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# RELATIONAL COORDINATION: A PREDICTOR OF NURSE JOB SATISFACTION, ORGANIZATIONAL COMMITMENT, AND TURNOVER INTENTION

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**RELATIONAL COORDINATION:  
A PREDICTOR OF NURSE JOB SATISFACTION, ORGANIZATIONAL  
COMMITMENT, AND TURNOVER INTENTION**

A Dissertation Presented

by

RAWAIH FALATAH

Submitted to The Graduate School of the  
University of Massachusetts Amherst in partial fulfillment  
of the requirements for the degree of

DOCTORATE OF PHILOSOPHY

September 2017

Nursing

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SATISFACTION, ORGANIZATIONAL COMMITMENT, AND TURNOVER  
INTENTION**

A Dissertation Presented

by

RAWAIH FALATAH

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College of Nursing

## **DEDICATION**

This dissertation is dedicated to the memories of my mother and father who have always encouraged me to seek knowledge and approach learning with an open heart and mind.

I also dedicate this dissertation to my sisters and brothers who have provided me with unconditional love, care, and support since the very first moment of my life. I dedicate it to my nieces and nephews who have overcome geographical distance and used many technologies to share with me all of their special moments.

Finally, I dedicate this dissertation to the people who have lived it all with me: my dear husband Reda, my beloved daughters Redaa, Retaj, Rama, and Rimas, and my hero, my son Muhammad. During this journey, you have handled my absence and the stress created by my study with trust, hope, and prayers. There are no words that can express my gratitude to you.

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## ABSTRACT

### **RELATIONAL COORDINATION: A PREDICTOR OF NURSE JOB SATISFACTION, ORGANIZATIONAL COMMITMENT, AND TURNOVER INTENTION**

SEPTEMBER 2017

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The purpose of this cross-sectional correlational study was to examine the psychometric properties of the relational coordination scale among nurses in the Kingdom of Saudi Arabia (KSA). In addition, it examined the relationship between relational coordination (RC), job satisfaction, affective organizational commitment (AOC), and turnover intention. Finally, it identified potential moderators and mediators between these four concepts.

The study population included staff nurses 22 years or older, who have worked in a healthcare setting for at least six months in the Kingdom of Saudi Arabia. Participants completed an online survey via Survey Monkey “Survey Monkey (www.surveymonkey.com).” A link to the survey was posted on KSA nurses’ social media websites (e.g. [https://twitter.com/MOH\\_Staff](https://twitter.com/MOH_Staff)). Using a snowballing nonprobability sampling technique (Polit & Beck, 2012), participants were asked to refer their colleagues to participate in the study.



One-hundred-and-eighty-one nurses working in the KSA participated in the study. Of these participants, 26 were broadly identified as Asian, and 154 were specifically Saudis. Additionally, 71% of the sample was female. Factor analysis showed that RC items were loaded into seven factors. Cronbach's alpha of the scale was .87, and Cronbach's alpha of the subscales ranged from .74 to .92. Results showed that RC was significantly and positively associated with job satisfaction and AOC, and was significantly and negatively associated with turnover intention. Thus, it is a valid measure among nurses in KSA.

The RC subscales problem-solving communication, job satisfaction, and AOC significantly predicted turnover intention. However, on its own, RC was not a significant predictor of turnover intention. The findings show that neither nurse nationality moderated the relationship between RC and job satisfaction and the relationship between RC and turnover intention. Nurse education moderated the relationship between RC and AOC as well as the relationship between RC and turnover intention. Nurse experience, did not mediate any of the relationships examined.

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## LIST OF ACRONYMS

AOC	Affective Organizational Commitment
KSA	Kingdom of Saudi Arabia
MMSS	McCloskey/Mueller Satisfaction Scale
RC	Relational Coordination
TCM	Three-Component Model
TI-6	Turnover Intention, six items
SCHS	Saudi Commission for Health Specialties
MOH	Ministry of Health



# CHAPTER 1

## INTRODUCTION

### Background

High nurse turnover negatively affects healthcare in the Kingdom of Saudi Arabia (KSA), as it does in other countries around the world (WHO, 2013). This problem represents a serious threat to patient safety and other healthcare outcomes because of the link between nurse turnover and increase in patient to nurse ratio, adverse patient outcomes, and healthcare cost (Abualrub & Alghamdi, 2012; Bae, Mark, & Fried, 2010; de Magalhães, Dall'Agnol & Marck, 2013). In the United States, 178 hospital coordinators participated in the National Database of Nursing Quality Indicators survey. Of the 178 participants, 67% to 70% reported concern about the impact of nurse turnover on their organizational environment, care quality, and their organizations' financial well-being (Park & Boyle, 2015). Nurse turnover has been additionally associated with an increased patient-to-nurse ratio, as well as increases in patient falls and pressure ulcers; it has also been determined to decrease patient satisfaction (Park, Boyle, Bergquist-Beringer, Staggs, & Dunton, 2014; Warshawsky, Rayens, Stefaniak, & Rahman, 2013). To counterbalance the increased patient-to-nurse ratio, healthcare organizations tend to contract with nurse agencies as a temporary solution before hiring new nurses. The need to compensate short-term staff and train the newly-hired nurses can increase healthcare costs (Waldman, Kelly, Arora, & Smith, 2004). Although the costs of nurse turnover in KSA is unknown, a study on a single medical center in the United States found that nurse turnover-related costs represent 3.4% to 5.8% of the institution's annual operational

budget (Waldman, et al. 2004). The estimated cost of the turnover of one nurse in New Zealand is \$23,800 (North et al., 2013). Therefore, reducing nurse turnover is not only important for improving safety and quality of care, but also for reducing operational costs.

A number of studies have documented significant determinants associated with nurse turnover, including staff-related factors, compensation and financial factors, work-life balance factors, and organizational factors (Al-Ahmadi, 2014; Al-Hussami, Darawad, Saleh, & Hayajneh, 2014). Demographic characteristics such as age, gender, marital status, nationality, education, and experience also correlate with nurse turnover (Al-Ahmadi, 2014; Al-Hussami, et al. 2014). Having high level of affective organizational commitment (AOC) decreased nurse turnover intention more than other forms of organizational commitment (Fleig-Palmer & Rathert, 2015; Meyer & Herscovitch, 2001). It is significant that the most frequently identified staff-related predictor of nurse turnover is job satisfaction (Al-Ahmadi, 2014; Alsaraireh, Quinn Griffin, Ziehm, & Fitzpatrick, 2014; Kuo, Lin, & Li, 2014). Financial factors, extrinsic rewards and recognition (Al-Ahmadi, 2014; Stanz & Greyling, 2010), professional development and career opportunities (Hart, 2005; C. Liu et al., 2012), and educational reimbursement (Takase, Teraoka, & Kousuke, 2015) correlate with nurse turnover and turnover intention as well.

Quality of work life is a workload related-variable associated with turnover intention, and concerns “the degree to which registered nurses are able to satisfy important personal needs through their experiences in their work organization while achieving the organization’s goals” (Almalki, et al., 2012, p. 1). A number of studies have found that a positive quality of work life decreases turnover intention (Al-Hussami

et al., 2014; Lee, Dai, Park, & McCreary, 2013), as do several environmental factors within the nurse's organization, including a positive work atmosphere (pleasure, good team spirit, and collegiality; Tummers, Groeneveld, & Lankharr, 2013). Safety organizing, which was defined by Vogus, Cooil, Sitterding, and Everett (2014) as the detecting and correcting of errors and unexpected events, was found to lower RNs' emotional exhaustion and turnover intention. Despite this new awareness of predictors of nurse turnover, both globally and in the KSA, the rate of nurses who leave their institutions is still high, leading to nurse shortages, increased health care costs, and other negative consequences for patients, nurses, and organizations.

Important environmental factors within organizations that mitigate nurse turnover and turnover intention are effective communication and commitment to high quality professional relationships. There is strong evidence in the nursing literature that poor communication and difficult professional relationships in the workplace can result in conflict, poor staff satisfaction, and turnover. For example, McKinley and Perino (2013) found a significantly positive relationship between staff communication competencies and job satisfaction, and Manojlovich and Antonakos (2018) found the same between nurses' satisfaction with communication and single-item measures of job satisfaction. Furthermore, turnover intention is significantly lower among nurses working in organizations in which they engage in more synergistic communication (Apker, Propp, & Zabava, 2009).

Relational coordination, defined as interdependent task integration through high quality communication and relationships, significantly improves job satisfaction among nurses and nurse aids (Gittel, Weinberg, Pfefferle, & Bishop, 2008; Havens, Vasey,

Gittell, & Lin, 2010). To date, this study by Gittell et al. (2008), and few other studies (e.g. Albertsen, Wiegman, Limborg, Thörnfeldt, & Bjørner, 2014) have examined the impact of relational coordination on job satisfaction among the medical professions, however, there is no known study that examines the impact of relational coordination on registered nurse job satisfaction in KSA. Nonetheless, theorists have posited that relational coordination fosters positive workplace communication and relationships, and this project anticipates that it will be positively associated with nurses' job satisfaction (Gittell, et al., 2008).

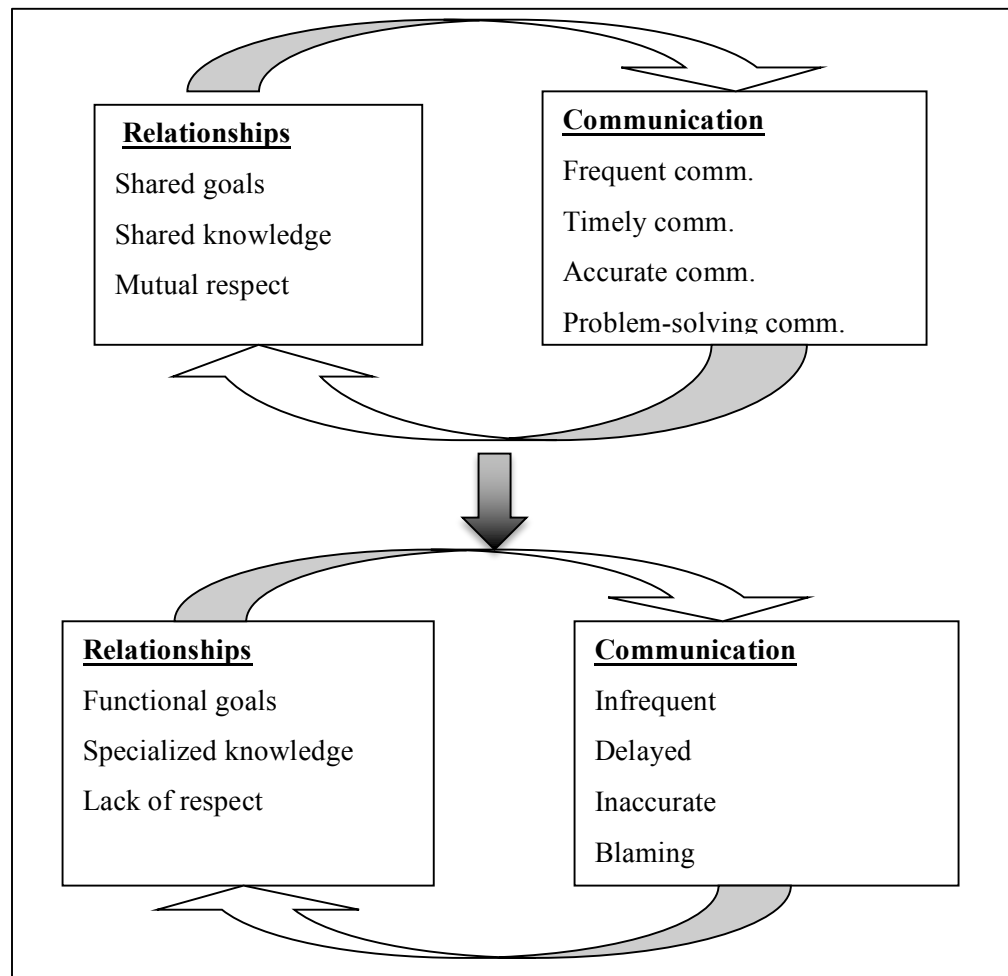


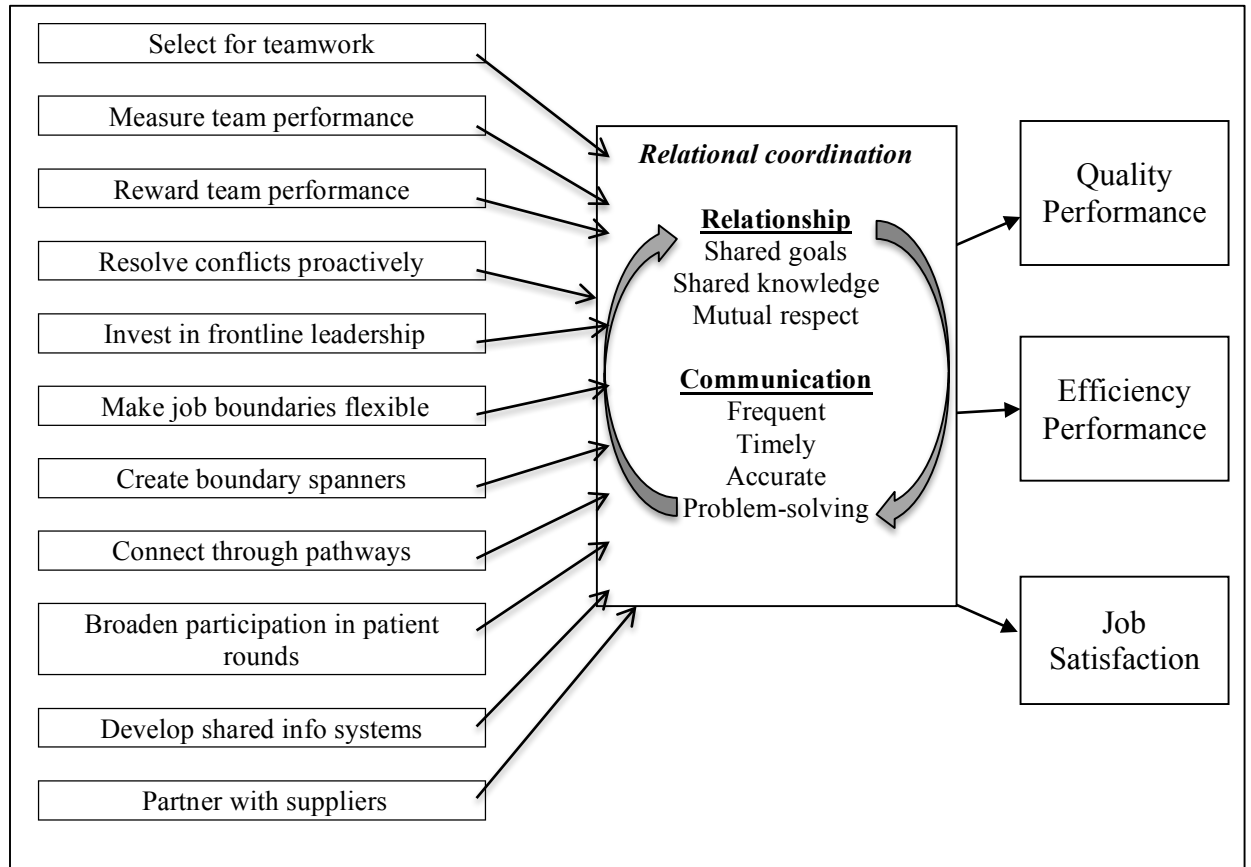
Figure 1: RC as a mutually reinforcing cycle of relationships and communication ties

From *High Performance Healthcare: Using the Power of Relationships to Achieve Quality, Efficiency, and Resilience*, by J. H. Gittell, 2009, p. 18. Copyright (2009) by McGraw-Hill. Reprinted with permission.

This positive association between RC, workplace communication, and job satisfaction might be particularly valid in workplaces like the KSA healthcare system for two reasons. First, in the KSA, 39.9% of the nursing workforce consists of non-Saudi nurses (MOH, 2015). Also, the overseas nursing workforce brings languages, values, and belief systems that differ from those of their patients, their employers, and their Saudi colleagues (Almutairia, 2015). These differences can lead to miscommunication and conflict (Jäge & Raich, 2011). Second, healthcare workers come from different professional backgrounds, and this can make cross-profession communication and the maintenance of collegial relationships challenging. Because of this, the KSA healthcare system is prone to miscommunication, poor professional satisfaction, and high turnover among nursing staff. Better communication quality and more positive relationships in the workplace, as demonstrated through Gittell's theory of relational coordination (Gittell, 2002; see Figure 1), may mitigate or eliminate the factors that lead to nurses leaving their jobs.

Since it has already proven beneficial in the U.S. healthcare system, this dissertation postulate that relational coordination may be used in the KSA healthcare system to predict and improve effectiveness and efficiency as well, since RC may, for example, reduce the length of hospital stays and improve postoperative pain management (Gittell et al., 2000). The KSA healthcare system aims to provide quality, free, and universal healthcare services, but due to the growing KSA population and the simultaneous nurse shortage, this goal is challenging (MOH, 2015). Gittell (2008)

indicates, however, that relational coordination increases under challenging situations as a collective resilience mechanism, enabling workers to cope with external stressors and improve performance on difficult tasks.



*Figure 2: A Model of High Performance Healthcare Systems*

From *High Performance Healthcare: Using the Power of Relationships to Achieve Quality, Efficiency, and Resilience*, by J. H. Gittell, 2009, p. 58. Copyright (2009) by McGraw-Hill. Reprinted with permission.

Gittell further indicates that high-performance work system practices like hiring for optimal teamwork and resolving conflict promptly will increase the level of relational coordination (Gittell, 2008; see Figure 2). The KSA healthcare system will benefit from implementing these practices, improving its relational coordination level and, from there,

patient, worker, and organizational outcomes. Relational coordination interventions will also enhance communication and relationships between members of the KSA healthcare system, and, as they do so, will improve staff satisfaction, staff retention, care outcomes, and healthcare costs as well. Finally, enhancing the KSA healthcare relational coordination level will reduce healthcare fragmentation through improving referral, feedback, and follow-up communication across different healthcare levels.

### **Statement of the Problem**

According to the World Health Organization, instability and turnover among nurses in the KSA is very high (WHO, 2013). For instance, the average turnover rate among non-KSA nurses working in a major state-owned KSA hospital between 2007 and 2008 was 32.5% (Bozionelos, 2009). This high turnover rate is supported by a similarly high rate of nurse turnover intention (Abualrub & Alghamdi, 2012; Almalki, FitzGerald, & Clark, 2012; Alonazi & Omar, 2013). Due to the potential impact of high nurse turnover and poor nurse retention, numerous studies have examined the relationships between these important predictors and the quality of nursing care and patient safety in the KSA (Al-Ahmadi, 2014; Al-Hussami, et al., 2014; Bozionelos, 2009).

Much research has focused on employee- and workplace environment-related factors, such as demographics, socioeconomics, cultural adaptation, and interpersonal factors like mentoring, peer support, communication, and conflict (Al-Hussami et al., 2014; Bozionelos, 2009; Jäge & Raich, 2011). The results of these studies have indeed identified a significant relationship between nurse turnover and turnover intention, as well as poor job satisfaction, poor organizational commitment, poor quality of patient

care, and an increased rate of medication errors (Abualrub & Alghamdi, 2012; Bae, Mark, & Fried, 2010; Maria, Magalhães, Maria, Agnol, & Marck, 2013, Wasti, 2003). Many of these predictors are explored in Gittell's theory of relational coordination (Gittell, 2003), and this approach has the potential to provide valuable knowledge regarding the causes and alleviation of nursing turnover in the KSA.

The theory of relational coordination suggests that interdependent task integration is attained by coordinating work through "relationships of shared goals, shared knowledge, and mutual respect" and is "measured as a network of communication and relationship ties among functional groups engaged in a common work process" (Gittell, 2011, p. 29). Two U.S. studies found a relationship between increased relational coordination and increased job satisfaction (Gittell & Weinberg, 2008; Havens, et al., 2010). However, it is still unknown whether relational coordination can predict job retention and satisfaction among nurses in the KSA.

### **Purpose of the Study**

Because the effect of relational coordination on turnover rates and job satisfaction among nurses in the KSA needs further study, the goal of this study was threefold: to evaluate the validity of a measure of relational coordination on nurses in the KSA; to evaluate the association between relational coordination, job satisfaction, affective organizational commitment, and turnover intention; and to identify potential moderators and mediators between relational coordination, job satisfaction, affective organizational commitment, and turnover intentions among nurses in KSA.



### **Specific Aims/Hypothesis**

The specific aims for this study were:

**Aim 1:** To examine the psychometric properties of the relational coordination (RC) scale among nurses in KSA by examining internal consistency and criterion-related validity.

H1a: Higher RC scores will be positively related to increased job satisfaction.

H1b: Higher RC scores will be positively related to increased affective organizational commitment.

H1c: Higher RC scores will be negatively related to increased turnover intention.

**Aim 2:** To examine the association between RC, job satisfaction, affective organizational commitment, and turnover intention.

H2a. RC will significantly predict turnover intention after controlling for job satisfaction and affective organizational commitment.

H2b. Job satisfaction will significantly predict turnover intention after controlling for RC and affective organizational commitment.

H2C. Affective organizational commitment will significantly predict turnover intention after controlling for RC and job satisfaction.

**Aim 3:** To identify potential moderator and mediator variables that impact the relationship between RC, job satisfaction, affective organizational commitment, and turnover intention among nurses in the KSA.

H3a: Nurse nationality (KSA vs. non-KSA) will moderate the relationship between RC and job satisfaction.

H3b: Nurse nationality (KSA vs. non-KSA) will moderate the relationship between RC and affective organizational commitment.

H3c: Nurse nationality (KSA vs. non-KSA) will moderate the relationship between RC and turnover intention.

H3d: Nurse education will moderate the relationship between RC and nurse job satisfaction.

H3e: Nurse education will moderate the relationship between RC and nurse affective organizational commitment.

H3f: Nurse education will moderate the relationship between RC and nurse turnover intention.

H3g: Years of nursing experience will mediate the relationship between RC and job satisfaction.

H3h: Years of nursing experience will mediate the relationship between RC and affective organizational commitment.

H3i: Years of nursing experience will mediate the relationship between RC and turnover intention.

### **Summary**

The negative impact of nurse turnover on patient care outcomes has been demonstrated by several studies in the nursing literature from around the world. An example of the negative impact of nurse turnover is adverse health outcomes, including patient falls, pressure ulcers, and medication errors (Park et al., 2014; Warshawsky et al., 2013). Scholars have found that demographic variables, such as age, education, and

experience, were associated with turnover and intention to leave. Al-Ahmadi (2014), for example, found a significant difference in anticipated turnover among nurses in KSA based on age, experience, gender, and KSA region. Alasmari and Douglas (2012) found that age, parental status, and length of intensive care unit experience predict intention to leave among critical care nurses in the KSA. A number of financial and organizational factors also predict KSA nurse intention to leave (Al-Ahmadi, 2014; Al-Hussami et al., 2014), and the most frequently reported predictor of turnover and turnover intention is job satisfaction (Abualrub & Alghamdi, 2012; Bae et al., 2010; Maria et al., 2013). It is also significant that job satisfaction predicts turnover more than any other variable. Although the association between these predictors and turnover intention has been established, the rates of turnover are still alarming. The growing relational coordination literature in healthcare suggests that relational coordination could predict staff outcomes such as job satisfaction, organizational commitment and turnover intention (Gittell & Weinberg, 2008; Gittell, 2011).

## CHAPTER 2

### REVIEW OF THE LITERATURE

This study applies the theory of relational coordination. In preparation, the available literature regarding relational coordination in the healthcare professions was collected, as was current academic knowledge regarding job satisfaction, organizational commitment, and turnover intention in the KSA nursing population. Relevant literature from the fields of healthcare and business has been thoroughly reviewed, drawn from searches in the following databases: Academic Search Premier, Business Source Premier, Cumulative Index of Nursing and Allied Health Literature (CINAHL), and PUBMED. The terms used in the searches were “relational coordination,” “job satisfaction,” “organizational commitment,” “job commitment,” “turnover intention,” “intention to leave,” “turnover,” “Saudi Arabia”, and “KSA.” The inclusion criteria for sources used in this research were that they had to be peer reviewed, full-text journal articles written in English. The search identified 385 articles; 36 were chosen for inclusion in this literature review.

#### **The Theory of Relational Coordination**

Relational coordination is interdependent task integration through high-quality communication and relationships. The theory was first developed and tested in the airline industry (Gittell, 2003), and then studied in and applied to healthcare (Gittell, 2002; Gittell et al., 2008; Hartgerink et al., 2014; Havens et al., 2010; Lamontagne, 2014; Lee, 2013). The theory provides an understanding of the effective relational coordination

dynamics of interdependent functional groups. Communication and relationships are the theory's two linchpins; Gittell (2010) described relational coordination as a reinforcing cycle of these two concepts (see Figure 1). To be effective, communication needs to be frequent, timely, accurate, and focused on problem-solving. The underlining relationships between the functional groups need to be characterized by shared goals, shared knowledge, and mutual respect (Gittell, 2003). The theory can be most effectively generalized to systems where there is a highly interdependent work process coupled with uncertainty and time constraints, such as the healthcare system (Gittell, 2003).

The healthcare system consists of functional groups cooperating interdependently to optimize care outcome. These groups include clinical teams, administrators, and patients and their families. There is a high level of uncertainty in this system regarding potential patient conditions, functional groups tasks, and severe time constraints. As such, healthcare requires a high level of coordination to be successful and to provide good patient outcomes. Gittell found that relational coordination increases in organizations that implement high performance work systems practices that foster positive employee behaviors, like rewarding employees' team performances and investing in the development of frontline leadership (Gittell, 2009; see Figure 2).

Relational coordination levels are measured using a seven-item survey with a five-point Likert-type scale (Gittell, 2001; see Table 1). In prior research, relational coordination has primarily been used to predict organizational and patient outcomes (Gittell, 202; Gittell et al., 2000; Havens et al., 2010). However, the use of relational coordination as a predictor for worker outcomes in workplace research has been limited (Gittell et al., 2008). A study by Gittell et al. (2008) identified a positive relationship

between relational coordination and nursing aide job satisfaction. Gittell (2011) also emphasized that one of the new directions for relational coordination theory should be to extend its theorized outcome from organization and customer outcomes to employee outcomes. Job satisfaction, organizational commitment, and turnover intention are key worker outcomes that impact organizational and consumer outcomes, and that influence operational costs. Examining the relationships between relational coordination and worker outcomes is crucial.

*Table 1: Sample Items for Measuring Relational Coordination*

Adapted from *High Performance Healthcare: Using the Power of Relationships to Achieve Quality, Efficiency, and Resilience*, by J. H. Gittell, 2009, p. 20. Copyright (2009) by McGraw-Hill. Reprinted with permission.

Frequent Communication	How often do you communicate with each of these groups?
Timely Communication	Do the people in these groups communicate with you in a timely way?
Accurate Communication	Do people in these groups communicate with you in an accurate way?
Problem Solving Communication	When there is a problem, do the people in these groups try to solve the problem or try to determine whose fault it was?
Shared Goals	Do people in these groups have the same work goals as you?
Shared Knowledge	How much do people in these groups know about your job?
Mutual Respect	How much respect do you get from the people in each of these groups?

### **Communication Aspect of Relational Coordination**

For communication to be effective, it needs to be frequent, timely, accurate, and focused on problem solving (Gittell, 2003). Frequent communication is essential in interdependent functional groups because it helps increase familiarity through recurrent interaction between the different groups (Gittell, 2011). Although frequent communication is an important characteristic of good communication, it also needs to be timely; in highly interdependent functional groups, late communication can be hazardous, resulting in confusion and poor outcomes (Gittell, 2003). Inaccurate or incomplete communication can also lead to poor outcomes, since frequent and timely communication that transfers misleading or wrong information might also result in error and delay, as well as in a lack of trust between functional groups (Gittell, 2010). Furthermore, problems among interdependent functional groups need collaborative problem solving, and workers in all groups must avoid casting blame, which can negatively affect performance, in order to focus on solving the problem (Gittell, 2010; see Figure 1).

### **Relationship Aspect of Relational Coordination**

The underlying relationship between functional groups as they communicate to coordinate interdependent work is based on shared goals, shared knowledge, and mutual respect, which creates a reinforcing cycle of effective relationships and communication (Gittell, 2010; see Figure 1). However, if the relationship is characterized by a functional goal, specialized knowledge, and a lack of respect, a cycle of *ineffective* relationships and communication takes place. Shared organizational goals create a powerful linkage between functional groups, but because functional groups focus on different tasks that

contribute to the overall outcome, they can easily disconnect from these shared goals and become committed to the more narrow goals of their group. The lack of shared goals among interdependent functional groups negatively impacts the coordination of tasks (Gittell, 2010). Shared knowledge, too, affects the coordination of interdependent work processes, since when workers know about each other's tasks, they know how the activities they perform work in concert with those of others and impact the entire work process. This knowledge helps workers understand the impact of local work process changes on other functional group outcomes (Gittell, 2010). Finally, in interdependent work processes, mutual respect between functional groups is critical (Gittell, 2010). In healthcare, for example, workers come from different professions, and this could lead to hubris, negative comparisons between groups, and a lack of disrespect and appreciation; this could decrease the bond between and coordination among highly interdependent work processes.

### **Relational Coordination in Healthcare Research**

Because of highly interdependent work processes, input uncertainty, and time constraints in the contemporary healthcare field, relational coordination is thriving in healthcare research. In their qualitative analysis of the interviews conducted as part of the larger National Survey of Accountable Care Organizations (ACOs) for the co-occurrence of the dimensions of relational coordination, Rundall, Wu, Lewis, Schoenherr, and Shortell (2016) found four dimensions: shared goals, frequency of communication, timeliness of communication, and problem-solving communication. The leaders of the organizations believed that these four dimensions were “positively influencing their



efforts to develop or expand patient care management activities” (Rundall et al., 2016, p. 97). New programs, such as ACOs, create threats to the profitability of healthcare organizations. The penetration of managed care into healthcare organizations, measured by the percentage of population insured by managed care, is another threat to revenue for healthcare organizations. Workers in these organizations were found to engage in higher levels of relational coordination as a collective, resilient response to these threats (Gittell, 2008). Furthermore, high quality relationships, one of the primary concepts in relational coordination, were proven conducive to employees being able to learn from their failures, thus enhancing psychological safety (Carmeli & Gittell, 2009).

Relational coordination was also associated with quality and efficiency outcomes that include improved quality of care, reduced postoperative pain, and a shorter hospital stay (Gittell et al., 2000). In a study of 15 nursing home facilities, resident quality of life, as well as patient and nurse aide satisfaction, was positively related to relational coordination (Bae et al., 2010; Gittell & Weinberg, 2008). Adverse patient outcomes, such as hospital-acquired infection and medication error, were negatively associated with relational coordination (Havens, et al. 2010). Bae et al. (2010) found that key functional group processes, like relational coordination, mediated the impact of nurse turnover on patient outcomes.

Many predictors are associated with high levels of relational coordination. High performance work practices, such as selecting employees based on their teamwork skills and rewarding team performance, have been positively associated with relational coordination (Gittell, 2010). In addition, formal coordination mechanisms, like boundary spanners, team meetings, work routines, and integrated care delivery models improved

outcomes by increasing the levels of relational coordination (Gittell, 2002; Hartgerink et al., 2014). Worker engagement in large, home-visiting nursing agencies with a wider span of management control was predicted by nurses' and nurse managers' relational coordination levels (Naruse, Sakai, & Nagata, 2016). In a study of teams caring for older hospitalized patients, a high level of relational coordination was positively associated with being a female and being a nurse. However, relational coordination was determined to be lower among healthcare professionals in the same functional group. Furthermore, relational coordination was higher between nurses and other healthcare functional groups, and lower between medical specialists and other healthcare functional groups (Hartgerink et al., 2013).

### **Job Satisfaction, Organizational Commitment, and Turnover Intention Among Nurses in the KSA**

Job satisfaction has been conceptually and operationally defined in a number of different ways in the nursing literature. In a recent concept analysis, Liu, Aunguroch, and Yunibhand defined job satisfaction as “the fulfillment of desired needs within the work settings, happiness or gratifying emotional responses towards working conditions, and job value or equity” (2016, p. 89). In order to address this topic in the KSA healthcare system, a number of studies have been conducted to measure nurses' job satisfaction in that country. In Al Juhani and Kishk's study, 67% of the participating nurses indicated that they are dissatisfied with their job (2006). Almalki, Fitzgerald, and Clark concluded that the respondents in their study of nurses in the KSA had lower quality of work life score, which indicated that these nurses were dissatisfied with their

work life (2012).

On the other hand, some studies revealed that nurses in the KSA were moderately satisfied with their job (Abualrub & Alghamdi, 2012; Al-aameri, 2000; Al-Dossary, Vail, & MacFarlane, 2012). Al-Dossary et al., for instance, demonstrated that both citizen and overseas nurses in the KSA were satisfied with their supervisors, their co-workers, and the nature of their work (2012). Aiming to learn about the determinants of job satisfaction among nurses in the KSA, Abualrub & Alghamdi have shown that nurses are more satisfied when being led by transformational leaders (2012). In addition, Al Juhani & Kishk found that significantly higher job-satisfaction mean scores were found among older, female, and non-Saudi senior nurses than among their counterparts (2006). Pay, fringe benefits, contingent rewards, hospital policies, operating conditions, fairness of the performance appraisal system, professional opportunities, and workload are the major determinants of job satisfaction or dissatisfaction among nurses in the KSA (Al-Dossary et al., 2012; Al Juhani & Kishk, 2006; Alotaibi & Paliadelis, 2016; Zaghloul, Al-Hussaini, & Al-Bassam, 2008).

There is a strong correlation between nurse job satisfaction, organizational commitment, and turnover intention (Abualrub & Alghamdi, 2012; Al-Aameri, 2000; Al-Ahmadi, 2014). One of the first studies on job satisfaction among nurses in the KSA indicated that significant differences were found in terms of job satisfaction between nurses who intended to leave and those who intended to stay (Bin Saeed, 1995). Furthermore, a study of 923 nurses working in a number of KSA Ministry of Health (MOH) Hospitals concluded that both nurse job satisfaction and organizational commitment predicted job performance (Al-ahmadi, 2009).

Organizational commitment is a multidimensional concept. One of the most widely-used conceptualizations of organizational commitment in nursing is the three-component model of commitment (Meyer & Allen, 1991). Based on this model, organizational commitment is understood to have three distinct themes: affective, normative, and continuance commitment. Affective commitment refers to the employee's identification with and emotional attachment to their organizations; the employees want to remain in their jobs. Normative commitment is related to the employee's sense of obligation to their organizations; the employees feel they ought to remain in their jobs. Continuance commitment refers to an employee's thoughts about the consequences of leaving their organization; the employees need to remain in their jobs (Meyer & Allen, 1991). Other researchers, including Manion (2004), have supported this three-component model of organizational commitment. Nonetheless, it has been proven that AOC has the strongest negative impact on turnover and turnover intention among the organizational commitment component. Because of this, AOC was the sole commitment type analyzed in this study.

In the KSA, a limited body of research has explored nurses' organizational commitment. Al-Aameri (2000) concluded that KSA nurses are slightly committed to their organizations. Al-Ahmed (2009) found that organizational commitment was significantly and positively associated with job performance. But although job satisfaction and organizational commitment were the focus of numerous studies in the KSA, studies of nurse turnover intention also examined additional worker variables associated with turnover.

In the KSA, predictors of nurse turnover and turnover intention include

demographic factors, protégé experience, pay and equity factors, management, recognition, hours and shift-types, job stress, autonomy at work, quality of communication with patients and their families, alternative employment opportunities, job satisfaction, and commitment (Al-Ahmadi, 2014; Alasmari, Douglas, Road, & Grove, 2012; Alonazi & Omar, 2013; Bin Saeed, 1995; Bozionelos, 2009). In addition, quality of work life, “the degree to which registered nurses are able to satisfy important personal needs through their experiences in their work organization while achieving the organization’s goals,” was associated with turnover (Almalki, et al., 2012, p. 1). Despite the available knowledge about turnover predictors among nurses in KSA, including the identified high turnover intention, the rates of turnover are still high.

The turnover rate has been studied extensively through different KSA nurses’ groups. However, the findings of these studies are inconsistent. In a study by Bin Saeed (1995), 56.35% of nurses intended to leave their jobs, and Bozionelos (2009) found that the turnover rate among overseas nurses who work in KSA was 32%. Almalki et al. (2012), however, studied primary care nurses and found that 40% had intention of leave their jobs. Only the Alonazi and Omar (2013) study found that 75% of a sample of nurses in KSA leave after two years of employment. Kovner, Brewer, Fatehi, & Jun (2014) argue that the inconsistency of nurse turnover across studies is due to differences in methods and sample characteristics. Nevertheless, Al-Ahmadi (2014) argued that nurse turnover is one of the KSA’s serious healthcare challenges, and it needs more attention and study. This study therefore contributes to the advancement of nursing science and will help to bridge the gap in nurse turnover knowledge in the KSA.

## Conceptual Definitions

1. Relational Coordination: “Relational coordination is an emerging theory for understanding the relational dynamics of coordinating work” (Gittell, 2012, p. 3); “Relational coordination is coordination[,] the management of task interdependencies[,] carried out in the context of relationships with other group members” (Gittell, 2001, p. 471).
2. Job Satisfaction: “The nurses’ positive feeling response to the work conditions that meet his or her desired needs as the result of their evaluation of the value or equity in their work experience” (Liu et al., 2016, p. 87); “Job satisfaction is an affective (i.e., emotional) reaction to a job that results from the incumbent’s comparison of actual outcomes with those that are desired, expected, and deserved” (Castaneda & Scanlan, 2009, p. 136).
3. Organizational Commitment: An emotional attachment, discontinuing costs, and/or obligation that links the employee to the organization and improves retention (Allen & Meyer, 1990).
4. Turnover intention: In the nursing literature, there is no consensus on the definition of the concept “turnover intention” (Chan, Tam, Lung, Wong, & Chau, 2013). In this study, it is defined as the nurse’s plan to quit from his/her current organization.
5. Nurse: In this study, registered nurses are defined based on the Saudi Commission for Health Specialties’ ranking in the “Guideline of Professional Classification Manual for Health” (2014). It will include technician rank (Diploma in nursing), nurse specialist rank (Bachelor's degree in nursing [BSN]),

senior nurse specialist rank (Master of Science degree in nursing [MSN]), and nurse specialist-consultant rank (Doctor of Philosophy in nursing [PhD]). Nurse assistant rank and nurses in managerial and leadership positions will be excluded.

### **Summary**

This literature review discussed the theory of relational coordination (Gittell, 2003) as it has been utilized as the theoretical underpinning of the proposed study. Further, the review presented an overview for the use of relational coordination in healthcare literature. Finally, studies on job satisfaction, job commitment, and intention to leave among nurses in the KSA were reviewed. Thirty-six articles retrieved from Academic Search Premier, Business Source Premier, CINAHL, and PUBMED databases were included in the review.

Relational coordination focuses on communication and relationships for the purpose of task integration in interdependent work processes. The theory is generalizable to fields characterized with interdependency, input uncertainty, and time constraints (Gittell, 2011). In the healthcare system, it is related to better patient outcomes, such as postoperative pain control and decreased hospital stay (Gittell et al., 2000; Havens et al., 2010). In addition, relational coordination is positively associated with job satisfaction among nurses (Gittell & Weinberg, 2008). In the literature, job satisfaction is the most frequent predictor of turnover intention. Hence, relational coordination has the potential to predict worker outcomes, including job satisfaction and turnover intention.

## **CHAPTER 3**

### **RESEARCH METHOD**

#### **Study Design**

This research utilized a cross-sectional correlational survey design.

#### **Subjects and Setting**

The subjects in the study were staff nurses—both KSA citizens and non-KSA citizens—working in the KSA healthcare system. Nurses from both genders, who were no less than 22 years old (as mentioned in the KSA Management of Public Visas Ministry of Foreign Affairs conditions for overseas nurses age), were invited to participate. Only nurses who provide nursing care in primary, secondary, or tertiary care settings, and who hold an associate degree in nursing or higher, were considered for participation. Participants needed to be active and working in one of the Saudi Ministry of Health organizations for more than 6 months at participation time, to eliminate the impact of homesickness for overseas nurses and adjustment time for newly-hired national nurses. Nurse assistants, managers, and leaders were excluded because they communicate and relate to other nurses and other functional groups differently than do staff nurses. In this study, two online recruitment strategies were employed. First, an invitation was posted on KSA nurses' pages in the social media sites Facebook and Twitter. Second, using a snowballing method, subjects were asked to refer other nurses to participate in the study.



## **Power**

The necessary sample size was evaluated via a power analysis using G\*Power 3.1®. Gittell (2008) found a significant relation between relational coordination and nurse aids job satisfaction ( $r = 0.30$ ). Since there is a known relationship between job satisfaction and turnover (Al-Ahmadi, 2014; Alsarairih, Quinn, Griffin, Ziehm & Fitzpatrick, 2014; Kuo & Li, 2014; Liu et al., 2012; Ramoo et al., 2013; Tourangeau & Cranley, 2006), using an effect size of  $f^2 = 0.06$  was an appropriate conservative estimate. Thus, when  $f^2 = 0.06$ , significant level  $\alpha = 0.05$ , power = 0.80, and number of predictor = 7, a sample size of 133 participants was needed. Power was established based on aim one and aim two of this study. For Aim 3, power was less than 0.80.

## **Procedure**

The researcher obtained approval to conduct the study from the Institutional Review Board (IRB) at the University of Massachusetts-Amherst and the KSA Ministry of Health. The participants were directed to a survey on Survey Monkey® through the social media sites listed above. A link to the survey was posted on KSA nurses' Facebook and Twitter pages. By using a snowballing nonprobability sampling technique (Polit & Beck, 2012), participants were asked to refer their colleagues to participate in the study. Participants needed to read an informed consent window and click an icon indicating their agreement before completing the online survey. Participant were disqualified if they did not agree to the informed consent waiver. Additionally, they were disqualified if they answered "No" to one of the three eligibility screening questions: "Do you work for the Saudi MOH?" "Have you been working as a nurse in KSA for six months or more?"

and “Do you work as a staff nurse?” No personal identification information, such as name or employer, was collected from participants.

### **Measures**

In this study, relational coordination, job satisfaction, organizational commitment, and turnover intention were examined.

#### **Relational Coordination**

The relational coordination scale is a seven-item, five-point Likert-type scale. The tool is self-administrated, and the participants are asked to report the behaviors of others instead of reporting their own behavior; this decreases the likelihood of a socially desirable outcome (Gittell, 2011). Relational coordination is an individual-level measure that evaluates the connection between an individual respondent and others (Gittell, 2011). Four of the items tested were about communication, evaluating its frequency, timeliness, accuracy, and problem solving. Three items were focused on relationships, evaluating the establishment of the relationship on shared goals, shared knowledge, and mutual respect. Psychometric assessment of this measure has found a single factor, and adequate internal consistency reliability has been established ( $\alpha = 0.85$ ; Gittell, 2011). In this study the RC scale demonstrated adequate reliability ( $\alpha = .87$ ).

According to Gittell (2011), the four theorized communication items of interdependent functional groups were operationalized by asking participants these questions through survey: (a) How frequently do people in each of the functional groups communicate with you regarding the work process? (b) Do they communicate with you

in timely way about the work process? (c) Do people communicate with you accurately about the work process? (d) When there is a problem in the work process, do people in these groups blame others or work with you to solve the problem?

Likewise, Gittell (2011) operationalized the three theorized relationship items by asking participants the following through survey: (a) Do people in the functional groups share your goals regarding the work process? (b) Do people in these groups know about the tasks you do in the work process? (c) Do people in these groups respect the tasks you do in the work process?

### **Administering and Scoring the Relational Coordination Survey**

According to Gittell, “The first step to measuring relational coordination is to identify a work process that serves a client population of interest—the focal work process—then to identify the roles or functional groups that are involved in carrying out that focal work process” (2011, p. 32). Nurses, physicians, pharmacists, laboratory technicians, and unit clerks are the functional groups for this study. If all the functional groups in a given work process are surveyed, the result will be a complete symmetrical matrix of relational coordination. Otherwise, the result will be an asymmetrical matrix of relational coordination. With an asymmetrical matrix, only the relational coordination among the surveyed group and between this group and all the other functional groups could be evaluated (Gittell, 2011).

Table 2: Relational Coordination Matrix

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Asymmetrical Matrix of Relational Coordination					
Role	Other Nurses	Physicians	Pharmacists	Laboratory specialists	Unit clerks
Nurse					

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In this study, nurses were the only surveyed functional group, and the only possible relational coordination evaluations possible were therefore among nurses and between nurses and other functional groups. Table 2 shows the asymmetrical RC matrix for this study of functional groups as reported by nurses. The use of an asymmetrical matrix should not cause any limitation because the information a symmetrical matrix can provide is beyond the purpose of this study. Surveys of this nature can be administered in person, by mail, or online. In this study, it was administered through an online survey due to geographical distance (see RC survey items I Appendix B). After administering the survey, relational coordination scores were calculated for each participant.

### **Job Satisfaction**

Job satisfaction was measured using The McCloskey/Mueller Satisfaction Scale (MMSS; see Appendix C). It is a 31-item, five-point Likert scale that measures job satisfaction among nurses, ranging from very dissatisfied (1) to very satisfied (5). Exploratory factor analysis was completed, yielding eight distinct factors. The identified factors were satisfaction with extrinsic rewards, scheduling, balance of family and work, co-workers, interaction opportunities, professional opportunities, praise and recognition, work control, and responsibility. The subscales of the MMSS have reliability ranges of .52 to .84, and the global scale reliability is .89 (Mueller & McCloskey, 1990). In the

current study, the MMSS showed adequate reliability ( $\alpha = .94$ ).

### **Affective Organizational Commitment**

Affective organizational commitment was measured using the six-item Affective Commitment subscale of the Three-Component Model of Commitment Survey (Meyer, Allen, & Smith, 1993; see Appendix D). Participants rated their agreement with each statement on a seven-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). The AOC scale reliability coefficient is .86 (Wolowska, 2014). In this study the ACO scale demonstrated adequate reliability ( $\alpha = .84$ )

### **Turnover Intention**

Turnover intention was measured using the Six-Item Roodt (2004; see Appendix E) turnover intention (TI-6), five-point Likert-type scale (1 = never, 5 = always). Factor analysis revealed a single factor, and a Cronbach alpha reliability coefficient of  $\alpha = 0.80$  (Bothma & Roodt, 2013). Cronbach alpha reliability coefficient of the TI-6 scale in the current study was .70.

### **Demographics**

Finally, demographic data (e.g., age, gender, education, marital status, experience, work location, and type of healthcare organization) were also measured (see Appendix F).

### **Data Analysis**

Data was analyzed using Statistical Package for Social Sciences (SPSS®) Version 24. A detailed descriptive analysis of all quantitative data was performed, involving the summarization of data and the use of inferential analytic techniques. The information

obtained from this investigation was used to: (a) describe univariate and bivariate sample distributions of the data, (b) identify the interrelationships between variables (i.e., the need for covariate adjustment), and (c) check for the violation of assumptions underlying identified statistical techniques (e.g., homoscedasticity or normality).

Factor analysis (principal axis factoring with Oblimin solutions) was performed to evaluate the RC scale factor structure. Reliability (internal consistency) and criterion related validity (correlation) tests were performed. Additionally, Multiple regression with covariates entered simultaneously was performed to test aim two. For aim three, moderation analyses was performed using multiple regression, covariates entered simultaneously in the first step, interaction term (potential moderator) in the second step. Also, mediation analyses with covariates entered into first step, potential mediator entered into second step was performed.

### **Data Management**

Responses to the online surveys were collected. The data generated in SurveyMonkey® was exported to the SPSS® database in two encrypted external hard drives (one as a backup) that were used only on password-protected computers that follow University of Massachusetts- Amherst protection and KSA Ministry of Health security protocol. The data were de-identified, and only the research team was granted access. Participants were not provided with individualized results from this study. The study's findings will be disseminated in the aggregate form through academic conferences and journals.

### **Protection of Human Subjects**

The Institutional Review Board (IRB) at the University of Massachusetts-Amherst and at the KSA Ministry of Health reviewed the research protocol. Subjects were informed about the study via social media pages. The purpose of the study was provided prior to study initiation, and all potential subjects were informed that participation was voluntary. Prior to completing the survey and after reading the online consent form, the potential subjects were required to click an icon that read, “I understand the purpose of this study and give my consent to participate.” No personal health information or employee information was collected (e.g., name or employee number). All participants were given contact information for the University of Massachusetts IRB, the KSA Ministry of Health IRB, and the principal investigator.

## **CHAPTER 4**

### **RESULTS**

The purpose of this cross-sectional correlational study was to validate a measure of relational coordination for use among nurses in the Kingdom of Saudi Arabia. This study also examined the association between RC, job satisfaction, affective organizational commitment, and turnover intention. Its final aim was to identify potential moderators and mediators between total RC, job satisfaction, AOC, and turnover intention among nurses in the KSA.

To reach these goals, data was collected from nurses in the KSA through an online survey, between May 15, 2017, and June 16, 2017, and analyzed using the Statistical Package for Social Sciences (SPSS®) Version 24. The statistical techniques used to test the hypotheses of this study include factor analysis, internal consistency reliability, correlation, and multiple linear regression. Normality, multicollinearity, and linearity were all tested as well, before conducting the analysis. Normality of the predictors' distribution was examined numerically through kurtosis and skewness indexes, and physically through a P-P plot. Linearity was examined using scatter plot. In addition, a collinearity diagnosis was conducted, and all the variables had a tolerance and Variance Inflation Factor (VIF) within the acceptable cut-off criterion unless otherwise stated. All the multivariate analyses were based on the list-wise sample size. This chapter begins with a description of the study sample, and then reports the study results organized by the specific aims and hypotheses.



### Study Sample Demographic Characteristics

The sample consisted of 180 nurses working in the KSA. The majority of the sample were female (71.1%), between the ages of 30 to 36 years old (49.4%), and married (59.4%). Twenty-six participants (14.4%) were Asian nurses, the majority of whom arrived in the KSA one to ten years ago (69.2%), and planned to leave within one to ten years (68.0%). Half of the sample (50.0%) holds a BSN, and almost a third (27.0%) has one to six years of nursing experience. Furthermore, 62.0% of the participants indicated that they have future educational plans. Almost 87% of the participants reported their Saudi Commission for Health Specialties rank as either nurse technician or nurse specialist. 40.8% of the participants indicated that they work in a secondary healthcare setting. The majority of the nurses were in the Central region of the KSA (30.5%). The demographic characteristics of the sample are summarized in Table 3.

*Table 3: Sample Demographic Characteristics*

Variable	N	%
<b>Age</b>		
23-29	47	30.1
30-36	77	49.4
37-43	19	12.2
44-52	13	8.3
<b>Gender</b>		
Male	41	22.9
Female	138	77.1
<b>Nationality</b>		
Saudi	154	85.6
Asian	26	14.4
<b>Non-Saudi arrival</b>		
1-10 years	9	69.2
11-20years	2	15.4
21-30 years	2	15.4

Variable	N	%
<b>Non-Saudi leave</b>		
1-10 years	17	68.0
11-20 years	8	32.0
<b>Marital status</b>		
Married	107	59.4
Divorced	11	6.1
Separated	4	2.2
Single	58	32.2
<b>Educational attainment</b>		
Diploma	55	31.3
Associate Degree	12	6.8
BSN	88	50.0
MSN	20	11.4
PhD	1	0.6
<b>Total years of experience</b>		
1-6	47	27.0
7-12	75	43.1
13-19	37	21.3
20-26	7	4.0
27-31	8	4.6
<b>Plans for education</b>		
Yes	111	62.0
No	25	14.0
Not sure	43	24.0
<b>SCHS Professional Rank</b>		
Nurse technician	79	44.6
Nurse specialist	78	44.1
Senior nurse Specialist	19	10.7
Nurse specialist-consultant	1	0.6
<b>Healthcare setting type</b>		
Primary	38	21.8
Secondary	71	40.8
Tertiary	65	37.4
<b>KSA region</b>		
Central	54	30.5
Western	52	29.4
Southern	23	13.0
Eastern	32	18.1
Northern	16	9.0

## **Relational Coordination Scores**

Relational coordination scores of this nurses in KSA sample will be presented in the following section.

### **Interpreting RC Scores**

An RC score is categorized as moderate within a functional group if it ranges from 4.1 to 4.6 (Relational Coordination Analytics, personal communication, 2017). A score of less than 4.1 is considered weak, and a score more than 4.6 is considered strong. A moderate RC score between functional groups is between 3.5 and 4.0 (Relational Coordination Analytics, personal communication, 2017). A score of less than 3.5 is considered weak, and a score of more than 4.0 is considered strong.

### **Sample RC Scores**

The mean RC scores in this project for nurses and for other functional groups, as rated by a sample of nurses working in the KSA, are presented in Table 4. The results of this study indicate that the highest-reported total RC score (as reported by nurses) was for total RC with other nurses, and that lowest-reported total RC score was for unit clerks (2.6). Responses by nurses also indicate that the highest-rated RC subscale in their group was frequent communication. In reporting on other groups, nurses identified the top RC subscale among all groups to be frequent communication, with physicians earning 3.7, pharmacists and laboratory specialists earning 3.2, and unit clerks earning 3.1. The lowest reported subscale among nurses, on the other hand, was shared goals (3.0), and they identified varying subscales as most deficient among other groups, including problem-

solving communication for physicians (2.6), shared knowledge for pharmacists and laboratory specialists (2.2), and shared goals for unit clerks (2.2).

The total RC within the nurses' group in this sample was rated 3.3 (see Table 4), which indicates weak relational coordination. The highest total RC score between the groups, as reported by nurses, was for physicians (3.1), and the lowest was for unit clerks (2.6). Moreover, the only moderate score between group RC subscale scores, as reported by nurses, was frequency of communication between physicians and nurses (3.7).

*Table 4: Mean RC Scores for Each Workgroup as Reported by Nurses*

	Mean	SD	Level
<b>Frequent Communication</b>			
Other nurses	3.6	1.4	Weak
Physicians	3.7	1.4	Moderate
Pharmacists	3.2	1.6	Weak
Laboratory specialists	3.2	1.5	Weak
Unit clerks	3.1	1.6	Weak
<b>Timely Communication</b>			
Other nurses	3.3	1.2	Weak
Physicians	3.1	1.2	Weak
Pharmacists	2.5	1.2	Weak
Laboratory specialists	2.5	1.2	Weak
Unit clerks	2.5	1.2	Weak
<b>Accurate Communication</b>			
Other nurses	3.3	1.2	Weak
Physicians	3.3	1.2	Weak
Pharmacists	2.6	1.2	Weak
Laboratory specialists	2.6	1.3	Weak
Unit clerks	2.6	1.3	Weak
<b>Problem-Solving Communication</b>			
Other nurses	3.0	1.3	Weak
Physicians	2.6	1.3	Weak
Pharmacists	2.8	1.2	Weak
Laboratory specialists	2.8	1.2	Weak
Unit clerks	2.9	1.2	Weak
<b>Shared Goals</b>			

	Mean	SD	Level
Other nurses	2.9	1.3	Weak
Physicians	2.8	1.3	Weak
Pharmacists	2.4	1.3	Weak
Laboratory specialists	2.3	1.3	Weak
Unit clerks	2.2	1.4	Weak
<b>Shared Knowledge</b>			
Other nurses	3.4	1.3	Weak
Physicians	3.1	1.2	Weak
Pharmacists	2.2	1.2	Weak
Laboratory specialists	2.2	1.2	Weak
Unit clerks	2.2	1.2	Weak
<b>Mutual Respect</b>			
Other nurses	3.5	1.4	Weak
Physicians	3.2	1.3	Weak
Pharmacists	2.8	1.4	Weak
Laboratory specialists	2.7	1.4	Weak
Unit clerks	2.7	1.4	Weak
<b>Total RC</b>			
Other nurses	3.3	0.9	Weak
Physicians	3.1	0.9	Weak
Pharmacists	2.6	0.9	Weak
Laboratory specialists	2.6	1.0	Weak
Unit clerks	2.6	1.0	Weak

### **Relation between RC Scores and Nationality and Gender**

To identify potential differences in RC scores based on gender and national background, two independent sample *t*-tests were performed (see Table 5). The first *t*-test examined the difference in the total RC score for the two national groups (Saudi vs. Asian), while the second examined the difference in the total RC score for the two gender groups (male vs. female). Results showed significant differences based on nationality and gender. Asian nurses reported significantly higher RC scores than did Saudi nurses, as both the total RC score and all the RC subscales scores were higher for Asian nurses. Results for the gender comparison indicated that females reported significantly higher RC

scores than males, with a higher total RC score, as well as higher scores in frequent communication, timely communication, accurate communication, and shared knowledge.

*Table 5: Mean Comparisons for RC and National Background; RC and Gender*

Items	National background			Gender		
	Group	Mean	t	Group	Mean	t
Frequent Communication	Saudi	3.2	-2.68**	Male	2.7	-4.44***
	Asian	3.8		Female	3.5	
Timely Communication	Saudi	2.7	-2.67**	Male	2.4	-3.00**
	Asian	3.3		Female	2.9	
Accurate Communication	Saudi	2.8	-2.99**	Male	2.6	-2.22*
	Asian	3.4		Female	3.0	
Problem-Solving Communication	Saudi	2.7	-4.86***	Male	2.6	-1.83
	Asian	3.7		Female	3.0	
Shared Goals	Saudi	2.4	-3.94***	Male	2.4	-.75
	Asian	3.3		Female	2.6	
Shared Knowledge	Saudi	2.6	-3.22**	Male	2.4	-2.20*
	Asian	3.2		Female	2.7	
Mutual Respect	Saudi	2.9	-3.18**	Male	2.9	-.28
	Asian	3.7		Female	3.0	
Total RC	Saudi	2.8	-4.55***	Male	2.6	-2.72**
	Asian	3.5		Female	2.9	

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

### **Results by Study Aims**

The following section describes the data analytic results arranged by study aims and hypotheses.

#### **Aim 1**

The first goal of this project was to analyze the psychometric properties of the Relational

Coordination Scale among nurses in the KSA by examining internal consistency and criterion-related validity.

**H1a:** Higher RC scores will be positively related to increased job satisfaction.

**H1b:** Higher RC scores will be positively related to increased affective organizational commitment.

**H1c:** Higher RC scores will be negatively related to increased turnover intention.

To evaluate the psychometric properties of the RC Scale among nurses in the KSA, factor analysis and internal consistency reliability analyses were performed. Factor loading for each item is reported in Table 7. In addition, H1a, H1b, and H1c were tested using correlations between RC scores, job satisfaction, AOC, and turnover intention, in order to examine RC scale, criterion-related validity.

### **Relational Coordination Scale psychometrics**

The psychometric properties of the RC scale in this sample of nurses working in the KSA were examined. The findings will be presented in the subsequent section.

#### **Exploratory Factor Analysis**

An exploratory factor analysis with oblimin rotation, principal components analysis abstraction of the 35 relational coordination items used in this study was conducted. The results of factor analysis indicated that the items loaded on eight factors. Because one of the factors was identified by a single item, which had an eigenvalue of 1.1, and because there were only seven items in the original RC Scale, a second

exploratory factor analysis was performed requesting seven factors. The results of the factor analysis are presented in Table 6.

Upon review, this factor structure was much more consistent with the original relational coordination factor structure. The factor analysis table demonstrates that almost all the items loaded to the factor structure of the original RC Scale (e.g., all the shared-goal items loaded to Factor 1). The only two exceptions were Factor 2 (communication accuracy), where three timeliness items were loaded with accuracy items, and Factor 3 (communication timeliness), where two of the knowledge items were loaded with timeliness items. Nonetheless, the factor structure from this analysis is very similar to the original RC dimensions, and so the seven RC dimensions were used as subscales.

Furthermore, a third exploratory factor analysis with oblimin rotation, principal components analysis abstraction was performed on the seven RC subscales' averages, revealing a single-factor structure (eigenvalue = 4.02). The factor structure identified by Gittell (2010) was also a single factor structure.

*Table 6: 35 Relational Coordination Items Factor Loadings*

Item	Factor <sup>†</sup>						
	I	II	III	IV	V	VI	VII
Pharmacists goal sharing	0.83						
Laboratory specialists goal sharing	0.82						
Physicians goal sharing	0.80						
Unit clerks goal sharing	0.77						
Other nurses goal sharing	0.62		0.39				
Accuracy Laboratory specialists communicate		-0.80					
Accuracy Pharmacists communicate		-0.78					



Item	Factor <sup>†</sup>						
	I	II	III	IV	V	VI	VII
Accuracy Unit clerks communicate		-0.73					
Timely Laboratory specialists communicate		-0.61					
Accuracy Physicians communicate		-0.56	0.38				
Timely Pharmacists communicate		-0.53			0.32	0.34	
Timely Unit clerks communicate		-0.49					
Timely other nurses communicate			0.79				
Timely Physicians communicate			0.66				
Other nurses' knowledge about your work			0.60				
Accuracy other nurses communicate		-0.45	0.53				
Physicians knowledge about your work	0.37		0.38				0.30
Unit clerks respect the work you do				-0.81			
Pharmacists respect the work you do				-0.81			
Laboratory specialists respect the work you do				-0.81			
Other nurses respect the work you do			0.34	-0.68			
Physicians respect the work you do				-0.65			
Frequency Pharmacists communicate					0.74		
Frequency Laboratory specialists communicate					0.62		
Frequency Physicians communicate			0.34		0.61		
Frequency Unit clerks communicate					0.56		
Frequency other nurses communicate				-0.32	0.38	-0.32	
Laboratory specialists' knowledge about your work						0.80	
Pharmacists' knowledge about your work						0.79	
Unit clerks' knowledge about your work						0.73	
Pharmacists problem-solving communication							-0.90
Laboratory specialists' problem-solving communication							-0.84
Physicians problem-solving communication							-0.83
Unit clerks' problem-solving communication							-0.78
Other nurses' problem-solving communication							-0.66

<sup>†</sup>Factor I = Shared goal, Factor II = Communication accuracy, Factor III = Communication timeliness, Factor IV = Mutual respect, Factor V = Communication frequency, Factor VI = Shared knowledge, Factor VII = Problem-solving communication

### **Internal Consistency Reliability**

The internal consistency reliability of the RC Scales was examined, and Cronbach's alphas for these scales are presented in Table 7. According to Nunnally and

Bernsten (1994), a reliability coefficient of .70 is adequate in validation studies. The Cronbach's alpha for the total RC Scale in this sample is .87, and the Cronbach's alpha for the seven RC subscales ranged from .74 to .92. These results indicate a high degree of reliability for the total RC Scale and for the seven RC subscales for nurses in the KSA.

*Table 7: RC Scales Internal Consistency Reliability*

RC Scales	Cronbach's alpha
Total RC	.87
Frequent Communication	.74
Timely Communication	.87
Accurate Communication	.89
Problem-Solving Communication	.90
Shared Goals	.91
Shared Knowledge	.85
Mutual Respect	.92

### **Criterion Related Validity**

**H1a.** As mentioned above, to examine the relational coordination scale validity, total RC was correlated with job satisfaction. The result revealed a significant positive association between total RC and job satisfaction ( $r = 0.57, p < .001$ ). Therefore, it is clear that as relational coordination increased, job satisfaction also increased.

Furthermore, the magnitude of the correlation suggests that total RC and job satisfaction shared a high level of variance; about 32.5% of the variance in job satisfaction was shared by the variability in RC. Finally, all seven RC subscales were significantly and positively associated with job satisfaction (see Table 8). The magnitude of these correlations suggests strong-to-moderate shared variance between job satisfaction and the RC subscales. This data provides evidence that the RC Scale is valid for use among KSA

nurses.

**H1b.** To further examine the validity of the relational coordination scale, total RC was correlated with affective organizational commitment. The results of the correlation analysis identified a positive association between total RC and AOC score ( $r = 0.40$ ,  $p < .001$ ). Thus, as relational coordination increased, affective organizational commitment also increased. The magnitude of the correlation suggests that total RC and AOC shared a high level of variance, and 16% of variability in AOC was shared by variability in total RC. In addition to the total RC, all seven RC subscales were significantly and positively associated with AOC. The correlations analyses suggest strong to moderate relationships (see Table 8).

In summary, total RC score was related to affective organizational commitment, providing further evidence of RC Scale validity.

*Table 8: RC, Job Satisfaction, AOC, and Turnover Intention Correlations coefficients*

	Satisfaction	AOC	Turnover intention
Frequent communication	.30**	.23**	-.20*
Timely communication	.38***	.22**	-.13
Accurate communication	.37***	.24**	-.10
Problem-solving communication	.54***	.40***	-.32***
Shared goals	.45***	.30***	-.14
Shared knowledge	.50***	.32***	-.18*
Mutual respect	.51***	.41***	-.20*
Total RC	.57***	.40***	-.24**

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**H1c.** In a final examination of the RC Scale for use with KSA nurses, the relationship between RC and turnover intention was examined. The results revealed a

negative association between total RC and turnover intention ( $r = -0.24$ ,  $p = .005$ ). Thus, as relational coordination increased, turnover decreased. The magnitude of the correlation suggests that the two variables shared 5% variability. In addition, several other RC Scales were negatively related to turnover intention as well: frequent communication ( $r = -0.20$ ,  $p = .021$ ), problem-solving communication ( $r = -0.32$ ,  $p < .001$ ), shared knowledge ( $r = -0.18$ ,  $p = .042$ ), and mutual respect ( $r = -0.20$ ,  $p = .019$ ). Furthermore, the magnitude of the correlation between turnover intention and frequent communication, problem-solving communication, and mutual respect suggest moderate to weak association between these variables. Yet, problem-solving communication exhibited more than double the variance in relation to turnover intention than did frequent communication and mutual respect (10.2% versus 4.0%).

### **Summary**

In conclusion, the results of the analyses performed to examine AIM 1 demonstrate that the RC Scale is valid for use with KSA nurses. The factor analysis found seven factors with significant overlap of scale items. All scales had adequate internal consistency reliability ( $\alpha$ s ranging from .74 to .92). Additionally, the total RC score was positively associated with job satisfaction and affective organizational commitment, and negatively associated with turnover intention.

### **Aim 2**

The second goal of this project was to examine the association between RC, job satisfaction, affective organizational commitment, and turnover intention. Due the multivariate nature of the analyses, the listwise sample size for this aim is 130.

**H2a.** RC will significantly predict turnover intention after controlling for job

satisfaction and affective organizational commitment.

**H2b.** Job satisfaction will significantly predict turnover intention after controlling for RC and affective organizational commitment.

**H2c.** Affective organizational commitment will significantly predict turnover intention after controlling for RC and job satisfaction.

Multiple regression was performed to assess the ability of relational coordination, job satisfaction, and affective organizational commitment to predict turnover intention over and above other variables.

### **Predictors of Turnover Intention**

**H2a – H2c.** To test these three hypotheses, multiple linear regression was conducted to predict turnover intention. The standardized regression coefficients are reported in Table 9. RC, job satisfaction, and AOC were included as predictors. The model showed statistical significance  $F(3,127) = 17.2, p < .001$ , and accounted for 28.9% of turnover intention variance. Job satisfaction and AOC significantly and negatively predicted turnover intention, so nurses who were satisfied with their job were significantly less likely to have turnover intention, as were nurses who were emotionally attached to their organizations. That is, as nurse job satisfaction increased, turnover intention decreased. Similarly, as AOC increased, intention to leave decreased. Unfortunately, relational coordination was not a significant predictor of nurse turnover intention ( $\beta = .05, p = .616$ ). The strongest predictor of turnover intention in this model was AOC ( $\beta = -.40, p < .001$ ), which uniquely explained 14.5% of variance.

Table 9: Analysis predicting turnover intention

Variables	$\beta$
RC	.05
Job Satisfaction	-.26**
AOC	-.40***

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

### **The Association Between RC Subscales and Turnover Intention**

To further explore the predictability of turnover intention by relational coordination, a second regression analysis was performed. The RC subscales frequent communication, timely communication, accurate communication, problem-solving communication, shared goals, shared knowledge, and mutual respect were included as predictors (see Table 10). The model was statistically significant at  $F(7,123) = 2.4$ ,  $p = .026$ , and explained 11.9% of turnover intention variance. Problem-solving communication was a significant predictor of turnover intention ( $\beta = -0.33$ ,  $p = .006$ ), and uniquely explained 5.5% of the variance in turnover intention. Thus, nurses who experienced problem-solving communication in their workplace, instead of finger-pointing and blaming, had less turnover intention. Therefore, in this sample, nurses who considered their organization to have higher problem-solving communication had a lower intention to leave. However, frequent communication, timely communication, accurate communication, shared goals, shared knowledge, and mutual respect were not significant predictors of turnover intention.

Table 10: RC Subscale and Turnover Regression

Items	$\beta$
Frequent communication	-.11

Timely communication	-.02
Accurate communication	.09
Problem-solving communication	-.33**
Shared goals	.04
Shared knowledge	.02
Mutual respect	-.02

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

In summary, both job satisfaction and AOC predicted turnover intention.

Although total RC did not predict turnover intention, the problem-solving communication RC subscale was related to turnover intention.

### **Turnover Intention Measurement**

Although the previous multiple regression analyses indicated that RC did not significantly predict turnover intention, it must be noted that turnover intention is a complex construct and difficult to measure. In this study, turnover intention was measured using the TI-6 Scale (Roodt, 2004). Participants were also asked three dichotomous turnover intention questions: “Do you think you will have the same job six months from now?” “Do you think you will have the same job one year from now?” and “Do you think you will have the same job five years from now?” To further explore the turnover intention variable, independent sample *t*-tests were performed to examine the mean difference between participants who will have the same job in the future and those who will not have the same job. Results of the *t*-tests are reported in Table 11.

Table 11: Mean Turnover Intention Score Comparison (quitters vs. non-quitters)

Item	Group	Mean	t	
Turnover intention score	Will have the same job six months from now	No	19.3	1.5
		Yes	18.2	
	Will have the same job one year from now	No	19.9	2.7*
		Yes	17.8	
	Will have the same job five years from now	No	19.2	1.7
		Yes	18.0	

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

Results have shown that there was no statistically significant mean difference in turnover intention between the nurses who intend to have the same job six months or five years from data collection time and nurses who do not intend to have the same job. Although those who left and those who stayed did not significantly differ in the turnover intention score, it is possible that the small sample size impacted the results and increased the risk for type II error. Nonetheless, there was a statistically significant mean difference between participants who intended and those who do not intend to have the same job one year from data collection time ( $t = 2.7, p = .010$ ). Thus, given the fact that there is a difference in turnover intention score between those who intended to have the same job in one year and those who did not, as well as a correlation between turnover intention and RC ( $r = -.24, p = .005$ ), the predictability of RC for turnover intention cannot be completely ruled out. It is recommended that the predictability of turnover intention by RC be further examined with a larger sample size and a more comprehensive measure of turnover intention.



## Summary

Job satisfaction and AOC significantly predicted variance in turnover intention. RC, however, was an insignificant predictor of turnover intention. Further exploration of turnover intention indicated that although RC did not predict turnover intention based on the available data, the predictability of RC for turnover intention should not be completely ruled out.

## Aim 3

The final goal of this project was to identify potential moderator and mediator variables that impact the relationship between RC, job satisfaction, organizational commitment, and turnover intention among nurses in the KSA.

**H3a:** Nurse nationality (KSA vs. Asian) will moderate the relationship between RC and job satisfaction.

**H3b:** Nurse nationality (KSA vs. Asian) will moderate the relationship between RC and affective organizational commitment.

**H3c:** Nurse nationality (KSA vs. Asian) will moderate the relationship between RC and turnover intention.

**H3d:** Nurse education will moderate the relationship between RC and nurse job satisfaction.

**H3e:** Nurse education will moderate the relationship between RC and nurse affective organizational commitment.

**H3f:** Nurse education will moderate the relationship between RC and nurse turnover intention.

**H3g:** Years of nursing experience will mediate the relationship between RC and job satisfaction.

**H3h:** Years of nursing experience will mediate the relationship between RC and organizational commitment.

**H3i:** Years of nursing experience will mediate the relationship between RC and turnover intention.

### **Moderators and Mediators Between RC, Job Satisfaction, AOC, and Turnover**

#### **Intention**

To test H3a to H3f, hierarchical multiple regression was performed. The interaction term was calculated to examine the moderation effect. In each hierarchical regression, the predictors were entered in step one and the interaction term in step two. Similar to Aim 2, in Aim 3, the sample is reduced due to missing values (N=132).

#### **RC and Job Satisfaction Association by Nurse Nationality**

**H3a.** A two-step hierarchical multiple regression model was performed to test whether the association between RC and job satisfaction was moderated by nurse nationality. In the first step, RC and nurse nationality were entered, and in the second step, the interaction term between RC and nurse nationality was entered. Relational coordination was a significant predictor of job satisfaction ( $\beta = .42, p = .008$ ), so nurses with higher RC scores are considered more satisfied with their jobs. Therefore, as RC increased, job satisfaction increased as well. However, when adding the interaction term, both the nurse's national background and the RC\*national background interaction term

were insignificant predictors of job satisfaction (see Table 12). This result suggests that the relationship between RC and job satisfaction does not differ based on national group. Thus, nurse nationality does not appear to moderate the relationship between total RC score and job satisfaction.

*Table 12: Predictors of Job Satisfaction*

Variable	$\beta$
RC	.42**
Nurse nationality	-.13
RC*nurse nationality <sup>a</sup>	.30

<sup>a</sup>Interaction term

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

To further examine nurse nationality as a potential moderator, two separate multiple regressions were performed predicting job satisfaction. The first regression was performed solely on the Saudi nurses, while the second regression analysis was performed on the Asian nurses. In both regressions, total RC score was a significant predictor of job satisfaction (Saudi Nurse  $\beta = 0.47$ ,  $P < .001$ ; Asian Nurse  $\beta = 0.69$ ,  $P < .001$ ). However, since the beta for Asian nurses increased, this does suggest that the relationship between RC and job satisfaction might be different between the two national groups. Further research needs to explore this possibility.

### **RC and Affective Organizational Commitment Association by Nurse Nationality**

**H3b.** To examine if the relationship between total RC score and affective organizational commitment was moderated by nurse nationality, regression analysis was performed using the methods described in H3a. When examining whether nurse

nationality moderated the relationship between total RC score and AOC (although total RC was related to organizational commitment in prior analyses [ $r = .40, p < .001$ ]), and when adding both nurse nationality and the RC\*nationality interaction term to the regression, there were no significant predictors of affective organizational commitment (see Table 13). Thus, the relationship between RC and AOC is not moderated by nationality.

*Table 13: Predictors of AOC*

Variable	$\beta$
RC	-.32
Nurse nationality	.07
RC*nurse nationality <sup>a</sup>	-.09

<sup>a</sup>Interaction term

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

To additionally examine nurse nationality as a potential moderator, two separate multiple regressions were performed to predict AOC using the method described in H3a. In the first regression, total RC score was a significant predictor of AOC, whereas in the second regression, RC was not a significant predictor of AOC (Saudi Nurse  $\beta = 0.33, P < .001$ ; Asian Nurse  $\beta = 0.38, P < .069$ ). Although the relationship between RC and AOC is not significant for Asian nurses, due to the small number of Asian nurses in this sample ( $N = XX$ ), power for this analysis is very low. Given that the magnitude of the betas for both groups is similar, these results support the findings above that nurse nationality does not moderate the relationship between RC and AOC.

### **RC and Turnover Intention Association by Nurse Nationality**

**H3c.** A two-step hierarchal multiple regression model was conducted to test

whether the association between RC and turnover intention was moderated by nurse nationality. The regression analysis was performed using the methods described in H3a. In this analysis RC, only the RC\*nationality interaction term was a significant predictors of nurse turnover (see Table 14). These results support the conclusion that nurse nationality moderates the relationship between RC and turnover intention.

*Table 14: Predictors of Turnover Intention*

Variable	$\beta$
RC	.10
Nurse nationality	.62
RC*nurse nationality <sup>a</sup>	-.89*

<sup>a</sup>Interaction term

<sup>†</sup>p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

### **RC and Job Satisfaction Association by Nurse Education**

**H3d.** A two-step hierarchal multiple regression model was conducted to test whether the association between RC and job satisfaction was moderated by nurse education. In the first step, RC and nurse education were entered, and in the second step, the interaction term between RC and nurse education was entered. Relational coordination was a significant predictor of job satisfaction ( $\beta = .84, p < .001$ ); nurses with higher RC scores are more satisfied with their jobs. However, both the nurse education and the RC\*nurse education interaction term were not significant predictors of job satisfaction (see Table 15). Thus, nurse education did not moderate the relationship between RC and job satisfaction.

Table 15: Predictors of Job Satisfaction

Variable	$\beta$
RC	.84***
Nurse education	.45
RC*nurse education <sup>a</sup>	-.54

<sup>a</sup>Interaction term

<sup>†</sup>p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

Additional analyses were performed to examine if nurse education moderated the relationship between RC and job satisfaction. In these analyses, two separate multiple regressions were performed to examine the impact of nurse education on the association between RC and job satisfaction (see Table 16). The first regression was performed on nurses with less than bachelor degree educational attainment level. The second regression was performed on nurses with bachelor degree or more educational attainment level. In both regressions, RC was a significant predictor of job satisfaction (< BSN  $\beta = .61$ ,  $P < .001$ ;  $\geq$  BSN  $\beta = .53$ ,  $P < .001$ ). Thus, regardless of nurse educational attainment, as nurse RC increased, job satisfaction increased as well. Therefore, in this sample, nurse education did not moderate the relationship between RC and job satisfaction.

Table 16: RC Predication for Job Satisfaction per Educational Level

Variable	< BSN	$\geq$ BSN
	$\beta$	$\beta$
RC	.61***	.53***

<sup>†</sup>p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

### **RC and AOC Association by Nurse Education**

**H3e.** A two-step hierarchical multiple regression model was conducted to test whether the association between RC and affective organizational commitment was

moderated by nurse education. The regression analysis was performed using the methods described in H3d. The results indicated that neither RC, nurse education, nor RC\*nurse education were significant predictors of AOC (see Table 17). The association between RC and AOC did not differ across education levels.

*Table 17: Predictors of AOC*

Variable	$\beta$
RC	.12
Nurse education	-.44
RC*nurse education <sup>a</sup>	.58

<sup>a</sup>Interaction term

<sup>†</sup>p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

Since the interaction term was insignificant, further analyses were conducted.

Two separate multiple regressions were performed to predict AOC, using the method described in H3d. For both the higher and lower educational levels, RC was a significant predictor of job satisfaction (< BSN  $\beta = .27, P = .05$ ;  $\geq$  BSN  $\beta = .45, P < .001$ ). In both educational groups, as RC increase, job satisfaction increases. Although both analyses were significant, the effect is larger for nurses with at least a BSN degree. This does suggest that RC might have more of an impact on AOC for nurses with a BSN than nurses without a BSN.

*Table 18: RC Prediction for AOC per Educational Level*

Variable	< BSN	$\geq$ BSN
	$\beta$	$\beta$
RC	.27*	.45***

<sup>†</sup>p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

### **RC and Turnover Intention Association by Nurse Education**

**H3f.** To test whether the association between RC and turnover intention was moderated by nurse education, a two-step hierarchal multiple regression model was performed, as described in H2d. In this analysis, whereas nurse education was a significant predictor of turnover intention, RC did not predict turnover intention and the interaction term was only marginally significant ( $p = 0.57$ ).

*Table 19: Predictors of Turnover Intention*

Variable	$\beta$
RC	.12
Nurse education	.80*
RC*nurse education <sup>a</sup>	-.79 <sup>†</sup>

<sup>a</sup>Interaction term

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Because of the marginal association between the interaction term and turnover intention, further analyses were performed. In these analyses, two separate multiple regressions were performed using the method described in H3d. For the lower educational levels, RC was not a significant predictor of turnover intention, whereas in the higher educational level RC predicted turnover intention ( $< \text{BSN } \beta = .02, p = .908; \geq \text{BSN } \beta = -.35, p = .001$ ). Thus, in the higher educational groups, as RC increased, turnover intention decreased. This finding supports that nurse education might moderate the relationship between RC and turnover intention.



Table 20: RC Prediction for Turnover Intention per Educational Level

Variable	< BSN	≥ BSN
	$\beta$	$\beta$
RC	.02	-.35**

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

### **The Influence of Nurse Years of Experience in the Association Between RC and Job**

#### **Satisfaction**

**H3g.** A two-step hierarchal multiple regression model was conducted to test whether the association between RC and job satisfaction was mediated by a nurse's total years of experience. RC was entered in step one, and nurse experience was entered in step two. The results indicated that the overall model was significant at  $F(2, 125) = 29.9$ ,  $p < .001$ , which explained 32.4% of the variance in job satisfaction. In the first model, RC was a significant predictor of job satisfaction, indicating that as nurses' total RC scores increased, their job satisfaction increased as well. When nurse years of experience was added to the model, it significantly and positively predicted turnover intention. Therefore, the more experience nurses have, the higher the level is their satisfaction. However, adding nurse total years of experience in step two did not reduce the magnitude of RC and job satisfaction association (see Table 20). This finding does not provide evidence that the relationship between RC and job satisfaction is mediated by nurse years of experience.

Table 21: RC and job Satisfaction Association through Nurse Experience

Model	Variable	$\beta$
1	RC	.55***
2	RC	.55***
	Nurse experience	.15*

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

### **The Influence of Nurse Years of Experience in the Association Between RC and AOC**

**H3h.** A two-step hierarchal multiple regression model was conducted to test whether the associations between RC and AOC were mediated by nurse total years of experience. The regression model was performed as described in H2g. The results indicated that the overall model was significant at  $F(2, 134) = 13.7, p < .001$ , which explained 17.0% of the variance in AOC. Relational coordination was a significant predictor of AOC. This indicated that as RC score increased, affective organizational commitment increased as well. The association between RC and AOC did not change when nurse total years of experience was entered into the regression model (see Table 21). Thus, this result does not provide evidence that nurse years of experience mediates the relationship between RC and AOC.

Table 22: RC and AOC Association through Nurse Experience

		AOC
1	RC	.40***
2	RC	.39***
	Nurse years of experience	.12

†p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

**The Influence of Nurse Years of Experience in the Association Between RC and Turnover Intention**

**H3i.** To test whether the association between RC and turnover intention was mediated by nurse total years of experience, a two-step hierarchal multiple regression model was performed as described in H2g. The overall model was significant ( $F [2, 125] = 3.9, p = .022$ ) and explained 5.9% of turnover intention variance. RC negatively predicted turnover intention ( $\beta = -.24, p = .008$ ). Thus, as relational coordination increased, turnover intention decreased. Adding nurse total years of experience did not impact the relationship between RC and turnover intention (see Table 22). Therefore, there is no evidence that nurse years of experience mediates this relationship.

*Table 23: RC and Turnover Intention Association through Nurse Experience*

model	Variable	$\beta$
1	RC	-.24**
2	RC	-.23**
	Nurse experience	-.06

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Summary**

The findings show that neither nurse nationality nor nurse education moderate the relationship between RC and job satisfaction. While there was no evidence that the relationship between RC and AOC was moderated by nurse education, the results show evidence that the relationship between RC and nurse AOC was moderated by nurse nationality. Likewise, there was evidence that the relationship between RC and turnover intention was moderated by nurse nationality and nurse education. Lastly, there was no

evidence that the relationships between RC and job satisfaction or the relationship between RC and turnover intention was mediated by nurse experience.

## **CHAPTER 5**

### **DISCUSSION**

As the first study to explore relational coordination among nurses in KSA, this dissertation represents an original and important contribution to KSA nursing knowledge. Additionally, it will have important implications for nursing education, management, and policy in the KSA. The purpose of this study was to validate a measure of relational coordination for use among nurses in the KSA, and to examine the association between RC, job satisfaction, affective organizational commitment, and turnover intention. Also, this study aimed to identify potential moderators and mediators between RC, job satisfaction, AOC, and turnover intention among nurses in the KSA. Key study findings, as well as implications for nursing education, management, and policy will be discussed in this chapter. Additionally, limitations, strengths and future research options will be presented.

#### **Relational Coordination as Rated by Nurses in KSA**

In this sample of nurses working in the Saudi MOH healthcare organization, RC scores among nurses were rated as weak. RC scores between nurses and physicians, pharmacists, laboratory specialists, and unit clerks were all rated as weak as well. The only moderate score was for the overall RC between nurses and physicians, which contradicts the tendency of physicians to have the weakest RC scores (Gittell, 2009). Since there are no previous RC studies among nurses in the KSA, it is unclear where this sample's RC scores might fit compared to other samples in the same population.

Nevertheless, Gittell (2009) reported an overall RC score of 4.48 among nurses in the USA, which 1.18 higher than the overall RC score among nurses in this sample.

The low RC scores indicate a need for policy development that will improve communication and professional relationships among nurses and between nurses and other functional groups. Communication policy might be particularly important in the KSA healthcare system because of its multinational nature (MOH, 2015). High performance healthcare practices, as presented by Gittell (2009; See Figure 2), represent an opportunity for the KSA healthcare system and nurse leaders. If implemented in KSA, these 12 high-performance healthcare practices, which include selecting for teamwork, creating boundary spanners, and broadening participation in patient rounds, can help overcome the KSA healthcare system's communication challenge.

### **Differences in RC Across Nationality and Gender.**

Although only 26 Asian nurses represent the non-KSA nurses in this study, a statistically significant mean difference in RC scores was found based on participants' nationality. Surprisingly, the Asian group has higher mean RC scores than the KSA group. This might indicate cultural and English proficiency differences between the Asian and the KSA group. First, while gender segregation and social restrictions might limited the KSA nurses' communication and professional relationships (Medbrouk, 2008), Asian nurses' values and beliefs allow for more copious communication and more beneficial relationships. Second, whereas the majority of Asians were introduced to the English language in the early stages of their K-12 education (Cheney, Ruzzi, & Muralidharan, 2005), many KSA nurses did not start learning English until the sixth

grade (Al-Nasser, 2015). This delay in English language education might contribute to lower English proficiency among some KSA nurses (Al-Nasser, 2015), and thereafter result in lower RC scores.

In the gender-based mean comparison, there was a statistically significant mean difference in RC between males and females in overall scores as well in terms of frequent communication, timely communication, accurate communication, and shared knowledge; females tended to have higher scores than males. This might be attributed to the females' domination of the nursing profession in the KSA (MOH, 2015). This indicates an opportunity to target KSA male nurses to bolster effective communication and professional relationships through job training and workshops.

### **Psychometric Properties of the RC Scale**

In this sample, RC scale has demonstrated adequate psychometric properties. Factor analysis findings were compatible with the theorized RC components. The seven extract factors matched the frequent, timely, accurate, and problem-solving communication components, as well as the shared goal, shared knowledge, and mutual respect relationship components. Nonetheless, this factor structure differed from the single-factor structure reported by Gittell (2011) and by Dejesus (2015), the two-factor structure reported by Lee (2012), and the four-factor structure reported by Gilmartin, Pogorzelska-Maziarz, Thompson, and Sousa (2015). These observed differences in RC scale factor structure might be related to variation in the methods used for conducting factor analysis. For example, while in this study factor analysis was performed using 35

RC items, Gittell (2011) used the average of the seven RC dimensions instead of the raw survey items. Additionally, Gilmartin et al. (2015) used dichotomous RC items in their factor analysis.

Moreover, Cronbach's alpha for the overall RC items and the seven subscales demonstrated adequate reliability (see Table 7). The overall RC scale Cronbach's alpha is comparable to the alphas reported in the literature (Lee, 2012; Gittell, 2011; Gilmartin et al., 2015). The criterion-related validity test revealed significant positive association between RC scores, job satisfaction, and AOC, and significant negative associations between RC scores and turnover intention. These findings match the findings in the literature that support the association between job satisfaction, AOC, and turnover intention (Abualrub & Alghamdi, 2012; Al-Aameri, 2000; Al-Ahmadi, 2014; Gittell & Weinbery, 2008). Furthermore, this study added additional knowledge about the association of RC with the aforementioned variables. Indeed, the findings support the validity of the RC scale and will allow future use of this scale in this population for research and workplace communication, and for professional relationship development purposes.

### **RC, Job Satisfaction, ACO, and Turnover Intention Association**

The results indicated that both job satisfaction and affective organizational commitment were significant predictors of turnover intention, while relational coordination was *not* a significant predictor of turnover intention. These findings must be considered in light of the turnover intention measurement limitation that was mentioned



in the results section. Also, it must be taken into consideration that there are many other factors that might contribute to turnover intention and were not measured in this study. For example, Alasmari and Douglas (2012) stated that intention to leave differ significantly between the group of nurses who reported having children and those who reported not having children, with higher intention to leave for the nurses who have no children. Another factor that might impact nurse turnover intention is shift type. Whereas 43.1% of day working nurses indicated their intention to leave, 66.3% of evening shift nurses and 78.4% of the night shift nurses reported their turnover intention (Ma, Lee, Yang & Chang, 2009).

Nonetheless, AOC was the strongest predictor in this model, and predicted turnover intention over and above relational coordination and job satisfaction. AOC has been found to be significantly and negatively associated with turnover intention in numerous studies in the nursing literature (Meyer & Herscovitch 2001; Wagner 2007). Thus, the findings of this study match with the findings of other studies in the nursing literature. Furthermore, this finding supports the growing evidence that the negative association between turnover intention and organizational commitment, particularly AOC, is stronger than the association between turnover intention and job satisfaction (Wagner 2007), which has been historically considered the strongest predictor of turnover.

Although RC was not a significant predictor of turnover intention, the RC subscale problem-solving communication was a significant predictor of turnover intention. Thus, as problem-solving communication increases, turnover intention decreases. Although the association between turnover intention and problem-solving

communication as it is defined in the context of relational coordination theory is new, there is a strong evidence in the nursing literature that support the positive association between workplace conflict, miscommunication, and incivility with turnover intention (D'ambra, & Andrews, 2014). These constructs, although different than problem-solving communication, could be conceptualized as contradictory. In their meta-analysis, Nei, Snyder, and Ltwiller (2015) found that nurses who were managed by supportive and communicative leaders have lower turnover intention. The findings in this study therefore match with findings across the nursing literature.

### **Moderator and Mediator**

In this study, nurse nationality (KSA versus Asian) moderated the association between relational coordination and job satisfaction, as well as the association between RC and turnover intention. This finding is particularly important because overseas nurses have more potential for communication and professional relationship difficulties due to language barriers (Philip, S., Manias, E., & Woodward-Kron, R., 2015). The insignificance of RC as a predictor of turnover among the Saudi nurse population in the KSA, might be due to other non-job-related factors demographics (Al-Ahmadi, 2014), family commitments, such as caring for a child or an older adult (Alasmari and Douglas, 2012), or it might be associated to job related factor such as having to work night shifts (Al-Dossary et al., 2012). Another explanation for these results might be that although KSA nurses might be as dissatisfied with their organizations' communication and professional relationship structures as their Asian colleagues. Finally, the lack of impact of RC on turnover intention for KSA nurses is that Asian nurses might consider their job in

the KSA as a temporary one that will improve their economic status or allow them to find a job in another more developed country therefore, they have more tendency to leave their jobs (Alamri, Rasheed, & Alfawzan, 2006).

Nurse education, moderated the association between RC and AOC and RC and turnover intention. In contrast, in this sample, nurse education did not moderate the association between RC and job satisfaction, this finding contradict with reports that job satisfaction differs significantly across nurse education levels (Alsarairah et al., 2014).

### **Limitations**

There are several limitations that must be considered when interpreting the results of this study. First, as expected in online survives, response rate was low given the actual number of MOH nurses. That was evidenced by the significant number of potential participants who opened the survey, but did not complete it. Yet, the available data revealed meaningful and significant results, and further analyses were performed when inadequate power was a problem. Second, the use of social media for recruitment was also a limitation, because the social media pages were utilized more by KSA nurses than non-KSA nurses. This may have limited the ability to explore and compare RC in the different national groups that compromise the KSA nursing workforce. Additionally, turnover is a complex construct that could be influenced by several predictors. In this study, many potential turnover predictors could not evaluated as covariates because they were not measured. Examples include the size of the organization and shift type. In future studies, it is recommended to measure more potential turnover intention predictors.

Finally, the use of a nonprobability sampling technique might have impacted the external validity of this study.

### **Strengths of the study**

An important strength of this study is that it is the first study in the KSA that explores RC and validates an RC measure for use among nurses in KSA. Also, it is the first study that examines the association between RC, job satisfaction, organizational commitment, and turnover intention. Although the use of an online survey limited the response rate, it allowed for cost-effective data collection from participants across all KSA regions.

### **Implications**

#### **Nursing Education Implications.**

Nursing can be considered a young profession in the KSA, and it is currently undergoing significant development. Despite enormous governmental efforts to educate, and to regain a qualified national nursing workforce, turnover continues to be a barrier to maintaining an adequate supply of nurses. This study has shown that communication and professional relationships, as presented in RC theory, play a significant role in nurse turnover in the KSA. Therefore, integrating communication and professional-relationship competencies across the undergraduate nursing curriculum in the KSA may improve job satisfaction, organizational commitment, and retention among future KSA nurses. Because nurses work in challenging, interdependent environments, nursing

programs in the KSA should focus on building communication and professional-relationship competencies in their graduates both in the nursing profession and across medical professions. This will ensure that nurses are well prepared to communicate effectively within their functional group, with other functional groups, and with their clients.

### **Nursing Management Implication.**

In the nursing literature, there is strong evidence that the practices of nurse managers and leaders influence staff job satisfaction and turnover intention (Abualrub & Alghamdi, 2012). Nurse managers in the KSA should adopt leadership styles and practices that foster relational coordination and improve job satisfaction, organization commitment, and nurse retention. Particularly, nurse managers should focus on improving problem-solving communication in their units, as it appears to have a significant impact on these factors. Furthermore, nurse managers must base their practices on the best available research evidence to improve staff outcome and job performance. The results of this study demonstrate that the level of Affective Organization Commitment was the strongest predictor of nurse turnover intention. Thus, nurse managers should strive to improve AOC.

### **Nursing Policy Implication.**

Recently, a new healthcare reform was sanctioned in the KSA as part of Saudi Vision 2030 and the National Transformation Program 2020. One of the important pillars of Saudi Vision 2030 and the National Transformation Program 2020 is the partnership

and encouragement of private sector investors in services that have been previously established, funded, and operated by the government (Vision 2030). In the KSA, healthcare is one of the biggest expenditures and is mostly run by MOH. The reform will shift the focus of the Saudi MOH from operation to legislation and regulation.

Additionally, with this reform expansion and growth in the KSA healthcare sector is expected. Therefore, the demand for qualified nurses will increase. It is therefore crucial to consider all ways to improve job satisfaction, organizational commitment, and retention among nurses. This study's results show an association between relational coordination and job satisfaction, organizational commitment, and retention. Also, the results indicated that RC scores among nurses in the KSA were low. In her nine-hospital study, Gittel (2010) found a significant association between high performance healthcare practices and improved RC scores. Therefore, in its new legislative and regulatory role, the Saudi MOH needs to support the adaptation and integration of high performance healthcare practices in the healthcare organizations of the KSA, in order to improve worker outcomes and job performance.

### **Future Nursing Research.**

Given that this is the first study that explores relational coordination among nurses in the KSA, it opens the door for a new line of research on the influence of RC on KSA nurse-management issues. More research should be conducted, with a bigger and more nationally-diverse sample. Future RC studies in the KSA should survey all the functional groups to obtain a deeper understanding of RC among healthcare workers. Surveying all the functional groups will result in a symmetrical RC matrix that will allow

comparison between functional groups. Additionally, utilizing structured interviews in future research would help justify some of the findings of this online survey study. Finally, in future studies, more potential predictors of turnover intention should be measured.

### **Conclusion**

The purpose of this cross-sectional correlational study was to validate a measure of relational coordination among nurses in KSA, to evaluate the association between RC, job satisfaction AOC, and turnover intention, and to identify potential moderators and mediators between the four mentioned variables. As the first study to explore RC among nurses in KSA, this study contributes to both RC and KSA nursing body of knowledge. The results of this study indicated that the RC Scale show adequate psychometric properties among nurses in KSA. This finding is significant because it will allow future utilization of this scale. The results also indicated that the RC subscales problem-solving communication, job satisfaction, and AOC significantly predicted turnover intention. Nurse nationality moderated the relationship between RC and job satisfaction as well as between RC and turnover intention. Nurse education moderated the relationship between AOC and turnover intention. None of the relationships in this study were mediated by nurse years of experience.

## APPENDIX A

### ONLINE RECRUITMENT MESSAGE

Greetings,

I am conducting an online survey to study the association between workplace communication, professional relationship, job satisfaction, organizational commitment, and turnover intention among MOH nurses. Participation is completely voluntary and the survey will take about 25 to 30 minutes to complete. If you are interested, please click on the link to the survey (Link) and please refer your colleagues to participate in the study.

Thank you in advance for your time.

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## APPENDIX B

### RELATIONAL COORDINATION SCALE

1. How frequently do people in each workgroup communicate with you about your patient?

Function group	Not nearly enough	Not enough	Just the right amount	Too often	Much too often
Other nurses					
Physicians					
Pharmacists					
Laboratory specialists					
Unit clerks					

2. Do people in each workgroup communicate with you timely about your patient?

Function group	Never	Rarely	Sometimes	Often	Always
Other nurses					
Physicians					
Pharmacists					
Laboratory specialists					
Unit clerks					

3. Do people in each workgroup communicate with you accurately about your patient?

Function group	Never	Rarely	Sometimes	Often	Always
Other Nurses					
Physicians					
Pharmacists					
Laboratory specialists					
Unit clerks					

4. When there is a problem with patient care, do people in each workgroup blame others or work with you to solve the problem?

Function group	Always blame	Mostly blame	Neither blame nor solve	Mostly solve	Always solve
Other Nurses					
Physicians					
Pharmacists					
Laboratory specialists					
Unit clerks					

5. Do people in each of these groups share your goals for the patients?

6.

Function group	Not at all	A Little	Somewhat	A lot	Completely
Other Nurses					
Physicians					
Pharmacists					
Laboratory specialists					
Unit clerks					

7. Do people in each workgroup know about the work you do with the patients?

Function group	Nothing	A Little	Some	A lot	Everything
Other Nurses					
Physicians					
Pharmacists					
Laboratory specialists					
Unit clerks					

8. Do people in each workgroup respect the work you do with the patients?

Function group	Not at all	A little	Somewhat	A lot	Completely
Other Nurses					
Physicians					
Pharmacists					
Laboratory specialists					
Unit clerks					

## APPENDIX C

### MCCLOSKEY/MUELLER SATISFACTION SCALE (MMSS)

How satisfied are you with the following aspects of your current job?

Please select the option that applies to your current job.

1. Salary

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

2. Vacation

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

3. Benefits package (insurance, retirement)

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

4. Hours that you work
  - Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
5. Flexibility in scheduling your hours
  - Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
6. Opportunity to work straight days
  - Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
7. Opportunity for part-time work
  - Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied

- Very Dissatisfied
8. Weekends off per month
- Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
9. Flexibility in scheduling your weekends off
- Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
10. Compensation for working weekends
- Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
11. Maternity leave time
- Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied

- Moderately Dissatisfied
- Very Dissatisfied
- Not applicable

12. Child care facilities

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

13. Your immediate supervisor

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

14. Your nursing peers

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

15. The physicians you work with

- Very Satisfied

- Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
16. The delivery of care method used on your unit (e.g. functional, team, primary)
- Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
17. Opportunities for social contact at work
- Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
18. Opportunities for social contact with your colleagues after work
- Very Satisfied
  - Moderately Satisfied
  - Neither Satisfied nor Dissatisfied
  - Moderately Dissatisfied
  - Very Dissatisfied
19. Opportunities for interact professionally with other disciplines



- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

20. Opportunities to interact with faculty of the College of Nursing

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied
- Not applicable

21. Opportunities to belong to department and institutional committees

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

22. Control over what goes on in your work setting

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied

- Very Dissatisfied

23. Opportunities for career advancement

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

24. Recognition for your work from superiors

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

25. Recognition of your work from peers

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

26. Amount of encouragement and positive feedback

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied

- Moderately Dissatisfied
- Very Dissatisfied

27. Opportunities to participate in nursing research

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

28. Opportunities to write and publish

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

29. Your amount of responsibility

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

30. Your control over work conditions

- Very Satisfied
- Moderately Satisfied

- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

31. Your participation in organizational decision-making

- Very Satisfied
- Moderately Satisfied
- Neither Satisfied nor Dissatisfied
- Moderately Dissatisfied
- Very Dissatisfied

## APPENDIX D

### ORGANIZATIONAL COMMITMENT

Listed below is a series of statements that represent feelings that individuals might have about the company or organization for which they work. With respect to your own feelings about the particular organization for which you are now working, please indicate the degree of your agreement or disagreement with each statement.

1. I would be very happy to spend the rest of my career with this organization.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

2. I really feel as if this organization's problems are my own.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

3. I do not feel a strong sense of "belonging" to my organization.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

4. I do not feel "emotionally attached" to this organization.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

5. I do not feel like "part of the family" at my organization.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

6. This organization has a great deal of personal meaning for me.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

7. Right now, staying with my organization is a matter of necessity as much as desire.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

8. It would be very hard for me to leave my organization right now, even if I wanted to.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree

- Strongly agree

9. Too much of my life would be disrupted if I decided I wanted to leave my organization now.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

10. I feel that I have too few options to consider leaving this organization.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

11. If I had not already put so much of myself into this organization, I might consider working elsewhere.

- Strongly disagree
- Disagree
- Slightly disagree



- Undecided
- Slightly agree
- Agree
- Strongly agree

12. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

13. I do not feel any obligation to remain with my current employer.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

14. Even if it were to my advantage, I do not feel it would be right to leave my organization now.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

15. I would feel guilty if I left my organization now.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

16. This organization deserves my loyalty.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

17. I would not leave my organization right now because I have a sense of obligation to the people in it.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

18. I owe a great deal to my organization.

- Strongly disagree
- Disagree
- Slightly disagree
- Undecided
- Slightly agree
- Agree
- Strongly agree

## APPENDIX E

### TURNOVER INTENTION

Please read each question and indicate your response using the scale provided for each question.

#### Turnover Intention Scale

1. How often have you considered leaving your job?

Never				Always
1	2	3	4	5

2. To what extent is your current job satisfying your personal needs?

To no extent				To a very large extent
1	2	3	4	5

3. How often are you frustrated when not given the opportunity at work to achieve your personal work-related goals?

Never				Always
1	2	3	4	5

4. How often do you dream about getting another job that will better suit your personal needs?

Never				Always
1	2	3	4	5

5. How likely are you to accept another job at the same compensation level should it be offered to you?

Highly unlikely

Highly likely

1                      2                      3                      4                      5

6. How often do you look forward to another day at work?

Never

Always

1                      2                      3                      4                      5

**APPENDIX F**  
**DEMOGRAPHIC**

1. What is your age? \_\_\_\_\_ (enter # of years)
2. What is your gender?
  - Male
  - Female
3. What is your national background?
  - Saudi
  - Arabic non-Saudi
  - Asian
  - Western
  - African
  - Other (Please specify \_\_\_\_\_)
4. If your nationality is not Saudi, when did you come to Saudi Arabia? (enter # of years)
5. If your nationality is not Saudi, do you have plans when you will leave?
  - No
  - Yes (specify date: \_\_\_\_\_)
6. What is your marital status?
  - Married
  - Divorced
  - Widow

- Separated
- Single

7. How many children do you have? (enter # of children)

8. What is your higher education level?

- Diploma
- Associate Degree
- BSN
- MSN
- DNP
- PhD
- Other (Please specify \_\_\_\_\_)

9. Do you have future plans for education?

- Yes
- No
- Not sure

a. If you have future education plans, what are they? (\_\_\_\_\_)

10. How many years of nursing experience do you have in total? \_\_\_\_\_ (enter # of years)

11. How many years of nursing experience do you have in your current organization? \_\_\_\_\_ (enter # of years)

12. How many years of nursing experience do you have in KSA? \_\_\_\_\_ (enter # of years)

13. In what KSA Region do you currently work?

- Central
- Western
- Southern
- Eastern
- Northern

14. What is your Saudi Commission for Health Specialties Professional Rank?

- Nurse technician
- Nurse specialist
- Senior nurse Specialist
- Nurse specialist-consultant

15. What is your Healthcare setting type?

- Primary (e.g. primary healthcare centers)
- Secondary (e.g. public hospitals)
- Tertiary (e.g. specialized centers and hospitals)
- Other (describe)



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