

2-10-2021 10:00 AM

# **The Influence of Authentic Leadership on Nurses' Turnover Intentions and Satisfaction with Quality of Care in Saudi Arabia: A Cross-Sectional Study**

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Nursing

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## ABSTRACT

Rising job turnover intentions among staff nurses in Saudi Arabia has become a significant issue that risks increasing the shortage of qualified nurses working in Saudi hospitals. Effective leadership has been found to promote positive work environments and is a key factor influencing nurses' job turnover intentions. More specifically, nurses led by authentic leaders are more engaged in their work which leads to increased job satisfaction and in turn, decreased job turnover intentions. Thus, the purpose of this study was to test a model that examined the relationships between authentic leadership, psychological safety, work engagement, and team effectiveness, and the subsequent effects of team effectiveness on job turnover intentions and nurse satisfaction with quality of care among nurses who work on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia. Avolio et al.'s (2004) theory of authentic leadership was used to guide the study by supporting the hypothesized connections among study constructs. A non-experimental, predictive, correlational, cross-sectional, self-reported survey design was conducted, and structural equation modelling (SEM) was used to test the study model. A total of 656 registered nurses working in inpatient units and outpatient clinics in the selected hospitals participated in this study, so 456 participants were used to test the study model and 200 different subjects were used to test the psychometric proprieties of nurse satisfaction with quality of care scale. Six scales were used to measure the study variables: the Authentic Leadership Questionnaire (ALQ), the Psychological Safety Scale, the Utrecht Work Engagement Scale (UWES), the Technical Quality Subscale, the Job Turnover Intentions Scale, and the Nurses' Satisfaction with the Quality of Care Scale. The fit indices of the final model indicated good fit between the data and the hypothesized model  $\chi^2(37) = 93.04, p < 0.001$ , SRMR

= 0.052, RMSEA = 0.058 [90% CI = 0.043–0.072], CFI = 0.98. The SEM results provided evidence for positive and direct relationships between authentic leadership and team effectiveness, work engagement, and psychological safety and a positive and indirect relationship between authentic leadership and team effectiveness through work engagement. Work engagement also had a significant positive impact on team effectiveness but not on nurse satisfaction with quality of care. Team effectiveness had a negative relationship with job turnover intentions but positive relationship with nurse satisfaction with quality of care. However, there was no relationship was found between psychological safety and team effectiveness as well as between psychological safety and job turnover intention. The results also showed that there were significant relationships between authentic leadership and job turnover intention (negative) and nurse satisfaction with quality of care (positive) through work engagement and team effectiveness. The results of this study have implications for nursing research, practice and leadership for nursing in Saudi Arabia. The results highlight a role for authentic leadership in decreasing nurse turnover, considered to be a major issue facing the nursing profession in Saudi Arabia. Introducing programs to support nurse leadership is essential in order to enhance the work environments of staff nurses in Saudi Arabia as this could help to reduce nurses' intention to leave their jobs and increase their level of satisfaction with the quality of care delivered to patients. Further studies are needed in Saudi Arabia that examine the role of authentic leadership on other important nurse and patient outcomes.

*Keywords:* authentic leadership, psychological safety, work engagement, team effectiveness, turnover intentions, satisfaction with the quality of care, Saudi Arabia, nurses

## **SUMMARY FOR LAY AUDIENCE**

The role of leadership in nursing practice is essential. Nurse leaders have the responsibility of cultivating a healthy work environment where staff nurses feel encouraged, motivated, supported, engaged and involved. Because there are different leadership styles reported, nurse leaders need to be aware of leadership styles that are best suited for their area of practice. One of the leadership styles that has been reported recently in the nursing literature is authentic leadership. It has been shown to have positive effects on various nurse, patient, and organization outcomes such as reducing staff nurse turnover intentions, bullying and burnout. Although authentic leadership has been shown to have positive effects on the work environment in several countries, there have been little, if any, studies examining this leadership style in nursing in Saudi Arabia.

A non-experimental, predictive, correlational, cross-sectional survey design study was conducted to examine the relationships among authentic leadership, psychological safety, work engagement, team effectiveness, job turnover intentions, and satisfaction with the quality of care among nurses who work in inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia.

The results of this dissertation illustrated that authentic leadership had direct, positive and significant effects on nurses' work engagement, psychological safety, and team effectiveness and indirect relationships with job turnover intentions (negative) and satisfaction with quality of care (positive) through team effectiveness and work engagement. However, no relationship was found between psychological safety and team effectiveness as well as between psychological safety and job turnover intentions. Work engagement was found to have a significant positive impact on team effectiveness but not

on nurse satisfaction with quality of care. Team effectiveness had a negative effect on job turnover intentions and positive impact on nurse satisfaction with quality of care.

Future studies are needed to examine the relationships between authentic leadership and other important outcomes related to staff nurses, patients, and healthcare organizations in Saudi Arabia. Also, researchers should continue to focus on examining authentic leadership in nursing in order to help to reduce the current shortage of nurses in Saudi Arabia.

## **CO-AUTHORSHIP STATEMENT**

Bayan Alilyyani completed the work of this dissertation under the supervision of Dr. Mickey Kerr and the committee members Dr. Carol Wong and Dr. Dhuha Wazgar. Dr. Mickey Kerr, Dr. Carol Wong and Dr. Dhuha Wazgar will be co-authors on the publications of the three papers resulting from this dissertation which are Chapter Two, Three and Four. Their approvals were obtained before submitting this dissertation.

## **DEDICATION**

I dedicated my PhD dissertation to two persons who deserve to see this academic achievement in my life. To my Mom, Norah Alsrwani, and my Dad, Hammady Alilyyani, I couldn't have achieved this dream without your support and help. I dedicated this work to you as a simple gift compared to what you have given me since I was born.

## ACKNOWLEDGMENTS

It is hard for me to write about people who have supported me during this journey in my life as no words can describe my feelings toward them. I would start to thank a person who supported and helped me since I had started my PhD journey. This person is my supervisor Dr. Mickey Kerr. I am so grateful to be under your supervision. Thank you so much Dr. Mickey for your continuous support and help. I couldn't do this amazing achievement in my life without your guidance. You were always available when I needed your help. I learnt a lot from you; you taught me nothing is impossible, and I can do it no matter what the obstacles I would face. I am so proud to be one of your students.

I would also thank Dr. Carol Wong for her continuous support and guidance through this journey. If I want to talk about Dr. Carol, I need chapters to describe her amazing input on this work. I am so glad to have this chance for the second time to work with her. She was available all the time and able to meet and discuss the work and gave her constructive feedback. Thank you so much Dr. Carol for every single comment you provided; her research interest is authentic leadership, and she is an authentic leader. Thank you so much also to Dr. Dhuha Wazgar who helped me and introduced me to the system in Saudi Arabia. Her input was valuable; I am so glad to have had this chance to work with you.

Being an international student and studying abroad would not be easy without the external support that I received from the Saudi Arabian Cultural Bureau in Canada; thank you for every person in the Saudi Arabian Cultural Bureau who helped and supported me. In addition, I cannot forget to thank Taif University for the funding during this journey. I would thank Dr. Abdullellah Al Thobaity who is Dean of Faculty of Applied Medical



Sciences at Taif University; thank you so much Dr. Abdullellah for your help and encouragement.

When it comes to family, I am speechless. My dad and my mom were the source of energy that I received during my PhD journey. I know how difficult it was to be away from them, but at the same time I know how they will be proud of me to get this degree. Every obstacle I went through, they were the first support and believe in me since I came to Canada. Thank you so much to my sisters Atheer and Raghidah for their support. They were available any time I feel happy or disappointed. I know how proud of me they are which helped me to continue what I started to see the happiness in their eyes.

Lastly, this journey wouldn't be nice without my friends and roommates who were available at any time I needed them. They supported and encouraged me to be this creative person. Nada Alaidarous was not only my friend and roommate, she was my sister who was close to me and believed in me. Being surrounded with her added to my life the meaning of family that I missed in Canada. I would thank also my friend Sara Mantach for her support during this journey; she was my emotional support. I would extend my appreciations and thanks to Dr. Majed Abdullah, who is a Saudi writer, for his indirect support and encouragement through reading his books every time I needed motivation. Thank you so much for every person I might forget to mention their names here, but without having you all in my life I would not be able to do this work and get this degree.

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## **CHAPTER ONE**

### **INTRODUCTION AND BACKGROUND**

#### **Overview to the Dissertation**

This dissertation consists of five chapters and it was based on the integrated article format, as recommended by the School of Graduate and Postdoctoral Studies at Western University. Chapter One provides an overview and a brief introduction to the dissertation. Chapter Two reviews the relevant literature related to nursing leadership theories that have been examined in the nursing literature in Saudi Arabia. In Chapter Three, the psychometric properties of an untested instrument designed to measure nurse satisfaction with quality of care are described. This is followed by Chapter Four in which the results of a model to test the relationships between authentic leadership, psychological safety, work engagement, team effectiveness, job turnover intentions, and nurse satisfaction with quality of care are described. Lastly, the dissertation concludes with Chapter Five, which provides a summary of the dissertation findings and implications for theory, nursing leadership, nursing practice, nursing education, policy, and future research.

#### **Introduction**

Nursing is considered as one the most valuable professions in healthcare globally (Aboshaiqah, 2016). However, healthcare organizations have faced a significant, chronic and global issue of a nursing shortage, which has the potential for many negative impacts on healthcare (Aboshaiqah, 2016). One impact relates to nurses' work outcomes, as shortages can affect nurses' performance in delivering high quality care (Alghamdi et al., 2019). Saudi Arabia, in particular, has faced an acute shortage of qualified locally trained nurses. Most nurses working in healthcare organizations in Saudi Arabia are foreign,



coming from many different backgrounds in terms of academic preparation, culture, and language (Aboshaiqah, 2016; Almalki et al., 2011). One of the reasons for the increasing shortage of nurses in Saudi Arabia is that the turnover rate among nurses is high (Kaddourah et al., 2018). The role of nurse leaders in coping with nursing staff shortages is crucial (Aboshaiqah, 2016). Aboshaiqah (2016) reported that in order to solve the problems related to the shortage of nursing staff and their intentions to leave, collaboration is required between nurse leaders and healthcare administrators. The role of nursing leadership in relation to nurse and organization outcomes in Saudi Arabia must be addressed as effective leadership has been shown to promote positive nurses' work outcomes (AbuAlrub & Alghamdi, 2012; Alshammari, 2018).

One essential strategy that has been recognized in developing and enhancing any healthcare organization is the recruitment and preparation of effective nurse leaders (Kim, 2012). Leadership is defined as “a process whereby an individual influences a group of individuals to achieve a common goal” (Northouse, 2016, p. 6). The influence of nursing leadership in supporting nurses' work processes and enhancing outcomes has been illustrated by the work of Balsanelli and Cunha (2014). In their review of studies examining the relationship between nursing leadership styles and work environment, they found that the leadership style of a nurse manager who leads nursing units plays a significant role in nurse outcomes including, job satisfaction and empowerment (Balsanelli & Cunha, 2014). More specifically, the positive impact of leadership style on staff and patient safety in healthcare organizations has been shown in many studies (Cummings et al., 2018; Cummings, Midodzi et al., 2010; Wong & Cummings, 2007; Wong et al., 2013). Nurse leaders/managers have the ability to use their leadership style to promote engagement, psychological safety and positive relationship formation with

nurses (Edmondson, 2004). The leadership styles of nurse managers have been shown to influence nurses' psychological safety and work engagement (Plasse, 2015).

Leadership may be categorized under two main types: relational and task-oriented styles (Cummings, 2012; Cummings et al., 2010; Cummings et al., 2018). Relational focused leadership style concentrates on people and relationships while task focused leadership style focuses on tasks or activities rather than relationships (Bass & Avolio, 1994). Leadership theories were found to have associations with various outcomes relating to both followers and organizations (Alshammari, 2018; Lievens & Vlerick, 2013; McFadden et al., 2015; Merrill, 2015). One of the nursing leadership theories that has received increased attention recently is authentic leadership, one of the relational focused leadership styles (Luthans & Avolio, 2003). This type of leadership is particularly relevant in contemporary times where healthcare environments and rules are rapidly changing and effective leaders are those who are transparent about their intentions and who display strong connections between their values, actions, and behaviors (Luthans & Avolio, 2003). Authentic leadership has been shown to have positive impacts on nursing work environments including increased staff engagement, psychological safety and team effectiveness and decreased nurse turnover intentions (Alilyyani et al., 2018; Avolio et al., 2004; Giallonardo et al., 2010; Plasse, 2015). Applying authentic leadership in nursing practice may help nurse leaders to promote healthy work environments where nurses can be satisfied with and engaged in their work which in turns affects the quality of care that they provide to their patients (Avolio et al., 2004; Read, 2016; Wong et al., 2010). A short description of nursing leadership theories, with a special focus on authentic leadership, and their connection with nurse, patient and

organization outcomes is presented in the following section after some background on the health care context of Saudi Arabia.

### **Background and Significance**

Local Saudi nurses account for only 29.1% of all nurses working in Saudi Arabia, as most nurses working in Saudi Arabia come from different countries (Almalki et al., 2011). The percentage of the local Saudi workforce in nursing practice is low when compared with other professions (Alotaibi et al., 2016). However, maximizing the number of Saudi nurses in the Saudi healthcare system (Almalki et al., 2011) is needed to ensure the provision of appropriate care for Saudi patients that is based on their culture and their native language which is Arabic (Mebrouk, 2008). Increased turnover intentions among qualified Saudi nurses may be the major reason for the chronic shortage of Saudi nurses in Saudi Arabia (Aboshaiqah, 2016). According to Almalki et al. (2012), the lack of leader or manager support for staff nurses in healthcare organizations is a major reason for increased turnover intentions rates in Saudi Arabia. Almalki et al. (2012) also suggested the quality of management supervision and the supportiveness of organizations were linked to higher staff nurse turnover intentions.

Leadership skills are based on the combination of an individual's innate abilities and their work experiences (Luthans & Avolio, 2003). Leadership style was found as a way that nurse leaders engage with followers and may have positive or negative impacts on the follower's work attitudes and outcomes and ultimately the quality of their work environment (Murray et al., 2018). The setting of clear guidelines and sharing their visions for the future by nurse leaders can positively influence nurses' engagement and facilitate their performance which is essential for safe and innovative practice (Brady et al., 2010). In addition, nurse leaders motivate and empower staff nurses in order to

enhance the quality of patient care (Haycock-Stuart & Kean, 2012). Effective leadership styles have significant positive influences on nurses' abilities to report errors because their leaders create an open communication environment where nurses feel safe and can share their mistakes (Castel et al., 2015).

Authentic leadership was found to be a style that represents the confluence of previous leadership theories such as transformational and ethical leadership theories as well as positive organizational behavior (POB; Luthans, 2002). Authentic leadership theory of Avolio et al. (2004) has been tested in previous studies to support the relationships between authentic leadership (and its four components of balanced processing, relational transparency, internalized moral perspective and self-awareness) and staff attitudes and behaviours (Laschinger & Fida, 2014; Laschinger & Smith, 2013; Laschinger et al., 2012; Laschinger et al., 2013; Wong et al., 2010). Authentic leaders demonstrate high ethical and moral behaviour which they role model for others (Schulman, 2002). Authentic leadership is defined as a pattern of a leader's behaviour that both builds upon and promotes "positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development." (Walumbwa et al., 2008, p. 94). Thus, authentic leaders are confident, hopeful, optimistic, resilient, transparent, moral/ethical, and future-oriented (Luthans & Avolio, 2003). Also, they are aware of themselves and develop their behaviors according to what their beliefs.

Authentic leadership has been shown to have a broad impact in the nursing profession (Alilyyani et al., 2018; Shirey, 2006; Wong & Walsh, 2020). It has been examined with different outcomes including those relating to nurses, patients and

organizations. Positive relationships have been found between authentic leadership of managers and nurses' outcomes including trust in the manager, job satisfaction, structural empowerment, and work engagement (Alilyyani et al., 2018). On the other hand, negative relationships have been shown in research studies between authentic leadership and outcomes such as bullying, incivility and burnout (Alilyyani et al., 2018). Findings of Alilyyani et al.'s review (2018) suggested that the authentic leadership theory of Avolio et al. (2004) can be used to enhance healthcare organizations by promoting the components of healthy work environments for staff and patients. Alilyyani et al.'s review (2018) findings also supported the four dimensions of authentic leadership (balanced processing, relational transparency, internalized moral perspective, and self-awareness) and their relationships to different nurses' outcomes such as job satisfaction, work engagement and well-being.

Although authentic leadership style has been examined in many countries around the world (Wong & Walsh, 2020), there are little, if any, published nursing studies in Saudi Arabia that have examined the relationships between authentic leadership and nurse, patient and healthcare organization outcomes. Because the role of leaders/managers in reducing nursing shortages is crucial, it follows that authentic leadership may have an essential impact on addressing the problem of shortages of qualified Saudi nurses through enhancing nurses' work outcomes. High turnover intentions have been associated with shortages of Saudi nurses (Almalki et al., 2012). Since authentic leadership has been shown to have a negative relationship with nurses' turnover intentions in several countries, it may show similar results in studies of nurses in Saudi healthcare organizations (Alilyyani et al., 2018; Avolio et al., 2004; Bin Saeed, 1995; Giallonardo et al., 2010; Laschinger & Fida, 2014; Plasse, 2015).

To date authentic leadership in nursing has not been a topic of research in Saudi Arabia. Other leadership styles have been examined in the nursing literature in Saudi Arabia, including transformational, transactional, laissez-faire, passive/ avoidant and management-by-exception-passive leadership styles (Abualrub & Alghamdi, 2012; Alshahrani & Baig, 2016; Al-Yami et al., 2018; Asiri et al., 2016; El Dahshan et al., 2017; Omer, 2005). Also, Omer (2005) found that nurses perceived their nurse managers as a combination of both transformational and transactional leadership styles. Five outcomes were examined with these leadership styles and these included organizational commitment (Al-Yami et al., 2018; Asiri et al., 2016; El Dahshan et al., 2017), nurses' job satisfaction (Abualrub & Alghamdi, 2012; Alshahrani & Baig, 2016; Omer, 2005), intent to stay (Abualrub & Alghamdi, 2012), willingness to exert extra effort (Omer, 2005), and leaders' effectiveness (Omer, 2005).

In summary, there is a need to firstly identify the leadership styles that have been used by nurse managers/leaders in Saudi Arabia and their relationships with various work outcomes. The role of authentic leadership on staff nurse outcomes should be the focus of future studies in Saudi Arabia. The following section provides a brief overview of the main study of this dissertation. This is followed by a brief chapter by chapter outline of the overall dissertation.

### **The Empirical Study**

In this section, the purpose, theoretical framework, and methods of the main empirical study that was conducted as part of this dissertation are provided.

#### **Purpose**

The aim of this study was to test a model that examined the relationships between authentic leadership, psychological safety, work engagement, and team effectiveness, and

their relationships with job turnover intentions and nurse satisfaction with quality of care among nurses who worked on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia.

### **Theoretical Framework**

The hypothesized study model was based on Avolio et al.'s theory (2004) of authentic leadership. The model illustrated the effects of authentic leadership on followers' attitudes and behaviours such as commitment, job satisfaction, meaningfulness, engagement, job performance, extra efforts, and withdrawal behaviours through the key psychological processes of personal and work identification, hope, positive emotions, optimism, and trust (Avolio et al., 2004). Authentic leaders are those who build healthy work environments for their staff through four key leadership components, which are balanced processing, relational transparency, internalized moral perspective, and self-awareness (Avolio et al., 2004). Authentic leaders are also able to improve follower attitudes such as engagement, motivation, commitment, work satisfaction, and involvement (Kark & Shamir, 2002). In addition, authentic leadership theory highlights the essential role of emotions as a mechanism in the advancement of leader effectiveness (Dasborough & Ashkanasy, 2005).

### **Method**

A non-experimental, predictive, correlational, cross-sectional, self-reported survey design was used in this study to test the hypothesized model. This study was conducted in public hospitals in three different cities, Makkah, Taif, and Jeddah, in Saudi Arabia. Non-probability, convenience sampling was used because the option of using a random sample was not possible. A total of 1130 questionnaires was distributed to nurses who worked on inpatient units and outpatient clinics across the participating hospitals, and a total of 656

out of the 1130 questionnaires were completed and returned for a response rate of 58%. Six different scales were used to measure the study variables which were the Authentic Leadership Questionnaire (ALQ) (Avolio et al., 2007), Psychological Safety Scale (Edmondson, 1999), Utrecht Work Engagement Scale (UWES) (Schaufeli & Bakker, 2003), Technical Quality Subscale (Shortell et al., 2001), Job Turnover Intentions Scale (Kelloway et al., 1999), and Nurse Satisfaction with the Quality of Care Scale (as developed by Laschinger and Kerr). The study's main statistical model was tested using structural equation modelling (SEM) in Mplus 8 (Muthén & Muthén, 2017).

The format of this dissertation is illustrated below in this chapter.

### **Format of the Dissertation**

The format of this dissertation is the integrated-article format according to the regulations of the School of Graduate and Postdoctoral Studies at Western University.

Paper One (Chapter Two) is entitled *Nursing Leadership Theories in Saudi Arabia: An Integrative Review*. The aim was to document leadership theories that have been examined in nursing literature in Saudi Arabia and to identify the current state of evidence about the impact of leadership styles with nurse, patient and organization outcomes in Saudi Arabia.

Paper Two (Chapter Three) is entitled *A Psychometric Analysis of the Nurse Satisfaction with the Quality of Care Scale*. The aim of this paper was to assess the psychometric properties of a researcher-developed instrument measuring nurse satisfaction with the quality of nursing care they delivered.

Paper Three (Chapter Four) is entitled *The Influence of Authentic Leadership on Nurses' Turnover Intentions and Satisfaction with Quality of Care in Saudi Arabia: A Cross-Sectional Study*. The purpose of this study was to test a model that examined the



relationships between authentic leadership, psychological safety, work engagement, and team effectiveness, and the subsequent effects of team effectiveness on job turnover intentions and nurse satisfaction with quality of care among nurses who work on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia.

The current introductory chapter (Chapter 1) provided an overview of the main issue facing the nursing profession in Saudi Arabia, namely the shortage of staff nurses. It also discussed the direct and indirect role of leaders in addressing the issue. More specifically, the role of authentic leaders on staff nurse outcomes was discussed. The dissertation concludes with Chapter 5, which discusses the main implications for the research from a number of nursing perspectives.

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## CHAPTER TWO

### NURSING LEADERSHIP THEORIES IN SAUDI ARABIA: AN INTEGRATIVE REVIEW

#### Abstract

**Purpose:** The purposes of this integrative review were to describe leadership styles that have been examined in nursing literature in Saudi Arabia and to identify the current state of evidence about the relationships between leadership styles and nurse, patient and organization outcomes in Saudi Arabia.

**Background:** Leadership includes the ability of leaders or managers to influence followers through guiding, motivating and directing in order to achieve effective organizational outcomes. Nurse managers are responsible to create hospital environments where nurses feel supported and motivated. Leadership styles can positively or negatively impact healthcare systems including nurse, patient, and organizational outcomes.

**Design:** Integrative review

**Research method:** Databases used for this integrative review included: Nursing & Allied Health Database, Cochrane Database of Systematic Reviews (CDSR), PUBMED, CINAHL, EMBASE, PsychINFO, SCOPUS, Web of Science, and Dissertations & Theses ProQuest. The following search terms were used with all databases: "Saudi Arabia", "leadership theory\*", "leadership style\*", "leadership model\*", "management style", and nurse\*.

**Findings:** Nine manuscripts representing eight studies were included in this review. The papers reviewed included quantitative (n=6), qualitative (n=2), and mixed methods studies (n=1). Descriptive characteristics of each study were documented. Results were grouped into different themes, identified as: nursing leadership styles in Saudi Arabia; leadership

styles and nurses' outcomes; and demographics and leadership styles. Themes were based on the similarities in meaning that address the purpose of this review and research questions.

**Conclusions and implications:** The findings of this integrative review provide evidence related to a variety of nursing leadership styles that have been examined in Saudi Arabia. Results showed only nine studies examining the leadership styles of nurse managers in Saudi Arabia and all were of transformational leadership theory. More specifically, transformational, transactional, laissez-faire, passive/ avoidant and management-by-exception-passive leadership styles were the leadership styles that have been examined most often in nursing studies in Saudi Arabia. Findings suggest the need for future studies in Saudi Arabia regarding the role of nurse managers and their leadership styles. Future research could help to improve nursing work environments and thereby create positive outcomes for nurses, patients and healthcare organizations.

*Key words:* leadership theories, leadership styles, nursing, integrative review, review, Saudi Arabia

## **Introduction**

Research examining leadership in nursing has increased over the past decade, with more emphasis on the role of nurse managers/leaders in healthcare organizations (Azaare & Gross, 2011; Barr & Dowding, 2019). Leadership focuses on how leaders can influence change and encourage their followers to generate change (Barr & Dowding, 2019; Ellis & Hartley, 2009). Leadership includes the ability to influence followers through guiding, motivating and directing in order to achieve effective organizational outcomes (Cai et al., 2019; Ellis & Hartley, 2009). As leaders, nurse managers are responsible to create hospital environments where nurses feel supported and motivated (Abualrub & Alghamdi, 2012). Evidence shows that the following leadership theories have been extensively investigated in a variety of professions, including nursing: transactional leadership, transformational leadership, situational leadership, and authentic leadership (Schreuder et al., 2011). Also, there are many leadership styles that nurse managers and leaders use to lead staff nurses in clinical settings such as classical leadership (autocratic, democratic, laissez-faire, bureaucratic and situational) and contemporary leadership (charismatic, transactional, transformational, connective and shared leadership; Huber, 2017; Major, 2019). Nurse managers' leadership styles in hospitals could influence nurses staff outcomes such as job satisfaction (AL-Hussami, 2008). In addition, their leadership styles can impact positively or negatively on different aspects of healthcare systems including staff satisfaction and retention which in turn can impact on the quality of healthcare delivered to patients (Barr & Dowding, 2019; Chen et al., 2005; Major, 2019).

While nurse managers face many challenges related to new roles and technology, financial constraints, increasing cultural diversity and needs for education, their roles as

leaders should be viewed as key to the organization which means that they need to be supported as they work to improve their leadership skills (Zydzianaite & Suominen, 2014). In Saudi Arabia, there is no current evidence of advanced leadership programs being introduced for nurse managers in nursing education and practice (Alghamdi et al., 2019). Additionally, there is a lack of nursing leadership content in undergraduate nursing education programs in Saudi Arabia especially leadership related theories and leadership related competencies (Alghamdi et al., 2019). Alkahtani (2016) found that leadership style was the most important factor affecting nurses' attitudes and behaviors. Leadership style is the individual leader's approach to providing directions, implementing plans, and encouraging followers (Northouse, 2015). There is evidence that nurse managers and their leadership styles can have direct and substantial effects on staff, patient and organization outcomes (Cummings et al., 2018); however, there is very little research on the leadership styles of nurse managers in Saudi Arabia (El Dahshan et al., 2017; Saleh et al., 2018).

There is a need to have a better understanding of the nature of nurse managers' leadership styles in Saudi Arabia. Several issues described in the Saudi nursing literature are reported to be affected by leadership styles such as nurse staff shortages, job satisfaction and intention to leave the job (Aboshaiqah, 2016; Zaghloul et al., 2008). Retention of nurses staff was found as an essential factor for healthcare organizations in Saudi Arabia and it was related to other factors such as job satisfaction (Abualrub & Alghamdi, 2012; Al-Ahmadi, 2009). Zaghloul et al. (2008) illustrated that effective leadership is essential for improving work outcomes including, nurses' job satisfaction and retention. According to Abualrub and Alghamdi (2012), nurse leaders have an effective role in enhancing staff satisfaction and retention, because they facilitate building

healthy work environments by encouraging nurses to be involved in making decisions and promoting open communications and active involvement in unit decision-making. Giving more research attention to the importance of nursing leadership styles and their relationships with nurse outcomes may help increase our understanding of what makes leadership more effective in the nursing profession (Eneh et al., 2012; Lavoie-Tremblay et al., 2016). Nonetheless, little is currently known about the impact of leadership styles on nurse outcomes in Saudi Arabia (Al-Yami et al., 2018).

Findings of studies in countries such as, Canada and the United States, have shown that leadership styles of nurse managers are considered the major contributing factor to staff nurse decisions to stay in their current position, or to transfer or seek other employment inside or outside of the nursing profession (Abualrub & Alghamdi, 2012). Therefore, the purposes of this integrative review were to describe leadership theories that have been examined in the nursing literature in Saudi Arabia and to determine the current state of evidence regarding the effects of nursing leadership styles on outcomes of nurses, patients and organizations. The knowledge generated from this integrative review may contribute to improved education for nurse managers on different leadership theories and facilitate their choice of leadership style best suited to their personal skills and goals for their work in their healthcare organizations. Increased preparation of managers could help staff nurses experience more positive outcomes such as improved job satisfaction and work engagement and minimize negative outcomes such as intention to leave and burnout. Moreover, it could be a foundation for developing leadership programs for nurse managers and contribute effective course content for educating nursing students. To provide the required background for such research, an integrative review of the leadership literature related to nursing in Saudi Arabia was conducted.

The integrative review method allows for the inclusion of research using different methodologies such as experimental and non-experimental research; it also plays a significant role in evidence-based practice for nursing (Whittemore & Knafl, 2005). In this type of review past empirical or theoretical literature is summarized in order to provide a more comprehensive understanding of a particular phenomenon or healthcare problem (Broome, 1993). Also, integrative reviews have been advocated as important to nursing science, research and practice (Estabrooks, 1998, Evans & Pearson, 2001; Kirkevold, 1997). Integrative reviews can also be useful for defining concepts, reviewing theories and evidence, and analyzing methodological issues of a specific topic (Broome, 1993).

### **Leadership Theories**

Prior to focusing on the situation in Saudi Arabia, a brief overview of leadership theories commonly used in nursing is provided. Leadership styles can be divided into two major categories which focus on human relationships or task completion. Relational focused leadership styles, which concentrates on people and relationships, include transformational leadership (Bass & Avolio, 1994), resonant leadership (Boyatzis & McKee, 2005; Goleman et al., 2002), and authentic leadership (Gardner et al., 2005; Walumbwa et al., 2008). Task focused leadership styles, which mainly focus on tasks and activities rather than relationships, include transactional leadership (Bass & Avolio, 1994), dissonant leadership (Goleman et al., 2002), and instrumental leadership (Avolio et al., 1999). There are a number of different leadership theories that have been used in the nursing literature including, transformational leadership (Bass & Avolio, 1994), emotional intelligence/resonant leadership (Goleman, 1995), charismatic leadership (Conger & Kanungo, 1998), and leader member exchange theory (Graen & Uhl-Bien,



1995); all of which are considered as relationally focused leadership styles.

Transformational leadership refers to leaders who are able to move their followers beyond immediate self-interests through idealized influence, inspiration, intellectual stimulation, or individualized consideration (Bass, 1999). This helps followers to enhance their level of maturity and ideals which positively impacts their achievement, self-actualization, and the well-being of others, the organization, and society (Bass, 1999). Transformational leaders influence others through a powerful and positive vision (Wong & Cummings, 2009).

Emotional intelligence is another theory that has been used in nursing studies; this concept was first introduced by Mayer and Salovey in (1993) and was further studied by Goleman. Goleman (1995) described emotional intelligence as self-awareness and self-management; referring to knowing what is felt and why it is felt, and with an additional emphasis on empathy and social skills (Goleman, 1995). Emotionally intelligent leaders are those who use positive emotions to motivate followers in order to bring out their best, which is required to achieve goals (Goleman et al., 2002; Squires et al., 2010). Emotional intelligence has four main components which are self-awareness, self-management, social awareness, and relationship management (Boyatzis & McKee, 2005; Goleman, 1998; Goleman et al., 2002).

Charismatic leadership theory has been developed within organizational settings (Conger & Kanungo, 1987, 1998; House, 1977, 1999; House & Shamir, 1993), and it is defined as an attribution based on perception of followers about their leaders' behaviour. Charismatic leadership is linked to transformational leadership in terms of transforming the values and priorities of followers to motivate them to perform beyond their expectations (Bass, 1999; Yukl, 1998). Therefore, charismatic leadership theory was

found as a factor to improve followers' performance and job satisfaction (Shamir et al., 1993).

Leader–member exchange is another theory that focuses on the perceived quality of the dyadic relationship between followers and their leaders (Graen & Scandura, 1987). Leader–member exchange theory encourages leaders to build trust, loyalty, and respect in their relationship with their followers (Bass, 1999). Leadership is defined as a process that concentrates on the interactions between leaders and their followers in leader–member exchange theory (Wong & Cummings, 2009). However, leader–member exchange theory does not include mechanisms by which effective exchanges between leaders and followers are developed (Wong & Cummings, 2009). Table 1 illustrates the main leadership theories and their definitions.

Effective leadership is needed to develop nurses and nurse leaders in order to support their visions and enhance nursing care delivery processes and outcomes (Laschinger et al., 2008; Smith et al., 2006; Tropello & DeFazio, 2014). Some relationally focused leadership theories, including transformational leadership and authentic leadership suggest leaders embodying these styles make ethical decisions which lead to better outcomes (Banks et al., 2016; Bass et al., 2003; Goleman et al., 2002; Wong & Giallonardo, 2013). Cummings et al. (2018) conducted a systematic review of studies that examined the relationships between various styles of leadership and outcomes for the nursing workforce and their work environments. Review results suggested that relationally focused leadership styles contribute to positive outcomes compared to task focused leadership styles. For instance, 52 of 57 studies reviewed reported that relational leadership styles were associated with higher nurse job satisfaction; moreover, 16 of the 57 studies reported that task-focused leadership styles

were associated with lower nurse job satisfaction. However, given the current under-resourced reality faced by many healthcare leaders, and nurse leaders specifically, they become primarily task-focused, and use task-focused leadership theories such as transactional leadership theory to support their practice (Cummings et al., 2018).

### **The Five Stages of Integrative Reviews**

Whittemore (2005) described five stages to in order to enhance rigour in integrative reviews based on Cooper's (1998) framework as applied to the systematic review and meta-analysis methods. Therefore, Whittemore (2005) mentioned five essential stages for integrative reviews, which are problem identification, literature search, data evaluation, data analysis, and data presentation.

#### **Problem Identification**

Theoretical and empirical evidence in the nursing literature about nursing leadership theories has increased in the past decade, as leadership has emerged as an essential factor for nursing as a profession. However, it was not as clearly described in the Saudi nursing literature, where research related to nursing leadership theories is absent; additionally, there is only limited research about the type of leadership styles that have used by nurse managers or leaders in Saudi Arabia. There are also no reviews that address this significant gap in the nursing literature in Saudi Arabia. Greater understanding of nurse managers styles could help to identify problems that are related to nursing leadership in Saudi Arabia and thus help to find strategies to solve them. Therefore, the purpose of this integrative review was to identify leadership theories that have been used by nurse managers or leaders in Saudi Arabia and to identify the current state of evidence on leadership styles and their relationships with nurse, patient and

**Table 1***Definition of Some Key Review Concepts*

<b>Concept:</b>	<b>Definition:</b>
<b><i>Leadership</i></b>	Leadership is defined as “a process whereby an individual influences a group of individuals to achieve a common goal” (Northouse, 2016, p. 6).
<b><i>Transformational leadership</i></b>	According to Bass et al. (2003), transformational leadership style involves working with followers in order to improve efficiency, and achieve better and more creative results.
<b><i>Transactional leadership</i></b>	Transactional leadership is defined by Bass (1985) as the process in which leaders expect followers to provide services in exchange for payment and meeting their demands.
<b><i>Emotional intelligence</i></b>	Goleman (1995) described emotional intelligence as self-awareness and self-management; referring to knowing what is felt and why it is felt, and with an additional emphasis on empathy and social skills.
<b><i>Charismatic leadership</i></b>	Leaders who are charismatic are able to show sensitivity to member needs and the environment, to articulate innovative strategic visions based on communicating them with followers, take personal risks, and achieve the vision through personal affect (Conger & Kanungo, 1987). Charismatic leaders also are able to communicate with their followers on a deep emotional level (Conger & Kanungo, 1987).
<b><i>Leader–member exchange</i></b>	The central focus of this leadership style is that effective leadership processes can be developed when leaders and followers are able to develop a mature partnership relationship that can then generate the benefits that this kind of relationship brings. The essential dimensions of this leadership style are respect, trust, support, loyalty and obligation (Graen & Uhl-Bien, 1995).
<b><i>Laissez-faire</i></b>	Laissez-faire leadership is defined as: “... the avoidance or absence of leadership and is, by definition, the most inactive – as well as the most ineffective according to almost all research on the style. As opposed to transactional leadership, laissez-faire represents a non-transaction.” (Bass & Avolio, 1994, p. 4).
<b><i>Passive-avoidant</i></b>	Passive-avoidant refers to taking actions after significant problems occur (retrospective). It could also be considered as transformational leadership in terms of letting the followers learn from their mistakes (Horwitz et al., 2008).
<b><i>Authentic leadership</i></b>	It is defined as a pattern of a leader’s behaviour that both builds upon and promotes “positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development.” (Walumbwa et al., 2008, p. 94).

organization outcomes in Saudi Arabia. The research questions that guided this integrative review are:

- 1- What leadership theories have been examined in nursing leadership research in Saudi Arabia?
- 2- What are the relationships between nursing leadership theories and nurse, patient and organization outcomes in Saudi Arabia?

### **Literature Search (Data Search Strategy)**

The search strategy for this integrative review work was completed in August 2020, and the databases that were used for searching were: Nursing & Allied Health Database, Cochrane Database of Systematic Reviews (CDSR), PUBMED, CINAHL, EMBASE, PsychINFO, SCOPUS, Web of Science, and Dissertations & Theses ProQuest. These databases include health-related research specific to healthcare disciplines including nursing. The following search terms were used with all databases: "Saudi Arabia", "leadership theor\*", "leadership style\*", "leadership model\*", "management style", and nurs\*. Table 2 illustrates the search terms and databases and results of the searches that were used in the study. These search terms were selected based on a preliminary review of the literature, and consultations with the university librarian and key information. EndNote was used as the reference management system for this integrative review. In addition to using electronic databases, we also conducted hand-searches of reference lists of relevant articles and scanned specific journals that are related to the topic of this review, such as *Journal of Nursing Management* and *Health Care Management Review*.

**Table 2***Search Strategy and Search Results*

Database/Source	Search Terms	# of Titles and Abstracts
Nursing & Allied Health Database	"Saudi Arabia" AND "leadership theor*" OR "leadership style*" OR "leadership model*" OR "management style" AND nurs*	15
Cochrane Database of Systematic Reviews (CDSR)	"Saudi Arabia" AND "leadership theor*" OR "leadership style*" OR "leadership model*" OR "management style" AND nurs*	0
PUBMED	Nursing theories Leadership Saudi Arabia	3
CINAHL	Nursing theories Leadership Saudi Arabia	37
EMBASE	Nursing theories Leadership Saudi Arabia	3
Dissertations & Theses	"Saudi Arabia" AND "leadership theor*" OR "leadership style*" OR "leadership model*" OR "management style" AND nurs*	122
PsychINFO	"Saudi Arabia" AND "leadership theor*" OR "leadership style*" OR "leadership model*" OR "management style" AND nurs*	53
Scopus	"Saudi Arabia" AND "leadership theor*" OR "leadership style*" OR "leadership model*" OR "management style" AND nurs*	17
Web of Science	"Saudi Arabia" AND "leadership theor*" OR "leadership style*" OR "leadership model*" OR "management style" AND nurs*	2011
Total:		2261

The inclusion and exclusion criteria for this review were identified based on the research questions. Titles and abstracts of each study were selected based on the following inclusion criteria: peer-reviewed research; English language full text publication available; full-text published between January 2000 and August 2020; involve nurse leaders or managers in a variety of healthcare settings; measure nursing leadership theories; conducted in Saudi Arabia; and measure relationships between nursing leadership theories and other variables. All types of studies were included which are quantitative, qualitative, and mixed method studies as well as theses and dissertations. In terms of exclusion criteria, the most common reasons for excluding studies were: grey literature, described opinions about leadership theories, were done in fields other than healthcare, full-text was not available, or were done in countries other than Saudi Arabia.

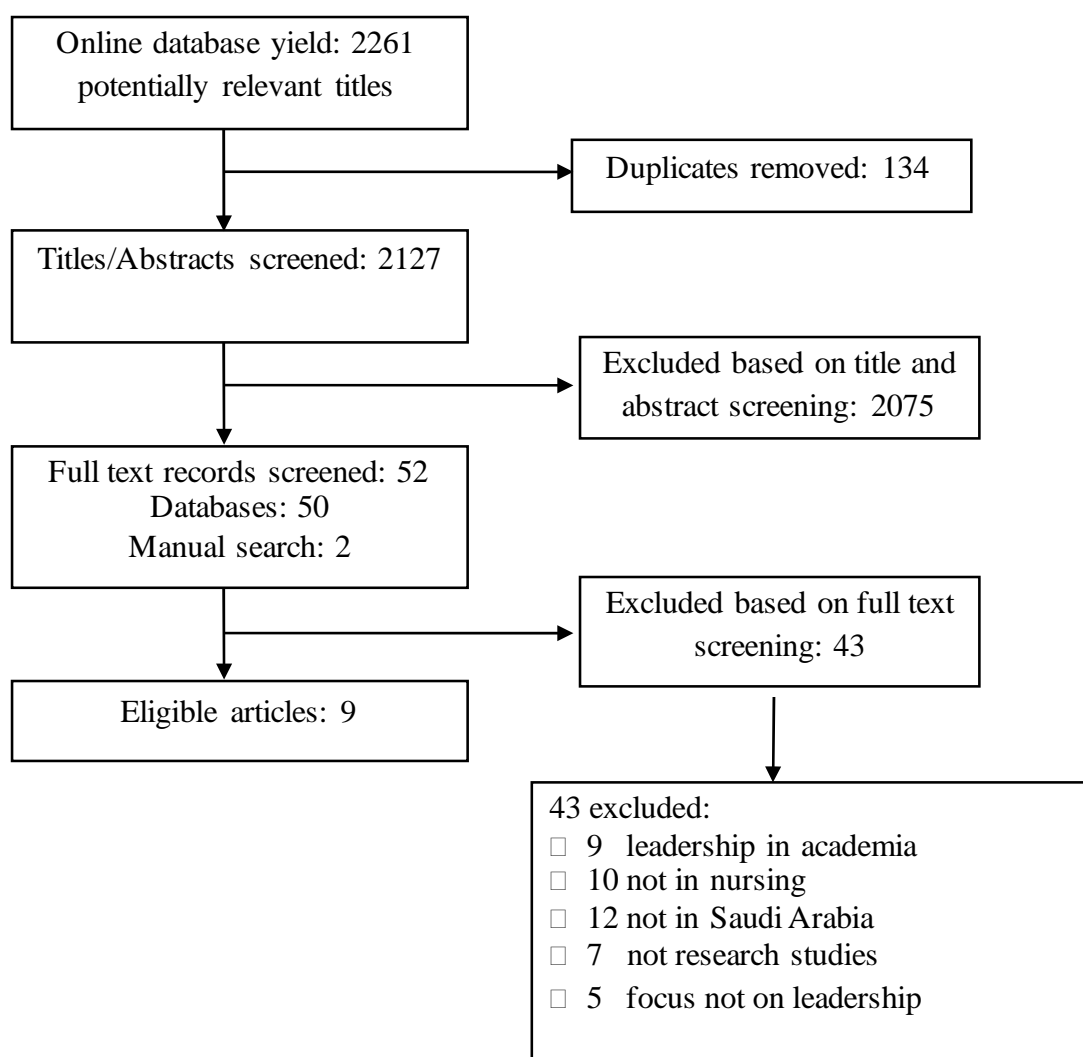
Two screening stages were used for selecting articles for the review. The first screening stage included the review of all titles and abstracts by using the above inclusion and exclusion criteria. The first and second authors screened all titles and abstracts to ensure validity of the screening process. All articles that passed the first stage proceeded to full-text screening. All full-text manuscripts were screened by the primary researcher and the second author.

The electronic database search yielded 2261 titles and abstracts (see Table 2). After removal of duplicates, a total of 2127 titles and abstracts were screened by using inclusion and exclusion criteria in order to select the eligible articles for inclusion. The title and abstract review of the database search results yielded 50 potentially relevant manuscripts to be retrieved for full text review in addition to two articles that were found from by manual searching in reference lists of relevant articles, for a total of 52 candidate articles. After final full text review, nine manuscripts representing eight studies were

included in this review. Two papers counted as one study because there was a second paper (a secondary analysis) from one of the studies (Abualrub & Alghamdi, 2012; Alghamdi, Topp, & AlYami, 2018), therefore these two articles were counted as one study in the analyses and results. A summary of the search strategy and screening process results is explained in Figure 1.

**Figure 1**

*Selection of Articles for Review*





There were six manuscripts representing five original quantitative studies, as well as two qualitative studies, and one mixed methods study. Two manuscripts were unpublished doctoral dissertations; one was a qualitative study and the other a mixed method study. Quantitative studies were all non-experimental, correlational studies ( $n=6$ ). Both qualitative studies used a qualitative descriptive design. For the mixed methods study, the author used a non-experimental, correlational design for the quantitative part and a phenomenological approach for the qualitative part.

### **Data Evaluation (Quality Assessment)**

The primary researcher assessed each included study for methodological quality using two different quality-rating tools for quantitative and qualitative studies. For the mixed methods study, a quantitative tool was used to evaluate the quantitative part, and the qualitative tool to assess the qualitative part. For quantitative studies, the quality appraisal tool used in this review was adapted from other published reviews (Cowden et al., 2011; Cummings & Estabrooks, 2003; Cummings et al., 2008, 2010; Germain & Cummings, 2010; Wong & Cummings, 2007). This tool assesses four major criteria which are research design, sample, measurement/instrument, and statistical analysis. Thirteen criteria were assessed, and the total maximum score is fourteen. Thus, studies can be categorized as low (0–4), moderate (5–9), or high (10–14). For qualitative studies, the Critical Appraisal Skills Programme tool was used which consists of ten questions related to rigor, credibility and relevance (CASP, 2010). The highest score is nine in this tool.

All studies were rated as high quality, so none of them were excluded. All five quantitative studies and the quantitative part of the mixed methods study were rated as high quality overall. The results for the design section included: all five quantitative

studies and the quantitative part of the mixed methods study were prospective; three quantitative studies used probability sampling while two quantitative studies and the quantitative part of mixed methods did not. For the sample section, only two quantitative studies justified the sample size; all five quantitative studies and the quantitative part of mixed methods were drawn from more than one site; anonymity was protected in all studies; two quantitative studies and the quantitative part of the mixed methods study had response rates more than 60%. For the measurement evaluation: all five quantitative studies and the quantitative part of the mixed methods study reported reliability and validity of instruments, and had an internal consistency equal or more than 0.70; only one quantitative study and the quantitative part of the mixed methods study used a theoretical model/framework to guide their studies. The last criteria was for statistical analysis, all five quantitative studies and the quantitative part of the mixed methods study used correlation and multiple regression to analyze the data. Table 3 presents a summary of the quality assessment for five quantitative studies and the quantitative part of the mixed methods study.

The results of the qualitative study appraisal showed that, of the 3 qualitative studies reviewed, one qualitative study and the qualitative part of the mixed methods study were rated as 8 out of a maximum score of 9 while the other qualitative study was rated as 9. All of them had a clear statement of the aims; used appropriate study designs, methodology, recruitment strategy, and data collection; considered ethical issues; had sufficient data analysis; and had a clear statement of findings. However, only one qualitative study described the relationship between the researcher and participants in terms of any involvement with the participants prior to recruitment. Table 4 illustrated the summary of quality assessment for two qualitative studies and the qualitative part of mixed method study.

**Table 3**

*Summary of Quality Assessment for the 6 Quantitative Studies – (includes 5 quantitative only studies, 1 quantitative part of mixed method study)*

Criteria	No. of studies	
Scores	YES (=1)	NO (=0)
Design:		
Prospective studies	6	0
Used probability sampling	3	3
Sample:		
Appropriate/justified sample size	2	4
Sample drawn from more than one site	6	0
Anonymity protected	6	0
Response rate >60%	3	3
Measurement:		
Reliable measure of leadership	6	0
Valid measure of leadership	6	0
*leadership style was observed rather than self-reported	6	0
Internal consistency $\geq .70$ when scale used	6	0
Theoretical model/framework used	2	4
Statistical Analyses:		
Correlations analyzed when multiple effects studied	6	0
Management of outliers addressed	6	0
*This item scored 2 points. All others scored 1 point		
Low (0-4) Medium (5-9) High (10-14)	High (n=6)	

**Table 4**

*Summary of the Quality Assessment for the 3 Qualitative Studies – (includes 2 qualitative only studies and the qualitative part of the mixed method study)*

Criteria	No. of studies	
	YES (=1)	NO (=0)
Scores		
Clear statement of research aims	3	0
Appropriate methodology	3	0
Appropriate research design	3	0
Appropriate recruitment strategy	3	0
Appropriate data collection	3	0
Relationship between the researcher and participants described	1	2
Ethical issues considered	3	0
Sufficient data analysis	3	0
Clear statement of findings	3	0
Total Score: 9	2 studies= 8	1 study=9

### **Data Extraction and Descriptive Analysis**

In this phase, descriptive data from each of the included articles was categorized and summarized in order to integrate their results (Whittemore, 2005). Data that were extracted from the studies included: author, journal, study purpose, theoretical framework, design, sample, measurement/instruments, analysis, and findings (Table 5). Findings of the included studies were extracted based on the purpose of this review and

research questions which focus on types of leadership theories that have been used by nurse managers in Saudi Arabia and the relationship between these theories and various outcomes.

Descriptive characteristics of each study are explained in Tables 5. All studies were published between 2005 and 2018, and each study was published in a different journal or university. Participants in all 8 studies were registered nurses working in the healthcare settings associated with each study. Two unpublished studies (Doctoral dissertations) included nurse managers and head nurses in their sample (Aldawood, 2017; Omer, 2005).

All quantitative, qualitative, and mixed methods studies aimed to examine the leadership styles of nurse managers that were measured based on different theories and their relationships with various outcomes. Only one quantitative study and one mixed methods study used a theoretical framework as guidance for the study (Al-Yami et al., 2018; Omer, 2005). Two main leadership instruments were used in the five quantitative studies and one mixed methods study: the Multifactor Leadership Questionnaire (MLQ) to measure transactional, transformational and laissez-faire leadership styles (Bass, 1985) (Abualrub & Alghamdi, 2012; Alshahrani & Baig, 2016; Al-Yami, et al., 2018; Asiri et al., 2016; Omer, 2005) and the Leadership Style Questionnaire to measure transactional and transformational leadership styles (Vera & Crossan, 2004) (El Dahshan et al., 2017).

**Table 5***Characteristics of Included Studies*

Study	Author(s)/ Journal	Purpose/ Conceptual framework	Design	Subjects/ Sample	Measurement/ instrument	Analysis	Findings
1 a	Abualrub, R. F., & Alghamdi, M. G. (2012). <i>Journal of nursing management</i> , 20 (5), 668-678	To examine the impact of leadership styles of nurse managers on Saudi nurses' job satisfaction and their intent to stay at work	A descriptive correlational design	600 nurses who are holding a registered nursing license and practicing as a registered nurse, (2) having at least 6 months of experience in their current job, and (3) working under the direct supervision of a nurse manager in a hospital setting in the selected hospitals (6 public hospitals in the Western Region of Saudi Arabia) (Convenience sample)  Response rate=51.3% Final n= 308  <b>Demographics:</b> Reported: yes	Leadership styles: Multifactor Leadership Questionnaire (MLQ- 5X) (Bass & Avolio, 2004)  Job satisfaction: Job Satisfaction Survey (JSS) (Spector, 1985)  Intention to stay at work: McCain s Intent to Stay Scale (McCloskey & McCain, 1987)	Descriptive statistics  Pearsons correlation  Hierarchical regression	There was a significant/ positive correlation between transformational leadership style and nurses job satisfaction ( $r = 0.45, p < 0.001$ ) while a significant/ negative relationship between transactional leadership style and job satisfaction ( $r = 0.14, p < 0.01$ )  There was a significant weak correlation in the positive direction between nurses job satisfaction and nurses intention to stay at work ( $r = 0.15, p < 0.01$ )  The relationship between the transformational leadership style and the level of intent to stay was statistically insignificant ( $r = 0.08, p = 0.14$ ) as well as the relationship between the transactional leadership style and the level of intent to stay ( $r = 0.01, p = 0.81$ )  Participants perceived their managers as transformational leaders rather than transactional leaders

1 b	Alghamdi, M. G., Topp, R., & AlYami, M. S. (2018). <i>Journal of advanced nursing</i> , 74(1), 119-127	To compare nurses' job satisfaction and perceptions of transformational leadership style of their manager among four different nurse/manager gender dyads in Saudi Arabia	A descriptive analysis of one-time survey (A secondary analysis)	600 nurses who are holding a registered nursing license and practicing as a registered nurse, (2) having at least 6 months of experience in their current job, and (3) working under the direct supervision of a nurse manager in a hospital setting in the selected hospitals (6 public hospitals in the Western Region of Saudi Arabia) (Convenience sample)	Job satisfaction: Job Satisfaction Survey (JSS) (Spector, 1985)  Transformational leadership style (TF): Multifactor Leadership Questionnaire (MLQ-5X; just TF leadership subscales) (Bass & Avolio, 2004)	Descriptive statistics  ANOVA	<p>Job satisfaction indicated a main effect of gender of the manager (<math>F = 51.8</math>, <math>p &lt; .001</math>) with staff nurses who worked under the leadership of male managers higher than those who worked under female managers</p> <p>A main effect of the manager's gender on the nurse's perceptions of their manager's TF leadership style (<math>F = 156.8</math>, <math>p &gt; .001</math>)</p> <p>The results indicated that nurse who worked under the leadership of a male manager perceived higher TF leadership style compared with the other subordinates who worked under the leadership of a female manager</p>
<b>Demographics:</b> Reported: yes							
2	Alshahrani, F. M. M., & Baig, L. A. (2016). <i>Journal of the College of physicians and Surgeons Pakistan</i> , 26(5), 366-370	To evaluate the effect of transformational and transactional leadership styles of head nurses on the job satisfaction of staff nurses in critical care units (CCU) of a tertiary care hospital	A cross-sectional study	160 licensed nurses, working under direct supervision of a head nurse with a minimum of 6 months experience in critical care units (Aseer Central Hospital (ACH), reporting to 8 nurse leaders)	Leadership styles: Multifactor Leadership Questionnaire (MLQ-5X) (Bass & Avolio, 2004)  Job satisfaction: Job Satisfaction Survey (JSS) (Spector, 1985)	ANOVA  Multiple linear regression analysis	<p>The majority of the head nurses demonstrated transactional leadership style</p> <p>Nurses working under leaders with a transformational style demonstrated significantly (<math>p &lt; 0.05</math>) higher job satisfaction</p> <p>There were statistically significant differences between 8 head nurses' leadership styles as well as nurses' job satisfaction</p>

				Response rate=59% Final n= 89			
				<b>Demographics:</b> Reported: yes			
3	Asiri, S. A., Rohrer, W. W., Al-Surimi, K., Da'ar, O. O., & Ahmed, A. (2016). <i>BMC nursing</i> , 15(1), 38	To investigate the relationships among leadership style, psychological empowerment, and organizational commitment	A cross-sectional survey	350 questionnaires were randomly distributed to full time registered nursing staff in the acute care units at King Abdulaziz Medical City in Riyadh (KAMC-R)  Response rate=95% Final n= 332  <b>Demographics:</b> Reported: yes	Leadership Styles: Multifactor Leadership Questionnaire (MLQ) (Bass & Avolio, 2004)  Psychological Empowerment: Psychological Empowerment Scale (Spreitzer, 1995)  Organizational Commitment: Three-Component Model of employee commitment (Allen & Meyer, 1996)	Pearson Correlation  Stepwise regression   ANOVA	Nurses' commitment was significantly negatively correlated with meaning dimension of Commitment ( $r = -0.130$ , $p = 0.019$ ) and transformational leadership (TFL) ( $r = -0.113$ , $p = 0.045$ )  Nurses' commitment was significantly positively correlated with Transactional Leadership (TAL) ( $r = 0.124$ , $p = 0.028$ )  Nurses' perception of leadership styles (TAL and LFL) had positive and significant effects on commitment ( $p = 0.027$ and $0.012$ ), respectively  The psychological empowerment subscale, autonomy, was the only statistically significant predictor of commitment



4	El Dahshan, M. E. A., Youssef, H. A., Aljouaid, M., Babkeir, R. A., & Hassan, W. B. (2017). Global Journal of Management And Business Research, 17(6), 0975-5853	To explore and describe nurse managers' leadership styles and its effect on nurses' organizational commitment at Taif governmental hospitals in Kingdom of Saudi Arabia	A cross sectional descriptive survey	A random sample of 570 nurses worked in King Faisal Specialized Hospital {KFSH} & King Abdul-Aziz Specialized Hospital {KASH} and have at least one year of experience and working at study settings  Response rate=N/A Final n= 570  <b>Demographics:</b> Reported: yes	Leadership Style: Leadership Style Questionnaire (Vera & Crossan, 2004)  Organization Commitment: Organization Commitment Questionnaire (Meyer, 2004)	Descriptive statistics  Pearson correlation  Chi-square	Most of participant nurses (74.4%) perceived their leaders as transformational leaders in while (65.6%) of them perceived their leaders as transactional leaders in both hospitals  Majority (87.1%) of participant nurses had commitment to their organization in King Faisal hospital and (76.8%) of participant nurses had commitment to their organization in King Abdul Aziz hospital  There was statistically significant positive correlation between transformational leadership style and organizational commitment in each hospital  There was positive correlation between transactional leadership style and organizational commitment in King Abdul Aziz Hospital but significant positive correlation in King Faisal hospital
5	Al-Yami, M., Galdas, P., & Watson, R. (2018). <i>Journal of nursing management</i> , 26 (5), 531-539	To examine how nurse managers' leadership style and nurses' organizational commitment are related in Saudi Arabia  Full Range of Leadership (FRL) model (Bass, 1985)	A quantitative survey design	232 nurses randomly selected from two medical cities in Riyadh, Saudi Arabia  Response rate=84% Final n= 219  <b>Demographics:</b> Reported: yes	Leadership styles: Multifactor Leadership Questionnaire (MLQ) (Bass, 1985)  Organizational commitment: Organizational Commitment Questionnaire (Mowday et al., 1979)	t tests  Pearson's correlation  Hierarchical regression	Transformational leadership and organizational commitments were positively related represented by value commitment and commitment to stay ( $r = .374, p < .01$ and $.345, p < .01$ , respectively)  Transactional leadership is more strongly related to commitment than to transformational leadership

							<p>Passive avoidant leadership (PAL) and commitment were negatively correlated (<math>r = -.240, p &lt; .01</math> and <math>-.240, p &lt; .01</math>, respectively)</p> <p>Both management by-exception- passive and laissez-faire leadership styles have negative correlations with both value commitment and commitment to stay</p> <p>No significant difference was found between marital status, level of education, and leadership styles and their subscales while age has significant relationships with transformational leadership and transformational subscales</p>
6	Aldawood, A. (2017). (Doctoral dissertation, Cardiff University)	<p>To understand the relationship between nurse leadership and cultural differences in Saudi Arabia's (SA) hospital settings</p> <p>To identify the future training and development needs of nurse leaders in Saudi Arabia</p> <p>The cultural competence model (Papadopoulos, 2006)</p>	A qualitative design	<p>Nurse directors (n=8), head nurses (n=23) and staff nurses (n=15)</p> <p>30 of these participants were equally distributed amongst six focus groups while 16 were interviewed separately at King Saud Medical City (KSMC)</p> <p>Final n= 46</p> <p><b>Demographics:</b> Reported: yes</p>	In-depth interviews and focus groups	<p>The transcribed documents</p> <p>Coding</p> <p>Thematic analysis</p>	<p>Three main themes emerged from an analysis of all the transcripts: 1) Gendered Aspects of Nursing in Saudi Arabia. 2) Unique personal leadership qualities. 3) What works?</p> <p>1- Gendered Aspects of Nursing in Saudi Arabia: The issue of the gender-based segregation inherent to Saudi culture, sanctioned by society and enforced through government structures</p> <p>2- Unique personal leadership qualities: Leadership emerged as a key skill in these data for nurses at all levels</p>

							3- What Works? Examine what works and also what may not when leading nursing in SA
7	Saleh, U., O'Connor, T., Al-Subhi, H., Alkattan, R., Al-Harbi, S., & Patton, D. (2018). <i>British Journal of Nursing</i> , 27(4), 197-203	To explore the nature of leadership styles used by the nursing management team, as perceived by nurses working at the bedside	Qualitative methodology	Purposive, non-probability sample of 35 nurses who are in a full-time position with a minimum of one year experience in different specialties of a medical city in Saudi Arabia	Semi-structured interview	A phenomenologic-hermeneutic approach inspired by Ricoeur's philosophy, a five-phase process (Ricoeur, 1976)	<p>Four themes were emerged: relational; preferential; communication chain; and ineffectual leadership styles</p> <p>1- Relational leadership style: The relationship was viewed as a cooperation between ward nurses and the nursing leadership team to produce the best possible patient outcomes</p> <p>2- Preferential leadership style: Participants were dissatisfied because of the preferential style employed by head nurses and/or charge nurses</p> <p>3- Communication chain leadership style: Participants were able to identify the chain of communication at the institution, which comprised the charge nurse/head nurse, the nursing director, and the chief nursing officer (CNO)</p> <p>4- Ineffectual leadership style: Nurses would like to see improvement in their managers' leadership styles</p>

8	Omer, T. Y. (2005). (Doctoral dissertation, George Mason University)	<p>To assess the leadership style of nurse managers working at National Guard hospitals in Saudi Arabia</p> <p>To explore the correlation of their perceived leadership style to certain organizational outcomes, including leader effectiveness, staff job satisfaction, and staff willingness exert extra effort</p> <p>Transformational leadership model (Bass, 1985)</p>	Mixed methods	<p>146 nurses who work in National Guard hospital in Jeddah and 269 from National Guard hospital in Riyadh; 23 nurse managers</p> <p>Response rate=65.3% Final n= 271</p> <p><b>Demographics:</b> Reported: yes</p>	<p>For quantitative part: Leadership style: Multifactor Leadership Questionnaire (MLQ-5X) (Bass, 1985)</p> <p>For qualitative part: Narrative interview (Heideggerian Phenomenological-Hermeneutic approach, 1962)</p>	<p>For quantitative part: CFA ANOVA Multiple linear regression For qualitative part: A phenomenologic-hermeneutic approach</p>	<p>The quantitative results of this study indicated that the nurse managers as well as the staff nurses working with them perceived that the leadership style of the nurse managers at the Saudi National Guard was a mix of both transformational and transactional styles</p> <p>Both nurse managers and staff nurses gave a higher rating to transformational factors than transactional factors</p> <p>Nurses rated the nurse managers significantly lower in all nine leadership factors</p> <p>There was no significant difference between the demographic characteristics in regard to the perceived leadership style of the nurse managers</p> <p>The main themes emerged from qualitative part are: leadership process, work environment, and work relationship</p>
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### **Data Presentation and Narrative Analysis**

Data extracted from the reviewed studies were grouped into different themes based on the similarities in meaning that address the purpose of this integrative review and research questions. These themes are nursing leadership theories in Saudi Arabia, leadership styles and nurses' outcomes, and demographics and leadership styles.

#### **Nursing Leadership Styles in Saudi Arabia**

The main goal of all but one of the included studies was to assess the types of leadership styles of nurse managers in Saudi Arabia. One study focused only on assessing transformational leadership styles (Alghamdi et al., 2018). It was found that transformational, transactional, laissez-faire, passive/ avoidant and management-by-exception-passive leadership styles were the most leadership styles that have been examined in nursing studies in Saudi Arabia. Four studies showed that transformational leadership and transactional leadership styles were the most common nursing leadership styles reported, based on how the study nurses perceived their leaders as (Abualrub & Alghamdi, 2012; Alshahrani & Baig, 2016; El Dahshan et al., 2017; Omer, 2005). Nonetheless, laissez-faire leadership style was also found as a preference for some nurse managers in Saudi Arabia (Abualrub & Alghamdi, 2012; Al-Yam et al., 2018; Asiri et al., 2016; El Dahshan et al., 2017).

Abualrub and Alghamdi (2012) found that participants perceived their managers as transformational leaders or transactional leaders, but the mean transformational leadership score was higher ( $M = 3.43$ ,  $SD = 0.82$ ) than for transactional leadership ( $M = 2.98$ ,  $SD = 0.57$ ) as it was rated by nurses (Abualrub & Alghamdi, 2012). In another study, the authors explored the nurse managers' leadership styles and its effect on nurses' organizational commitment at two governmental hospitals in Saudi Arabia (King Faisal

Specialized Hospital (KFSH) and King Abdul-Aziz Specialized Hospital (KASH) (El Dahshan et al., 2017). The results of this study indicated that 74.4% of participant nurses perceived their leaders as transformational leaders while 25.6% of them were seen as non-transformational leadership style in both hospitals. On the other hand, 65.6% of the participants perceived their leaders as transactional leaders while 34.4% of them non-transactional leadership style in both hospitals (El Dahshan et al., 2017).

The quantitative results of the mixed methods study indicated that staff nurses perceived that their nurse managers at the Saudi National Guard Hospital used as a combination of both transformational and transactional leadership styles (Omer, 2005). Omer (2005) also found that there is a difference in mean scores between nurse managers' self-ratings and staff nurse ratings. Therefore, the mean score of transformational leadership styles by nurse managers was  $M=3.13$ ,  $SD=0.47$  while the score when nurses rated their managers was lower ( $M=2.22$ ,  $SD=0.96$ ). Similar results applied to transactional leadership. Nurse managers who rated themselves as high on transactional leadership ( $M=3.18$ ,  $SD=0.48$ ) were rated lower on that dimension by their staff nurses ( $M=2.21$ ,  $SD=0.95$ ). However, nurse managers who rated themselves as low on laissez-faire leaders ( $M=0.42$ ,  $SD=0.50$ ) were rated higher on that dimension by their staff nurses ( $M=1.27$ ,  $SD=0.50$ ). In a more recent study, Alshahrani and Baig (2016) found that the majority of nurses rated their head nurses as using a transactional leadership style compared to a transformational leadership style, thus the mean score of transactional leadership style ( $M= 3.58$ ,  $SD= 0.68$ ) was higher than the mean score of transformational leadership style ( $M= 3.32$ ,  $SD= 0.72$ ).

The results of the qualitative studies also focused on the nature of leadership styles used by nurse managers in Saudi Arabia and its impacts on nurses' outcomes.

Qualitative studies illustrated the essential role of nurse leaders and their behaviours on increasing healthy work environments in general. Saleh et al. (2018) found that nurses reported that there is a need for their nurse managers to enhance their leadership skills by receiving training leadership competencies such as effective communication, conflict resolution and building a good relationship with nurses. In addition, their study results showed the nature of leadership styles of nurse leaders may have a major impact on nurses' satisfaction which in turns affects their engagement levels and turnover intentions, and ultimately the quality of care that they provide to their patients may be affected (Saleh et al., 2018). Behaviour of leaders and their leadership styles were found as essential components to being effective leaders (Aldawood, 2017). Nurse leaders should build respectful and trustful relationships with followers which positively reflects on a healthy work environment (Aldawood, 2017).

### **Leadership Styles and Nurse Outcomes**

All included studies in this review examined the relationships between leadership styles of nurse managers and different outcomes that are related to staff nurses. There were five nurse outcomes that were examined in relation to manager leadership styles: organizational commitment (Al-Yami et al., 2018; Asiri et al., 2016; El Dahshan et al., 2017), nurses' job satisfaction (Abualrub & Alghamdi, 2012; Alshahrani & Baig, 2016; Omer, 2005), intent to stay (Abualrub & Alghamdi, 2012), willingness to exert extra effort (Omer, 2005), and leaders' effectiveness (Omer, 2005). Table 6 illustrates the relationship between leadership styles and nurse outcomes in more details.

**Table 6**

*Summary of the Relationships between Leadership Styles and Nurse Outcomes*

<b>Nurse outcomes:</b>	<b>Leadership styles:</b>				
	<i>Transformational leadership</i>	<i>Transactional leadership</i>	<i>Laissez-faire leadership</i>	<i>Passive/Avoidant leadership</i>	<i>Management-by-exception-passive leadership</i>
<i>Organizational commitment</i>	-Positive and significant (Al-Yami et al., 2018; El Dahshan et al., 2017)	-Positive and significant (Al-Yami et al., 2018; Asiri et al., 2016; El Dahshan et al., 2017)	-Positive and significant (Asiri et al., 2016)	-Negative and significant (Al-Yami et al., 2018)	-Negative and significant (Al-Yami et al., 2018)
	-Negative and significant (Asiri et al., 2016)	-Positive but not significant (El Dahshan et al., 2017)	-Negative and significant (Al-Yami et al., 2018)		
<i>Nurses' job satisfaction</i>	-Positive and significant (Abualrub & Alghamdi, 2012; Alshahrani & Baig, 2016; Omer, 2005)	-Negative and significant (Abualrub & Alghamdi, 2012)	-Negative and significant (Omer, 2005)		-Negative and significant (Omer, 2005)
		-Positive and significant (Omer, 2005)			
<i>Intent to stay</i>	-Positive but not significant (Abualrub & Alghamdi, 2012)	-Positive but not significant (Abualrub & Alghamdi, 2012)			
<i>Willingness to exert extra effort</i>	-Positive and significant (Omer, 2005)	-Positive and significant (Omer, 2005)	-Negative and significant (Omer, 2005)		-Negative and significant (Omer, 2005)
<i>Leaders' effectiveness</i>	-Positive and significant (Omer, 2005)	-Positive and significant (Omer, 2005)	-Negative and significant (Omer, 2005)		-Negative and significant (Omer, 2005)



Transformational leadership has been examined in the included studies with various outcomes. It found that there was a positive and significant relationship between transformational leadership and organizational commitment (Al-Yami et al., 2018; El Dahshan et al., 2017). However, Asiri et al. (2016) found that organizational commitment was significantly negatively correlated to transformational leadership. There was a significant and positive relationship between transformational leadership style and nurses' job satisfaction (Abualrub & Alghamdi, 2012; Alshahrani & Baig, 2016; Omer, 2005). Abualrub and Alghamdi (2012) found that that there was a positive but not significant relationship between transformational leadership style and the level of intent to stay ( $r = 0.08, p = 0.14$ ). The relationship between willingness to exert extra effort and transformational leadership was positive and significant (Omer, 2005).

Transactional leadership style was also examined with the same nurse outcomes in the included studies. Transactional leadership had a significant and positive relationship with organizational commitment (Al-Yami et al., 2018; Asiri et al., 2016). El Dahshan et al. (2017) also found that there was a positive but not significant relationship between transactional leadership style and organizational commitment in King Abdul Aziz Hospital while there was a statistically significant positive correlation in King Faisal Hospital. Transactional leadership was examined with nurses' job satisfaction, and there was a significant, negative relationship between transactional leadership style and job satisfaction ( $r = -0.14, P < 0.01$ ) (Abualrub & Alghamdi, 2012) while Omer (2005) found the relations between nurses' job satisfaction and transactional leadership style to be positive and significant. The relationship between willingness to exert extra effort and transactional leadership style was positive and significant (Omer, 2005). Lastly, Abualrub

and Alghamdi (2012) found no relationship between the transactional leadership style and the level of intent to stay ( $r = 0.01, p = 0.81$ ).

Finally, laissez-faire, passive/avoidant and management-by-exception-passive leadership styles were examined with organizational commitment in two studies (Asiri et al., 2016; Al-Yami et al., 2018). The relationship between laissez-faire leadership and organizational commitment was positive and significant (Asiri et al., 2016) while Al-Yami et al. (2018) found that there was a negative and significant relationship between laissez-faire leadership and organizational commitment. The relationships between both passive/avoidant and management-by-exception-passive leadership and organizational commitment were negative and significant (Al-Yami et al., 2018). Also, laissez-faire and management-by-exception-passive leadership styles were examined with nurses' job satisfaction, willingness to exert extra effort and leaders' effectiveness and found to have negative and significant relationships.

### **Demographics and Leadership Styles**

Because there are possible relationships between demographic factors and nurse managers' leadership styles in Saudi Arabia, demographics were examined in most of the included studies (Aldawood, 2017; Alghamdi et al., 2018; Al-Yami et al., 2018; Omer, 2005). Alghamdi et al. (2018) found that gender was a factor influencing nurse's perceptions of manager's leadership style ( $F = 156.8, p < 0.001$ ). They concluded that nurses who worked under a male manager perceived higher transformational leadership style compared with a female manager (Alghamdi et al., 2018). Aldawood (2017) also found that in his qualitative study gendered aspects of nursing in Saudi Arabia were considered to be the main issue because of gender-based segregation in the healthcare

system. The results of his study showed that gender issues were considered as one of the significant obstacles for female nurse leaders in Saudi Arabia; for example, some female nurses have the experience and leadership skills to be leaders, but the cultural norms in Saudi Arabia dictate that men usually take leadership positions. Thus, it is uncommon to see women in leadership positions.

Age also has a significant positive relationship with transformational leadership style of nurse managers (Al-Yami et al., 2018). However, two studies found that there were no significant differences between marital status and level of education and leadership style of the nurse managers (Al-Yami et al., 2018). Omer (2005) found that there were no significant relationships between age, gender, marital status, level of education and transformational, transactional and laissez-faire leadership styles. Nonetheless, there were significant relationships between ward, type of care unit and position and transformational, transactional and laissez-faire leadership styles (Omer, 2005).

### **Discussion**

The purposes of this integrative review were to identify leadership styles that have been examined in studies of nurse managers in Saudi Arabia and to identify the current state of evidence of the impact of leadership styles with nurse, patient and organization outcomes in Saudi Arabia. The findings of this review indicate that transformational, transactional, laissez-faire, passive/ avoidant and management-by-exception-passive leadership styles were the only leadership styles that have been examined in nursing studies in Saudi Arabia. However, the two leadership styles found to be the most often used by nurse managers were transformational leadership and transactional leadership styles. These results support a previous review that found that relationally focused

leadership styles were commonly used by nurse managers in other countries (Cummings et al., 2018). Cummings et al.'s review (2018) also found that other different styles were used by nurse managers, including socio-emotional, consideration, authentic, inspirational, charismatic, and resonant styles. However, these styles were not examined in the nursing leadership literature in Saudi Arabia.

The results of this review support a relationship between leadership styles of nurse managers and different staff nurse outcomes. Five nurse outcomes that were found in the reviewed studies and had relationships with leadership styles included: organizational commitment, nurses' job satisfaction, intent to stay, willingness to exert extra effort and leaders' effectiveness. The findings of this review support positive and significant relationships between transformational leadership and organizational commitment and nurses' job satisfaction. The review findings also suggest that there are positive and significant relationships between transactional leadership and organizational commitment and nurses' job satisfaction. However, there was also a negative and significant relationship between transactional leadership style and job satisfaction (Abualrub & Alghamdi, 2012). This negative result concurs with a previous review by Cummings et al. (2018) who reported that task-focused leadership styles were less likely to enhance positive outcomes or to reduce negative outcomes. The results of this review support what was found in a previous study related to the negative associations between passive leadership styles and outcomes (Derue et al., 2011). The review illustrates that passive/avoidant leadership and management-by-exception-passive leadership styles have negative relationships with organizational commitment, nurses' job satisfaction, willingness to exert extra effort and leaders' effectiveness.

This review's findings provide support for the relationships between nursing leadership styles, including transformational, transactional, laissez-faire, passive/avoidant and management-by-exception-passive leadership styles and nurse outcomes such as organizational commitment, nurses' job satisfaction, intent to stay, willingness to exert extra effort and leaders' effectiveness. It is essential to differentiate between the various leadership styles especially the two most common types: relationally focused and task focused leadership styles. The findings of this review illustrate that there is a significant gap in the nursing leadership literature in Saudi Arabia. The review found only nine studies examining the leadership style of nurse managers in Saudi Arabia and all were reported to be a type of transformational leadership. All outcomes in the included studies were related to nurses' only, and no study examined the connections between nursing leadership styles and patients and organizational outcomes.

The overall results of the quality assessment of the included studies show that all of the quantitative, qualitative, and mixed methods studies reviewed were rated as high quality. This high-quality scoring provides evidence that can be used to guide future research. According to Gopalakrishnan and Ganeshkumar (2013), the quality of evidence that comes from a review with high quality studies is a state-of-the-art synthesis of a specific topic that provides the most current evidence.

### **Implications for Nursing Leadership Practice**

The role of nurse managers is essential in creating healthy work environments for staff, nurses and patients (Shirey, 2006). Building meaningful relationships with staff is the key role that nurse managers should be aware of in addition to task completion (Cummings et al., 2018). Investing time and effort to build a healthy relationship between nurse managers is crucial in order to achieve the common goal of providing the best care

for patients (Cummings et al., 2018). The results of this review concur with previous work indicating that relational leadership styles have positive impacts on nurses' outcomes such as job satisfaction and intent to stay in their current jobs (Cummings et al., 2018). It is possible that leadership styles of nurse managers have a significant influence on nurses' outcomes which in turn affect the quality of care that patients receive.

Johnson (2015) found that there were direct relationships between authentic leadership and falls with injury, patient satisfaction, and hospital acquired pressure ulcers in the United States, and authentic leadership had a negative and significant association with falls with injury. Thus, nurse managers should apply the best leadership styles in their practices in order to achieve the best outcomes for both staff and patients. The crucial effect of leadership styles of nurse managers might not be directly seen on patients, but it could affect patients through the outcomes for nurses. For example, if nurses are satisfied in their work, they could provide better care to meet their patient needs. Additionally, it could affect their decision to stay or leave their current job and thus indirectly influence the quality of care through staff turnover (Cummings et al., 2018).

In other countries such as the United States and Europe, leadership was found to have an indirect effect on the healthcare organizations through nurses and patients' outcomes. Some nurses' outcomes including job satisfaction and intent to leave their current jobs can influence the cost of care, staff safety, patients' safety, and patient mortality (Aiken et al., 2002; Russell et al., 2017). Thus, retention of staff nurses could lead to poor health outcomes for patients and increase mortality and morbidity (Aaron, 2011; Chafin & Biddle, 2013). Giving consideration to the direct and indirect effects of leadership styles of nurse managers on nurses, patients and organizational outcomes is therefore essential, and it should be addressed in nursing research and practice.

### **Implications for Nursing Theory**

An important observation from this review is that theoretical frameworks are important for studies because they provide guidance for the relationship among the concepts and the interpretation of the relationships observed between study variables (Cummings et al., 2018). In this review, only two of the included studies were guided by theoretical frameworks. Using theoretical frameworks can help strengthen the findings by improving the validity of results since they are based on well-established nursing leadership theories. Testing these theories explicitly can also help to address their weaknesses and the applicability of using them in different contexts. There are different leadership theories that have been used in the nursing leadership literature, but the most common theories are Transformational and Transactional Leadership (Bass & Avolio, 1994), Full Range Leadership Model (Bass, 1985), Authentic Leadership (Avolio & Gardner, 2005), Organizational Empowerment Theory (Kanter, 1977), Leadership Practices (Kouzes & Posner, 2003).

This review emphasizes the importance of applying theories to guide research and to illustrate the connections between independent variables and outcomes in the studies. Also, some other studies (not the included studies) use mechanisms (mediators or moderators) to connect independent and outcome variables. Thus, it is important to have theories that help explain how these variables are connected because they can guide researchers to identify the concepts and interrelationships between them as well as how they can be tested (Shalley, 2012). Therefore, the fact that only two studies in this review used explicit theoretical frameworks indicated that the validity of the study findings could be limited.

### **Recommendations for Future Research**

To address a gap in the literature about nursing leadership styles and their relationships with outcomes, there is a need for future studies in Saudi Arabia and elsewhere that examine the impact of leadership style on outcomes at different levels. Firstly, more studies that examine the relationships with a variety of leadership styles and nurses, patients and organizations outcomes are needed. For example, although a previous review examined the impact of authentic leadership on different outcomes, none of the included studies were conducted in Saudi Arabia (Alilyyani et al., 2018). Also, only five outcomes were examined in the current review, hence the need for more studies that examine different outcomes related to health & well-being of nurses, including the psychological states of nurses, performance of nurses, and the quality of their work environment factors. There is a need for more studies that illustrate the relationships between leadership styles and patients' outcomes because none of the included studies examined the influences of leadership styles on patients. Future studies need to include different study designs such as non-experimental, longitudinal, quasi-experimental or experimental designs as well as different qualitative studies designs. Additionally, researchers should focus more on including a theoretical model/framework to guide their studies as only two of the included studies used a theoretical framework. All studies were conducted in public hospitals in Saudi Arabia, but nothing was done in private hospitals. Thus, there is a need for more studies in the private sector as this accounts for 33% of healthcare delivery in Saudi Arabia (Global Health Exhibition, 2018). Lastly, all the included studies used basic statistical analysis such as multiple regression and correlation, so it is recommended that future studies use more robust statistical analysis such as



structural equation modeling (SEM) in order to test more complex inter-relationships between variables.

### **Limitations**

The review was limited to identifying leadership theories that have been examined in nursing literature in Saudi Arabia thus the generalizability of the findings may be limited to the Saudi context. The small number of studies in the nursing literature in Saudi Arabia regarding leadership styles is another limitation that could affect the findings related to outcomes. Also, only nursing related articles were included which could limit the findings. All the included studies focused on examining transformational leadership theory in nursing without paying attention to other recent leadership theories in nursing such as authentic leadership. All quantitative studies were cross-sectional correlational designs which do not allow for causal inferences relationships between studies variables. All included studies were conducted in public hospitals in Saudi Arabia which limited the findings to only public healthcare services, so the findings are not applicable to private healthcare sectors in Saudi Arabia. In addition, all quantitative studies used basic statistical methods to analyze the data where in future, advanced statistical tests could be applied such as SEM. Finally, publication bias is a limitation of this review because grey literature and Arabic language studies were excluded.

### **Conclusions**

There has been increased research focus on the importance of effective nursing leadership in healthcare settings. The findings of this integrative review provide evidence related to nursing leadership styles including relational leadership and task-focused leadership styles and their links to nursing outcomes. A type of relational leadership theory, transformational leadership more specifically, was found to be the only theory that

has been tested in relation to nurses and their work outcomes in Saudi Arabia.

Knowledge generated from this review support the significant role that nurse managers play in nurses' job satisfaction and their intent to stay with their current organization. The results summarize the need for future studies in Saudi Arabia regarding to the essential role of nurse managers and their leadership styles in enhancing the work environments and creating positive outcomes for nurses, patients and healthcare organizations. By integrating knowledge from previous studies, this review helps future researchers to focus on the gaps that need to be explored.

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## CHAPTER THREE

### A PSYCHOMETRIC ANALYSIS OF THE NURSE SATISFACTION WITH THE QUALITY OF CARE SCALE

#### Abstract

**Objective:** The purpose of this study was to measure the psychometric properties of a researcher-developed instrument measuring nurse satisfaction with the quality of care.

**Background:** The quality of nursing care is a core concept in nursing practice. However, the concept of quality of nursing care can vary across healthcare organizations and many different factors may affect the quality of nursing care as perceived by nurses. Measuring satisfaction with the quality of nursing care from the nurse's perspective is important as a valid and reliable indicator of care quality.

**Methods:** A sample of 200 nurses was randomly selected from three hospitals in three different cities in Saudi Arabia. Nurse satisfaction with the quality of care scale (NSQC) is a self-administrated 5-item scale. Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and internal consistency analysis were conducted to determine the validity and reliability of the instrument.

**Results:** Results of the EFA supported a one factor structure that consists of the five items as the best fit for the scale, and the five items were correlated to one factor, with no items eliminated. CFA results confirmed that the five items are integral to nurse satisfaction with the quality of care with one slight modification (an error correlation) to produce acceptable goodness of fit indices. The range of factor loadings was 0.44 to 0.76 and all were significant ( $p < 0.001$ ). Cronbach internal consistency of the scale was acceptable ( $\alpha = 0.80$ ).



**Conclusions:** This study tested the new tool appears to be a reliable and valid way to assess nurse perceptions of their satisfaction with the quality of care provided. This tool may provide researchers and healthcare organizations with an efficient option when trying to assess nurse satisfaction with the quality of nursing care. Additional studies to test the psychometric properties of this scale further in different contexts are warranted.

*Keywords:* satisfaction with the quality of care, quality of care, nursing, psychometric properties, scale, Saudi Arabia, nurses

## **Introduction and Background**

Nurses' views on the quality of patient care they deliver and what is needed to improve that care develop over time as they engage in daily bedside nursing practice (Spence Laschinger et al., 2016). Furthermore, nurses' perceptions of care quality have been shown to be a reliable indicator of the actual care delivered (McHugh & Stimpfel, 2012). Quality of nursing care is defined as the care that is provided by nurses based on healthcare organizational standards and nursing professional requirements (Grujic et al., 1989). Different concepts such as nursing skills, caring attitudes, effective communication, efficient management and leadership, effective community participation (High Seas Traders, 2002; Mudallal et al., 2017), adequate nursing staff, as well as patient outcomes including, falls, skin integrity, infection rates and patient satisfaction (Liu & Aungsuroch, 2018; Loan et al., 2003) have all been considered as important elements of the quality of nursing care. According to Burhans and Alligood (2010), nurses evaluate the quality of nursing care based on assessment, intervention, and effectiveness of nursing treatments. Different factors can affect the quality of nursing care such as the work atmosphere, equipment shortages and inefficiency, dissatisfaction with the facilities and poor economic status of the facility (Nobahar, 2017). Enhancing the nursing work environment is an essential condition for nurses to provide the quality of care needed for each patient which in turn can increase nurse job satisfaction (Aiken et al., 2012; Rojas Russell et al., 2011). It has been shown that when organizational support including, adequate equipment, technological advances and appropriate facilities is provided to nurses, it positively affects the quality of nursing care (Aiken et al., 2002; Patrician et al., 2010; Phillips et al., 2015; Van Bogaert et al., 2009).

Quality of nursing care has been associated with various patient and nurse work outcomes. Research has shown that nurses' perceptions of patient quality of care are associated with nurse outcomes such as job satisfaction, career satisfaction, and turnover intentions (Laschinger, 2012; Laschinger & Fida 2015; Zhu et al., 2014). Aiken et al. (2012) found that, in all of 12 countries examined, quality of nursing care was significantly associated with patient satisfaction with care and nurse workforce outcomes including nurse burnout, job dissatisfaction, and intention to leave their current positions. A study conducted by McHugh and Stimpfel (2012) reported that the quality of nursing care rated by nurses had a significant relationship with objective outcomes related to hospital quality indicators, such as mortality rate, failure to rescue, and patient satisfaction. Another study explained that the increased quality of nursing care may improve patient and organizational outcomes such as patient falls, infections, and medication errors (Zhu et al., 2012).

Measuring nurse perceptions of the quality of nursing care is essential because it helps to determine the level of treatment success and to evaluate care provided to patients (de Freitas et al., 2014). In addition, measuring nurses' level of satisfaction with the care is a way to determine how they view the quality of the care they provide (Aiken et al., 2012). Spence Laschinger et al. (2016) found that when new graduate nurses perceived they were providing nursing care based on professional standards, their assessment of overall care quality was positively associated with their overall their job satisfaction. Nurses can practice and provide care according to professional standards when they work in supportive environments (Spence Laschinger et al., 2003; Kalisch et al., 2011; Manojlovich, 2003). Thus, nurse satisfaction with the quality of care may be a proxy measure of the actual quality of nursing care delivered (Aiken et al., 2012). Measuring

nurse satisfaction with the quality of care offers an important perspective when assessing the quality of nursing care, however, there is no pre-existing standardized scale for measuring nurse satisfaction with the quality of care.

There is a gap in the nursing literature regarding the measurement of the quality of nursing care in general; perhaps this is due to the subjective nature of the definition of quality which results in measurement challenges (Burhans & Alligood, 2010). Defining the quality of nursing care is variable as each nurse may evaluate the quality of care from differing perspectives (Burhans & Alligood, 2010) and the resulting inconsistency in the definition of the quality of nursing care makes it challenging to measure (Andrews et al., 2011; Baernholdt et al., 2013).

This significant gap might be addressed by focusing instead on measuring the degree of nurses' satisfaction with the quality of care they provide as the quality of nursing care is a core concept in nursing practice (Aiken et al., 2012). Measuring the level of nurse satisfaction with the quality of care as an essential element of a work setting could enable nurses who are trying to reach the goals of the organization related to providing high quality nursing care (Disch, 2002). In addition, nurse satisfaction with the quality of care may have an influence on patient outcomes. For example, nurses working in poor work environments with insufficient resources and having to care for a high number of patients on their shifts could be more likely to make errors that could lead to negative outcomes related to patients and thus could feel more dissatisfied with the quality nursing care delivered (Walker, 2018). Although measuring nurse satisfaction with the quality of care is important, previous studies have focused on measuring satisfaction with the quality of care primarily from the perspective of patients (Karaca & Durna, 2019; Kvist et al., 2014), and none of them measured satisfaction with the quality

of care from the nurse perspective. Therefore, the aim of this study was to assess the psychometric properties of an unpublished instrument measuring nurse satisfaction with the quality of nursing care. This scale focuses on measuring nurse satisfaction with the quality of care rather than directly measuring objective indicators of the quality of nursing care. Testing the psychometric properties of this scale included exploratory factor analysis (EFA) to assess the need for item reduction as well as confirmatory factor analysis (CFA) to examine the factor validity of the scale as well as Cronbach's alpha to assess the scales' internal consistency (i.e. reliability).

### **Literature Review**

An empirical literature search on the quality of care and quality of nursing care, factors affecting quality of nursing care, nurse satisfaction with quality of care, and measuring nurses' perceptions of quality of care will be reviewed. The main databases used for searching included CINAHL, PubMed, Scopus, and PsycINFO in addition to Google Scholar. The key terms used in the search were quality of care, quality of nursing care, nurse perception, missed nursing care, factors, scales, instruments, and measure. Published articles and unpublished theses and dissertations from 2000-2020 were included, with some older references included as well in order to clarify some essential concepts in the review.

#### ***Quality of Care and Quality of Nursing Care***

Prior to focusing on nurse perceptions of the quality of care, a broader discussion of quality in health care is provided to give context to the narrowed focus that follows on nurse perceptions of care. There is debate in the literature about the definition of the quality of care because quality is viewed from differing perspectives, including patients and various healthcare professionals (Campbell et al., 2000). Quality of care from the

patient's perspective often focuses on whether patients can access the structures and processes of healthcare that they need as well as the effectiveness of the care they receive (Campbell et al., 2000). Defining the quality of care from the perspective of healthcare providers tends to center on provider practices, availability of resources, satisfaction with outcomes, and acquisition of knowledge, skills, and competence (Gregory et al., 2005). More specifically in nursing, quality of care is defined from the perspective of nurses as care that is meeting all the needs of the patients including both physical and psychosocial needs (Williams, 1998, p. 811).

Quality of nursing care has also been described differently by country. In Australia, Coulon et al.'s (1996) study to examine the meaning of excellence in nursing care among 156 undergraduate and postgraduate nurses and found that the quality of nursing care means focusing on patients as the center of care delivery at all times (Coulon et al., 1996). In addition, participants described quality using four concepts: professionalism, holistic care, practice, and humanism. Humanism in his research was defined as "an action or practice of mode of thought in which human interest predominates" (Coulon et al., 1996) and is related to enabling qualities of nurse- patient relationships, or nurse-health team member relationships (Coulon et al., 1996). The authors concluded that excellence in nursing care depends on nurses' attitudes, values, behaviour, and relationships with patients, peers, and administration, all of which positively lead to enhanced patient health outcomes (Coulon et al., 1996).

In another Australian study, researchers examined the relationships between specific general practice characteristics and nurse consultation characteristics, and patient satisfaction and enablement (Desborough et al., 2016). The results illustrated five characteristics identified by both patients and nurses that should be considered as

essential elements of the best nursing care: the trustful relationship between healthcare providers team, team meetings, continuous education and training for nurses, availability of nursing staff, and maintaining privacy between nurses and their patients (Desborough et al., 2016).

McKenna et al., (2006) compared perceptions of quality of care perceived by nurses in the United Kingdom with those of nurses in the United States. Participants identified staff competency, staff communication, patient-staff communication, caring, understanding patient needs, and dignity as key elements of quality of patient care (McKenna et al., 2006). However, there was a difference in the components of quality of care identified by nurses in the two countries. Nurses in the United Kingdom explained quality of care in terms of cleanliness and safety of the environment, infection control, appropriate documentation, feeling supported, adequate resources and personnel, and the ward leader (McKenna et al., 2006). On the other hand, nurses in the USA identified family member inclusion in education, accessibility of staff, and attentiveness of staff to relieving discomfort as the basic aspects of the quality of care (McKenna et al., 2006; Panunto & Guirardello, 2013).

Thus, the concept of quality of nursing care has been delineated by a variety of elements as perceived by nurses in different contexts. This makes defining and measuring quality of nursing care difficult.

### ***Factors Affecting Quality of Nursing Care***

A number of published studies have examined factors that affect the quality of nursing care (Ryan et al., 2017) and which ultimately could determine the level of satisfaction with nursing care perceived by nurses providing that care (Nobahar, 2017). A major factor influencing the quality of nursing care is the work environment (Aiken et

al., 2013; Nobahar, 2017). Relevant elements of the work environment include working in teams, organizational support, availability of resources and equipment, and adequate staff and all of these have a significant impact on the quality of nursing care (Aiken et al., 2002; Aiken et al., 2012; Bennett, 2011; Rojas Russell et al., 2011). Rojas Russell et al. (2011) showed that there is a significant connection between the work environment and the quality of nursing care, thus enhancing the work environment including good relationships among nursing staff, work colleagues, and leaders was shown to be important factors that can lead to greater satisfaction with the care delivered. Therefore, enhancing the work environment is essential as it helps nurses to provide their care at the highest quality possible (Aiken et al., 2012). In addition, enhancing organizational structures by involving nurses in hospital affairs, providing support for nurse managers, and having adequate staff and resources, was found to be an important strategy to increase nurse satisfaction with care (Nantsupawat et al., 2011). The organizational support provided to nurses at their workplaces including availability of resources and building respectful relationships between leaders and staff have a positive effect on the quality of nursing care and their satisfaction with the care they provide to their patients (Aiken et al. 2002; Patricia et al., 2010; Van Bogaert et al., 2009). On the other hand, staff shortages and the inadequacy of equipment or supplies can negatively affect nurse perceptions of the quality of nursing care in their departments (Borzou et al., 2014; Nobahar, 2017).

Other factors that have been found to influence the quality of nursing care and nurse satisfaction with care include the skills and education of nurses, nursing leadership styles, and the quality of communication between nurses and other healthcare workers (Rojas Russell et al., 2011). Phillips et al. (2015) found that technology has been shown



to increase the quality of care and increase nurses' overall satisfaction with the care provided. Purdy et al. (2010) showed that nurses' assessments of the quality of care were influenced by structural empowerment whereby employees can feel motivated and have self-determination over their work activities which ultimately influence nurses' overall personal judgments of the quality of nursing care delivered. As shown in this section, there are different factors that could affect nurse perceptions of the quality of nursing care that they provide to their patients and in turn, shapes their level of satisfaction with quality of care (Nobahar, 2017).

### ***Nurse Satisfaction with the Quality of Nursing Care***

Satisfaction with the quality of nursing care is essential to measure for the following reasons. Firstly, nurses should evaluate their level of satisfaction with the quality of care to ensure they are providing the best care to each patient (Aron, 2015). From the perspectives of nurses, the nursing profession strives to provide meaningful work (Drach-Zahavy, 2004), that leads to increased job satisfaction (Kusk & Groenkjaer, 2016; Sellick et al., 2003). Although previous studies explained the importance of measuring satisfaction with the quality of care from the perspectives of nurses and patients (Aron, 2015; Peltier & Dahl, 2009), most studies have focused on measuring satisfaction with care from only the patient's perspective (Goh et al., 2016; Karaca & Durna, 2019; Reck, 2013). For example, patient satisfaction with nursing care was the most important predictor of overall satisfaction with hospital care in various studies (Goh et al., 2016; Laschinger et al., 2005; Mohanan et al., 2010; Reck, 2013). In addition, measuring patient satisfaction with nursing care was considered as an effective way to enhance nursing service quality by allowing for the creation of new care standards that incorporate the needs and views of the recipients of care (Akin & Erdoğan, 2007; Senarat

& Gunawardena, 2011; Tang et al., 2013). Patient satisfaction has been mentioned as a concept that was associated with the quality of nursing care (Aspinal et al., 2003; Jennings & Staggers, 1999; Lin, 1996). The level of satisfaction with quality of care from the nurse perspective may be assessed by focusing on key elements of the work environment. Previous studies showed that availability of resources and supplies, having enough staff in each shift, spending enough time in each task, and organizational support were the crucial components of measuring the level of satisfaction with quality of care (Aiken et al., 2002; Burhans & Alligood, 2010; Hogston, 1995; Mrayyan, 2006). Thus, measuring nurse satisfaction with the quality of care is an essential and indirect (i.e. proxy) way to measure the actual quality of care.

### ***Measuring Nurses' Perceptions of Quality of Care***

Some approaches to measuring nurses' perceptions of the quality of nursing care have been reported in the nursing literature. La Sala et al. (2017) developed a scale that measures intensive care unit (ICU) nursing care quality and it reflects the different aspects of the underlying conceptual model: i.e. the organizational structure, process of care and nursing outcomes in Doran et al.'s Nursing Role Effectiveness Model (2002). However, this scale consists of 63 items focusing only on the quality of nursing care in the ICU. Another scale developed to measure the nurses' perception of the activities that contribute to nursing care quality (Martins et al., 2016) consists of 25 items using seven subthemes, including patient satisfaction, health promotion, prevention of complications, well-being and self-care, functional readaptation, nursing care organization, and responsibility and rigour. Although this scale was validated, it mainly focuses on measuring activities that contribute to nursing care quality without paying attention to nurses' level of satisfaction with the care they provide to their patients.

In a statewide study of American acute care nurses, Sochalski (2004) reported that 43% of the variance in nurse-assessed quality of care was accounted for by nursing tasks (such as, skin care, discharge planning and patient teaching) that were not finished due to lack of time as well as the occurrence of medication errors and patient falls. Since that study there has been a significant increase in research on the issue of unfinished or missed nursing care, which may be considered as a salient aspect of the quality of care. Based on findings of a qualitative study, Kalisch and Williams (2009) developed a questionnaire to measure missed nursing care and the reasons for missed nursing care. The questionnaire is called The Missed Nursing Care Survey (MISSCARE Survey) and consists of two parts: nursing care actions (22 questions) and reasons for missed care (16 questions) to assess the components of missed care and to evaluate the key reasons for missed care including, communication, labor resources, and material resources (Kalisch & Williams, 2009). This scale does cover the key elements of missed care, yet the essential elements of quality of care and the level of satisfaction with providing care were not the purpose of this scale.

Nurses' perceptions of the quality of care on their unit or organization is another approach to measuring care quality that is frequently used in nursing studies. The measure is a one item question from the International Survey of Hospital Staffing and Organization of Patient Outcomes (Aiken et al. 2001). This single item is "In general, how would you describe the quality of nursing care delivered to patients on your unit on your last shift?" and is rated on a 4-point Likert scale from 1 (poor) to 4 (excellent). Although this item has been used repeatedly in large scale nursing studies (Aiken et al., 2002; Laschinger & Fida, 2015; Smith et al., 2020; Van Bogaert et al., 2009; Van Bogaert et al., 2013) and it captures nurses' perceptions of the quality of care in a

practical and feasible manner, it could be criticized for being too simplistic and failing to incorporate the key elements of care quality that are important to nurses' satisfaction with the care they provide. Thus, the purpose of this paper was to test the psychometric properties of a scale that was developed to measure satisfaction with the quality of nursing care from the nurse's perspective.

### **Development of the Nurse Satisfaction with Quality of Care Scale (NSQC)**

As mentioned above, there is no existing published scale designed to measure nurse satisfaction with the quality of care. Thus, Laschinger and Kerr developed a scale to measure nurse satisfaction with the nursing care, although this scale has not yet been published or tested for psychometric analysis. The Nurse Satisfaction with the Quality of Care Scale (NSQC) consists of five items, rated on a five-point Likert-type scale ranging from 1 (very dissatisfied) to 5 (very satisfied). Laschinger and Kerr (unpublished) developed the items of this scale for use in the National Survey of the Work and Health of Nurses (NSWHN) in Canada as part of the NSWHN's Perception of Quality of Care section. The NSWHN questionnaire included nine questions related to nurses' perceptions about patient care activities during the last shift they worked in their clinical areas (Statistics Canada, 2005). The following six items are examples of the questions included: 1. "Was your last shift during the day, evening or night?"; 2. "Do you think the staffing level in this clinical area was adequate?"; 3. "Overall, how would you describe the quality of patient care delivered by your team during that shift?"; 4. "How would you describe the quality of patient care you provided during that shift?"; 5. "Why do you feel the care has improved?"; and 6. "Why do you feel the care has deteriorated?" The nine items from the NSWHN were used as the basis for a shortened 5-item version that is examined in this study. The five items retained were focused specifically on the

perceptions of care delivered. Laschinger and Kerr developed the quality of care items based on the key quality of nursing care recommendations from The Nursing Sector Study in its Phase II final report. The second phase of the Nursing Sector Study aimed to develop a pan-Canadian nursing human resource strategy in consultation with government and non-government stakeholders that built on the findings and recommendations presented at the completion of Phase I (The Nursing Sector Study Corporation, 2006). The five items developed for the scale reflected five key areas referred to in the report. Therefore, the new scale was designed to measure nurse satisfaction with the quality of care they provided although no other published studies have described the psychometric properties of this scale to date. As shown in Table 7, the scale consists of five items that measure nurses level of satisfaction with the type of care they provide, the time they spend with each patient, the availability of resources and staffing and overall care provided in the unit. The scale was designed so that the time frame is not stated, in comparison with other questionnaires that focus on nurse perceptions regarding to the quality of care based on the last shift. Thus, this scale has an open time frame in order for nurses to provide a more general assessment of their satisfaction with the care delivered.

There is a gap in the literature in addressing research tools to measure perceived satisfaction with the quality of nursing care provided by nurses, so this study was designed to assess the psychometric properties of a researcher-developed instrument measuring nurse satisfaction with the quality of care.

**Table 7**

*The Nurse Satisfaction with the Quality of Care Scale (NSQC)*

<b>Satisfaction with Care / Service:</b> Please indicate how much you are satisfied with the following statements as they relate to your work at the Hospital. Please circle the number that corresponds to your answer.					
<b>How satisfied are you with ...</b>	<b>Very Dissatisfied</b>	<b>Dissatisfied</b>	<b>Neutral</b>	<b>Satisfied</b>	<b>Very Satisfied</b>
1. the type of care you can provide to patients in this unit/clinic.	1	2	3	4	5
2. the amount of time you can spend with patients in this unit/clinic.	1	2	3	4	5
3. the level of staffing that is available for patient care in this unit/clinic.	1	2	3	4	5
4. the availability of other resources needed for patient care in this unit/clinic.	1	2	3	4	5
5. the overall quality of care patients receive in this unit/clinic.	1	2	3	4	5

## Methods

### Sample and Setting

Two hundred nurses were selected to complete the survey used for the psychometric analysis of nurse satisfaction with the quality of care scale. The sample was drawn from 656 subjects obtained for a larger study that examined the relationships among authentic leadership, psychological safety, work engagement, team effectiveness, job turnover intentions, and satisfaction with the quality of care among nurses who work on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia. A total of 656 out of the 1130 questionnaires

distributed were completed and returned in that study for a response rate of 58%. Non-probability, convenience sampling was used to select the 656 main study participants because it was the most appropriate sampling method due to the lack of a complete roster of all nurses working in public hospitals in Saudi Arabia (as required for random sampling to be possible). The 200 subjects used in this study were randomly selected from the 656 obtained for the larger study by using SPSS. A forum sample size calculation was not obtained, although 200 subjects can be considered an adequate sample for conducting a factor analysis (Kline, 2005). Ethical approval for the studies was obtained from the Saudi Ministry of Health and the Western University Human Research Ethics Board.

The study subjects were recruited from three public hospitals in three different cities in Saudi Arabia, including Makkah, Taif, and Jeddah for approximately four months during 2019 (May- August). The three hospitals are all located in the west region of Saudi Arabia where the biggest public hospitals in Saudi Arabia are in the west part of Saudi Arabia, and the majority of people in Saudi Arabia get treatment in public hospitals. This targeted subject recruitment approach for the larger study helped to facilitate data collection and increased the likelihood of attaining the sample size needed for the study. For this methodological sub-study, 200 of the 656 participants from the main study were randomly selected for the psychometric analysis of nurse satisfaction with the quality of care scale. These 200 subjects were used only for this analysis (i.e. as a “training” data set) as they were not included in subsequent analyses using the newly tested NSQC.

### **Inclusion/Exclusion Criteria**

Participants in this study were selected based on the following criteria: they were registered nurses in Saudi Arabia; worked on inpatient units and/or outpatient clinics, in

one of the hospitals in three cities chosen; had six months or more of experience in their current department to ensure familiarity with the setting and their manager; were in direct nursing care positions; were willing to participate in the study; and were capable of completing the survey in English. Nurses were excluded if they had less than six months experience on the current unit; were on leave such as annual, sick, education, emergency or maternity leave; or were not in direct nursing care positions, such as management or administration positions.

### **Data Collection Procedures**

Surveys were distributed to 1130 nurses who worked on inpatient units and outpatient clinics in the selected hospitals, comprising approximately 30% of the total number of available nurses from each of the three-selected hospitals. Based on the previous studies done in Saudi Arabia, a provisional 40 to 50% response rate was estimated (Alghamdi et al., 2018; Alotaibi et al., 2016; Asiri et al., 2016). Thus, a total of 656 usable surveys out of the 1130 distributed questionnaires were completed and returned for a response rate of 58%. The quality management departments in each of the selected hospitals were responsible to inform nurses about the study. Nurses received the questionnaire and a letter of information about the study. Nurses placed the completed questionnaire in a lockable box provided on each unit to ensure confidentiality. The primary researcher collected the returned surveys weekly from the lock boxes in the participating hospitals. Returning the completed survey back was construed as implied consent, indicating that the nurse agreed to participate in the study.

### **Instrumentation**

The NSQC scale is a self-administrated 5-item scale designed to measure nurse satisfaction with the quality of care that they provide to their patients (see Table 2).



Nurses rate their level of satisfaction for each item on the NSQC from 1 (very dissatisfied) to 5 (very satisfied), with higher scores indicating higher levels of satisfaction. A demographic questionnaire was also used to gather descriptive information about the study participants.

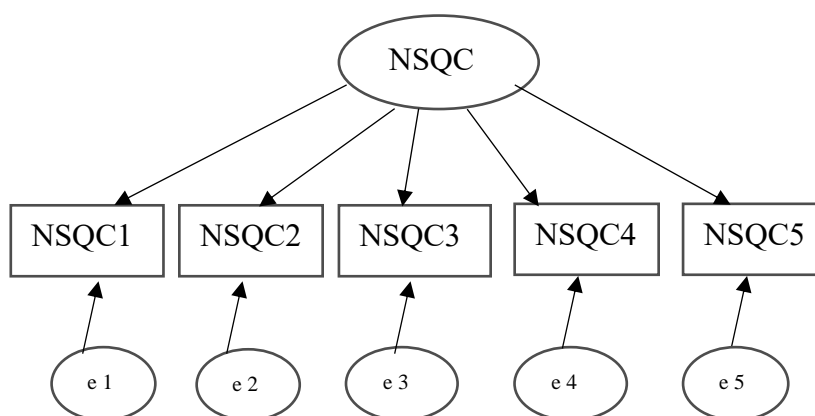
### **Data Analysis**

Two statistical packages were used to analyze data, including the Statistical Package for Social Sciences (SPSS 25) (IBM Corp, 2017) and Mplus 8 (Muthén & Muthén, 2017). To deal with missing data, maximum likelihood (ML) estimation was used in Mplus. There was no missing data for the five items of the scale, as all missing data occurred in the demographic part of the study survey. Thus, missing data were assessed in SPSS as percentages based on the number of non-missing values by default for the descriptive demographic part. Little's Missing Completely at Random (MCAR) was used to determine if data were missing completely at random. The results of MCAR (Chi-Square = 0.95,  $df = 1$ ,  $p = 0.32$ ) indicated that the demographic data were missing completely at random. The Cronbach's alpha reliability coefficient was used to determine the scale's internal consistency. Item loadings and factorial validity of the scale were examined using a two-step factor analysis process. First, the scale's dimensionality was examined by using exploratory factor analysis to test for redundant items and the appropriate number of factors (using factor loadings higher than 0.35). Second, confirmatory factor analysis was used to test the fit of the data with the goodness-of-fit of the model based on the following criteria: Chi-square ( $\chi^2$ ), degrees of freedom ( $df$ ), root mean square error of approximation (RMSEA) (the required score is  $<0.06$ ), standardized root mean square residual (SRMR) (the required score is  $<0.08$ ), and comparative fit index (CFI) (the required score is  $>0.95$ ) (Byrne, 2012;

Hair et al., 2010). Figure 2 illustrates the CFA model that consists of five observed variables (i.e questionnaire items).

**Figure 2**

*The CFA Model of the Nurse Satisfaction with Quality of Care (NSQC) Scale Items*



NSQC; Nurse Satisfaction with Quality of Care

## Results

### Sample Characteristics

Demographic data are presented for the 200 nurses in Table 8. Most respondents were female (92%) and the mean age was 32 years ( $SD= 6.56$ ). The mean of years of experience as registered nurses was 9 years ( $SD= 5.99$ ) and at their current unit was 5 years ( $SD= 4.46$ ). Most nurses were not Saudi nationals (including Indian 44.5 %, Filipino 26%, other 3.5%) with Saudis accounting for only 25% of the total. Most nurses (68%) had a Bachelor's of Nursing degree while 30% held a diploma in nursing, and just 2% held a Master's degree in nursing. Nurses worked in a variety of different departments such as medical unit 17%, surgical unit 28%, ICU 7%, and 7.5% cardiac units. Most of the nurses (54%) were from Jeddah while 26% from Makkah and 20% from in Taif. Lastly, most nurses (72.5%) reported that they have contact with their head nurses at least once per day.

**Table 8***Demographic Characteristics – Frequencies and Means*

<b>Demographic characteristics</b>	<b><i>n</i></b>	<b><i>%</i></b>
Sex	200	100
Male	16	8
Female	184	92
Nationality	200	100
Saudi	52	25
Indian	89	44.5
Filipino	52	26
Other	7	3.5
Highest education	200	100
Nursing Diploma	60	30
Bachelors of Nursing	136	68
Master Degree in Nursing	4	2
Current area of work	200	100
Medical unit	34	17
Surgical unit	56	28
Cardiac unit	15	7.5
ICU	14	7
Orthopedic unit	13	6.5
Outpatient	10	5
Other	58	29
City of work	200	100
Makkah	52	26
Jeddah	108	54
Taif	40	20
Frequency interaction with head nurse	200	100
Once or twice per year	4	2
Once a month	6	3
Once every other week	6	3
1-2 times per week	10	5
3-4 times per week	29	14.5
At least once per day	145	72.5
	<b><i>M</i></b>	<b><i>SD</i></b>
Age	32.18	6.56
Years of experience in nursing	9.09	5.99
Years employment at current unit	5.29	4.46
Years living in Saudi Arabia	30.94	41.29

## Descriptive Statistics

The means for the each of the 5 items from the NSQC ranged from a low of 2.75 for item 3 (satisfaction with the level of staffing that is available for patient care in this unit/clinic) to a high of 3.76 for item 1 (the type of care you can provide to patients in this unit/clinic). The standard deviations are similar for the 5 items, and there were no outliers observed. The Cronbach's alpha for the five items of the NSQC was 0.80, indicating that the scale is reliable. Table 9 illustrates the descriptive statistics of the five items of the scale.

**Table 9**

*Descriptive Statistics of the Five Items of the Scale*

Items	Mean	Std. Deviation	N	Skewness	Kurtosis
1- the type of care you can provide to patients in this unit/clinic.	3.76	0.84	200	-1.08	1.94
2- the amount of time you can spend with patients in this unit/clinic.	3.64	0.85	200	-0.77	0.93
3- the level of staffing that is available for patient care in this unit/clinic.	2.75	1.19	200	0.07	-1.00
4- the availability of other resources needed for patient care in this unit/clinic.	3.04	1.03	200	-0.10	-0.63
5- the overall quality of care patients receive in this unit/clinic.	3.51	0.94	200	-0.62	0.53

## Exploratory Factor Analysis

The results of the exploratory factor analyses with oblimin rotation showed that a one-factor solution with the 5 observed variables is recommended for the following reasons. Firstly, the initial Eigen values from the EFA support a one factor solution. This factor accounts for 57.58% of the variance in the five items. In addition, the scree plot figure shows that there is only one factor with an Eigen value above 1. The results of Kaiser-Meyer-Olkin (KMO) to measure the sampling adequacy (0.74) and Bartlett's test of sphericity (Chi-Square = 383.26,  $df = 10$ ,  $p = <0.001$ ) also support the one factor structure. Finally, the factor loadings were all in the acceptable range, (from 0.58 to 0.74) (see Appendix A).

### **Confirmatory Factor Analysis**

The fit statistics of the CFA model are presented in Table 10. The results of the analysis of the original model of the 5 observed variables were:  $\chi^2 (5) = 89.96$ ,  $p < 0.001$ , SRMR = 0.08, RMSEA = 0.29 (90% CI = 0.24–0.34), CFI = 0.77. Based on the results of fit indices, the model did not have an adequate fit. The modification that was made was based on the modification indices suggested by the Lagrange multiplier tests and indicated a need to correlate the error terms between the residuals for item 3 (“the level of staffing that is available for patient care in this unit/clinic”) and item 4 (“the availability of other resources needed for patient care in this unit/clinic”) which suggested that these two items may be theoretically similar (Brown, 2015). These items could be theoretically similar because they measure the availability of two essential components of the quality of care in the unit which are staff and resources. It does make sense as the availability of staff and resources are considered as essential elements of satisfaction with quality of care in the practice. Also, staff and resources are the foundation of the care that each patient needs to receive the best care.

The results of CFA show there is an error correlation between the residuals of the two items. Thus, allowing for this correlation of the errors between the residuals improved the goodness of fit indices  $\chi^2(4) = 9.92$ ,  $p = 0.04$ , SRMR = 0.02, RMSEA = 0.08 (90% CI = 0.01–0.15), CFI = 0.98. The fit of the final model was therefore improved, as evidenced by the fit indices shown in Table 10.

**Table 10**

*Summary of Original Model and the Model Modification*

<b>Model</b>	<b>Summary of modifications</b>	<b><math>\chi^2(df)</math></b>	<b><math>p</math></b>	<b>RMSEA</b>	<b>CFI</b>	<b>SRMR</b>
Original	N/A	89.96 (5)	0.001	0.29 CI: 0.24-0.34	0.77	0.08
Modification 1	Allowing the correlation of errors between the residuals of items 3 and 4	9.92 (4)	0.04	0.08 CI: 0.01-0.15	0.98	0.02

The range of factor loadings was 0.44 - 0.76. All loadings factors were statistically significant  $p < 0.001$ . Table 11 explains the factor loadings of the five items before and after modification. Figure 3 illustrates the standardized factor loadings of the five observed variables model as well as the correlation between two observed variables residuals for item 3 (the level of staffing that is available for patient care in this unit/clinic) and item 4 (the availability of other resources needed for patient care in this unit/clinic). The correlation between them was 0.60 and statistically significant  $p < 0.001$ . The correlations between observed variables ranged between 0.33- 0.70 (Appendix B).

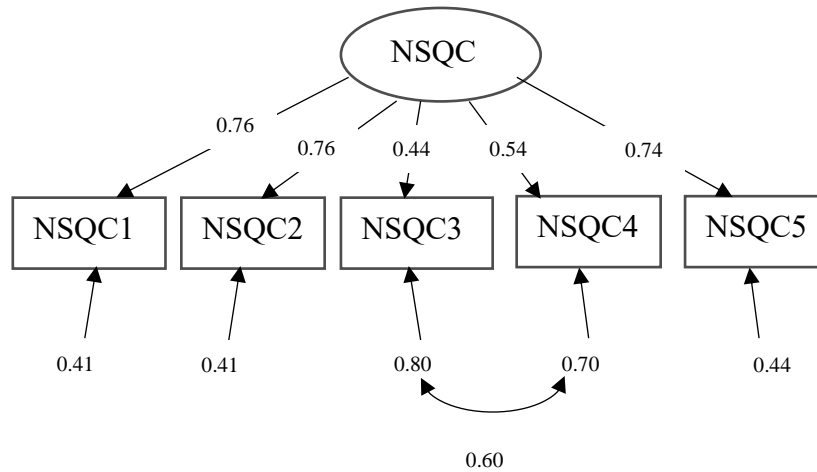
**Table 11**

*Loadings Factors of the Five Items Before and After Modification*

Items		Unstandardized <i>B</i>	Standardized <i>β</i>	<i>P</i>
Before modification	NSQC 1	1.00	0.70	< .001
	NSQC 2	1.03	0.71	< .001
	NSQC 3	1.17	0.58	< .001
	NSQC 4	1.15	0.66	< .001
	NSQC 5	1.18	0.74	< .001
After modification	NSQC 1	1.00	0.76	< .001
	NSQC 2	1.02	0.76	< .001
	NSQC 3	0.83	0.44	< .001
	NSQC 4	0.88	0.54	< .001
	NSQC 5	1.09	0.74	< .001

**Figure 3**

*The Standardized Observed Variables Loadings Model*



NSQC; Nurse Satisfaction with Quality of Care

Note. All coefficients statistically significant ( $p < .001$ )

## Discussion

The purpose of this study was to test the psychometric properties of an unpublished instrument measuring nurse satisfaction with the quality of care. Exploratory factor analysis and confirmatory factor analysis were used to test the structural validity of

the scale as well as Cronbach's alpha to assess the reliability. It is essential for nurses to be aware of the quality of care that they provide for their patients as this helps to maximize their satisfaction with the care and the quality of their patients' outcomes (Karaca & Durna, 2019; Pahlavanzadeh et al., 2016). As previously mentioned, no pre-existing standardized scale was found to measure nurse satisfaction with the quality of care that they provide. Although the various definitions of quality of care can complicate its assessment, in this study, the focus was on measuring nurses' perceptions of their satisfaction with the quality of care provided in their unit. By focusing on nurses' degree of satisfaction with specific elements of quality of care such as the type of care they provide, the time they spend with each patient, the availability of resources and staffing and overall care provided in the unit, this scale provides more information than a single-item global, or overall quality of care rating could provide.

The range of the means for the five items was 2.75 - 3.76. The highest mean score was for the item relating to the type of care provided to patients in the unit/clinic) while the lowest mean was for the level of staffing that is available for patient care in the unit/clinic. The results supported previous studies that showed that adequate staffing is a significant issue in some countries such as the United States and Europe (Aiken et al., 2012; Aiken et al., 2013). It is also considered to be an important issue in Saudi Arabia, where Alharbi et al. (2019) found that supporting nurses through adequate staffing could improve the quality of nursing work life in Saudi Arabian hospitals.

The results of this study suggested that the NSQC scale is a valid and reliable research tool. The results support a one factor solution that consists of the five items as the best fit for the scale, with all five items correlated to one factor. No item was eliminated which means that these five items appear to all independently contribute to



measuring nurse satisfaction with the quality of care. The range of the loadings factor was 0.58 - 0.74, which are considered acceptable loading values (Tabachnick & Fidell, 2007).

The results of the CFA also showed that the range of factor loadings was 0.44 - 0.76, and the range for the correlation between them was 0.33 - 0.70. Only one minor modification was made which was allowing the correlation of errors between the residuals of two items to improve the model fit. These two items are the level of staffing that is available for patient care in this unit/clinic and availability of other resources needed for patient care in this unit/clinic. Allowing the correlation between the residuals of these two items suggests that these items could be theoretically similar, possibly because they measure the availability of two essential components of the quality of care in the unit which are staff and resources. The correlation makes sense as the availability of staff and resources are considered as essential elements of satisfaction with quality of care in the practice. Also, staff and resources are the foundation of the care that each patient needs to receive the best care. Previous studies often combine the availability of staffing and resources as one element when it comes to the quality of care (Aiken et al., 2002; Aiken et al., 2012; Mrayyan, 2006). Thus, these two elements are the foundation of any care that is provided for patients.

Assessing the reliability and validity of a research instrument helps future studies intending to use the scale. The importance of measuring nurse satisfaction with the quality of care to ensure providing the best care was demonstrated in previous research (Aiken et al., 2013; Aron, 2015). Because nurses are considered as the largest group who provide healthcare for patients in most healthcare organization (Fitzpatrick, 2017), evaluating the quality of care that they provide and assessing their level of satisfaction

with nursing care is essential (Aiken et al., 2012). The five items of this scale summarize what has been found in the literature in terms of the factors that could determine nurses' level of satisfaction with quality of care. Availability of resources and supplies, adequate staff and organizational support were essential components of providing nursing care with high level of satisfaction (Aiken et al., 2002; Aiken et al., 2012; Bennett, 2011; Rojas Russell et al., 2011). Additionally, Hogston (1995) explained that quality of nursing care mainly depends on having enough staff, having enough skills, and allowing time to be spent with patients, three key concepts that were used as items in the scale. Other studies mentioned that one of the most significant factors that affects nurse satisfaction and nurses' evaluations of the quality of care is the work environment and the availability of equipment (Aiken et al., 2011; Van Bogaert et al., 2010). Tervo-Heikkinen et al. (2008) also illustrated that the proportion of registered nurses in relation to all staff and their work experience can also affect their overall nurse satisfaction. Thus, the five items of the scale were related to these elements that determine how nurses are satisfied with the type of care, amount of time spending with patients, adequate staff, availability of resources and the overall quality of care.

The results of this study suggest that these five items represent a reliable and valid way to measure nurse satisfaction with the quality of care, based on the statistical results and the theoretical approach used. These five items represent the level of nurse satisfaction with the type of care they provide to patients, the amount of time they spend with patients, the availability of staff, the availability of resources, and the overall quality of care that are needed to meet patients need regarding to nursing care. The focus of the scale was on patient centred-care, which has been reported to be the prime indicator of quality of nursing care (Charalambous et al., 2009). Therefore, the items of the scale were

found to conceptually map onto key measure of nurse satisfaction with the quality of care. Also, this scale could help to assess the level of satisfaction with quality of the nursing care provided by nurses. The following section briefly discusses the implications of the findings for nursing practice and future research.

### **Implications for Nursing Practice**

Currently we are experiencing a rapid change in healthcare practice combined with an increase in patients' needs (Reynolds & Lawless, 2017). This increases the complexity of the care provided by healthcare professionals (Kuziemy, 2016). Increasing demand for health care, rising costs and demands for resources, and evidence of variations in clinical practice have maximized the interest in measuring and improving the quality of care in many countries (Aljuaid et al., 2016; Campbell et al., 2000). Monitoring nurse satisfaction of the quality of care requires a valid and reliable scale to provide useful data on their perceptions on the quality of care provided (Campbell et al., 2000). As the main providers of care in hospital settings, nurse satisfaction with the quality of care should be monitored in order to adjust practices to enhance patients' outcomes.

The results of this study could help organizations monitor staff nurses' perceptions of the quality of care they provide. As the sample for this study was drawn from different hospitals and different types of units and clinics, it suggests that nurses who work in different acute care departments including inpatients and outpatients can use this scale. Also, leaders and managers can use the tool to assess the level of satisfaction among nurses working in their departments regarding to the quality care that they provide to their patients in order to help improve both nurse and patient outcomes. As it consists of only 5 items it needs just a few minutes to complete, an important consideration given

that nurses are always busy (Hietapakka et al., 2019). As a result, healthcare organizations can use this scale as a way to monitor nurse satisfaction with the quality of patient care and motivate nurses to assess and improve the care, which in turns affects their job satisfaction.

### **Recommendations for Future Studies**

The findings of the study suggest the following for future research. First, it is found that there is a significant gap in the literature in terms of defining the quality of care from nurses' perspectives, so future studies need to focus on defining the aspect(s) of the quality of nursing care being assessed. This will help researchers to develop more valid and reliable scales that measure the quality of nursing care and nurse satisfaction with that care. In addition, as this scale has not been used in previous studies, there is a need to further test the scale using different study designs, such as cross-sectional, non-experimental, longitudinal, quasi-experimental or experimental designs. More studies are also needed to test this scale in different contexts and cultures, which helps to ensure the validity and reliability of the scale. There is an essential need for future studies to focus on measuring and considering satisfaction with the quality of nursing care from nurses' perspective and its relationships with more directly assessed outcomes (i.e. objective measures) for the quality of nursing care.

### **Limitations**

Although the results suggest the NSQC tool may be psychometrically sound, some limitations are evident. The first limitation related to the scale is that the tool was not designed for the Saudi context. This potentially affects the validity and reliability of the instrument since different cultures could impact how it is interpreted, however the results suggest that the scale was reliable and valid in the Saudi context despite being

developed based on recommendations from a nursing task force in Canada. Common method variance (CMV) could also be another limitation for this study because all data were collected at the same time through a self-report instrument. In addition, the scale focuses on measuring nurse satisfaction with the quality of care not the observed quality of care which could be a limitation for the scale to be specific for satisfaction with the quality of care. One additional limitation to consider is that data were collected from specific hospitals all located in the west region of Saudi Arabia which could affect the generalizability of the study.

### **Conclusions**

The findings of this study provide evidence for the psychometric properties of a new tool that measure nurse satisfaction with the quality of care. The scale was found to be reliable and valid for use by nurses in hospital-based practices in Saudi Arabia. The scale consists of five items developed to measure nurse satisfaction with the quality of care provided in their practice area. EFA and CFA results provide evidence that this scale measure nurse satisfaction with the quality of care while the result of Cronbach's alpha indicated the reliability of the scale. The quality of nursing care has a significant impact on patient, nurse and healthcare organization outcomes, so the benefits of using this scale could extend to hospital management, clinical nursing practice, and future research. This tool is useful not only for nurses and nursing practice, but also for healthcare organizations seeking to improve patients' outcomes and encourage nurses to provide high quality of nursing care. There is need for future studies to use this scale in various contexts so that its psychometric properties and the links with observed quality of care can be further established.

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**CHAPTER FOUR**  
**THE INFLUENCE OF AUTHENTIC LEADERSHIP ON NURSES' TURNOVER**  
**INTENTIONS AND SATISFACTION WITH QUALITY OF CARE IN SAUDI**  
**ARABIA: A CROSS-SECTIONAL STUDY**

**Abstract**

**Purpose:** The purpose of this study was to test a model that examined the relationships between authentic leadership, psychological safety, work engagement, and team effectiveness, and the subsequent effects of team effectiveness on job turnover intentions and nurse satisfaction with quality of care among nurses who work on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia.

**Background:** Nurse leaders who exhibit authentic leadership have been shown to contribute to the development of healthy work environments. In workplaces with demonstrated authentic leadership, nurses are more engaged in their work and have lower job turnover intentions. Also, the effects of authentic leadership may extend to teams and organizations which in turn can positively influence outcomes for nurses, patients, and healthcare organizations. In Saudi Arabia, high job turnover intentions among many nurses is a serious issue with a variety of contributing factors.

**Methods:** The study model was based on Avolio et al.'s theory (2004) of authentic leadership. A non-experimental, predictive, correlational, cross-sectional, self-reported survey design was used to test the hypothesized model via structural equation modelling (SEM). Using a convenience sample of 656 registered nurses, study variables were measured by the Authentic Leadership Questionnaire (ALQ), the Psychological Safety

Scale, the Utrecht Work Engagement Scale (UWES), the Technical Quality Subscale, the Job Turnover Intentions Scale, and Nurse Satisfaction with the Quality of Care Scale.

**Findings:** The SEM analysis indicated a good fit for the hypothesized model. Authentic leadership had a positive, significant, and direct relationship with team effectiveness as well as an indirect relationship through work engagement. Also, authentic leadership had positive and significant relationships with nurses' work engagement and psychological safety. Work engagement had a significant positive relationship with team effectiveness and an indirect positive relationship with nurse satisfaction with the quality of care through team effectiveness. As hypothesized, team effectiveness was found to be negatively related to job turnover intentions and positively related to nurse satisfaction with quality of care.

**Conclusions and Implication:** The results of this study may help nursing leaders and managers in Saudi Arabia have a better understanding of the essential role of leadership style in increasing healthy nursing work environments for both leaders and followers. Improving work environments of staff nurses in Saudi Arabia through leadership development programs may decrease nurses' intention to leave their jobs and enhance the quality of care delivered to patients.

*Keywords:* authentic leadership, psychological safety, work engagement, team effectiveness, turnover intentions, satisfaction with the quality of care, Saudi Arabia, nurses

## **Introduction**

The shortage of qualified nurses has become a critical issue all over the world leading to many potentially negative impacts on patients, nurses and healthcare services in general (AL-Dossary, 2018; El-Jardali et al., 2009). A high level of turnover among healthcare professionals, especially nurses, may be the major contributor to the chronic shortage of nurses in Saudi Arabia (Aboshaiqah, 2016). Although the impact of nursing turnover may vary across different countries, its impact on the Saudi healthcare system is potentially more serious than other countries because of the lack of qualified nationally trained nurses (Aboshaiqah, 2016; Bin Saeed, 1995). Findings of studies have shown that more than half of the nurses working in Saudi hospitals reported they intend to leave the job, or even worse the entire profession, which has led to a serious shortage in the Saudi nursing workforce (Almalki et al., 2012). Almalki et al. (2012) identified reasons for this increase in turnover intention rates in Saudi Arabia, including the poor public image of nursing in Saudi Arabia and the lack of accountability for employee and management departments. There are other factors in the work context that may influence nurses' turnover intentions such as the quality of management and supervision, relationships with co-workers, number of professional opportunities, and the supportiveness of the work climate (Almalki et al., 2012). The concept of job turnover intentions is different from actual turnover, thus turnover intentions is defined as the intention of employees to quit their jobs at their current organizations (Ali, 2008). Actual turnover is defined as the number of organizational members who have left their jobs during a specific period (Price, 1977). Nurse turnover is a challenge for many healthcare organizations as it has negative consequences for healthcare organizations as well as the profession (Al-Ahmadi,

2014). For example, nurse turnover may affect the organization's capacity to meet patient needs and provide quality care, and it can decrease morale because of increased stress from excessive workloads (Falatah & Salem, 2018).

Some of the factors that may influence nurses' turnover intentions are the same factors that affect nurses' job satisfaction, including rewards and recognition, scheduling and shift work, work culture, work conditions, the clinical environment, autonomy and empowerment, leadership, communication, and demographic characteristics (Hayes et al., 2010; Lu, Barriball et al., 2012; Manley, 2004). Leadership has a vital role in enacting structural changes and creating hospital environments that support and motivate staff nurses. Leaders share responsibility for the retention of their staff nurses and may influence staff turnover intentions (Abualrub & Alghamdi, 2012).

Leadership behaviour is also one of the factors that can influence an employee's experience of psychological safety (Hirak et al., 2012; Nembhard et al., 2006).

Psychological safety is a shared belief that the work environment is conducive to interpersonal risk-taking; for instance, employees in a team from a safe environment can speak up without fear of retaliation in response (Edmondson, 1999). Edmondson (1999) defined team psychological safety as a shared belief, so the group members feel safe to express their ideas and thoughts with colleagues. A psychologically safe environment fosters honesty and safety for staff when they present ideas and admit errors (Carmeli et al., 2010). Otherwise, they may feel unsafe to ask questions and take other interpersonal risks which can, in turn, increase the risk for error and poor outcomes (Carmeli et al., 2009; Edmondson, 2004). Leaders or managers can use their leadership style to create the template for enhancing engagement, psychological safety and relationship formation (Edmondson, 2004).

Leadership style more specifically, the authentic leadership approach or style, has been shown to positively influence other work attitudes and behaviours of staff, such as work engagement (Avolio et al., 2004; Wong, 2008; Wong & Cummings, 2009). Work engagement may also be influenced by other factors, including work experience (Bjarnadottir, 2011), peer relations and support in addition to good leadership and communication (Jenaro et al., 2011). Work engagement was found to be a significant factor that positively affects the healthcare environment and is related to lower healthcare costs (Aboshaiqah, 2016). In addition, authentic leadership was found to have an indirect effect on team effectiveness through structural empowerment and social capital (Read, 2016).

Leadership style was also found to be a significant factor affecting the quality of nursing care in Saudi Arabia, in addition to other factors such as numbers of nurses, adequate skills, caring attitudes, effective communication, and effective community participation (Abualrub & Alghamdi, 2012). In other settings leadership has been linked with other patient quality of care outcomes such as falls, skin integrity, nosocomial infection rates, and satisfaction with care (Loan et al., 2003).

Therefore, in this study, nurses in Saudi Arabia were surveyed to test the direct and indirect relationships between authentic leadership of managers with nurses' job turnover intentions and their satisfaction with quality of care delivered while considering the possible mediating roles of psychological safety, work engagement and team effectiveness.

## **Background**

According to the Saudi Arabian Ministry of Health (2013), 50.3 % of the healthcare workforce in Saudi Arabia are nurses. However, Saudi Arabia is struggling

with a nursing shortage and increasing turnover rates (Almalki et al., 2011). Therefore, locally trained nurses account for only 36.5 % of the workforce in the healthcare system in general (AL-Dossary, 2018). Table 12 presents the total number of Saudi and non-Saudi nurses working in all healthcare sectors in Saudi Arabia (AL-Dossary, 2018). Healthcare organizations face significant challenges to offer high quality healthcare services because of the shortage of nursing staff needed to meet patients' needs (Alsadah, 2017). In addition, most nurses in Saudi Arabia are female, so nursing is considered as a female career. On the other hand, working in nursing requires staff to be in hospitals for long hours, often on night shifts, both of which may run counter to Saudi cultural expectations for women. A number of factors may contribute to the shortage in nursing and the high turnover rates, and thus, further study is required to better understand the different dimensions that influence nurses' careers, their work engagement, and their retention at work (Alsadah, 2017).

**Table 12**

*The Total Number of Nurses in Saudi Arabia*

<b>Sector</b>	<b>No.</b>	<b>Saudis</b>	<b>%</b>	<b>Non - Saudi</b>	<b>%</b>
Ministry of Health	101 256	58 274	57.55	42 982	42.45
Other government facilities	36 927	5518	14.9	31 409	85.1
Private sector	42 638	2265	5.3	40 373	94.7
Total	180 821	66 057	36.5	114 764	63.5



Nursing leadership has an essential impact on enhancing nurses' outcomes as nurses represent the largest segment of the healthcare workforce compared with other health professions (Marquis & Huston, 2015). Leaders in any healthcare organization are responsible for facilitating changes that can lead to achieving high standards of patient care outcomes (Sullivan & Garland, 2010). Alkahtani (2016) found that leadership is the most effective factor that influences employees' attitudes and behaviours. For example, the lack of support from supervisors was the factor that most affected nurses' turnover intentions in Saudi Arabia, and the relationship with their supervisors could lead to negative impacts such as high turnover intentions and low job satisfaction (Alotaibi et al., 2016). Asiri et al. (2016) found that due to a nursing shortage in Saudi Arabia, healthcare organizations frequently replace senior nursing positions, such as the nurse manager, a position which requires strong leadership and at least minimal management experience and training, with less-qualified nurse leaders who do not have any experience in leadership or management. Indeed, leadership styles exhibited by leaders are considered as the major contributing factor to nurses' decisions to stay in their current position, transfer or seek employment elsewhere or work outside of the nursing profession in Saudi Arabia (Abualrub & Alghamdi, 2012). Leadership styles of nurse leaders could lead to negative consequences and result in conflicts and poor workplace relationships leading to tardiness, absenteeism, intent to leave, and actual turnover (Torres, 2009).

There are a number of different leadership theories applied in nursing such as transformational leadership (Bass & Avolio, 1994) and emotional intelligence/resonant leadership (Boyatzis & McKee, 2005; Goleman, 1995); however, most of them primarily focus on leader or follower characteristics or behaviours, rather than on aspects of the leader-follower relationship (Northouse, 2007). Transformational leadership style

involves leaders inspiring and motivating followers to work toward common goals to enhance efficiency and achieve better results (Bass et al., 2003) while transactional leadership is a style in which leaders expect their followers to provide services in exchange for payment and meeting their demands (Bass, 1985). Authentic leadership is one model that focuses on the relationship between leaders and followers. Authentic leadership has four elements: 1) self-awareness, 2) relational transparency, 3) balanced processing, and 4) internalized moral perspective. These four aspects are used to emphasize leaders' insight, transparency, and congruence in their actions and beliefs (Walumbwa et al., 2008). Authentic leadership aims to build relationships between leaders and their followers based on emotions, trust, and ethical standards (Wong, 2008). Authentic leaders are those who motivate their staff, and build confidence and trust (Laschinger & Smith, 2013). Thus, nurses working with leaders who are authentic are more likely to be engaged in their work, motivated, satisfied and involved in decision-making. Despite the vital role of authentic leadership in healthcare organizations, there is a significant gap in the literature about the role of authentic leadership in healthcare in Saudi Arabia. There are few, if any, published studies have examined the relationship between authentic leadership of nurse managers in Saudi Arabia with key nurse attitudes and behaviours found in Saudi healthcare work environments.

### **Study Purpose**

The purpose of this study was to test a model that examined the relationships among authentic leadership, psychological safety, work engagement, and team effectiveness, job turnover intentions and nurse satisfaction with quality of care among nurses who work on inpatient units and outpatient clinics in public hospitals in three

cities (Makkah, Jeddah, and Taif) in Saudi Arabia. The study's theoretical model was based on Avolio et al.'s theory (2004) of authentic leadership.

### **Significance of the Study**

Results from this study could help to address the gap in the Saudi nursing literature in terms of factors that could contribute to increased turnover rates among nurses in Saudi Arabia. The potential significance of this study applies to nursing education, theory, and practice. For nursing education, results from this study may improve our understanding of authentic leadership within healthcare organizations and in the Saudi healthcare context in particular. This study is significant to Saudi nursing education as it emphasizes the role of authentic leadership theory in nursing for future nursing students in Saudi Arabia. For nursing theory, the study was based on Avolio et al.'s theory (2004) of authentic leadership which includes four components (balanced processing, relational transparency, internalized moral perspective, and self-awareness) and explains their impacts on followers' attitudes and behaviours. For nursing practice, these results have the potential to provide nurse leaders and direct care nurses who work in Saudi hospitals with theory- based evidence to support strategies to help decrease nurse turnover intentions and thereby improve other outcomes for nurses, patients, and healthcare organizations.

### **Theoretical Framework**

#### **Authentic leadership**

The concept of authentic leadership was developed in (2003) by Luthans and Avolio and has been designated as the root concept of positive leadership models such as transformational, charismatic, and emotional intelligence leadership (Avolio et al., 2004; Avolio & Gardner, 2005). Therefore, the intent of proposing the authentic leadership

model was not to develop a new theory for leadership but rather than to explore, discover, and test the common foundation of all leadership theories (Avolio et al., 2005). Authentic leadership is defined as a pattern of a leader's behaviour that both builds upon and promotes "positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development." (Walumbwa et al., 2008, p. 94). Authentic leaders are able to make positive differences in organizations by helping followers to find meaning at work which helps to build optimism and commitment among followers (Avolio & Gardner, 2005). Authentic leaders are able to build positive and healthy work environments through the creation of trustful and positive ethical climates (Avolio & Gardner, 2005).

Avolio et al.'s (2004) model of authentic leadership illustrated the influence of authentic leadership on followers' attitudes and behaviours through the key psychological processes of identification, hope, positive emotions, optimism, and trust (Figure 4). Authentic leaders have the ability to build healthy work environments through four key components, which are balanced processing, relational transparency, internalized moral perspective, and self-awareness. *Self-awareness* refers to the way a person understands and makes meaning of the world and the impacts of that meaning on his/her views over time (Kernis, 2003). *Relational transparency* is where a person can be presenting one's authentic self to others by involving others in making decisions and sharing information (Kernis, 2003). *Balanced processing* is when a leader objectively analyzes all relevant data before making a decision (Gardner et al., 2005). *Internalized moral perspective*

refers to self-regulation guided by internal moral standards and values instead of through group, organization, or societal pressures (Walumbwa et al., 2008).

According to Kark and Shamir (2002), authentic leaders are able to enhance follower attitudes such as engagement, motivation, commitment, work satisfaction, and involvement, which are required to improve work performance outcomes through the creation of personal identification with the leader and social identification with the work unit/organization. Personal identification is the degree to which the individual's belief in the leader is self-defining (Avolio et al., 2004). Leaders who exemplify high standards of honesty and integrity are able to connect with their followers and thus influence their values and beliefs. Social identification is the degree to which individuals can identify with their group and the idea of group membership becomes a central aspect of their identity (Hogg, 2001). Avolio et al.'s authentic leadership theory (2004), proposed that authentic leaders facilitate followers to personally identify with the leader and socially identify with the workgroup/ organization. Leaders could thereby influence followers' attitudes and behaviours through a number of other mechanisms, such as the positive psychological resources of hope, trust, positive emotion, and optimism to promote the development of these ideals in others.

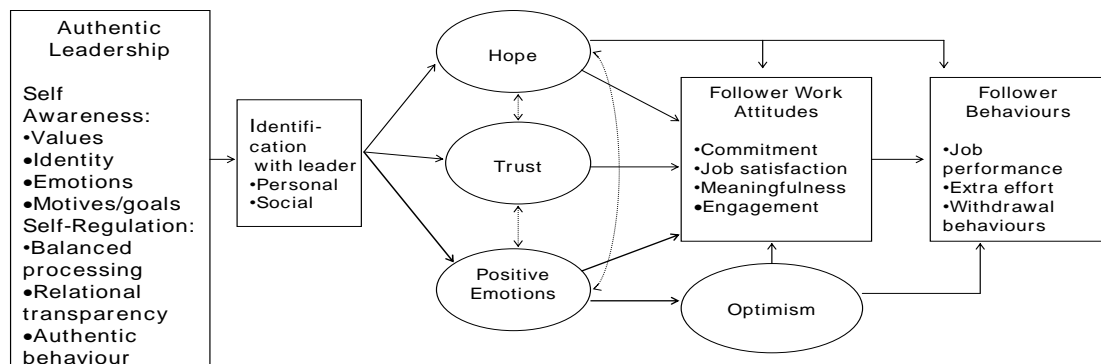
Authentic leadership theory was used to guide this study and was the suitable theory for this study for the following reasons. The tenets of authentic leadership applied by leaders can make a significant difference in any organization by helping workers to find meaning in their work, building optimism among followers, fostering trust between followers and their managers through transparent relationships, and providing positive and healthy ethical climates (Avolio & Gardner, 2005). Authentic leaders are people who usually focus on doing their work in ethical ways and prioritize making changes in others

(Avolio et al., 2004; May et al., 2003). More specifically, Avolio et al.'s (2004) authentic leadership theory emphasizes processes including, hope, trust, positive emotions, and optimism that link authentic leaders and followers' attitudes and behaviours such as commitment, job satisfaction, meaningfulness, engagement, job performance, extra efforts, and withdrawal behaviours. Additionally, authentic leadership theory emphasizes the role of positive emotions as a linking mechanism in the development of leader effectiveness (Dasborough & Ashkanasy, 2005; McColl-Kennedy & Anderson, 2002). Finally, authentic leadership theory integrates relevant components of other theories such as transformational, charismatic, servant, and spiritual leadership, which makes this theory more comprehensive (Wong, 2008).

**Figure 4**

*Framework Linking Authentic Leadership to Followers' Attitudes and Behaviours (Avolio et al., 2004)*

## Authentic Leadership Model



## **Review of the Literature**

Prior to reviewing the literature, a brief outline of the healthcare system and nursing in Saudi Arabia is presented to provide the cultural context for the study. Nursing leadership in Saudi Arabia will then be discussed, to provide a deeper understanding about leadership styles that have been used in Saudi healthcare. In addition, the empirical literature on the main concepts and variables of this study, including authentic leadership; psychological safety; work engagement, team effectiveness; job turnover intentions; and nurse satisfaction with quality of care, is then reviewed. Databases that were searched for this review were CINAHL, PubMed, ProQuest Nursing & Allied Health, and PsycINFO. The key terms used in the search were authentic leadership, psychological safety, work engagement, team effectiveness, turnover intentions, nursing, Saudi Arabia, leadership styles, and nurse satisfaction with quality of care. Research and conceptual papers, published articles, unpublished theses and dissertations, and articles in health care and non-health care from 2008-2020 were included in the literature review. However, some older references are included in different parts in the literature review section to give a better understanding of the history of some main concepts and the background of the healthcare system and nursing in Saudi Arabia.

### **The Healthcare System and Nursing in Saudi Arabia**

The healthcare system in Saudi Arabia is administered nationally. The Ministry of Health (MOH) is responsible for regulating, planning, managing and financing the health-care sector through funding different governmental sectors and agencies. The Saudi MOH serves a total Saudi population of 28.3 million by providing health services including, curative, preventive, and rehabilitative healthcare services (Almutairi, 2015; Central Department of Statistics and Information, 2013; Ministry of Health, 2016;

UNICEF, 2014). There are also other different governmental agencies that provide healthcare services for specific populations enrolled in security or the armed forces such as the Ministry of National Guard, the Ministry of Defence and Aviation, and the Ministry of Interior (Central Department of Statistics and Information, 2013). Moreover, The Ministry of Health funds specialised national tertiary hospitals such as King Faisal Specialist Hospital (KFSH) and King Khalid Eye Specialist Hospital (KKESH) to deliver care by using highly advanced technologies to treat complex cases that require advanced medical care (Almalki et al., 2011). The Ministry of Health is also responsible to provide similar services for both urban and rural areas in Saudi Arabia. Alfaqeeh et al. (2017) examined the factors influencing the access to and utilisation of primary health care centres in urban and rural areas of Riyadh province of Saudi Arabia. They found that there were no significant relationships between the region someone resides in (urban vs. rural) and seeing a doctor, being referred to a specialist and having a blood test. This means that people in Saudi Arabia have almost the same access to healthcare services whether they live in urban or rural areas of Saudi Arabia.

Higher education in medical fields in Saudi Arabia started in Riyadh in 1958 by initiating the first health institute for boys when the Ministry of Health (MOH) cooperated with the World Health Organization (WHO) (Aldossary et al., 2008). Fifteen students with primary school certificate level education were enrolled in that health institution (Aldossary et al., 2008; Alhusaini, 2006; Al Thagafi, 2006). By 1961, two-year nursing schools were available for females in Riyadh and Jeddah and 13 Saudi female nurses' assistants graduated from these schools (Alhusaini 2006; Al Thagafi 2006). In 1967, the MOH established the Department of Health Education and Training (DHET), and it was responsible for supervising health institutes, including nursing schools



(Alhusaini, 2006). In 1979, the DHET further developed the nursing schools by enrolling students who completed their intermediate school preparation (ninth grade) rather than just having primary school certificates (sixth grade) (Alhusaini, 2006; Miller-Rosser, 2006). Since then, varied nursing schools and health institutes have opened in different regions and cities of Saudi Arabia (Alhusaini, 2006). There were a total of 48 health institutes and branches in 1992 for health education, including nursing education (Alhusaini, 2006). The Central Nursing Committee (CNC) was established in 1987 by the MOH in order to advance the quality of nursing care and recruit more Saudis to the nursing profession to help to offset the domination of the profession by physicians (Aboul-Enein, 2002). The CNC helped to establish the Division of Nursing (General Directorate of Nursing) at the MOH that is directed by Saudi nurses, and then helped to establish nursing departments in various regions of Saudi Arabia (Tumulty, 2001). In 2004, male students started to apply and got accepted in nursing schools in Saudi Arabia (Aljohani, 2020). There are 39 nursing colleges in Saudi Arabia and 13 of these colleges have been established by the private education sector. While the other schools have been operated by Saudi Ministry of Education the government by 2017 (Alomran et al., 2017)

The increase in the population of Saudi Arabia has led to economic growth and thus, the Saudi Arabian healthcare sector is working to adjust healthcare services that can meet each patient's needs including health promotion related to the most prevalent diseases and health conditions (AL-Dossary, 2018). These changes are based on the 2030 Kingdom's Vision that focuses on the quality of health care and education as factors that should be improved to meet national needs and international accreditation standards (Kingdom of Saudi Arabia Vision 2030, 2016; Saudi Arabia Vision 2030, 2016; Saudi Vision 2030, 2016). One of the significant goals of this vision is that there is a need to

accomplish Saudization, which means increasing the employment of Saudi citizens in all sectors, and specifically in healthcare sectors where the majority of healthcare providers are expatriates (AL-Dossary, 2018). Moreover, around 100,000 nursing positions need to be filled by 2030 (Youssef et al., 2013). As a result, an average of 6000 to 7000 new nurses should be graduated and employed every year to meet these growing demands (McKinsey Global Institute, 2015).

In comparison to other health and non-health professions, nursing in Saudi Arabia is considered a less desirable career choice for Saudi people (AL-Dossary, 2018). The type of work, the working hours, and perceptions of inadequate monetary compensation by nurses all negatively affect Saudis when considering nursing as their profession (AL-Dossary et al., 2016 a, b). Therefore, the majority of nurses working in Saudi hospitals are foreign, from a variety of cultural backgrounds (Omer, 2005). For example, most nurses are from India or the Philippines and were recruited by the Ministry of Health hospitals in Saudi Arabia (Aldossary et al., 2008; AL-Dossary et al., 2016 a, b). There are other nurses coming from different countries including, Malaysia, Australia, North America, the United Kingdom, South Africa, and other Middle Eastern countries (Aldossary et al., 2008). The fact that the professional backgrounds and cultures of the non-Saudi nurses are so varied may affect the care provided to Saudi patients (Almutairi & McCarthy, 2012). Additionally, most non-Saudi nurses may have limited knowledge about both Saudi culture and Islamic culture (Almutairi & McCarthy, 2012). According to Mebrouk (2008), being aware of the patient's culture is considered as a fundamental principle of the nursing profession.

Although education for the nursing profession has improved in Saudi Arabia in terms of increasing the number of nursing colleges (Alboliteh et al., 2017a), there are

still some obstacles facing the advancement of nursing practice. A challenge facing the advancement of nursing practice in Saudi Arabia is finding a common language of communication inside healthcare facilities, as most nurses are foreign. Establishing the type and level of communication is essential to providing high quality nursing care, and this mix of languages and cultures can hinder effective communication (Mebrouk, 2008). Additionally, Aldossary et al. (2008) explained that most patients and their families are Saudis and speak their native language, which is Arabic, while most nurses communicate with their patients in English. Therefore, there is a positive impact of using the Arabic language for communication between patients and local Saudi-born nurses, which may increase patient and family satisfaction as well as improve the outcomes of nursing care (Mebrouk, 2008). Another essential issue related to nursing improvement in Saudi Arabia is the poor image of the nursing profession (Alboliteh et al., 2017b). The negative perception is a major factor affecting the employment of Saudis in the nursing profession (Alboliteh et al., 2017b). Thus, Saudi male and female students face many cultural and social barriers in choosing nursing as their future career because of the current image of nursing in Saudi Arabia (Ministry of Economy and Planning (MOEP), 2013). One reason for the negative image of nursing as a profession is that in the past, nurses were perceived as only providing basic tasks that anyone can learn (Alboliteh et al., 2017b). Consequently, many Saudis viewed nursing as a career similar to domestic work, which does not require an education (Alboliteh et al., 2017b).

The potential role of nurse leaders is critical to enhancing the nursing profession and solving issues related to nursing practice such as integrating foreign nurses into the work environment and Saudi community and providing training courses in Arabic that focus on communication skills and Saudi culture (Almalki et al., 2012). For example,

nurse leaders can provide some workshops that aim to explain the Saudi culture and Islamic culture for recently employed nurses because this helps them to be aware of dealing with Saudi patients (Almalki et al., 2012). Additionally, Aldawood (2017) suggested that it is important to train nurse leaders in Saudi Arabia in cultural competency because this might lead to improved understanding and positive responses especially in challenging situations that are often associated with culture. These approaches may also enhance the development of healthcare services and improve work environments for nurses (Aldawood, 2017).

### **Nursing Leadership in Saudi Arabia**

Leadership style is considered a very important factor influencing employees' attitudes and behaviours, including organizational commitment, job satisfaction, and work engagement (Alkahtani, 2016). An effective leadership approach helps leaders to provide direction, implement plans, and motivate people (Northouse, 2015). In Saudi Arabia, transformational leadership style has been studied in different fields such as, healthcare management, education, and business administration (Alghamdi et al., 2018). For instance, Al-Yami et al. (2018) examined the relationship between nurse managers' leadership style, and nurses' organisational commitment in Saudi Arabia using the Multifactor Leadership Scale (Bass & Avolio, 1988) which assesses transformational leadership and other leadership styles. They found that nurses gave transformational leadership the highest score, followed by transactional leadership, and passive-avoidant leadership respectively (Al-Yami et al., 2018).

In another study Alghamdi et al. (2018) compared nurses' job satisfaction and manager transformational leadership style among four different nurse/manager dyads based on their gender in Saudi Arabia. Authors divided their sample ( $n=308$ ) into four

groups: female subordinates of male managers, male subordinates of female managers, male subordinates of male managers, and female subordinates of female managers (Alghamdi et al., 2018). The findings of this study supported that male and female Saudi nurses whose leaders were male, reported higher job satisfaction than nurses whose managers were female. In addition, transformational leadership style ratings were higher for male leaders compared to female leaders (Alghamdi et al., 2018). These study findings contradicted previous findings (Martin, 2015; Paustian-Underdahl et al., 2014) which reported that nurse job satisfaction and perceived leadership characteristics were not related to the gender of the manager (Alghamdi et al., 2018).

El Dahshan et al. (2017) examined nurse managers' leadership styles and their effect on nurses' organizational commitment at two Taif governmental hospitals in Saudi Arabia by using the Leadership Style Questionnaire to measure transactional and transformational leadership styles (Vera & Crossan, 2004). They found that 74.4% of the total nurses perceived their leaders as transformational leaders in both hospitals, King Faisal Specialized Hospital (KFSH) and King Abdul-Aziz Specialized Hospital (KASH), with a statistically significant difference between the two hospitals. Nonetheless, 65.6% of the total nurses in both hospitals perceived their leaders as transactional leaders, with no statistically significant difference in the means between two styles in the two hospitals (El Dahshan et al., 2017). This means that nurses in these two hospitals perceived their leaders with both transformational and transactional leadership styles, but transformational leadership style was rated higher than transactional leadership styles in both hospitals (El Dahshan et al., 2017). In addition, the findings of this study support the relationship between the two leadership styles and organizational commitment, which were significantly and positively correlated in each hospital (El Dahshan et al., 2017).

In order to understand the relationship between nurse leadership and cultural differences in Saudi Arabia's hospital settings, Aldawood (2017) did a qualitative study to explore this relationship and to identify the future training and development needs of nurse leaders in Saudi Arabia. He used in-depth semi-structured interviews and focus group discussions in the King Saud Medical City (KSMC) in Riyadh. The sample was divided into three groups: nurse directors ( $n = 8$ ), head nurses ( $n = 23$ ) and staff nurses ( $n = 15$ ). Results showed that cultural factors were essential in influencing both the quality of nursing care delivered and the effectiveness of nurse leadership style (Aldawood, 2017). Also, the study findings emphasized that gendered behaviour expectations were considered as a significant limitation for women in Saudi Arabia who are in leadership positions (Aldawood, 2017). Several participants in this study claimed that women nurse leaders were unable to demonstrate a directive leadership style due to their nature of gender difference roles of women in Saudi Arabia (Aldawood, 2017).

Transformational leadership style has been examined most often in the Saudi Arabian nursing leadership literature. (Alghamdi et al., 2018; Al-Yami et al., 2018; El Dahshan et al., 2017). However, there is a significant gap in the literature examining other leadership styles and their relationships with staff and patient outcomes in Saudi Arabia. More specifically, the relationships between authentic leadership and staff outcomes such as work engagement, psychological safety, team effectiveness, job turnover intentions, and the quality of nursing care have not been examined. Although the effect of transformational leadership style on nurse outcomes such as organizational commitment (Al-Yami et al., 2018; El Dahshan et al., 2017) and job satisfaction (Alghamdi et al., 2018), has been illustrated in some studies, there is a need for more studies that examine the relationships between different leadership styles such as

authentic leadership and a variety of nurse, patient, and organizational outcomes in Saudi Arabia.

### **Authentic Leadership Research in Other Contexts**

Authentic leaders promote a positive climate wherein everyone feels respected and trusted (Blake, Blayney, Loera, Rowlett, & Schmidt, 2012). Authentic leadership focuses on humanistic values consistent with patient care values which are fundamental concepts in all health professions especially nursing (Wong & Cummings, 2009).

Therefore, authentic leaders have the ability to achieve high levels of authenticity as they know themselves and their values firstly which guide them in their work (Avolio et al., 2004). Furthermore, Avolio et al. (2004) found that authentic leaders facilitate higher quality relationships that are required for active engagement of employees in workplace activities, so this helps staff achieve greater job satisfaction and higher productivity and performance. Giallonardo et al. (2010) conducted a study to illustrate the relationship between authentic leadership and work engagement among 170 new graduate nurses in Canada, and they reported that nurse preceptors' authentic leadership was significantly related to new graduates' work engagement. Also, work engagement was also positively significantly associated with authentic leadership in two other studies (Bamford et al., 2013; Du Plessis, 2014).

In a recent review, Alilyyani et al. (2018) focused on studies examining the relationship between authentic leadership and staff and patient outcomes in healthcare, and described the known antecedents, mediators, and outcomes of authentic leadership. The review included 21 studies presented in 38 manuscripts. Results showed that 43 outcomes were examined in studies and were grouped into two major themes which are healthcare staff outcomes (e.g., personal psychological states, satisfaction with work,

work environment factors, health and well-being, and performance) and patient outcomes (e.g., falls with injury, patient satisfaction with care and hospital acquired pressure ulcers). In addition, 23 mediators between authentic leadership and 35 different outcomes were tested but only one antecedent of authentic leadership was assessed. Only one study examined the direct effect of authentic leadership on psychological safety (Plasse, 2015), and just four studies illustrated the positive and direct relationship between authentic leadership and work engagement (Bamford et al., 2013; Giallonardo et al., 2010; Du Plessis, 2014; Stander et al., 2015). Findings of Alilyyani et al.'s (2018) review supported that the four dimensions of authentic leadership theory (balanced processing, relational transparency, internalized moral perspective, and self-awareness) were positively related to work engagement (Bamford et al., 2013; Giallonardo et al., 2010; Du Plessis, 2014; Stander et al., 2015). Also, work engagement was found to be a mediator between authentic leadership and job satisfaction in this review (Giallonardo et al., 2010). An indirect relationship between authentic leadership and team effectiveness through social capital was found in one study (Read, 2016). Also, of note, none of these authentic leadership studies were conducted in Saudi Arabia.

Leadership styles may influence the experience of psychological safety by creating inclusiveness among team members which has been linked to positive outcomes (Hirak et al., 2012). Plasse (2015) conducted a study examining the relationship between authentic leadership and psychological safety in healthcare. This study examined the impact of authentic leadership style on psychological safety as mediated by high quality relationships and workplace incivility (Plasse, 2015). The findings of this study did not support the hypothesized relationship between leadership style and psychological safety (Plasse, 2015). However, the direct relationship between authentic leadership and



psychological safety has been examined in the education field (Sores, 2015). The author found that authentic leadership of the teacher in the classroom was an essential factor for student academic performance (Sores, 2015). There was also a significant, positive and direct effect of authentic leadership on psychological safety (Sores, 2015).

Although the effect of authentic leadership on work teams has been discussed conceptually in the way that authentic leaders are aware of the needs of their followers and teams (Avolio et al., 2004; Walumbwa et al., 2008), no studies were found examining the direct relationship between authentic leadership and team effectiveness (López et al., 2015; Monzani et al., 2014). Nelson et al. 2014 reported that work climate which includes relationships among co-workers, mediated the relationship between authentic leadership and psychological well-being among nurses. Additionally, only one study was found that showed that there was a small but significant positive indirect relationship between authentic leadership and team effectiveness through structural empowerment and social capital (Read, 2016).

One of the components of authentic leadership, balanced processing, supports the notion that authentic leadership may positively affect team effectiveness. Balanced processing means authentic leaders are able to engage followers and take into account their multiple viewpoints as sources of information for decision making and thus, empowering individuals and teams (Avolio et al., 2004; Avolio & Gardner, 2005). This inclusive approach with followers may reduce uncertainty and the fear of failure and increase the attributional optimism of team members (Seligman, 2011). It is possible that authentic leadership could positively enhance different nurse outcome such as work engagement, psychological safety, and team effectiveness. Based on the existing

literature, there is a need to examine the effect of authentic leadership on work engagement, psychological safety, and team effectiveness.

**Hypothesis 1:** Authentic leadership is positively related to work engagement, psychological safety, and team effectiveness.

### **Psychological Safety**

Edmondson (1999) defined psychological safety at a team level as a perception that “people are comfortable being themselves” (p. 354). Team psychological safety is “a shared belief held by members of a team that the team is safe for interpersonal risk taking” (Edmondson, 1999, p. 708). Schein and Bennis (1965) discussed the need to create psychological safety for employees so they feel secure and capable of participating in changing their workplaces. Edmondson (1999) suggested that psychological safety is a concept that goes beyond trust. Nevertheless, building trust in organizations is important in creating a climate of psychological safety. Indeed, psychological safety is confused with other concepts such as trust and psychological mindfulness (Edmondson, 1999). The differences between psychological safety and trust are that psychological safety focuses on a belief about a group norm while trust focuses on a belief that one person has about another. Additionally, psychological safety is about how group members think they are viewed by others in the group, but trust is related to how one views another (Edmondson & Mogelof, 2006). Mindfulness is also different than psychological safety in that mindfulness is about being aware of one's surroundings, but psychological safety is about being respected in a group (Bornemisza, 2013). Kahn (1990) described psychological safety as “feeling able to show and employ one’s self without fear of negative consequences to self-image, status, or career.”

The benefits of psychological safety are not only for teams but also for organizations, as the organizational consequences of teams feeling psychologically safe include: improved likelihood that an attempted process innovation will be successful, members are more likely to learn from mistakes, it boosts employee engagement and enhances team innovation (Edmondson, 1996; Nembhard et al., 2006). For organizations, psychological safety is associated with enhanced learning within organizations (Carmeli et al., 2009; Edmondson, 2003; Edmondson, 2004; Edmondson et al., 2001; Ortega, Van den Bossche et al., 2014), team creativity (Carmeli et al., 2010; Kessel et al., 2012), and engagement in quality improvement work (Nembhard et al., 2006).

As a result, nurses who are psychologically safe could also feel assured in the safety of reporting errors (Edmondson, 1999). Ortega et al. (2014) examined the impact of change-oriented leadership on team learning in several hospitals in Spain. The results of the study supported the mediating effect of psychological safety on team learning and ultimately on team performance. Sharing knowledge has been found as a mediator between psychological safety and team performance (Plasse, 2015). Exploring factors which contribute to an increased perception of psychological safety is essential to enhance our understanding of how psychological safety can best enhance the work experience (Plasse, 2015). The influence of authentic leadership on psychological safety has been examined in education, and it was found that authentic leadership had a positive influence on psychological safety (Soares, 2015). Thus, the author highlighted the importance of teachers to adopt authentic behaviours in order to promote trust and motivate their students to speak their mind (Soares, 2015).

A team member who feels psychologically safe can more easily engage in certain behaviours, including seeking feedback, asking for help, speaking up about their

mistakes, coming up with new ideas, and spanning boundaries which results in effectiveness of the team positively (Cauwelier et al., 2016). As a result, team members are comfortable to discuss mistakes with each other in their team, and they can ask for help without hesitating, which allows for healthy exchanges (Cauwelier et al., 2016). Cauwelier et al. (2016) found that teams that have higher team psychological safety will be more likely to ask for help than those with lower team psychological safety. Studies have found that higher psychological safety has a positive relationship with employee's retention, but lower levels could lead to employee's silence and increased turnover intentions (Chen et al., 2014; He, 2010). Based on the current literature, it is important to further examine the relationships between psychological safety and both team effectiveness and job turnover intentions.

**Hypothesis 2:** Psychological safety is positively related to team effectiveness and negatively related to job turnover intentions.

### **Work Engagement**

Work engagement of employees in any organization has a significant impact on improving outcomes as they are positively involved in and enthusiastic about their work (Alsadah, 2017). Work engagement is defined by Schaufeli et al. (2002) as “. . . a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption” (p. 74). Vigor is characterized by “high levels of energy, an experience of mental resilience while working, a willingness to invest effort in one's endeavor, and persistence in the face of difficulties” (Schaufeli & Bakker, 2004, p. 295). Dedication refers to “strong involvement in one's vocation, characterized by feelings of significance, enthusiasm, and pride” (Schaufeli & Bakker, 2004, p. 295). Absorption is characterized by “being fully concentrated and happily engrossed in one's work, whereby time passes

quickly and one has difficulties with detaching oneself from work” (Schaufeli & Bakker, 2004, p. 295). Research has demonstrated that work engagement is associated with a number of different outcomes such as higher structural empowerment (Laschinger et al., 2009) and job satisfaction and lower burnout (Laschinger et al., 2006). Work engagement of employees positively affects their work priorities and being able to cope with the daily tasks of the job (Loehr & Schwartz, 2003).

Findings of a study examining work engagement of employees in 8,000 business units in 36 companies showed that engaged employees had better performance, loyalty, profitability, and lower turnover intentions (Harter et al., 2002). In terms of healthcare settings, Laschinger et al. (2009) examined the relationship between empowerment, engagement and work effectiveness among new graduates and experienced nurses. Their study results supported the hypothesis that work engagement plays a significant positive mediating role between empowerment and perceived effectiveness in both groups, with stronger results in the more experienced group. Also, Giallonardo et al. (2010) examined the relationships between new graduate nurses’ perceptions of preceptor authentic leadership, work engagement, and job satisfaction. Results showed work engagement mediated the relationship between authentic leadership and job satisfaction. Aboshaiqah et al. (2016) examined the differences in work engagement among nurses in Saudi Arabia and its relationship with personal characteristics across different hospital affiliations. Their results showed that nurses reported high levels of work engagement, especially regarding the element of dedication (Aboshaiqah et al., 2016). Additionally, their study illustrated that there are significant differences between nurses’ engagement and personal characteristics, including age and experience (Aboshaiqah et al., 2016).

If employees are engaged in their work, they transfer their positive emotions and engagement to their environment, co-workers, and teams, which makes work engagement a contagious experience (Bakker, 2009; Bakker & Demerouti, 2008). Moreover, engagement is considered as an indicator of enhanced work performance that ultimately results in fewer occupational injuries and error reports (Alsadah, 2017). Bakker and Xanthopoulou (2009) demonstrated that employees who are engaged in their works are able to transfer their engagement to their team in a way that leads to improved communication among workers. Van Bogaert et al. (2014) explored the mechanisms through which the dimensions of the practice environment, such as nurse–physician relationships, nurse management at the unit level and hospital management and organizational support, are associated with job outcomes and nurse-assessed quality of care. The study results revealed that work engagement in positive practice environments ultimately lead to improved staff and patient outcomes such as the quality of nursing care provided. Therefore, it is essential to illustrate the influence of work engagement on team effectiveness and nurse satisfaction with quality of care.

**Hypothesis 3:** Work engagement is positively related to team effectiveness and nurse satisfaction with quality of care.

### **Team Effectiveness**

The ability to work well with other staff who are in a team has been identified as an important aspect of any organization as it contributes to enhanced outcomes for both employees and organizations (Delarue et al., 2006; Hackman, 1987, 1990; Hackman & Wageman, 2005; Kozlowski & Ilgen, 2006). A team is defined as “a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one

or more larger social systems (for example, business unit or corporation), and who manage their relationships across organizational boundaries” (Cohen & Bailey, 1997, p. 241). In order for individuals in a team to work together effectively, they must interact with others and try to create positive relationships while working (Read, 2016).

Sundstrom et al. (2000) explained effectiveness of teams as the first point when team members meet the performance expectations, of those who receive, use, or review the team's output. Performance expectations differ depending on groups receiving services, but usually stem from leaders, internal and external customers (Duygulu & Ciraklar, 2008). Effective teamwork can be achieved when team members are able to work together in such a way that core goals are attained (Duygulu & Ciraklar, 2008). Team effectiveness is defined by WHO (2014) as occurring when the team members, including the patients, communicate with each other and share their observations, expertise, and decision-making responsibilities to maximize patients’ care.

In the current health care climate, there is an increased emphasis on interprofessional teams who work together to improve the quality of healthcare services delivery and enhance patient outcomes, thus teams have become an important aspect over the last few decades (Canadian Health Services Research Foundation, 2006; Shortell et al., 2004). The concept of a team in health care delivery continues to grow as the provision of health care becomes increasingly complex, such that there is a need for individuals and teams to work together to ensure they are providing the essential care required for each patient (Heinemann, 2002; Shortell & Kaluzny, 2000). Indeed, team effectiveness among nurses in hospitals has been examined in many previous studies with a variety of outcomes that are related to successful team performance (Lemieux-Charles & McGuire, 2006). Recent studies have illustrated the role of teams in critical care and

primary care settings. Two studies examined the essential use of a hospital-wide critical care/medical emergency teams in enhancing survival to discharge and minimizing readmission to critical care (Ball et al., 2003), decreasing adverse events and mortality rates after surgery, and shortening length of stay (Bellomo et al., 2004). The role of leaders on team effectiveness has been discussed in the literature, so they can increase the level of satisfaction of the team members and improve the performance of the team (Cheung et al., 2001). However, leader roles can be highly affected by organizational culture. Duygulu and Ciraklar (2008) showed that leadership roles and team effectiveness are significantly correlated. Also, they found that the role of leaders in helping their team to clarify and create a goal should not be ignored (Duygulu & Ciraklar, 2008). This means that leader role effectiveness is highly intertwined with team effectiveness.

Cohen and Bailey's (1997) model of team effectiveness illustrated the complex interactions between task design, team processes, team psychosocial traits, and team outcomes. In their model, task design refers to the type of team in relation to a project, management, or work team, task features such as interdependence or autonomy, team composition including size, tenure, and diversity, and organizational context such as rewards and supervision. Although external environments can affect task design factors, they can be manipulated by managers to enhance team effectiveness. The similarities between team processes and team psychosocial traits are explained by the authors, who indicate that both can be influenced by task design which directly influences team outcomes. Moreover, processes and traits can interact with each other. Indeed, task design can influence outcomes directly or indirectly through team processes and traits. Lemieux-Charles and McGuire (2006) talked about some objective and subjective outcomes that are associated with team effectiveness. Some of these objective outcomes



are related to patients such as functional status and satisfaction, and other to teams such as clinical quality of care, and organizations such as cost effectiveness. Subjective outcomes can include perceived team effectiveness by team members (e.g., perceived task outcomes, well-being, and willingness to work together in the future).

Dixon and Hart (2010) found that work group effectiveness can impact group members' turnover intentions. Therefore, job turnover intentions could be considered as an outcome that is associated with team effectiveness. Almalki et al., (2012) conducted a study to examine the relationship between quality of work life (QWL) and turnover intentions of primary healthcare nurses in Saudi Arabia. They found that turnover intentions was high which supports findings of some previous studies that have been done in China (Chan et al., 2009) and Sweden (Gardulf et al., 2005), and among nurses working in Saudi Arabia in particular (Al-Ahmadi, 2006). Several studies have shown that factors such as relationships among co-workers or team members (Tourangeau et al., 2010), and aspects of the work environment such as climate and team relationships (Shader et al., 2001), may affect nurses' turnover intentions. In addition, team effectiveness is a factor that can enhance the quality of care at different levels including, organization, team itself, the individual team member, and the patient (Cheng et al., 2016; WHO, 2014). Thus, it is essential to examine the relationships between team effectiveness and both job turnover intentions and nurse satisfaction with quality of care.

**Hypothesis 4:** Team effectiveness is negatively related to job turnover intentions and positively related to nurse satisfaction with quality of care.

### **Job Turnover Intentions**

Takase (2010) described turnover intentions as the process that consists of psychological, cognitive, and behavioural components, so it starts with psychological

responses to any negative aspect related to their organization or their work. The cognitive component is where the decision can be made to leave the job while behaviour is the action to either withdraw from the current job or search for other future opportunities (Takase, 2010). Turnover is defined as the proportion of the employees to leave the current employing organization or the potential movement by the workforce out of an organization (Mobley, 1982). Indeed, turnover among nurses has been the subject of numerous research studies in many countries (El-Jardali et al., 2009; Tourangeau & Cranley, 2006). Lucas et al. (1993) illustrated a number of personal and organizational factors associated with as turnover behaviour; for example, demographics including, age, years of experience, education level, marital status, specialization and rotations, and job satisfaction, professional and organizational factors increase the rate of turnover. The cost of turnover per nurse in Canada was estimated to be around \$25,000, which is considered similar to costs in other countries (O'Brien-Pallas et al., 2008). The costs of turnover indirectly influence the quality of patient care and the stability of the work environment (Duffield et al., 2009; O'Brien-Pallas et al., 2008). Therefore, turnover is costly for both employees and organizations, but leaders play an essential role in creating a healthy work environment that reduces the turnover intentions among staff (Dess & Shaw, 2001).

Turnover intentions, on the other hand, are a serious problem in different countries. In the United States, Alexander et al. (1998) examined a model that contains nine dimensions of job satisfaction that may affect nursing personnel's intention to leave and turnover such as relationships with patients and coworkers, workload, and professional growth opportunities. Thus, they found that job satisfaction was the strongest direct predictor of turnover intentions. Stone et al. (2006) also conducted a study to investigate the causes of nurses' intention to leave, so the result was that 15% of

nurses indicated intention to leave in the coming year, and organizational climate had a significant impact on their decision to leave.

In Saudi Arabia, a study was done to examine turnover intentions among 488 nursing staff in three public hospitals in Riyadh (Bin Saeed, 1995). The most important reasons for the desire to leave were lack of appreciation by superiors, lack of opportunities for career progression, dissatisfaction with salary, communication difficulties with patients, and family reasons. Almalki et al., (2012) found that the primary healthcare nurses indicated low satisfaction with their quality of work life and high turnover intentions. As a result, they concluded that there is a need to conduct a series of comparative studies that focus on quality of work life and turnover intentions among nurses in Saudi Arabia. While the literature on this topic has grown around the world, turnover intentions have received very little attention from researchers in Saudi Arabia even though turnover intentions are one of the most serious challenges facing the Saudi healthcare system (Al-Ahmadi, 2014). Laschinger and Fida (2014) also supported the significant role of leaders on nurses' turnover intentions. They examined the relationship between authentic leadership and new graduate nurses' experiences of workplace bullying and burnout in Canadian healthcare settings, and the process from workplace bullying to subsequent burnout dimensions, and to job and career turnover intentions. The results of this study indicated that nurses working with authentic leaders were less likely to report subsequent work-related bullying and burnout, or even job and profession turnover intentions. The results highlight the significant effect of leadership in avoiding negative outcomes for both staff and organization.

### **Nurse Satisfaction with Quality of Care**

According to Cooperberg et al. (2009), quality of care is defined as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (p. 411). The quality of care in nursing has been illustrated in the literature in a variety of ways. For example, the quality of care can be determined by different outcomes such as readmission to hospitals after discharge (Brooks, 2015). The Affordable Care Act in the USA established three programs for performance to improve the quality of care in acute care hospitals while controlling costs (Brooks, 2015) as patients may be readmitted to hospitals within a short time after discharge because of recurrence, side effects or adverse effects from the care they received. Another indicator of the quality of care that patients receive is the rate of hospital-acquired conditions such as falls, pressure ulcers, and infections (Brooks, 2015). Thus, each hospital should implement its hospital-acquired conditions policy to reduce these conditions in hospitals and encourage the elimination of avoidable complications (Bindman et al., 2009).

Previous studies have explored factors that affect the quality of care; however, few studies describe the quality of care from the perspective of the nurse (Ryan et al., 2017). Glen (1998) explained the quality of nursing care as a developmental continuum which consists of four stages: labor, nursing art, nursing craft, and profession. Thus, if nurses are able to progress through each stage, their personal qualities including, emotional and motivational states will be developed (Glen, 1998). These aspects are perceived as the key elements that are needed to achieve nursing competence and demonstrate quality nursing care (Ryan et al., 2017).

Coulon et al. (1996) examined the meaning of excellence in nursing care among 156 undergraduate and postgraduate nurses in Australia. Their findings suggested that patients are at the center of their focus when nurses deliver nursing care. In addition, participants described the quality of nursing care in four concepts which are professionalism, holistic care, practice, and humanism. Humanism is defined in this research findings as “an action or practice of mode of thought in which human interest predominates” (Coulon et al., 1996). Humanism could be related to enabling qualities of nurses, nurse- patient relationships, or nurse-health team members’ relationships (Coulon et al., 1996). The authors illustrated excellence in nursing care as nurses’ attitudes, values, behaviour, and relationships with patients, peers, and administration which positively lead to enhanced health outcomes (Coulon et al., 1996).

In another study conducted to compare nurses’ perceptions of quality of care between United Kingdom and USA, participants identified different elements that described quality of patient care including, staff competency, staff communication, patient-staff communication, caring, understanding patient needs, and dignity (McKenna et al., 2006). Some participants also described quality of care as privacy of patients, feeling valued and listened to, and basics such as cleanliness and safety (McKenna et al., 2006; Mitchell, 2008). Burhans and Alligood (2010) also found that nurses in the United States defined the quality of nursing care in six essential concepts which are advocacy, caring, empathy, intentionality, respect, and responsibility. Ryan et al. (2017) identified how nurses at a medical center perceived quality of care and reported that effective communication/ collaboration, professionalism, relationship-based care, leadership, resources, patient experience, environment/culture, and clinical outcomes were considered as significant elements of defining the quality of nursing care. These study

findings illustrate that the concept of quality of care is variable and suggest that there are different factors that may affect the quality of nursing care perceived by nurses in different settings. Thus, measuring quality of care is difficult because the definition of quality in healthcare disciplines remains subjective which results in measurement challenges (Alligood & Burhans, 2010). To reduce bias, the evaluation of quality of care should be approached from both patient outcomes and satisfaction and the nurses' perspective to reduce bias of opinion (Aron, 2015). Alligood and Burhans (2010) explained that nurses evaluate quality based on assessment, planning, or the effectiveness of treatments and medications while patients assess the quality based on communication, listening, kindness and responsiveness of their nurses. In this study, factors including authentic leadership, work engagement, team effectiveness will be examined for their direct and indirect relationships with perceived quality of nursing care.

As shown in the literature, there is a gap in nursing literature in defining and measuring the quality of nursing care. This significant gap does need to be addressed as the quality of nursing care is a core concept in nursing practice. It is essential for nurses to evaluate the quality of care and the level of satisfaction with the quality of care in order to ensure the provision of the best care to each patient (Aron, 2015). Also, nurse satisfaction with the quality of care may have an effect on both nurse and patient outcomes such as job satisfaction and patient satisfaction with care (Walker, 2018). Thus, we need to explore the level of satisfaction among nurses about the quality of care they provide as well as identify the components of the quality of nursing care as perceived by nurses. Therefore, in this study, nurse satisfaction with the quality of care will be measured and linked to nursing outcomes.

### **Statement of Research Problem**

There have been significant advancements in Saudi Arabia in the areas of nursing education, workforce and professional practice, but Saudi Arabia is still faced with a chronic shortage of locally trained nurses (Almalki et al., 2011). The current shortage of Saudi national nurses, in particular, is related to several factors including the increasing growth rate of the population and particularly the growth of the elderly population (UNICEF, 2014). The absence of qualified nurse managers is another factor which results in a failure of advocacy for nurses' employment rights such as the respect they deserve from other healthcare providers and the support and resources they need to do their job. This leads to a negative effect on nurse retention which exacerbates the nursing shortage in Saudi Arabia (Asiri et al., 2016).

The leadership style of unit managers influences the psychological safety and work engagement of their employees (Plasse, 2015). The impact of leadership style and leaders' behaviours on staff and patient safety in health workplaces has been explored in several studies (Cummings, et al., 2010; Cummings et al., 2010; Wong & Cumming, 2007). Managers can make their leadership styles the foundation for engagement, psychological safety and positive relationship formation (Edmondson, 2004). Based on research reviewed, authentic leadership has been shown to have a positive impact on nursing work environments including staff and team engagement, psychological safety, effectiveness, and intentions (Alilyyani et al., 2018; Avolio et al., 2004; Giallonardo et al., 2010; Plasse, 2015). Using nurses who work on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia, the proposed study tested a model derived from Avolio et al.'s (2004) authentic leadership theory to examine the relationships among authentic leadership, psychological safety,

work engagement, and team effectiveness, and the subsequent effects on team effectiveness, job turnover intentions and nurse satisfaction with quality of care.

The hypothesized model for this study is presented in Figure 5.

**Hypothesis 1:** Authentic leadership is positively related to work engagement, psychological safety, and team effectiveness (H1).

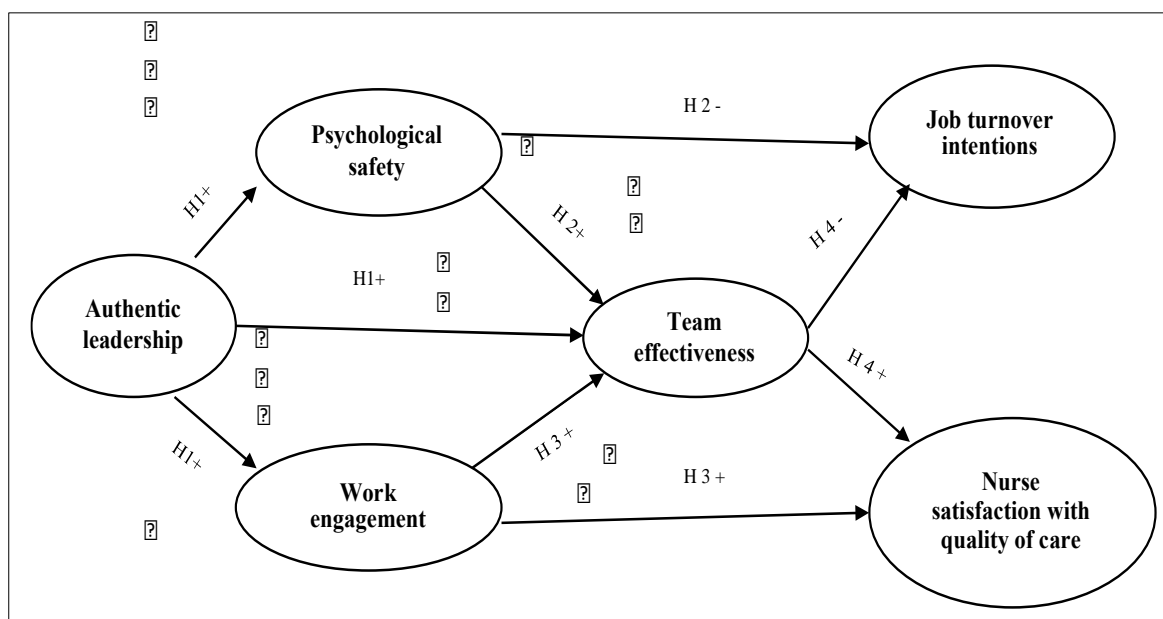
**Hypothesis 2:** Psychological safety is positively related to team effectiveness and negatively related to job turnover intentions (H2).

**Hypothesis 3:** Work engagement is positively related to team effectiveness and nurse satisfaction with quality of care (H3).

**Hypothesis 4:** Team effectiveness is negatively related to job turnover intentions and positively related to nurse satisfaction with quality of care (H4).

**Figure 5**

*The Hypothesised Study Model*



Note; (H=hypothesis; '+'=positive correlation; '-'=negative correlation)



## **Research Methods**

This study used a non-experimental, predictive, correlational, cross-sectional, self-reported survey design to test the hypothesized model. Self-report surveys are well suited to examine relationships or associations between a large number of variables (Setia, 2016). Cross-sectional studies can be also conducted efficiently using an affordable budget (Setia, 2016). Data collection took approximately four months during 2019 (May- August).

### **Sample Size**

The study tested the hypothesized model by using structural equation modeling (SEM) to analyze data. While there is no agreed upon method to calculate sample size for the SEM analysis in the literature, researchers have suggested the minimum sample size that is required for SEM statistical analyses is 200 participants (Kline, 2005). The study was designed to enroll two equally sized samples, with 200 participants for testing the psychometric properties of the satisfaction with the quality of care scale, and the other 300 participants to test the proposed relationships in the main study model. A total of 500 registered nurses working on inpatient units and outpatient clinics in Saudi Arabia was therefore considered as the appropriate sample size in this study. The reason for choosing 500 participants as a minimum number in this study was that in addition to Kline's recommendation for minimum number of 200 participants for SEM analysis, the following factors may also affect the required sample size: the measurement model approach to SEM which increases the number of parameters to be estimated, number of variables in this study, and the amount of missing data per indicator (Wolf, Harrington, Clark, & Miller, 2013).

### **Inclusion/Exclusion Criteria**

Participants in this study were selected based on the following criteria: they were registered nurses in Saudi Arabia; worked on inpatient units and outpatient clinics, in one of the hospitals in three cities chosen; had six months or more of experience in their current department to ensure familiarity with the setting and their manager; were in direct nursing care positions to ensure consistency; were willing to participate in the study; and were capable of completing the survey in English. However, there were some exclusion criteria including nurses who had less than six months experience on the current unit; were on leave such as annual, sick, education, emergency or maternity leave; and were not in direct nursing care positions such as management or administration positions.

### **Setting and Sample**

This study was conducted in public hospitals in three different cities in Saudi Arabia, including Makkah, Taif, and Jeddah, where there are many public hospitals. There are ten public hospitals in Makkah, 12 hospitals in Jeddah, and 13 hospitals in Taif (MRHB, 2017). The majority of people in Saudi Arabia get treatment in public hospitals that were built by the Ministry of Health (MOH); 59.5 % of healthcare services are provided in public hospitals, and 44.5% of nurses work in public hospitals while the remainder can be found in private and military hospitals (Almalki et al., 2011). The three cities are all located in the west part of Saudi Arabia, as the biggest hospitals in Saudi Arabia are in the west part of Saudi Arabia. Clustering the recruitment sites in this way helped to facilitate data collection and increased the likelihood of attaining the full sample size needed for the study.

Non-probability, convenience sampling was used to select participants as it was the most appropriate sampling method for this study. A probability sampling method

could not be obtained because of the lack of a complete roster of all nurses working in public hospitals in Saudi Arabia which makes classic random sampling impossible. A provisional 40 to 50% response rate was estimated based on previous studies conducted in Saudi Arabia (Alghamdi et al., 2018; Alotaibi et al., 2016; Asiri et al., 2016).

Therefore, a total of 1130 questionnaires was distributed to nurses working on inpatient units and outpatient clinics across the participating hospitals, which represents approximately 30% of the total number of available nurses from each hospital (see Table 13). A total of 656 usable surveys out of the 1130 distributed questionnaires were completed and returned for a response rate of 58%.

**Table 13**

*Total Number of Nurses in Each Hospital Used to Collect Data in Three Different Cities*

<b>Names of cities:</b>	<b>The total number of nurses in each hospital:</b>	<b>The selected number of nurses from each hospital in this study:</b>
Makkah	909	273
Jeddah	1589	477
Taif	1264	380
Total	3762	1130

### **Data Collection Procedures**

Surveys were distributed to 1130 potentially nurses who work on inpatient units and outpatient clinics in public hospitals in three different cities. Local ethics approval for the study's overall data collection plan was received from the Saudi Ministry of Health as

well as certificates of completion from the selected hospitals (Appendix C). Also, permission to conduct this study was obtained from Western University (Appendix D). The Dillman et al. (2011) guide to survey design and data collection protocol was used as it helped to minimize errors and maximize response rates. Participants received a paper copy invitation through the quality management department in each hospital, which included a letter of information, questionnaires, risks and benefits of the study, contact information for the researcher and faculty supervisor, as well as detailed options for participants to withdraw from participation at any time prior to submission of the survey (Appendix E). The quality management departments are responsible for informing staff in the hospitals about any possible involvement in a research study. After completing their surveys, the participating nurses placed them in a lockable box provided on each unit to ensure confidentiality, with the primary researcher collecting them weekly from the department. Returning the completed survey was construed as implied consent, indicating that the subject has agreed to participate in the study. The study questionnaire was in English. It included items related to nurse demographics, to help describe the study sample, as well as items from standardized tool for the main study variables of authentic leadership, psychological safety, work engagement, team effectiveness, job turnover intentions, as well as a measure of nurse satisfaction with the quality of care. The total number of questions was 63 and the estimated time to complete the survey was 35 minutes.

## **Instrumentation**

### ***Authentic Leadership***

Avolio et al.'s Authentic Leadership Questionnaire (ALQ, 2007) was used to measure authentic leadership. This tool consists of 16 items divided into four subscales:

relational transparency (5 items), internalized moral perspective (4 items), balanced information processing (3 items) and self-awareness (4 items). These items are rated on a 5-point Likert scale ranging from 0 (not at all) to 4 (frequently, if not always). An example of items in the scale is, “[my leader] says exactly what he or she means” (from relational transparency subscale). A total authentic leadership score was obtained by averaging the four subscales, so the higher score corresponded to the higher authentic leadership rating. Internal consistency has been tested, where Cronbach’s alphas was ranged from 0.70 to 0.90 (Bamford et al., 2012; Laschinger & Smith, 2013; Laschinger et al., 2012; Walumbwa et al., 2008; Wong & Laschinger, 2013). For validity, confirmatory factor analysis (CFA) has supported the four dimensions of the ALQ (Walumbwa et al., 2008).

### ***Psychological Safety***

Edmondson’s (1999) psychological safety instrument was used to measure psychological safety of an individual’s experience of psychological safety with team colleagues (Plasse, 2015). Four items from Edmondson’s (1999) seven-item psychological safety scale were used in this study. Items were scored on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The full scale that consists of seven items was administered, and only the four positive items were used in the analysis. The other three negative items that need to be reversed were deleted because the Cronbach’s alpha was very low 0.11 when these items were reversed. These negative items were: 1. “If you make a mistake on this team, it is often held against you”; 2. “People on this team sometimes reject others for being different”; and 3) “It is difficult to ask other members of this team for help”. The final score was the average of all four positively worded items with the possible range of one to five. The higher the score, the

more psychologically safe the individual feels. Edmondson (1999) conducted analyses to assess the psychometric properties of the team psychological safety instrument including, internal consistency reliability and discriminant validity of the scale. Team psychological safety has high internal consistency (Cronbach alpha = 0.82). Discriminant validity was established by creating a multitrait multimethod (MTMM) matrix (Campbell & Fiske, 1959). Also, in other studies the validity and reliability of this tool have been established. For instance, Plasse (2015) reported a Cronbach coefficient of 0.74.

### ***Work Engagement***

The Utrecht Work Engagement Scale (UWES) (Schaufeli & Bakker, 2003) was used to measure the work engagement of participants. It is a self-report questionnaire that consists of 17 items based on three subscales: vigor (6 items), dedication (5 items), and absorption (6 items). Items are rated on a seven-point Likert scale ranging from 0 (never) to 6 (always). Examples of these items are: “at my work, I feel bursting with energy” and “I find the work that I do full of meaning and purpose”. Items in each subscale are averaged to produce a subscale score from 0 to 6, so the total score was created from the average of all items ranging from 0 to 6, with higher scores representative of greater work engagement. Confirmatory factor analysis has supported the three subscales of this tool (Schaufeli et al., 2002). Acceptable Cronbach alphas have been supported with values ranging from 0.85 to 0.92 (Schaufeli et al., 2006).

### ***Team Effectiveness***

Team effectiveness was measured by using four items that are adapted from the technical quality subscale of Shortell et al.’s (2001) Intensive Care Unit Survey. This scale measures nurses’ abilities to work together effectively to achieve patient care goals. It is a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). An example of

the four items is “our clinic/unit works together to achieve patient care treatment goals”. The total score was created from the average of all four items ranging from 1 to 5 with higher scores representative of greater team effectiveness. Confirmatory Factor Analysis has supported the scale’s construct validity, and the results of factor loadings of the four items were 0.72-0.88 (Read, 2016). Internal consistency has been reported with a Cronbach’s  $\alpha$  value of 0.76 (Shortell et al., 1991).

### ***Turnover Intentions***

Turnover intentions were measured by using four items from the Turnover Intentions Scale (Kelloway et al., 1999). This tool measures nurses’ plans to remain or leave their positions. Items are rated on a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). “I am thinking about leaving this organization” is an example of an items from this scale. The total score was created from the average of all four items ranging from 1 to 5, and higher scores mean that they are more likely to leave the current facility. Reliability and validity were measured, and Cronbach alpha value of the original scale indicated that it is internally consistent (0.82) (Leiter & Maslach, 2009), with construct validity demonstrated in a number of past studies by using CFA (ICC; Kelloway et al., 1999; Laschinger, 2012).

### ***Nurse Satisfaction with Quality of Care***

Nurse satisfaction with quality of care (NSQC) was measured by using a scale that was developed by Dr. Heather Laschinger and Dr. Michael Kerr about 10 years ago at Western University. This scale consists of five items, that are rated on a five-point Likert-type scale ranging from 1 (very dissatisfied) to 5 (very satisfied). Some examples of the items are “the type of care you can provide to patients in this unit/clinic” and “the amount of time you can spend with patients in this unit/clinic”. The total score was

created from the average of all five items ranging from 1 to 5 with higher scores representative of more satisfaction with quality of care. Laschinger and Kerr developed the new tool based on The Nursing Sector Study recommendations in its Phase II final report (The Nursing Sector Study Corporation, 2006). This scale is intended to measure nurse satisfaction with the quality of care although no other published studies have used this scale to date. Thus, the psychometric properties of this tool have been examined recently and are reported on chapter three in this dissertation.

A demographic questionnaire was also used to gather information about participants including their age, sex, nationality, education, years of nursing experience, length of employment in the current setting, length of residence in Saudi Arabia, current practice area, the city that they work in, and length of time and frequency of contact with their manager. All questionnaires, the demographic questionnaire, and the permissions from the authors of the scales that were used in this study are illustrated in Appendix F.

### **Data Analysis**

In this study, there were two main steps to the analysis: Step 1) descriptive analysis of the demographics and main study variables with an examination of possible relationships among them and Step 2) structural equation modeling (SEM) to test the main study hypothesized model. Two statistical packages were used to analyze data which are the Statistical Package for Social Sciences (SPSS 25, IBM Corp, 2017) and Mplus 8 (Muthén & Muthén, 2017). Cronbach's alpha reliability coefficients were determined for all scales used in the analysis. For the demographic data, descriptive statistical analyses were conducted, including determining means and standard deviations of all relevant variables. In order to examine differences between means for demographic variables and major study variables, T-tests or ANOVA were conducted. The relationship between demographics and main study



variables was examined. To examine data for normal data distributions, skewness and kurtosis were measured. For the descriptive analysis and testing the hypothesized model, 456 subjects were used while the other 200 surveys used for testing the psychometric properties of the nurse satisfaction with the quality of care scale.

Mplus software was used to test the hypothesized study model via SEM (Muthén & Muthén, 2017). Prior to the data analysis, the quality of the data was examined for distributions, outliers and missing data. Full Information Maximum Likelihood (FIML) estimation was used in Mplus by default. With regards to missing data, there was no missing data in the main study variables and all missing data occurred in the demographic part of the survey including nationality and age. Little's Missing Completely at Random (MCAR) was used to test if data were missing completely at random and results ( $\text{Chi-Square} = 1.84, df = 2, p = 0.39$ ) showed data were missing completely at random. Missing data from participants' questionnaires was 4.8% over all questions, so it was considered random and a small amount of missing data which had no significant effect on the results (Kaiser, 2014). Thus, missing data in demographics were dealt in SPSS as percentages and based on the number of non-missing values by default. SEM has two primary components which are the measurement and structural models (Weston & Gore, 2006). After testing and finalizing a measurement model with adequate results for the fit indices, the structural model was tested to assess the hypothesized regression paths.

## **Results**

### **Descriptive Results**

Demographic data and work characteristics are presented in Table 14. The majority of registered nurse respondents were female (91.7%) and the mean age was 32 years ( $SD = 6.30$ ). Other previous studies in Saudi Arabia also found that nurses were mostly

female: 89% (Al-Yami et al., 2018), 72.6% (El Dahshan et al., 2017), and 92.1 % (Asiri et al., 2016). The mean years of experience as a registered nurse was nine years ( $SD = 5.79$ ) with a mean of five years ( $SD = 4.08$ ) experience on their current unit. In a previous study the length of experience in the current nursing position ranged between one to four years of experience (Alghamdi et al., 2018). Most nurses were not Saudi nationals (Indian 39.8%, Filipino 29.2%, Pakistani 2.2%, Egyptian 1.1%, Sudanese 0.9%) with Saudis accounting for just 26.8% of the total. These results concur with previous studies: AL-Dossary (2018) showed that Saudi nurses account for 36.5 % of the workforce in the healthcare system in general while 63.5% were non-Saudi, while another study found that 84% of nurses were non-Saudi (Al-Yami et al., 2018). In the current study 72.6% of nurses held a Bachelor's of Nursing degree. This compares to a previous study that found 58% of nurses had Bachelor's degrees (Al-Yami et al., 2018). Nurses worked in a variety of different departments such as surgical units (24.3.0%), medical units (20.4%), and cardiac units (7.9%). Most participants (51.5%) were from Jeddah while 26.8% were from Makkah and 21.7% from Taif. Lastly, most nurses in the study (71.9%) reported that they have contact with their head nurses at least once per day.

The means, standard deviations, and reliability analysis (Cronbach's alpha) of the main study variables are presented in Table 15. Cronbach's alphas of all study variables were equal to or greater than 0.56 (alpha values ranged from 0.56 to 0.96). The Cronbach's alpha was below 0.7 ( $\alpha=.56$ ) for only the psychological safety scale perhaps, because only four items (positive items) were used in the analysis due to the need to delete the three negatively worded items deleted. The mean overall score for authentic leadership (ALQ) was ( $M = 2.95$ ,  $SD = 0.74$ ) and the means for the sub-scales were: Transparency ( $M = 2.96$ ,  $SD = 0.78$ ), Moral/Ethical ( $M = 2.93$ ,  $SD = 0.79$ ), Balanced

Processing ( $M = 2.90$ ,  $SD = 0.84$ ), and Self-Awareness ( $M = 2.99$ ,  $SD = 0.80$ ). This suggests that nurses perceived their leaders as moderately high authentic leaders. The mean for psychological safety ( $M = 3.10$ ,  $SD = 0.63$ ) suggests nurses reported moderate psychological safety, while they rated team effectiveness (TE;  $M = 2.90$ ,  $SD = 0.85$ ) as moderate. Nurses' intention to leave their job (IT;  $M = 3.11$ ,  $SD = 1.07$ ) was also moderate, and mean nurse satisfaction with quality of care ( $M = 3.40$ ,  $SD = 0.70$ ) indicated that nurses were moderately satisfied regarding the quality of care that they provide. The means and standard deviations for work engagement and its sub-scales were: total ( $M = 4.16$ ,  $SD = 1.00$ ), Vigor ( $M = 3.99$ ,  $SD = 1.08$ ), Dedication ( $M = 4.54$ ,  $SD = 1.14$ ), and Absorption ( $M = 3.96$ ,  $SD = 1.10$ ). Overall, these results suggest that nurses were moderately engaged in their work.

**Table 14***Frequencies for Nurses' Demographic and Work Characteristics*

<b>Demographic characteristics</b>	<b><i>n</i></b>	<b>%</b>
Sex	456	100
Male	38	8.3
Female	418	91.7
Nationality	455	99.8
Indian	181	39.8
Filipino	133	29.2
Saudi	122	26.8
Pakistani	10	2.2
Egyptian	5	1.1
Sudanese	4	0.9
Highest education	456	100
Nursing Diploma	117	25.7
Bachelors of Nursing	331	72.6
Master Degree in Nursing	8	1.8
Current area of work	456	100
Other	120	26.3
Surgical unit	111	24.3
Medical unit	93	20.4
Cardiac unit	36	7.9
Orthopedic unit	34	7.5
Outpatient	32	7
ICU	29	6.4
Obstetric unit	1	0.2
City of work	456	100
Jeddah	235	51.5
Makkah	122	26.8
Taif	99	21.7
Frequency interaction with head nurse	456	100
Once or twice per year	5	1.1
Once a month	17	3.7
Once every other week	14	3.1
1-2 times per week	28	6.1
3-4 times per week	64	14
At least once per day	328	71.9
	<b><i>M</i></b>	<b><i>SD</i></b>
Age	31.67	6.30
Years of experience in nursing	8.54	5.79
Years employment at current unit	4.92	4.08
Years living in Saudi Arabia	31.29	41.79

**Table 15***Means (M), Standard Deviations (SD), and Reliability Analysis of Study Variables*

Scale	Sub-scale	Response range	# of items	M	SD	Cronbach's alpha
AL	4 sub-scales	0 - 4	16	2.95	0.74	0.96
	Transparency	0 – 4	5	2.96	0.78	0.89
	Moral/Ethical	0 – 4	4	2.93	0.79	0.86
	Balanced Processing	0 – 4	3	2.90	0.84	0.83
	Self-Awareness	0 – 4	4	2.99	0.80	0.92
PS	-	1 – 5	4	3.10	0.63	0.56
WE	3 sub-scales	0 – 6	17	4.16	1.00	0.91
	Vigor (VI)	0 – 6	6	3.99	1.08	0.77
	Dedication (DE)	0 – 6	5	4.54	1.14	0.83
	Absorption (AB)	0 – 6	6	3.96	1.10	0.77
TE	-	1 – 5	4	3.90	0.85	0.89
TI	-	1 – 5	4	3.11	1.07	0.92
NSQC	-	1 – 5	5	3.40	0.70	0.81

AL; Authentic leadership; PS; Psychological safety; WE; Work engagement; TE; Team effectiveness;  
 TI; Turnover intentions; NSQC; Nurse satisfaction with the quality of care

### Relationship of Demographic Variables to Major Study Variables

Prior to the inferential analysis, the main study variables were examined for associations with the demographic variables and the results are shown in Table 16. The analysis showed that there were significant relationships between sex and authentic leadership ( $p < 0.01$ ), psychological safety ( $p = 0.001$ ), and nurse satisfaction with quality of care ( $p < 0.02$ ). Male nurses rated authentic leadership, psychological safety, and satisfaction with quality of care higher than female nurses. Nationality had a significant relationship with authentic leadership ( $p < 0.02$ ) and intention to leave ( $p = 0.02$ ). Saudi nurses were the highest in rating their leaders as authentic while non-Saudi nurses showed higher turnover intentions scores. The results of one-way ANOVA tests showed that there were significant differences between nurses' level of education and

intention to leave ( $p = 0.003$ ). Nurses who held a Bachelor's of Nursing degree rated intention to leave as the highest. In addition, there were significant differences between the current areas of work and authentic leadership ( $p = 0.001$ ), intention to leave and satisfaction with the quality of care ( $p < 0.001$ ). Nurses who worked in orthopedic units rated their leaders as more authentic while nurses in medical unit reported the highest level of intention to leave their jobs. In terms of satisfaction with quality of care, nurses in outpatient clinics rated this the highest. City of work also had significant differences with authentic leadership ( $p < 0.001$ ) and satisfaction with quality of care ( $p = 0.03$ ). Nurses who worked in Jeddah city rated their leaders as more authentic than nurses in Makkah and Taif while nurses in Taif city reported the highest satisfaction with quality of care compared with the other two cities.

The correlations between main study variables are illustrated in Table 17. The significant correlations ranged from -0.09 to 0.93. Small negative correlations were found between job turnover intentions and all four components of authentic leadership which are Transparency, Moral/Ethical, Balanced Processing, and Self-Awareness (-0.12-0.20,  $p < 0.01$ ). Also, there were small positive correlations between nurse satisfaction with quality of care and two elements of work engagement vigor (0.20,  $p < 0.01$ ) and absorption (0.17,  $p < 0.01$ ).

**Table 16***Relationship of Demographic Variables to Major Study Variables (N = 456)*

Demographic characteristics	Authentic leadership			Psychological safety			Work engagement			Team effectiveness			Intention to leave			Satisfaction with quality of care		
	M	SD	T/F-Value/ p value	M	SD	T/F-Value/p value	M	SD	T/F-Value/p value	M	SD	T/F-Value/p value	M	SD	T/F-Value/p value	M	SD	T/F-Value/ p value
<b>Sex</b>			<i>t</i> (454)			<i>t</i> (454) =			<i>t</i> (454) =			<i>t</i> (454) =			<i>t</i> (454) =			<i>t</i> (454)
Male (n=38)	3.24	0.57	= 2.52,	3.44	0.63	3.47,	4.05	1.30	-0.69,	3.90	0.77	0.58,	3.08	1.02	-0.17,	3.64	0.67	= 2.21,
Female (n=418)	2.92	0.75	<i>p</i> <0.01	3.07	0.62	<i>p</i> = .001	4.17	0.97	<i>p</i> <0.48	3.89	0.85	<i>p</i> < 0.56	3.11	1.05	<i>p</i> < 0.86	3.37	0.70	<i>p</i> < 0.02
<b>Nationality</b>			<i>F</i> (5) =			<i>F</i> (5) =			<i>F</i> (5) =			<i>F</i> (5) =			<i>F</i> (5) =			<i>F</i> (5) =
Saudi (n=122)	3.08	0.72	2.55,	3.17	0.73	0.66,	4.18	1.18	1.33,	3.81	0.93	1.33,	2.85	1.11	2.66,	3.51	0.72	1.12,
Pakistani (n=10)	2.82	0.42	<i>p</i> < 0.02	3.30	0.53	<i>p</i> =0.65	3.77	1.16	<i>p</i> =0.24	4.20	0.84	<i>p</i> = 0.24	3.57	1.10	<i>p</i> =0.02	3.50	0.64	<i>p</i> =0.34
Indian (n=181)	2.95	0.79		3.06	0.58		4.18	0.88		4.00	0.82		3.20	1.04		3.36	0.71	
Filipino (n=133)	2.85	0.77		3.09	0.61		4.20	0.98		3.81	0.80		3.23	1.01		3.33	0.68	
Egyptian (n=5)	2.14	0.75		3.15	0.28		3.96	0.84		4.15	0.78		2.56	1.45		3.24	0.55	
Sudanese (n=4)	2.98	0.18		2.93	0.82		3.07	0.86		3.93	0.82		2.87	1.05		3.50	0.84	
<b>Highest education</b>			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =
Nursing Diploma (n=117)	2.97	0.75	1.2,8	3.16	0.70	0.65,	4.31	1.15	1.60,	3.83	0.96	0.85,	2.85	1.08	6.07,	3.48	0.74	1.79,
Bachelors of Nursing (n=331)	2.93	0.74	<i>p</i>	3.03	0.60	<i>p</i> =0.52	4.11	0.93	<i>p</i> = 0.20	3.91	0.81	<i>p</i> = 0.42	3.21	1.05	<i>p</i> = .003	3.36	0.69	<i>p</i> =0.16
Master Degree in Nursing (n=8)	3.33	0.45	=0.27	3.06	0.75		4.12	1.31		4.18	0.54		2.56	1.09		3.62	0.57	
<b>Current area of work</b>			<i>F</i> (7) =			<i>F</i> (7) =			<i>F</i> (7) =			<i>F</i> (7) =			<i>F</i> (7) =			<i>F</i> (7) =
Medical unit (n=93)	2.91	0.74	3.73,	3.06	0.67	1.03,	4.10	1.11	0.81, <i>p</i>	3.74	0.92	1.83,	3.38	1.01	3.78,	3.18	0.67	4.21,
Surgical unit (n=111)	3.00	0.66	<i>p</i> =0.00	3.06	0.61	<i>p</i> =0.40	4.22	0.91	=0.57	3.94	0.75	<i>p</i> = 0.07	3.09	0.98	<i>p</i> < .001	3.41	0.66	<i>p</i> < .001
Cardiac unit (n=36)	2.96	0.71	1	3.03	0.49		4.12	0.89		4.06	0.80		3.06	1.19		3.52	0.75	
Obstetric unit (n=1)	3.00	0.00		3.25	0.00		6.00	0.00		3.00	0.00		3.00	0.00		3.00	0.00	
ICU (n=29)	2.44	0.95		2.95	0.57		4.08	1.08		3.74	0.92		3.31	1.05		3.33	0.57	
Orthopedic unit (n=34)	3.35	0.65		3.12	0.85		4.23	1.17		4.20	0.91		2.94	1.27		3.28	0.88	
Outpatient (n=32)	2.84	0.79		3.12	0.76		4.24	1.20		4.07	0.90		2.32	0.93		3.90	0.67	
Other (n=120)	2.95	0.72		3.22	0.55		4.12	0.90		3.86	0.82		3.14	1.04		3.43	0.66	
<b>City of work</b>			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =			<i>F</i> (2) =
Makkah (n=122)	2.72	0.63	7.90,	3.18	0.67	1.53,	4.05	0.98	1.49,	3.88	0.81	0.19,	3.20	1.19	2.91,	3.48	0.72	3.28,
Jeddah (n=235)	3.04	0.73	<i>p</i> < .001	3.06	0.61	<i>p</i> = 0.21	4.17	0.92	<i>p</i> =0.22	3.92	0.83	<i>p</i> = 0.82	3.00	1.00	<i>p</i> = .055	3.31	0.67	<i>p</i> =0.03
Taif (n=99)	3.00	0.85		3.11	0.62		4.20	1.20		3.87	0.94		3.27	1.05		3.49	0.75	

**Table 17***Correlation Matrix between Study Variables*

Variables:	1	2	3	4	5	6	7	8	9	10	11	12
1.AL	–	–	–	–	–	–	–	–	–	–	–	–
2.ALQT	0.90	–	–	–	–	–	–	–	–	–	–	–
3.ALQM	0.93	0.82	–	–	–	–	–	–	–	–	–	–
4.ALOBP	0.93	0.76	0.82	–	–	–	–	–	–	–	–	–
5.ALQSA	0.92	0.76	0.80	0.85	–	–	–	–	–	–	–	–
6.WE	0.82	0.27	0.26	0.24	0.26	–	–	–	–	–	–	–
7.WEVI	0.22	0.20	0.21	0.19	0.21	0.91	–	–	–	–	–	–
8.WEDE	0.26	0.27	0.25	0.23	0.23	0.89	0.71	–	–	–	–	–
9.WEAB	0.27	0.27	0.26	0.23	0.23	0.91	0.77	0.70	–	–	–	–
10. PS	0.32	0.34	0.31	0.27	0.28	0.18	0.17	0.15	0.17	–	–	–
11. TE	0.37	0.36	0.32	0.35	0.36	0.38	0.27	0.34	0.24	0.19	–	–
12. JTI	-0.18	-0.15	-0.12	-0.20	-0.19	-0.13	-0.14	-0.12*	-0.09	0.003**	-0.23	–
13. SQC	0.28	0.29	0.22	0.26	0.27	0.23	0.20	0.25	0.17	0.27	0.40	-0.26

AL; Authentic leadership (ALQT; Transparency, ALQM; Moral/Ethical, ALQBP; Balanced Processing, ALQSA; Self-Awareness)

WE; Work engagement (WEVI= vigor; WEDE = dedication; WEAB = absorption)

PS; Psychological safety, TE; Team effectiveness, JTI; Job turnover intentions, SQC; Satisfaction with quality of care

\*\*not significant

\*significant  $p < .05$

Note; everything else is significant at  $p < .01$



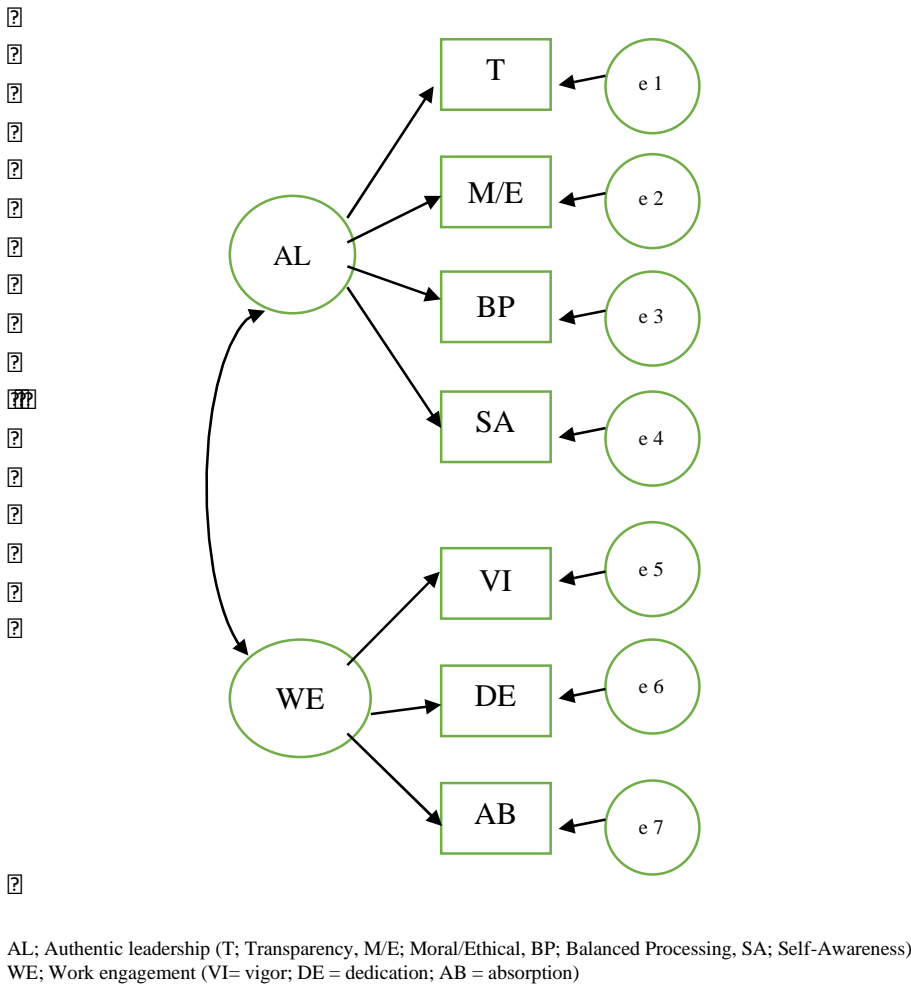
### **Testing the Hypothesized Study Model**

The overall fit of the hypothesized model was tested by using Structural Equation Modelling (SEM) using a two-step approach. Firstly, confirmatory factor analysis (CFA) was used to test the hypothesized measurement model to determine the factor structure of two constructs (authentic leadership and work engagement). Then, the structural model was examined using the hypothesized regression paths. The overall model consisted of two latent variables (authentic leadership and work engagement) and four single observed variables (psychological safety, team effectiveness, job turnover intentions, and nurse satisfaction with the quality of care) (Figure 8). The latent variables were formed with their subscales as indicators rather than all the original items. The other four constructs (psychological safety, team effectiveness, job turnover intentions, and nurse satisfaction with the quality of care) were unidimensional, that is, no subscales, and therefore those constructs were treated as single observed variables. As such the overall model is considered as a partially latent model (Brown, 2015). A partially latent model is defined as one in which at least one variable in the structural model is a single indicator, that is, an observed variable that is a single indicator for a construct (Kline, 2011). Although it would have been possible to use all items as indicators, this practice is usually recommended only for preliminary measurement purposes to test whether a scale is unidimensional or not (Brown, 2015). Some researchers have suggested that instead of individual items, parcels of items can be used as indicators, but this also adds complexity to the model to be analyzed by having some variables have subscales while other having items (Brown, 2015).

### **Testing the measurement model**

Using SEM, a two-factor measurement model was tested (Figure 6) as the focus of the measurement model was primarily with the two latent variables with subscales, namely: (1) authentic leadership (measured by four sub-scale factors which are balanced processing, relational transparency, internalized moral perspective, and self-awareness) and (2) work engagement (measured by three sub-scale factors which are vigour, dedication, and absorption). Thus, the measurement model should focus on either the observed variables level (subscale level) or the item level. The measurement model of this study focused only on the two constructs (authentic leadership and work engagement) with their subscales rather than the item level because there were four constructs that were unidimensional (psychological safety, team effectiveness, job turnover intentions, and nurse satisfaction with quality of care). In line with the theoretical model and support from the literature, the two latent variables specified in the model were allowed to correlate. Figure 3 illustrates the measurement model comprising the two latent variables.

**Figure 6**  
*Two Latent Variables in the Initial Measurement Model*



The fit statistics of the measurement model are presented in Table 18. The model’s fit was determined by parameter estimates and the following set of indices (Byrne, 2012): Chi-square ( $\chi^2$ ), degrees of freedom (df), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and comparative fit index (CFI) (Byrne, 2012; Hair et al., 2010). The results of the fit indices for the original model

with the two latent variables, that consisted of seven factors in total, were:  $\chi^2 (13) = 59.19$ ,  $p < 0.001$ , SRMR = 0.021, RMSEA = 0.088 (90% CI = 0.066–0.112), CFI = 0.98. The results suggested (with RMSEA > 0.06) that the model does not have an adequate fit, therefore the model needed some modifications in order to improve the fit. Based on the modification indices (Lagrange multiplier tests) which indicated that allowing the correlation of the errors between the residuals of two factors, balanced processing and self-awareness would improve the fit (Brown, 2015). This means that balanced processing and self-awareness could be theoretically similar in the scale (Brown, 2015). Allowing the correlation of the errors between the residuals improved the goodness of fit indices:  $\chi^2 (12) = 15.08$ ,  $p = 0.23$ , SRMR = 0.018, RMSEA = 0.024 (90% CI = 0.00–0.056), CFI = 0.99. The model fit was thereby improved, and it showed good overall fit indices.

**Table 18**

*Summary of Original Model and the Model Modification*

Model	Summary of modifications	$\chi^2(df)$	$p$	RMSEA	CFI	SRMR
Original	N/A	59.19 (13)	<0.001	0.088 CI: 0.066-0.112	0.98	0.021
Modification 1	Allowing the correlation of errors between the residuals of two factors	15.08 (12)	0.23	0.024 CI: 0.00-0.056	0.99	0.018

The range of factor loadings was 0.81- 0.94, and all loadings were statistically significant ( $p < 0.001$ ). Table 19 illustrates the factor loadings of the model before and after modification. The correlation between the two latent variables authentic leadership (AL) and work engagement (WE) was positive ( $r = 0.30$ ) and statistically significant ( $p < 0.001$ ). Figure 7 illustrates the standardized factor loadings of the two-variable measurement model. There is also a correlation between two observed variables residuals which are balanced processing and self-awareness, and the correlation between them was 0.42 ( $p < 0.001$ ). The correlations between observed variables are illustrated in Table 20. The correlations between observed variables ranged from 0.21 to 0.85.

**Table 19**

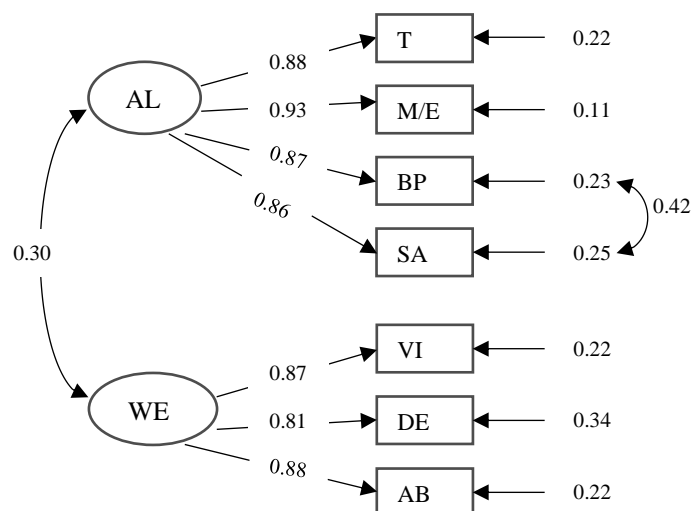
*The Factor Loadings of the Model Before and After Modification*

Items		Unstandardized <i>B</i>	Standardized $\beta$	<i>P</i>
Before modification	AL, T	1.00	0.86	< .001
	AL, M/E	1.07	0.91	< .001
	AL, BP	1.13	0.91	< .001
	AL, SA	1.07	0.90	< .001
	WE, VI	1.00	0.87	< .001
	WE, DE	0.96	0.81	< .001
	WE, AB	1.01	0.88	< .001
After modification	AL, T	1.00	0.88	< .001
	AL, M/E	1.08	0.94	< .001
	AL, BP	1.06	0.87	< .001
	AL, SA	1.00	0.86	< .001
	WE, VI	1.00	0.87	< .001
	WE, DE	0.96	0.81	< .001
	WE, AB	1.01	0.88	< .001

AL; Authentic leadership (T; Transparency, M/E; Moral/Ethical, BP; Balanced Processing, SA; Self-Awareness)  
WE; Work engagement (VI= vigor; DE = dedication; AB = absorption)

**Figure 7**

*The Final Standardized Two Variable Loadings Model and Correlations for the Confirmatory Factor Analysis*



AL; Authentic leadership (T; Transparency, M/E; Moral/Ethical, BP; Balanced Processing, SA; Self-Awareness)

WE; Work engagement (VI= vigor; DE = dedication; AB = absorption)

*Note.* All coefficients statistically significant ( $p < .001$ ).

**Table 20**

*Correlation Matrix between Observed Variables*

Observed variables:	1	2	3	4	5	6
1.ALQT	—	—	—	—	—	—
2.ALQM	0.82	—	—	—	—	—
3.ALOBP	0.77	0.82	—	—	—	—
4.ALQSA	0.76	0.81	0.85	—	—	—
5.WEVI	0.23	0.25	0.23	0.23	—	—
6.WEDE	0.21	0.23	0.21	0.21	0.71	—
7.WEAB	0.23	0.25	0.23	0.23	0.77	0.71

AL; Authentic leadership (ALQT; Transparency, ALQM; Moral/Ethical, ALQBP; Balanced Processing, ALQSA; Self-Awareness)

WE; Work engagement (WEVI= vigor; WEDE = dedication; WEAB = absorption) *Note.* All values were significant  $p < .01$

### Testing the structural model

A partially latent model was tested as combining latent variables formed by subscales as indicators and latent variables formed with items as indicators in a structural equation model can add excess complexity to the model by creating too many parameters (Brown, 2015). Also, models with items as indicators are typically used to identify the factor structure of the latent variables (Brown, 2015). The constructs that were not included in the measurement model were unidimensional. Higher-order latent variables for authentic leadership and work engagement with the items at the lowest level, the subscales as the first level of latent variables and the total authentic leadership and work engagement latent variables at the highest level was an option, but it introduces too many additional parameters in the model.

The structural model included hypothesized relationships between the main study variables authentic leadership, work engagement, psychological safety, team effectiveness, job turnover intentions, and nurse satisfaction with the quality of care. This model included paths from authentic leadership to work engagement, psychological safety, and team effectiveness, respectively. Also, paths from team effectiveness to job turnover intentions, and nurse satisfaction with the quality of care were included. The test of the structural model generated good results for the fit indices  $\chi^2(37) = 93.04, p < 0.001$ , SRMR = 0.052, RMSEA = 0.058 (90% CI = 0.043–0.072), CFI = 0.98. Table 21 shows unstandardized and standardized direct, total and specific indirect effects for the model. Based on the study's standardized results, the relationships between authentic leadership and work engagement ( $\beta = 0.309$ , 95% CI [0.21, 0.40],  $p < 0.001$ ), psychological safety ( $\beta = 0.345$ , 95% CI [0.26, 0.43],  $p < 0.001$ ), and team effectiveness ( $\beta = 0.295$ , 95% CI [0.20, 0.38],  $p < 0.001$ ) were

positive and significant. Thus, hypothesis one was supported as authentic leadership was positively related to work engagement, psychological safety, and team effectiveness.

The relationships between psychological safety and team effectiveness ( $\beta = 0.049$ , 95% CI [-0.04, 0.14],  $p=0.39$ ) and job turnover intentions ( $\beta = 0.019$ , 95% CI [0.004, 0.18],  $p = 0.08$ ) were not significant. Hypothesis two was therefore not supported as psychological safety was not positively related to team effectiveness and was not negatively related to job turnover intentions.

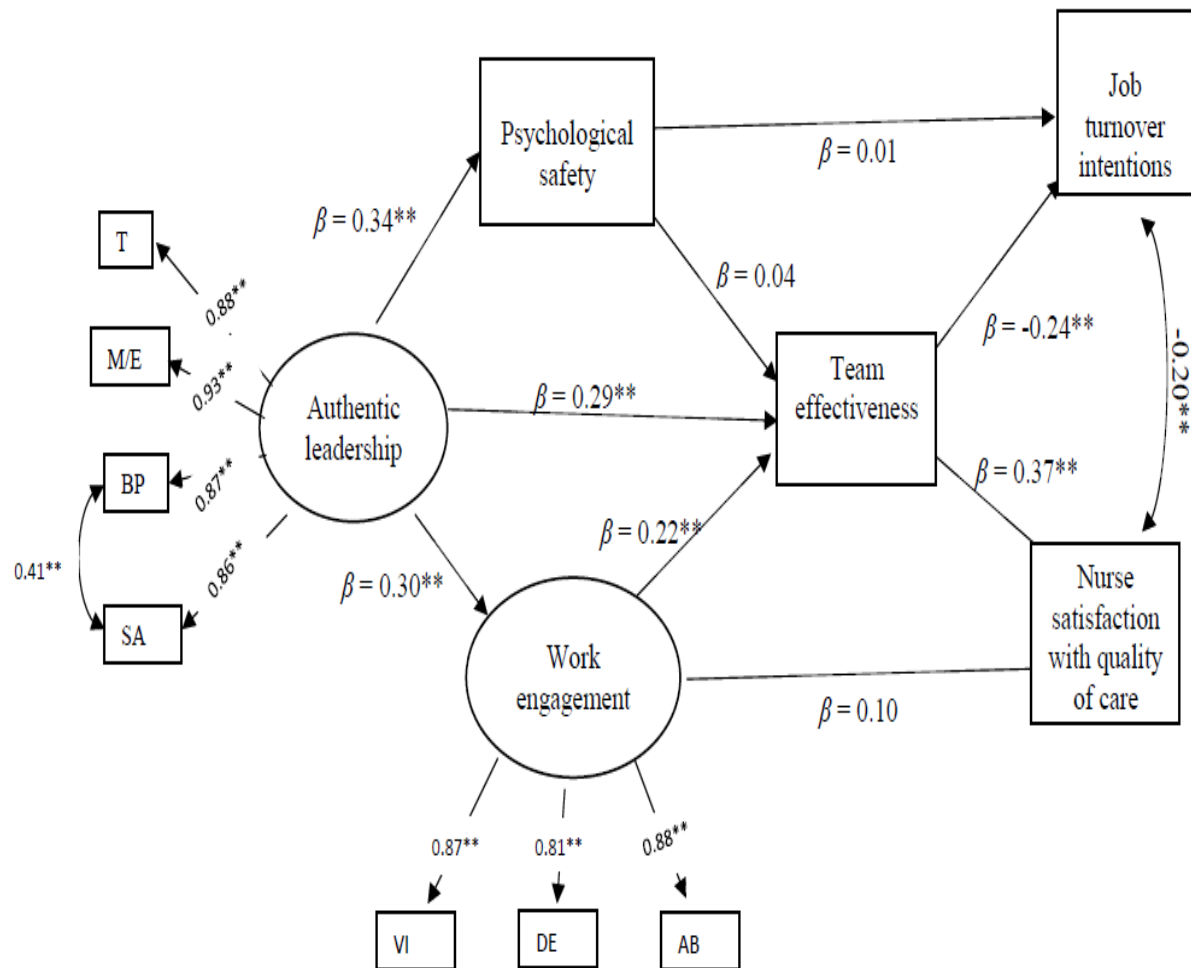
The coefficient for work engagement was found to be positive and significantly related to team effectiveness ( $\beta = 0.224$ , 95% CI [0.13, 0.31],  $p < 0.001$ ) while not significantly related to nurse satisfaction with quality of care ( $\beta = 0.105$ , 95% CI [0.01, 0.20],  $p = 0.056$ ). Therefore, hypothesis three was partially supported as work engagement had a positive and significant relationship with team effectiveness but not with nurse satisfaction with quality of care.

The coefficient for team effectiveness was found to be negative and significantly related to job turnover intentions ( $\beta = -0.246$ , 95% CI [-0.31, -0.16],  $p < 0.001$ ) but positive and significantly related to nurse satisfaction with quality of care ( $\beta = 0.376$ , 95% CI [0.29, 0.45],  $p < 0.001$ ). Thus, hypothesis four was supported as team effectiveness was negatively related to job turnover intentions and positively related to nurse satisfaction with quality of care.

The results also showed that there was a significant, positive correlation between balanced processing and self-awareness ( $r= 0.419$ ,  $p < 0.001$ ). However, there was a significant negative correlation between job turnover intentions and nurse satisfaction with quality of care ( $r= -0.206$ ,  $p < 0.001$ ).

Figure 8 shows the standardized path coefficients that were estimated for the model.



**Figure 8***The Structural Model (Study Standardization Results)*

T; Transparency, M/E; Moral/Ethical, BP; Balanced Processing, SA; Self-Awareness

VI= vigor; DE = dedication; AB = absorption

Note.  $^{**} p < 0.001$

### Indirect effects of psychological safety, work engagement, and team effectiveness

There were six significant specific indirect relationships shown in the model testing results. Authentic leadership had a significant, positive, and indirect relationship with team

effectiveness through work engagement ( $\beta = 0.069$ , 95% CI [0.03, 0.11],  $p = 0.003$ ). Work engagement had a significant, positive, and indirect effect on nurse satisfaction with the quality of care through team effectiveness ( $\beta = 0.084$ , 95% CI [0.05, 0.12],  $p < 0.001$ ). Authentic leadership has a significant, negative, and indirect effect on job turnover intentions through team effectiveness ( $\beta = -0.073$ , 95% CI [-0.10, -0.04],  $p < 0.001$ ). In addition, authentic leadership was found to have an indirect, significant, negative effect with job turnover intentions through work engagement and team effectiveness ( $\beta = -0.017$ , 95% CI [-0.03, -0.009],  $p = 0.016$ ). Also, authentic leadership had a significant, positive, and indirect influence on nurse satisfaction with quality of care through team effectiveness ( $\beta = 0.111$ , 95% CI [0.06, 0.16],  $p < 0.001$ ) as well as a significant, positive, and indirect influence on nurse satisfaction with quality of care through work engagement and team effectiveness ( $\beta = 0.026$ , 95% CI [0.01, 0.04],  $p = 0.004$ ).

**Table 21***Unstandardized and Standardized Direct, Total and Specific Indirect Effects for the Model*

Variable paths	Unstandardized <i>B</i>	Standardized $\beta$	<i>SE</i>	<i>p</i>	95% Standardized CI (lower bound)	95% Standardized CI (upper bound)
<b>Direct Effects</b>						
AL --> WE	0.426*	0.309*	0.05	< 0.001	0.21	0.40
AL --> PS	0.316*	0.345*	0.05	< 0.001	0.26	0.43
AL --> TE	0.362*	0.295*	0.05	< 0.001	0.20	0.38
WE --> TE	0.200*	0.224*	0.05	< 0.001	0.13	0.31
PS --> TE	0.066	0.049	0.05	0.39	-0.04	0.14
WE --> SQC	0.077	0.105	0.05	0.56	0.01	0.20
PS --> JTI	0.154	0.091	0.05	0.08	0.004	0.18
TE --> JTI	-0.311*	-0.246*	0.04	< 0.001	-0.31	-0.16
TE --> SQC	0.312*	0.376*	0.04	< 0.001	0.29	0.45
<b>Indirect Effects</b>						
<b>Authentic Leadership to Team Effectiveness</b>						
<i>Total Indirect Effect</i>	0.106*	0.086*	0.02	0.003	0.04	0.14
<i>Specific Indirect Effects</i>						
AL --> PS --> TE	0.021	0.017	0.02	0.41	-0.01	0.05
AL --> WE --> TE	0.085*	0.069*	0.02	0.003	0.03	0.11
<b>Psychological Safety to Job Turnover Intentions</b>						
<i>Total Indirect Effect</i>	-0.020	-0.012	0.01	0.41	-0.03	0.01
<i>Specific Indirect Effects</i>						
PS --> TE --> JTI	-0.020	-0.012	0.01	0.41	-0.03	0.01

**Work Engagement to Nurse Satisfaction  
with Quality of Care**

<i>Total Indirect Effect</i>	0.062*	0.084*	0.02	< 0.001	0.51	0.12
<i>Specific Indirect Effects</i>						
WE --> TE --> SQC	0.062*	0.084*	0.02	< 0.001	0.05	0.12

**Authentic Leadership to Job Turnover  
Intentions**

<i>Total Indirect Effect</i>	-0.097*	-0.063*	0.02	0.015	-0.10	-0.02
<i>Specific Indirect Effects</i>						
AL --> TE --> JTI	-0.113*	-0.073*	0.01	< 0.001	-0.10	-0.04
AL --> PS --> JTI	0.049	0.031	0.01	0.096	0.002	0.06
AL --> PS --> TE --> JTI	-0.006	-0.004	0.005	0.420	-0.01	0.003
AL --> WE --> TE --> JTI	-0.026*	-0.017*	0.007	0.016	-0.03	-0.009

**Authentic Leadership to Nurse Satisfaction  
with Quality of Care**

<i>Total Indirect Effect</i>	0.179*	0.176*	0.03	< 0.001	0.12	0.23
<i>Specific Indirect Effects</i>						
AL --> TE --> SQC	0.113*	0.111*	0.02	< 0.001	0.06	0.16
AL --> WE --> SQC	0.033	0.032	0.02	0.103	0.006	0.07
AL --> PS --> TE --> SQC	0.006	0.006	0.008	0.444	-0.005	0.02
AL --> WE --> TE --> SQC	0.027*	0.026*	0.009	0.004	0.01	0.04

AL; Authentic leadership

WE; Work engagement

PS; Psychological safety

TE; Team effectiveness

JTI; Job turnover intentions

SQC; Satisfaction with quality of care

Note. SE, standard error; CI, confidence interval,

\*  $p < 0.001$

## Discussion

The purpose of this study was to test a model that examined the relationships between authentic leadership, psychological safety, work engagement, and team effectiveness, and the subsequent effects of team effectiveness on job turnover intentions and nurse satisfaction with quality of care among nurses who work on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia. The purpose of the measurement model was to test the hypothesized factor structure of the constructs of the latent variables in the model which are authentic leadership (measured by four factors which are balanced processing, relational transparency, internalized moral perspective, and self-awareness) and work engagement (measured by three factors which are vigour, dedication, and absorption) as well as to test the psychometric properties of the scales used to assess the two variables. Thus, the results of the CFA of this study support findings of the original study that found that authentic leadership can be measured by four factors (balanced processing, relational transparency, internalized moral perspective, and self-awareness) (Walumbwa et al., 2008). The measurement model results of this study for work engagement supports the tool's original study findings (Schaufeli & Bakker, 2003) and those of a previous study (Schaufeli et al., 2002) that illustrated that work engagement is measured by three factors which are vigour, dedication, and absorption. These three observed variables therefore represented work engagement and appear to measure three essential aspects of being engaged in the workplace.

The structural model showed good results for the fit indices. The model test results suggested that authentic leadership has a positive, significant, and direct relationship with team effectiveness as well as an indirect relationship through work

engagement. This supports a previous Canadian study that shows that there is positive indirect relationship between authentic leadership and team effectiveness through structural empowerment and social capital (Read, 2016). However, the results of the current study also explored the direct and significant relationship between authentic leadership and team effectiveness which has not been shown in previous studies. As hypothesized in H1, authentic leadership was found to be significantly, positively, directly related to work engagement, psychological safety, and team effectiveness. These findings concur with previous studies that found a positive and direct relationship between authentic leadership and work engagement (Bamford et al., 2013; Giallonardo et al., 2010; Du Plessis, 2014; Stander et al., 2015). Only one other study was found that examined the relationship between authentic leadership and psychological safety in health care, but this relationship was not significant (Plasse, 2015) while the results of the current study suggested a positive and significant relationship between authentic leadership and psychological safety. Study findings are also important in that as far as it is known, this is the first study showing the relationships between authentic leadership, work engagement, psychological safety, and team effectiveness among nurses in Saudi Arabia. Nurses who view their nurse manager as more authentic are more engaged in their work and feel safe in their work environment to seek feedback or express concerns without fear of negative consequences. This study adds to nursing research in Saudi Arabia by documenting the role of authentic leadership since it has not yet been examined and reported in the nursing literature in Saudi Arabia. It also illustrates that authentic leadership style has significant, direct and indirect relationships with nurses' attitudes and work outcomes including psychological safety, work engagement, and team effectiveness.

Study findings did not support a relationship between psychological safety and team effectiveness as well as between psychological safety and job turnover intentions as hypothesized. This result did not support a previous study that showed that if individuals felt psychologically safe, they will be creative and motivated which enhance the production of working teams (Akan et al., 2020). The unexpected, albeit, non-significant, positive relationship between psychological safety and job turnover intentions in this study conflicts with those of previous studies which showed that psychological safety had a negative relationship with employee's job turnover intentions (Chen et al., 2014; He, 2010). This conflict may be related to measurement error in the psychological safety variable. For example, it may be that participants misunderstood the meaning of the items as the scale consists of both negatively and positively worded items, which could create confusion when combined into one scale (Hughes, 2009). The Cronbach's alpha of the psychological safety scale used in this study (Edmondson, 1999) was low, at 0.56 even after the three negatively worded items were deleted leaving only the four positively worded items of the scale for use in this study. These negative items included: 1. If you make a mistake on this team, it is often held against you; 2. People on this team sometimes reject others for being different; and 3) It is difficult to ask other members of this team for help. Given the negative framing of these items they should all be reverse coded prior to the analysis. However, when these items were reverse coded, the Cronbach's alpha plummeted to a very low 0.11. The results of CFA of this scale showed low loading results in most of the items. Also, the results of the correlation between items showed that there are some negative results between the items where negative correlations were not expected. Appendix G shows the results of correlation matrix

between items and results of CFA. Consequently, there is some concern going forward with the psychometric properties of this scale and further investigation of it is warranted.

In relation to hypothesis three (work engagement is positively related to team effectiveness and nurse satisfaction with quality of care), the study results suggested that work engagement had a positive and significant effect on team effectiveness but it was not directly related with nurse satisfaction with quality of care, although there was a significant, positive, and indirect relationship between work engagement and nurse satisfaction with the quality of care through team effectiveness. This indicated that the level of nurse satisfaction with quality of care could be indirectly influenced by some factors such as work engagement. Also, there could be factors that mediate the relationships between work engagement and the level of satisfaction with quality of care such as team effectiveness. These results need to be viewed in light of that fact that nurse satisfaction with quality of care was measured by an untested scale that was used for the first time in this dissertation. The results supported Van Bogaert et al.'s findings (2014) who showed that work engagement in positive practice environments ultimately leads to improved staff and patient outcomes such as the quality of nursing care provided.

Team effectiveness was found to be significantly negatively related to job turnover intentions but positively related to nurse satisfaction with quality of care as per hypothesis four. These results concur with previous studies that concluded that work group effectiveness can impact group members' turnover intentions (Almalki et al., 2012; Chan et al., 2009; Dixon & Hart, 2010; Gardulf et al., 2005) and enhance the quality of care (Cheng et al., 2016; WHO, 2014).

Study findings supported the indirect relationships between authentic leadership and nurse outcomes including, job turnover intentions and nurse satisfaction with quality



of care thorough work engagement and team effectiveness. This finding is consistent with findings of previous studies in Saudi Arabia where job turnover intentions among nurses were indirectly influenced by leadership styles, such as transformational and transactional leadership, of nurse managers through nurse outcomes such as job satisfaction (Al-Yami et al., 2018). Al-Yami et al. (2018) also found that the positive relationship between leadership styles of nurse managers and organisational commitment affects in turns the link between organisational commitment and nurse turnover intentions. The findings of the current study and previous studies in Saudi Arabia shed the light on the importance of leadership role directly and indirectly preventing and reducing nursing shortages (Abualrub & Alghamdi, 2012; Al-Yami et al., 2018).

The results of this study provided a picture of some factors directly or indirectly affecting turnover intentions such as authentic leadership, work engagement, team effectiveness, and satisfaction with quality of care among nurses in Saudi Arabia. It has hopefully shed some light on a problem by highlighting nurses' intentions to leave their jobs and the factors that could affect their decisions to leave, that if it is not well assessed and managed, could lead to negative consequences for providing high quality of care to meet patients' needs. Although the issue of increasing turnover intentions among nurses in Saudi Arabia has been illustrated in previous studies (Al-Yami et al., 2018; Almalki et al., 2012; Falatah & Conway, 2019; Kaddourah et al., 2018), it is still considered as a significant issue that needs to be addressed and solved. The results of turnover intentions among nurses in this study were similar to a previous study of Falatah and Conway (2019). Our study found that nurses reported medium levels of intentions to leave their current jobs ( $M = 3.11$  out of 5,  $SD = 1.07$ ). This concurred with the study of Falatah and Conway (2019) who found that nurses also reported medium results to intent to leave

their jobs ( $M = 3.08$  out of 5,  $SD = 0.75$ ). Another study conducted to explore turnover intentions among nurses in tertiary care hospitals in Riyadh, the capital city of Saudi Arabia, found that 94% of nurses were willing to leave the current job (Kaddourah et al., 2018). These worrisome study findings emphasize the need for the issue of turnover intentions among nurses in Saudi Arabia to receive more attention from policy makers, leaders, researchers, healthcare organizations, and nurses.

### **Limitations**

The study used a cross-sectional design which limits the determination of causal relationships among study variables (Setia, 2016). This study used a non-probability sampling (convenience sampling) which may affect the generalizability of the findings of this study, potentially limiting its applicability to inpatient units and outpatient clinics in other public hospitals in Saudi Arabia. Also, because random sampling methods were not possible due to the lack of an available roster for all nurses working in Saudi Arabia, selection bias may have influenced findings. Another limitation is related to the instruments used for the study variables as these tools were not designed for use in the Saudi context, which potentially may have affected the validity and reliability of these instruments in this population. However, despite the possible influence of cultural differences the results showed that most scales used were reliable and valid (with the possible exception of the psychological safety scale) indicating they can be used in the Saudi context (when used in English). Common method variance (CMV) could also be another limitation for this study because all data used were collected through self-report instruments over a short period of time. Possible measurement error, especially with the psychological safety scale that was used in this study, is another limitation of this study which might have affected the results of this study and in particular, the reliability of this

scale. However, apart from the satisfaction with the quality of care scale, these instruments had all been tested in previous studies for validity and reliability, which helps to minimize the potential impact of common method variance on the study's results.

### **Conclusions**

This study provided supportive evidence for the relationships between authentic leadership, psychological safety, work engagement, team effectiveness, job turnover intentions, and nurse satisfaction with the quality of care among nurses working in public hospitals in Saudi Arabia. The study sample included nurses working in inpatient departments and outpatient clinics in three public hospitals in the western region of Saudi Arabia. Based on the study findings, Avolio et al.'s theory (2004) of authentic leadership could possibly be used as the basis for future research to explore the effects of authentic leadership on nurse, patient, and organizational outcomes. Study findings demonstrated that authentic leadership has direct and indirect relationships with nurses' psychological safety, work engagement, team effectiveness, turnover intentions, and nurse satisfaction with quality of care. Authentic leadership was found to have direct effects on psychological safety, work engagement and team effectiveness and an indirect effect on team effectiveness through work engagement. The findings also showed that team effectiveness has a positive effect on nurse satisfaction with the quality of care but negative effects on nurses' turnover intentions. The results of this study may assist nursing leaders and managers in Saudi Arabia to have a better understanding of the essential role of leaders and managers and their leadership styles in enhancing healthy work environments and promoting lower nurse turnover intentions. Improving work environments of staff nurses in Saudi Arabia through development programs for nurse leaders and managers that increase their awareness about leadership styles could decrease

nurses' intention to leave their jobs and enhance the quality of care delivered to patients as well as improve the satisfaction of both nurses and patients.

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## CHAPTER FIVE

### DISSERTATION SUMMARY AND IMPLICATIONS

#### Summary of Dissertation Findings

The purposes of the three main papers in this dissertation were to: 1) identify leadership theories that have been examined in nursing literature in Saudi Arabia and to describe the current state of evidence about the impact of leadership styles on nurse, patient, and organization outcomes in Saudi Arabia; 2) to measure the psychometric properties of a untested instrument measuring nurse satisfaction with the quality of care and; 3) to test a model that examined the relationships between authentic leadership, psychological safety, work engagement, and team effectiveness, and the subsequent effects of team effectiveness on job turnover intentions and nurse satisfaction with quality of care among nurses who work on inpatient units and outpatient clinics in public hospitals in three cities (Makkah, Jeddah, and Taif) in Saudi Arabia. Although these three papers have different aims, their findings explained the essential role of authentic leadership in the nursing profession in Saudi Arabia. This final chapter provides an overview of the dissertation's findings, as well as discussion of its implications for theory, nursing leadership, nursing practice, nursing education, policy, future research, and conclusions.

#### Overview of Findings

The results of each study were explained in more details in previous chapters in this dissertation. However, the following points summarize the results of each study briefly:

##### *Study 1: Integrative review*

- 1- The results of the integrative review found nine manuscripts representing eight studies that examined the leadership styles of nurse managers in Saudi Arabia.
- 2- There were six manuscripts representing five original quantitative studies, two qualitative studies, and one mixed methods study. Two of the included studies were unpublished doctoral dissertations.
- 3- The findings were grouped into three themes which are nursing leadership theories in Saudi Arabia, leadership styles and nurses' outcomes, and demographics and leadership styles.
- 4- Transformational leadership style was the most common nursing leadership theory studied in Saudi Arabia.
- 5- The results of the review also showed that nurse leadership styles were related to only five measured nurse outcomes; these outcomes were organizational commitment, nurses' job satisfaction, and intent to stay, willingness to exert extra effort, and leader effectiveness.
- 6- The findings suggested that there is a significant gap in the nursing leadership literature in Saudi Arabia in terms of examining the influence of leadership theories on nurse and patient outcomes.

***Study 2: Psychometric analysis***

- 7- In the second study, examination of the psychometric properties of a new tool to assess nurse perceptions of quality of care showed that the scale was reliable and valid.
- 8- The results supported that a one factor solution consisting of five items was the best fit for the scale.

- 9- The Cronbach's alpha of nurse satisfaction with quality of care scale was 0.80 which indicated that the scale is reliable.
- 10- The results provided evidence to support researchers and healthcare organizations using this scale as an efficient option when trying to assess nurse satisfaction with quality of care delivered.
- 11- Findings also supported that there is a need for future studies to focus on measuring satisfaction with the quality of nursing care from the nurse's perspective since there are few studies that do so.

***Study 3: Main empirical paper***

- 12- The final study examined the relationships among authentic leadership, psychological safety, work engagement, team effectiveness, job turnover intentions, and satisfaction with the quality of care among nurses in Saudi Arabia. The study results suggested that authentic leadership had a number of relationships with the identified variables, including: i) a positive and direct relationship with team effectiveness as well as an indirect relationship through work engagement; ii) a positive and significant relationships with nurses' work engagement and psychological safety; and iii) indirect relationships with job turnover intentions (a negative relationship) and nurse satisfaction with quality of care (a positive relationship) through work engagement and team effectiveness.
- 13- There were no significant relationships between psychological safety and team effectiveness and job turnover intentions.
- 14- There was also no significant indirect relationship between psychological safety and job turnover intentions through team effectiveness.



- 15- Work engagement had a significant and positive relationship with team effectiveness but not with nurse satisfaction with quality of care while the indirect relationship between work engagement and nurse satisfaction with the quality of care through team effectiveness was also found to be positive and significant.
- 16- Team effectiveness was found to be negatively related to job turnover intentions and positively related to nurse satisfaction with quality of care.
- 17- These findings illustrated the role of authentic leadership in minimizing job turnover intentions among nurses in Saudi Arabia; this is noteworthy since turnover of nurses has become a key issue for healthcare organizations and their leaders in Saudi Arabia.
- 18- The results supported that nurses who view their nurse manager as authentic are more engaged in their work and feel safe in their workplace which helps them to express their concerns without fear of negative consequences. Nurses whom leaders are authentic are able to work in their teams effectively.
- 19- Lastly, it was found that authentic leaders have an indirect influence on the level of satisfaction for nurses regarding to care they provide for their patients.

### **Overall Strengths and Limitations of Dissertation**

There are various strengths and limitations of this dissertation. As far as it is known, this dissertation consists of the first integrative review that was conducted to identify the nursing leadership theories examined in Saudi Arabia and the first study to examine authentic leadership in nursing in Saudi Arabia. Findings shed light on the influence of authentic leadership and its essential role in nursing practice and research in Saudi Arabia since few, if any, research has been done in Saudi Arabia related to its application and effects on various nurse and patient outcomes in healthcare organizations.

In this dissertation, the role of authentic leadership in nurses' turnover intentions in Saudi Arabia was emphasized. Ensuring an adequate supply of Saudi educated nurses is considered a significant issue facing the nursing profession in Saudi Arabia (Lamadah & Sayed, 2014). Some mechanisms including, psychological safety, work engagement, and team effectiveness and outcomes including job turnover intentions and nurse satisfaction with quality of care were tested in this dissertation which indicated that these variables were essential outcomes of nursing practice in Saudi Arabia. Also, examining and reporting the psychometric properties of the nurse satisfaction with quality of care scale will aid future researchers in using this scale as a valid and reliable scale (Zangaro, 2019). The concept of nurse satisfaction with quality of care as explored in this dissertation has not been previously examined in the nursing literature in Saudi Arabia and other countries and thus, enhances understanding of this concept for future studies. Another strength was the large sample size as 656 completed questionnaires were collected. Half were used to analyze the primary study model and the other half to analyze the psychometric properties of nurse satisfaction with quality of care scale. Lastly, the analysis of the data in the empirical study in this dissertation was conducted using an advanced statistical procedure, SEM, to test the complex relationships among variables in the hypothesized model (Brown, 2015).

However, there are some limitations that should be discussed. One of the limitations is related to the integrated review. Because there are few studies that were found to examine leadership theories in nursing, the data on various nurse outcomes in Saudi Arabia were limited. The design of the empirical study was a limitation because it was a cross-sectional design which prevents to establish temporal or causal relationships between the study variables authentic leadership, work engagement, psychological safety,

team effectiveness, job turnover intentions, and nurse satisfaction with quality of care, and it is limited to one point in time (Polit & Beck, 2012). Using a non-probability sampling (convenience sampling) in three sites in Saudi Arabia (Makkah, Jeddah, Taif) limits the generalizability of the study findings to only the specific settings from which data was collected. Moreover, the lack of an available roster for all nurses working in Saudi Arabia meant random sampling not possible, which possibly increases selection bias due to using a non-random sampling method (i.e. convenience sampling used in the current study). Also, the instruments that were used in the study were self-report surveys which may affect the reliability of responses because of misinterpretation of items (Cabigao, 2009). Self-report surveys could also be susceptible to social desirability bias, where participants have difficulty answering some questions that could be private or sensitive, as well as recall bias, where participants are unable to accurately recall past events (Althubaiti, 2016). Possible measurement error with the psychological safety scale is another limitation of this dissertation. The scale consists of seven items, and the full scale was administered (Edmondson, 1999). However, only the four positively worded items were used in the analysis while the other three negatively worded items had to be deleted, possibly because misinterpretation of the negatively worded items in the scale weakened its psychometric properties. For example, one reason for using only four items in the analysis is that the internal consistency measure for all seven items was very low (Cronbach's  $\alpha = 0.11$ ).

### **Implications**

The implications of the dissertation's results for theory, nursing leadership, nursing practice, nursing education, policy, and future research are discussed and explained in the following sections.

## **Implications for Theory**

The empirical study in this dissertation was guided by Avolio et al.'s (2004) authentic leadership theory that explains the relationships between authentic leadership, including its four elements of balanced processing, relational transparency, internalized moral perspective, and self-awareness, and followers' attitudes and behaviours through the mechanisms of personal identification with the leader, social identification with the organization, and positive psychological resources of hope, trust, positive emotion, and optimism. Previous studies conducted in other countries such as the United States and Canada have illustrated the impact of authentic leadership theory on nurse and patient outcomes in healthcare, specifically in nursing (Alilyyani et al., 2018; Cummings et al., 2018; Wong & Walsh, 2020). Using theory to guide studies is essential because it helps to identify the interrelationships among study variables and how these variables can be tested (Shalley, 2012). Also, nurse leaders can use theory to guide the practice and help them to apply evidence based practice which is based on well-constructed theories.

In support of some of the tenets of authentic leadership theory (Avolio et al., 2004), the findings of this dissertation showed that authentic leadership had direct and indirect effects on nurse attitudes and outcomes such as, work engagement, psychological safety, team effectiveness, job turnover intentions, and nurse satisfaction with quality of care. Since this study was guided by authentic leadership theory and was the first study in Saudi Arabia using this theory in nursing, the results supported this theory's applicability to nursing in Saudi Arabia. The results of the measurement model supported what was proposed in Avolio et al.'s (2004) authentic leadership theory in terms of the four components of authentic leadership (balanced processing, relational transparency, internalized moral perspective, and self-awareness). New relationships variables were

examined in this study which have not been illustrated in previous studies of authentic leadership in nursing. Team effectiveness was examined in this study and in only one other study as an outcome of authentic leadership (Read, 2016). Nurse satisfaction with quality of care was examined as a new outcome of authentic leadership (via two indirect relationships only). Also, two new mediators (psychological safety and team effectiveness) of the relationships between authentic leadership and job turnover intentions and satisfaction with quality of care were tested in this study. Only team effectiveness was a significant mediator between authentic leadership and job turnover intentions and satisfaction with quality of care.

### **Implications for Nursing Leadership**

The findings of this dissertation support the role of leadership in the nursing profession and more specifically, the role of authentic leadership in nursing practice in Saudi Arabia. The results suggest that authentic leaders in Saudi Arabia display the four elements of authentic leadership by involving staff nurses in decision making, encouraging nurses to share their ideas and point of views, applying moral perspectives by their action, and collecting all relevant information before making decisions. Results were consistent with those of previous studies that found that authentic leaders have increased self-awareness and self-regulation (Gardner et al., 2005). Also, they are able to build healthy work environments for staff through the essential elements of authentic leadership which are balanced processing, relational transparency, and internalized moral perspective (Alilyyani et al., 2018; Gardner et al., 2005). Leaders can facilitate balanced processing by allowing their staff to provide their feedback and involve in decision making (Ilies et al., 2005). In addition, they can motivate the staff by sharing their ideas and knowledge which helps to accept different point of views and build a trustful

relationship through demonstrating relational transparency (Wong, 2008). Internalized moral perspective is an essential component of authentic leadership which allows leaders to reflect their internal moral standards on their actions and stand up for defending the others' rights in the workplace (Murphy, 2012; Walumbwa et al., 2008).

Authentic leaders are those who are open, truthful, and involve their staff in making decisions which positively affects the relationship between them to be built on trust (Wong & Cummings, 2009; Wong et al., 2010). Also, authentic leaders help their staff to be engaged, motivated, committed, satisfied, and involved in decision making (Kark & Shamir, 2002). Nurses feel empowered and supported in their work if their leaders are authentic (Laschinger et al., 2012). The findings of this dissertation support the link between authentic leadership and positive outcomes such as team effectiveness, work engagement, and nurse satisfaction with quality of care but negative outcomes with job turnover intentions. This emphasizes the application of authentic leadership style in nursing practice and healthcare organizations. Leaders in Saudi Arabia should firstly be aware of the importance of applying authentic leadership in nursing practice. They should be educated and have courses about authentic leadership and how to apply it in their workplaces. Nurse leaders in Saudi Arabia should involve nurses in decision making as much as possible. They have the responsibilities to build a trustful relationship with staff nurses by helping them to express their feelings without being afraid of any negative consequences. They should allow staff nurses to share their opinions when it is possible because this makes them feel engaged in their workplaces.

The findings of this dissertation also suggest that nurses who report their leaders as authentic feel secure and are able to make changes in their workplaces. Also, nurses who feel psychologically safe are involved in making decision and are able to show their

feelings without fear of negative consequences (Alilyyani et al., 2018; Kahn, 1990). It is essential for nurse leaders in Saudi Arabia to be aware of the psychological safety of their staff by having open discussions with nurses. This helps to build a trusting relationship and allows for healthy exchanges (Cauwelier et al., 2016). It was also found that authentic leaders have a positive influence on nurses' work engagement. This indicates that authentic leaders help their staff to be engaged with their jobs (Bamford et al., 2013; Du Plessis, 2014; Giallonardo et al., 2010; Kark & Shamir, 2002).

Study findings are consistent with the work of Abualrub and Alghamdi (2012) regarding to the role of effective nurse leaders in improving nurse outcomes such as satisfaction and retention helps to increase our understanding about their crucial impact in nursing practice. Abualrub and Alghamdi (2012) also suggested that encouraging staff nurses to be involved in the decision-making processes and having open communication with them are important strategies. Thus, nurse leaders can use these strategies to provide support and empower their staff nurses which in turn could increase their job satisfaction and enhance their retention (Abualrub & Alghamdi, 2012). The basis for these strategies is well explained in authentic leadership theory and can be considered among the main elements of authentic leadership (Avolio et al., 2004). Authentic leaders are those who create an environment where nurses are involved and participate in decision making (Wong & Cummings, 2009). Another study conducted in Saudi Arabia also supports that nurse managers should build a trustful and respectful relationship with staff nurses to enhance the outcomes related to nurses and healthcare organizations (Asiri et al., 2016). This aligns with the characteristics of authentic leaders, specifically relational transparency, because authentic leaders motivate their staff by building trustful relationships with their followers (Laschinger & Smith, 2013; Wong, 2008). Therefore,

nurse leaders in Saudi Arabia who have the characteristics of authentic leadership are able to role model and teach their staff about applying authentic leadership style in their practice. Sharing leadership experience with staff nurses may contribute to increase the positive nurses, patients and healthcare organizational outcomes. Given the new policy of Saudization in Saudi Arabia, which means that only Saudi people should be hired for leadership positions (AL-Dossary, 2018), newly graduated Saudi nurses should receive workplace training and coaching by nurse leaders in the essential elements of authentic leadership and be involved in leadership tasks. This will help staff to build leadership skills and awareness of the characteristics of authentic leadership in the workplace.

The shortage of nurses and the high turnover intentions among nurses are the major issues facing the nursing profession in Saudi Arabia (Aboshaiqah, 2016). It is essential for leaders/managers to be aware of their direct and indirect influence on these problems as the findings of this dissertation supported that authentic leadership is related to lower job turnover intentions among nurses. In Saudi Arabia, one of the major reasons for the high level of turnover intentions in nursing was that staff nurses complain they are lacking support from their leaders in the units where they work (Almalki et al., 2012). Findings supported Almalki et al.'s (2012) finding by showing that authentic leadership has an indirect and negative relationship with turnover intentions of nurses in Saudi Arabia through work engagement and team effectiveness. This indicates that the leadership style of nurse leaders/managers in Saudi Arabia has an effect on the issue of turnover intentions among nurses. More specifically, the study results suggest that the issue of turnover intentions among nurses can be reduced when nurse leaders are authentic. Thus, applying authentic leadership style in nursing practice could help to reduce the shortage of nurses stemming from the high turnover intentions of nurses in



Saudi Arabia. Also, the results supported a key role for team effectiveness to mediate the relationships between authentic leadership and job turnover intentions and nurse satisfaction with quality of care. This suggests that ensuring the effectiveness of a team is an important role for leaders which could enhance the outcomes related to staff nurses.

### **Implications for Nursing Practice**

The role of nurse leaders in nursing practice has been well documented in previous studies in terms of creating healthy work environments for staff and patients (Cummings et al., 2018; Shirey, 2006). In order to create a healthy work environment for staff nurses, nurse managers should build meaningful relationships with their staff (Shirey, 2017). The findings of this dissertation support that leadership styles of nurse managers can directly affect nurse outcomes. The results also supported a previous review that found that the leadership styles of nurse managers affect nurses' decisions to leave their current jobs which may indirectly affect the quality of care that patients receive (Cummings et al., 2018). Authentic leadership, more specifically, was found to create a healthy work environment for staff where they feel respected and trusted (Alilyyani et al., 2018; Blake et al., 2012).

The findings of this study suggest the need for different factors affecting nurses in practice that should be emphasized. Work engagement of nurses is an essential aspect in nursing practice which impacts the effectiveness of the team that they work with and their level of satisfaction with quality of care that they provide (Ziedelis, 2018). Thus, nurses who are engaged in their work can work effectively in their team, which, in turns, positively affects their satisfaction with quality of care that they provide for their patients. For nurses to be engaged, they should be motivated to work hard to achieve the goals that are related to the vision of the healthcare organizations (Bakker et al., 2014).

Additionally, nurses should have a clear understanding of the aims of their works and the achievements that they want to reach. They have to continuously evaluate their work and link it with the goals of their healthcare organizations. Engaging in the workplaces also means that nurses have the responsibility to discuss their issues or achievements with their nurse leaders because this will help to avoid obstacles that could be easily managed by talking to their leaders or managers (Dempsey et al., 2014).

The impact of team effectiveness on nurse satisfaction with the quality of care delivered and on job turnover intentions was one of the main findings of this study. Nurses usually work with teams including nurses and other healthcare professionals in order to achieve their common goal to deliver the best care to patients. Team effectiveness had a positive impact on nurse satisfaction with quality of care and negative influence on job turnover intentions among nurses. When nurses work in a team, they should be committed to the goals of the team and be responsible to meet patients' needs related to nursing care. In Saudi Arabia more specifically, nurses work most often with staff from different backgrounds and different nationalities, so nurses have to discuss the group's shared objectives clearly with all group members. Also, individuals in a team must interact with others and create healthy relationships while working in order to work together effectively (Read, 2016).

Lastly, because of the rapid change in healthcare practice which increases patients' needs, there is increasing demand for health care delivery (Aljuaid et al., 2016; Campbell et al., 2000; Reynolds & Lawless, 2017). Providing the best quality of care for each patient is also needed. One way that was found in this dissertation that helps nurses to provide high quality of care is assessing their level of satisfaction with the quality of care delivered. Although previous studies have not illustrated the concept satisfaction

with quality of care from a perspective of nurses, the findings from this dissertation suggest it can have a role in nursing practice. Thus, periodic monitoring of the level of satisfaction with quality of care by management could be helpful. It could help nurses create different strategies to deliver the best care for patients and evaluate the quality of care they provided. It is also important for healthcare settings and departments to use the nurse satisfaction with quality of care scale to monitor and measure nurse satisfaction with the quality of care as this will affect patients and organizational outcomes.

### **Implications for Nursing Education**

An important first step that is needed in order to make changes and solve problems in nursing practice is education. Giving more attention to the importance of leadership in nursing should begin with undergraduate education. There is a need to include course content about leadership and administration in nursing education, more specifically, students should be aware about leadership styles and their role in nursing practice. Moreover, it is essential for nursing students to be introduced to the development of leadership during their nursing education which can positively influence the nursing profession and healthcare outcomes in general (Laschinger et al., 2013; Waite et al., 2014). According to Waite et al. (2014), there were positive outcomes when a unique course related to authentic leadership was implemented in an undergraduate nursing program in the United States. This gives more attention for nursing education in future to implement courses related to leadership theories, and authentic leadership theory in particular, as authentic leadership theory is a recent theory that appeared in the literature in 2004 when Avolio et al. (2004) developed the theory (Alilyyani et al., 2018). Nursing students should be aware and educated about authentic leadership competencies

because they can translate the knowledge into nursing practice and become nurse leaders in healthcare organizations (Cummings et al., 2018; Laschinger et al., 2013).

Nursing students should become up to date with development on nursing leadership theories as not all leadership theories are well suited for every situation. Thus, nursing programs in Saudi Arabia should implement leadership courses in both undergraduate and graduate programs. Also, nursing students in Saudi Arabia face some problems related to courses and nursing practice creating a gap to translate theory into practice (Alghamdi et al., 2019). Reducing this gap could happen when nurse leaders in practice and course instructors in universities address the problems that affect nursing students in their practice.

### **Implications for Policy**

Leaders/managers in healthcare organizations may apply authentic leadership to enhance the overall outcomes of the organizations where they work at. The findings of this dissertation highlighted the direct and indirect role of authentic leadership in job turnover intentions among nurses in Saudi Arabia which has been considered as the major issue that has faced nursing profession in Saudi Arabia (Aboshaiqah, 2016; Almalki et al., 2011). If leaders are authentic, staff can more likely to be engaged, motivated, committed, and satisfied which affects their decision to stay at their current jobs (Alilyyani et al., 2018; Kark & Shamir, 2002). Thus, healthcare organizations in Saudi Arabia can invest more time to provide leadership programs or workshops for leaders/managers and update them about their essential roles in making either positive or negative changes in the organizations (AL-Dossary et al., 2016). In addition, being aware of leadership styles such as authentic leadership is an essential way to making significant and positive changes in the organizations. Healthcare organizations in Saudi Arabia

should select and recruit their leaders who are authentic or have the characteristics of authentic leadership style. Another strategy to positively impact the work environment is encourage leaders/managers to be involved in research that is related to leadership styles and nurse and organizational outcomes. Management quality assurance protocols should regularly emphasize and assess leadership at the organization level to ensure the continuous quality of services. Healthcare organizations in Saudi Arabia should work together to reach a common set of goals and similar policies that could be applied in all organizations by leaders/managers.

One of the main challenges experienced by the researcher during the data collection phase was the availability of time for participating nurses to complete the questionnaires and their motivation to participate in research. Nurses were busy providing care for their patients because the number of nurses in the unit is quite low compared to the number of patients. Additionally, nurses did not have the awareness of the importance of participating in research especially if the study is not a part of their jobs. Thus, healthcare organizations have a significant role in encouraging staff to be involved in doing research or participating in other researchers' studies by supporting time for research as a part of their jobs. Also, there is a need to have a formalized college of nurses in Saudi Arabia that would serve as the governing body for all nurses working in Saudi Arabia. In addition to its possible impact on professional standards, this body could also help researchers have access to a sampling frame for all nurses in Saudi Arabia and thus have the possibility of choosing random sampling in research studies. Researchers in Saudi Arabia, on the other hand, have the responsibility to work with healthcare organizations in publishing their studies locally to improve the awareness of the importance of research in Saudi nursing practice. For example, researchers should find

opportunities to share study results in each healthcare organizations where they conducted their studies as this could help leaders and staff be aware of the issues that they face and how to solve them (Ferris, 2011). In addition, research centers in Saudi Arabian hospitals usually arrange some local conferences for staff in the hospitals, so this is a good opportunity for researchers to share and publish their studies, especially when the participants in their studies were in those hospitals (Ferris, 2011).

### **Implications for Future Research**

Based on the integrative review paper's findings, it appears that there are gaps in the nursing literature about leadership styles and their relationships with outcomes in Saudi Arabia, including authentic leadership specifically. Thus, the findings of the studies suggest the following for future research. Firstly, there is a need for more studies that examine the relationships between authentic leadership and a variety of nurse, patient and organizational outcomes in Saudi Arabia. More specifically, the relationships between authentic leadership and staff nurse attitudes and behaviours such as psychological capital, satisfaction with work, job turnover intentions, incivility, workplace bullying, work engagement, and structural empowerment need to be addressed by future research. The potential for relationships between authentic leadership and these key nurse attitudes and behaviours in Saudi Arabia are logical extensions of Avolio et al.'s authentic leadership theory (2004). Also, these relationships have been examined in previous studies that were conducted in other countries such as the United States and Canada (Alilyyani et al., 2018). Thus, it could be possible to support these relationships in Saudi Arabia especially since some of these factors, including job satisfaction and organizational commitments, have been addressed in the nursing literature in Saudi

Arabia with other leadership theories, such as transformational leadership (Abualrub & Alghamdi, 2012; Al-Yami et al., 2018). Some of these outcomes related to nursing staff, such as psychological safety, work engagement, team effectiveness, turnover intentions, and satisfaction with quality of care and their relationships with authentic leadership were examined in this dissertation. However, more studies are needed to illustrate these relationships in different cities in Saudi Arabia and regions of Saudi Arabia because this study was conducted only in the West region of Saudi Arabia and thus cannot be generalized to all other regions in Saudi Arabia. Also, there is a need for more studies that examine different outcomes related to performance of nurses, work environment factors, and patients' outcomes and their relationships with authentic leadership (Alilyyani et al., 2018). No previously published nursing studies in Saudi Arabia explain the effect of authentic leadership on organization outcomes such as adverse events and readmission rates and patient outcomes such as patient satisfaction and hospital acquired infection. Thus, more studies are needed to explain the relationships between authentic leadership and patient and organization outcomes in Saudi Arabia because it was found in the previous studies conducted in other countries that there are connections between authentic leadership and outcomes related to patients and organizations. For example, Johnson (2015) examined the direct relationships between authentic leadership and falls with injury, patient satisfaction, and hospital acquired pressure ulcers in the United States and found that authentic leadership had a negative and significant association with falls with injury. Also, Wong and Giallonardo (2013) found that there was an indirect, significant negative effect of authentic leadership on adverse events through areas of worklife. However, in general there are few studies showing the effects of authentic leadership on patient outcomes and more research is needed.

Three mediators were tested in this dissertation with authentic leadership which were work engagement, psychological safety, and team effectiveness but there is a need for more studies in Saudi Arabia to focus on examining more mediators based on Avolio et al.'s authentic leadership theory (2004) such as personal and social identification, hope, trust, positive emotion, and optimism. Based on a previous review done by Alilyyani et al (2018), the authors found that there were 23 mediators that were tested in the included studies in order to examine the relationships between authentic leadership and 35 different outcomes. It is essential for researchers to explore the mechanisms that could affect the relationships between authentic leadership and different outcomes especially in Saudi Arabia as authentic leadership is considered as a new theory and no study was done related to its effects on nursing profession.

As far as it is known, this is the first study that examined the relationship between authentic leadership and outcomes related to nurses in Saudi Arabia. As the first of its kind, it used a non-experimental design study, therefore, more rigorous study designs for future studies including, longitudinal, quasi-experimental or experimental designs in addition to qualitative studies designs are needed. Using a theory or a theoretical model/framework to guide future studies is also recommended as theory is the fundamental aspect in research in order to identify the interrelationships between study variables that are being tested (Shalley, 2012). This dissertation was guided by Avolio et al.'s (2004) authentic leadership theory which showed that this theory can be used to guide future studies. Conducting future studies in different settings is needed because healthcare organizations in Saudi Arabia which has both public and private care models, may differ from other settings, especially those with more private healthcare organizations (Global Health Exhibition, 2018). Moreover, examining the effects of



authentic leadership in public and private healthcare sectors in Saudi Arabia is important for future studies to explore the differences between two sectors in terms of leaders' role in healthcare organizations. Giving more considerations about the importance of private healthcare sectors in Saudi Arabia in providing care, there should be more studies done to emphasize the effect of authentic leadership in private settings specifically. The current study used an advanced statistical analysis technique, structural equation modeling (SEM), to test a complex model, so it is recommended for future non-experimental model testing studies also use a suitable advanced statistical analysis.

One of the purposes of this dissertation was to test the psychometric properties of a new scale to measure nurse satisfaction with the quality of care delivered. Although the scale performed well in this study, the scale has not been used in any other published studies which emphasizes the need for more research to use and test the scale nationally (i.e. in Saudi Arabia) and internationally. Lastly, nurse satisfaction with quality of care could possibly be considered as a new concept and has not been well illustrated in nursing literature, so future studies should focus on examining this concept and its relationship with other important variables related to nurses and their patients.

### **Conclusion**

This dissertation was aimed at illustrating the essential role authentic leadership can have for nurses in Saudi Arabia. The findings emphasize the direct and indirect effect of authentic leadership on work engagement, psychological safety, team effectiveness, turnover intentions, and nurse satisfaction with quality of care in Saudi Arabia. In this study Avolio et al.'s (2004) authentic leadership theory provided a strong foundation for examining the construct of authentic leadership. Leaders in Saudi Arabia should be made aware of authentic leadership and try to apply it in their workplaces. The findings provide

a comprehensive framework about the potential influence of authentic leadership in nursing practice which can be used to encourage future research relating to authentic leadership in nursing Saudi Arabia. Implications of the dissertation findings suggest the need for more studies related to authentic leadership in nursing in Saudi Arabia and its results are consistent with a previous systematic review (Alilyyani et al., 2018) regarding the need for more studies in authentic leadership in nursing in terms identifying its antecedents, mediators, and outcomes.

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## APPENDICES

### Appendix A

#### Factor loadings of NSQC

*Goodness-of-fit Test of the scale*

Chi-Square	Df	Sig.
88.093	5	<0.001

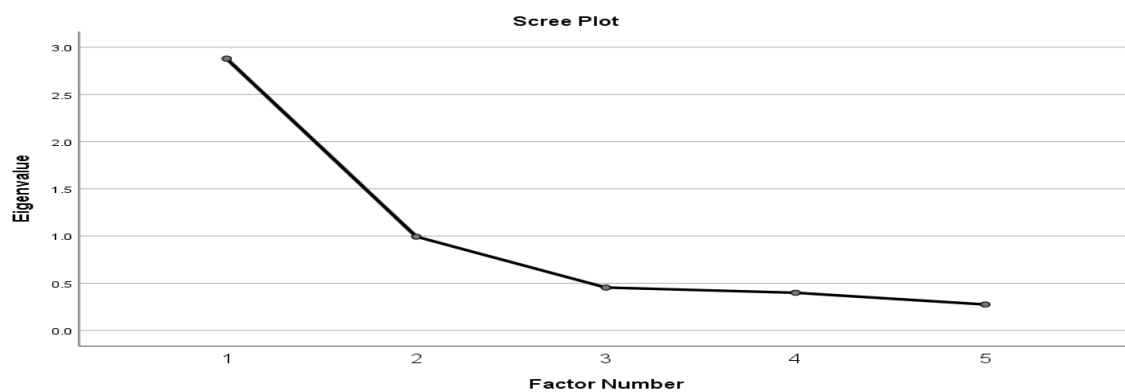
*Loadings factor of one-factor solution*

Loading factors:	1
NSQC 1	0.70*
NSQC 2	0.71*
NSQC 3	0.58*
NSQC 4	0.66*
NSQC 5	0.74*

\* $p < 0.05$

*Total Variance of one factor*

Factor	Total (Initial Eigenvalues)	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.879	57.587	57.587	2.353	47.051	47.051
2	0.993	19.866	77.452			
3	0.454	9.077	86.530			
4	0.399	7.976	94.506			
5	0.275	5.494	100.000			



The Scree Plot

**Appendix B**  
**Correlation Matrix between Observed Variables of NSQC**

*Correlation Matrix between Observed Variables*

Observed variables:	1	2	3	4	5
1.NSQC 1	—	—	—	—	—
2. NSQC 2	0.58**	—	—	—	—
3. NSQC 3	0.34**	0.34**	—	—	—
4. NSQC 4	0.41**	0.41**	0.70**	—	—
5. NSQC 5	0.56**	0.57**	0.33**	0.40**	—

NSQC; Nurse Satisfaction with Quality of Care

\*\*  $p < .001$

## Appendix C

### Ethical Approval from Saudi Ministry of Health



مديرية الشؤون الصحية بمحافظة الطائف  
Directorate of Health Affairs - Taif  
إدارة البحوث والدراسات  
Research and Studies Department

### ' Ethical approval '

IRB Registration Number With KACST , KSA. **HAP-02-T-067**

Approval number : **225**

Date : **22/04/2019**

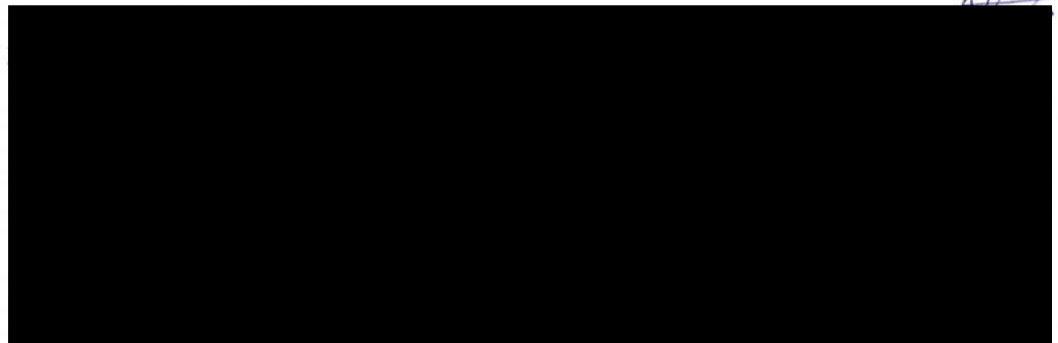
DEAR RESEARCHER : BAYAN ALILYYANI .

I am pleased to inform you submission dated (APR.2019) for the study titled , (The Influence of Authentic Leadership on Nurses' Turnover Intentions and Satisfaction with Quality of Care in Saudi Arabia: A Cross-Sectional Study), was reviewed and was approved. please note that this approval is from the research ethics perspective only. you will still need to get permission from the manager of hospital or an external institution to commence data collection.

we wish you well as you proceed with the study and request you to keep the IRB informed of the progress on a regular basis , using the IRB log number shown above.

PLEASE BE ADVISED that regulations require that you submit a progress report on your research every 1 month, you are also required to submit any manuscript resulting from this research for approval by IRB before submission to journals for publication.

BEST REGARDS,,,,



## Certificates of Completion from the Selected Hospitals



تشهد إدارة الشؤون الأكاديمية والتدريب بمستشفى النور التخصصي بالعاصمة المقدسة بأن الباحثة

بيان حمادي عطاالله العلياني

طالبة دكتوراه في تخصص التمريض ومبتعثة في كندا قامت بتجميع البيانات المتعلقة لبحثها في رسالة الدكتوراه من مستشفى النور التخصصي في مكة المكرمة وذلك خلال الفترة من ٢٠١٩/٥/٢٥ م حتى ٢٠١٩/٨/٢٥ م

مع تمنياتنا لها بالمزيد من التفوق والنجاح .

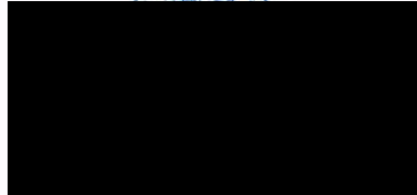


### إفادة

نفيدكم بأن الباحثة / بيان حمادي عطا الله العلياني طالبة دكتوراه في تخصص التمريض قامت بإنهاء إجراءات البحث والبيانات المتعلقة لبحثها في رسالة الدكتوراه من مستشفى الملك فهد بجدة وذلك من تاريخ ٢٠١٩ / ٥ / ٢٥ حتى تاريخ

٢٠١٩ / ٨ / ٢٥ .

مستشفى الملك فهد بجدة





### مشهد

السلام عليكم ورحمة الله وبركاته

تشهد ادارة الشؤون الأكاديمية والتدريب بمستشفى الملك عبدالعزيز التخصصي بالطائف بأن

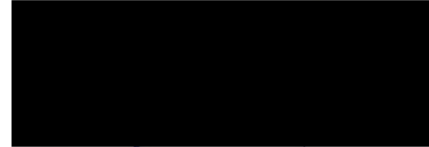
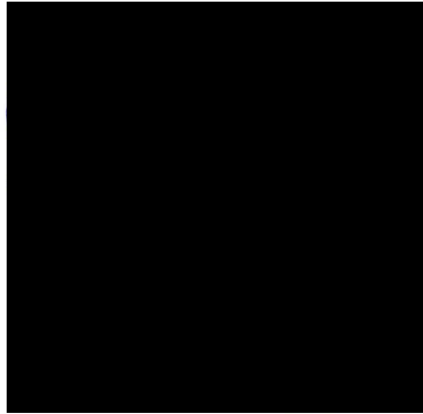
الباحثة/ بيان حمادي عطاالله العلياني قامت بتجميع البيانات المتعلقة لبحثها بعنوان :

The Influence of Authentic Leadership on Nurses' Turnover Intentions and Satisfaction with Quality of Care in Saudi Arabia: A Cross-Sectional Study

وذلك من تاريخ ٢٠١٩ /٥/٢٥ حتى تاريخ ٢٠١٩ /٨/٢٥ . وقد حرر لها هذا المشهد بناء علي طلبها دون تحمل

أي مسئولية تجاه ذلك .

مدير ادارة الشؤون الأكاديمية والتدريب





## Appendix D

### Ethical Approval from Western University



**Date:** 31 May 2019

**To:** Dr. Mickey Kerr

**Project ID:** 113798

**Study Title:** The Influence of Authentic Leadership on Nurses' Turnover Intentions and Satisfaction with Quality of Care in Saudi Arabia: A Cross-Sectional Study

**Application Type:** HSREB Initial Application

**Review Type:** Delegated

**Full Board Reporting Date:** June 18, 2019

**Date Approval Issued:** 31/May/2019 09:37

**REB Approval Expiry Date:** 31/May/2020

Dear Dr. Mickey Kerr

The Western University Health Science Research Ethics Board (HSREB) has reviewed and approved the above mentioned study as described in the WREM application form, as of the HSREB Initial Approval Date noted above. This research study is to be conducted by the investigator noted above. All other required institutional approvals must also be obtained prior to the conduct of the study.

**Documents Approved:**

Document Name	Document Type	Document Date	Document Version
CLEAN copy of the Letter of Information and Consent form	Written Consent/Assent	29/May/2019	second version
CLEAN copy of The paper surveys	Paper Survey	29/May/2019	SEcond version
CLEAN copy of The protocol:research plan	Protocol	29/May/2019	Second version
reminder email	Email Script	29/May/2019	second version

No deviations from, or changes to, the protocol or WREM application should be initiated without prior written approval of an appropriate amendment from Western HSREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

REB members involved in the research project do not participate in the review, discussion or decision.

The Western University HSREB operates in compliance with, and is constituted in accordance with, the requirements of the TriCouncil Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the International Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Products Regulations; Part 3 of the Medical Devices Regulations and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. The HSREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000940.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Nicola Geoghegan-Morphet, Ethics Officer on behalf of Dr. Joseph Gilbert, HSREB Chair

*Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).*

## Appendix E

### Letter of Information for Participants



Dear Madam/Sir,

My name is Bayan Alilyyani and I am a PhD student under the supervision of Dr. Michael Kerr in the Arthur Labatt Family School of Nursing at Western University. We are conducting a research study examining the impact of authentic leadership on factors related to the nursing work environment and nursing quality of care. We have attached a letter of information and consent, which provides further details on this study. We are truly appreciative of your help with this research project. For further information, please feel free to contact the study investigators using the contact information shown below.

Kind regards

*Bayan Alilyyani, PhD Student*

### Letter of Information and Consent

**Project Title:** The Influence of Authentic Leadership on Nurses' Turnover Intentions and Satisfaction with Quality of Care in Saudi Arabia: A Cross-Sectional Study

**Document Title:** Letter of Information for Participants

**Principal Investigator + Contact:** Dr. Mickey Kerr, *Associate Professor, Arthur Labatt Family School of Nursing, Western University*

**Primary Researcher + Contact:** *Bayan Alilyyani, PhD Student, Arthur Labatt Family School of Nursing, Western University*

### Letter of Information

#### 1. Invitation to Participate

You are being invited to participate in this study, which is funded by Saudi Arabian Cultural Bureau in Canada, about the effect of authentic leadership on job turnover intentions and nurses' satisfaction with the quality of care through psychological safety, work engagement, and team effectiveness to gain our knowledge about the effect of this nursing leadership style on nurse outcomes. 500 nurses are needed to conduct this study, so you are invited because you are a registered nurse in Saudi Arabia, have 6 months or more experience in the current department, and be able to complete the survey in English.

## **2. Why is this study being done?**

The purpose of this study is to examine the influence of authentic leadership on psychological safety, work engagement, team effectiveness, nurses' turnover intentions, and satisfaction with quality of care among nurses in Saudi Arabia. The following definitions of each term in this study are:

Authentic leadership is one model that focuses on the relationship between leaders and followers. It aims to build relationships between leaders and their followers based on emotions, trust, and ethical standards (Wong, 2008). Thus, authentic leaders are those who motivate their staff, and build confidence and trust (Laschinger & Smith, 2013).

Psychological safety is a shared belief that the work environment is conducive to interpersonal risk-taking; for instance, employees in a team can speak up without fear of retaliation in response (Edmondson, 1999).

Work engagement is defined as "... a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption" (Schaufeli et al., 2002, p. 74).

Team effectiveness is defined by WHO (2014) as occurring when the team members, including the patients, communicate with each other and share their observations, expertise, and decision-making responsibilities to maximize patients' care.

Turnover is defined as "employees' intention to leave the current employing organization or the potential movement by the workforce out of an organization" (Mobley, 1982).

Quality of care is defined as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (Birkmeyer et al., 2009, p. 411).

## **3. How long will you be in this study?**

Your participation is complete once you have submitted your survey. No other contact or follow-up is required. Results from this study will be submitted to the Arthur Labatt Family School of Nursing in the faculty of Health Sciences at Western University in London, Ontario as partial fulfillment of the requirements for the degree of Doctor of Philosophy for Ms Bayan Alilyani.

## **4. Inclusion Criteria**

Participants who meet following criteria: 1) must to be formal registered nurses in Saudi Arabia; 2) have six months or more of experience in their current department; 3) are in direct nursing care positions; 4) be willing to participate in the study; 5) and are capable of completing the survey in English.

**5. What are the study procedures?**

After you read this letter and agree to participate in the study, you will be asked to complete a study questionnaire. Once you have finished completing your questionnaire, you can place it in the sealed box provided on your unit/clinic, so the primary researcher can collect them weekly from your department.

Completing the questionnaire will take approximately 30 minutes of your time.

Nurses who agree to participate in the study do not have to sign a consent form, as returning the study questionnaire is your indication that you agree to participate in the study.

**6. What are the risks and harms of participating in this study?**

There are no anticipated burdens, risks, or harms from participation in this study.

Your decision to whether participate in this study or not will not affect your employment in your healthcare organization.

**7. What are the benefits of participating in this study?**

The overall anticipated public and scientific benefits of this research focus on the advancement of the nursing profession in Saudi Arabia. The study results could underline the essential role of authentic leadership in nursing care delivery and nurse work environment outcomes. Also, it is a way for policy makers to enhance healthcare organizations by knowing issues that are related to nursing leadership and its effects and some solutions.

**8. Can participants choose to leave the study?**

You can refuse to participate in the study at any time and there are no risks or harm associated with refusing to participate in the study. As the study is not collecting any personal identification from you, withdrawal of your questionnaire is not possible once you have submitted it.

**9. How will participants' information be kept confidential?**

No identifying information will be collected for this study; therefore, your responses are anonymous. All data you provide will be confidential and accessible to just the research team of the study, and only group data will be reported during the dissemination of the study findings. All electronic data will be stored in a highly secure manner encrypted and on password protected computers. No information will be intentionally released or disclosed in a form that could identify the participants. The questionnaires will be locked in a secure place at Western University and kept for future consultation by the researchers. The electronic data will be stored in an encrypted hard drive on the laptop for the PhD student for transportation back to Western University. Disk encryption software will be used. As required by current ethics guidelines, the raw study data (i.e.

questionnaires) will be destroyed seven years after completion of the study. The office of Research Ethics at Western University may access the data for quality assurance purposes.

**10. Are participants compensated to be in this study?**

You will not be compensated for your participation in this study.

**11. What are the rights of participants?**

Participation in this study is voluntary, so you can refuse to participate in the study at any time without any harm. As the study questionnaire is anonymous, please do not mention your name or any contact information when you complete it.

**12. Whom do participants contact for questions?**

If you need any additional information about the study you may contact the Principal Investigator, Dr. Mickey Kerr. Also, you can contact The Office of Research Ethics directly by phone at Western University or by email if you have any questions about your rights as a participant.

**13. Consent**

You indicate your voluntary agreement to participate by completing the study questionnaire and retaining it back to principal investigator.

We would like to thank you very much for considering our request to participate in the study.

Sincerely,

Bayan Alilyyani,

PhD Student,

The Arthur Labatt Family School of Nursing  
Western University

## Appendix F

### Demographic Questionnaire and Study Questionnaires

**Please tell us about yourself and your workplace**

**Instruction:** Circle one answer

1.	What is your age?	_____ Years
2.	What is your sex?	1) Male 2) Female
3.	What is your nationality?	1) Saudi 2) Other* ..... <b>*Please specify</b>
4.	What is your highest level of nursing education?	1) Nursing Diploma 2) Bachelors of Nursing 3) Master Degree in Nursing 4) PhD Degree in Nursing
5	How long have you been working as a registered nurse?	_____ Years
6	How long have you been working in your current unit?	_____ Years
7	How long have you been living in the Saudi Arabia?	_____ Years
8	What is your current area?	1) Medical unit 2) Surgical unit 3) Pediatric unit 4) Cardiac unit 5) Obstetric unit 6) Intensive care unit 7) Orthopedic unit 8) Outpatient clinic 9) Other* ..... <b>*Please specify</b>
9	Which city do you work in?	1)Makkah 2)Jeddah 3)Taif
10	How frequently do you interact with your head nurse?	1) Once or twice per year 2) Once a month 3) Once every other week 4) 1-2 times per week 5) 3-4 times per week 6) At least once per day

### Authentic Leadership Questionnaire (ALQ)

**Instructions:** The following survey items refer to your head nurse's leadership style, as you perceive it. Think about your experiences with this individual over the previous 12 months. *Judge how frequently each statement fits his or her leadership style using the following scale:*

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

#### My Leader:

- |    |   |   |   |   |   |   |
|----|---|---|---|---|---|---|
| 1. | says exactly what he or she means. ....               | 0 | 1 | 2 | 3 | 4 |
| 2. | admits mistakes when they are made.....               | 0 | 1 | 2 | 3 | 4 |
| 3. | encourages everyone to speak their mind. ....         | 0 | 1 | 2 | 3 | 4 |
| 4. | tells you the hard truth. ....                        | 0 | 1 | 2 | 3 | 4 |
| 5. | displays emotions exactly in line with feelings. .... | 0 | 1 | 2 | 3 | 4 |

### Psychological Safety Scale

In this survey, we ask questions about your facility, the unit on which you work, your manager, your co-worker group, and about you and your work. Team here refers to all people you work with including your manager and your colleagues.

**Instructions:** Answer the questions by choosing: 1 = strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, 5 = strongly agree

Strongly Disagree   Disagree   Neither agree nor disagree   Agree   Strongly Agree

	1	2	3	4	5
1. If you make a mistake on this team, it is often held against you.	1	2	3	4	5
2. Members of this team are able to bring up problems and tough issues.	1	2	3	4	5
3. People on this team sometimes reject others for being different.	1	2	3	4	5
4. It is safe to take a risk on this team.	1	2	3	4	5
5. It is difficult to ask other members of this team for help.	1	2	3	4	5
6. No one on this team would deliberately act in a way that undermines my efforts.	1	2	3	4	5
7. Working with members of this team, my unique skills and talents are valued and utilized.	1	2	3	4	5



## Work Engagement Scale

The following 17 statements are about how you feel at work.

**Instruction:** Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, places the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

Never	Almost never	Rarely	Sometimes	Often	Very often	Always
0	1	2	3	4	5	6
Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Everyday

---

1. \_\_\_\_\_ At my work, I feel bursting with energy
2. \_\_\_\_\_ I find the work that I do full of meaning and purpose
3. \_\_\_\_\_ Time flies when I'm working
4. \_\_\_\_\_ At my job, I feel strong and vigorous
5. \_\_\_\_\_ I am enthusiastic about my job
6. \_\_\_\_\_ When I am working, I forget everything else around me
7. \_\_\_\_\_ My job inspires me
8. \_\_\_\_\_ When I get up in the morning, I feel like going to work
9. \_\_\_\_\_ I feel happy when I am working intensely
10. \_\_\_\_\_ I am proud on the work that I do
11. \_\_\_\_\_ I am immersed in my work
12. \_\_\_\_\_ I can continue working for very long periods at a time
13. \_\_\_\_\_ To me, my job is challenging
14. \_\_\_\_\_ I get carried away when I'm working
15. \_\_\_\_\_ At my job, I am very resilient, mentally
16. \_\_\_\_\_ It is difficult to detach myself from my job
17. \_\_\_\_\_ At my work I always persevere, even when things do not go well

---

### Team Effectiveness Scale

**Please rate the EXTENT to which you agree with the following statements about your work team:**

1 = Strongly Disagree	2 = Disagree	3 = Neither Agree nor Disagree	4 = Agree	5 = Strongly Agree
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1. Our clinic/unit works together to achieve patient care treatment goals.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
2. Our clinic/unit does a good job of applying the most recently available technology to patient care needs.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
3. Overall, our unit functions very well together as a team.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
4. Our unit is very good at responding to emergency situations.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

---

### Intention to Turnover Scale

Using the scale below, please indicate the extent to which you agree or disagree with the following statements about your intentions to leave the organization.

Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

---

1. I am thinking about leaving this organization	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
2. I am planning to look for a new job.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
3. I intend to ask people about new job opportunities.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
4. I don't plan to be in this organization much longer.	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>

### Nurse Satisfaction with the Quality of Care Scale

**Instruction:** Please indicate how much you are satisfied with the following statements as they relate to your work at the Hospital. Please circle the number that corresponds to your answer.

How satisfied are you with ...	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
K1. the type of care you can provide to patients in this unit/clinic.	1	2	3	4	5
K2. the amount of time you can spend with patients in this unit/clinic.	1	2	3	4	5
K3. the level of staffing that is available for patient care in this unit/clinic.	1	2	3	4	5
K4. the availability of other resources needed for patient care in this unit/clinic.	1	2	3	4	5
K5. the overall quality of care patients receive in this unit/clinic.	1	2	3	4	5

Authors' Permissions to Use Their Scales in This Study

Need your permission to use ALQ More actions

BA

Br...

Fri 10

Bayan Alilyyani

Reply all

Brayan

Go to [www.mindgarden.com](http://www.mindgarden.com) to access the research form to use the ALQ

Sent from my iPhone

...

Need your permission to use Edmondson's (1999) psychological safety instrument

EA

Edmondson,

Fri 10/19, 3:07 PM

Bayan Alilyyani

Reply all

You are welcome to use the scale. The items are in the article. You can enter them into survey monkey or any platform you wish. All you need to do is cite the source. All best.

nd Management

g **Psychological Safety in the Workplace for Learning, Innovation,**

18; Available for preorder now)

the fearless organization

Creating Psychological Safety in the Workplace for Learning, Innovation, and Growth

Amy C. Edmondson

WILEY

...

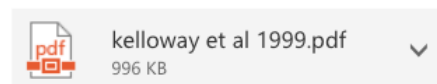
## Need your permission to use Turnover Intentions scale



[Redacted]

Tue 10/23, 10:50 AM

Bayan Alilyyani



Download Save to OneDrive - The University of Western Ontario

Hello

Yes please feel free to use the measure in your research. I have attached the source article description highlighted (p 340)

Best of luck

Kevin

[Redacted] gy

Editor, *Canadian Journal of Behavioural Science*

[Redacted]

...

## Need your permission to use Technical Quality subscale (Shortell et al., 2001)



[Redacted]



Reply all |

You have permission. Members of our research team will send to you.

Best

[Redacted]

## Need your permission to use Utrecht Work Engagement scale



Bayan Aliyyani



Reply all

Dear mr. Aliyyani,

Thank you very much for your interest in my work.

You may use the UWES free of charge, but only for non-commercial, academic research. In case of commercial use we should draft a contract.

Please visit my website (address below) from which the UWES can be downloaded, as well as all my publications on the subject.

Good luck with your research.

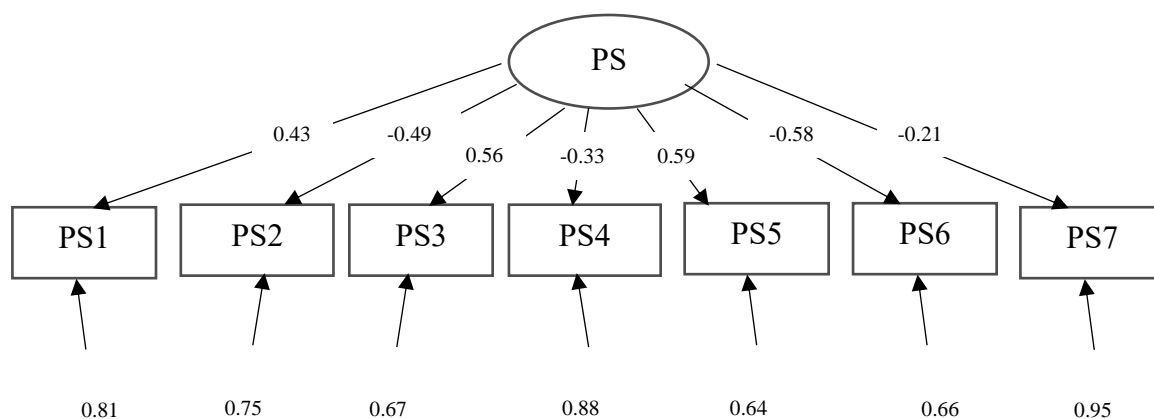
With kind regards,



## Appendix G

### Correlation matrix between items and results of CFA of psychological safety scale

#### *CFA of psychological safety scale with 7 items*



PS; Psychological safety

#### *Correlation Matrix between Items of Psychological Safety*

Items:	1	2	3	4	5	6	7
1.PS1	—	—	—	—	—	—	—
2.PS2	-0.21	—	—	—	—	—	—
3.PS3	0.24	-0.28	—	—	—	—	—
4.PS4	-0.14	0.16	-0.19	—	—	—	—
5.PS5	0.26	-0.29	0.34	-0.20	—	—	—
6.PS6	0.25	0.28	-0.33	0.19	-0.34	—	—
7.PS7	-0.09	0.10	-0.12	0.07	-0.13	0.12	—



## CURRICULUM VITAE

Name:	Bayan Alilyyani
Post-Secondary Education:	<p>Doctoral of Philosophy (PhD) in Nursing          Arthur Labatt Family School of Nursing          Western University          London, ON, Canada          2017-2021</p> <p>Master of Science (MSc) in Nursing          Arthur Labatt Family School of Nursing          Western University          London, ON, Canada          2015-2017</p> <p>Bachelor of Nursing          College of Nursing          Umm Al-Qura University          Makkah, Saudi Arabia          2007-2012</p>
Honours and Awards:	<p>King Abdullah Scholarship          Ministry of Higher Education          Riyadh, Saudi Arabia          2013-Present</p> <p>CultureWorks ESL Scholarship          King's University College          London, Ontario, Canada          2015</p> <p>Third rank for the best research project          Nursing Department, Umm Al-Qura University          Makkah, Saudi Arabia          2012</p>
Related Work Experience:	<p>Teaching Assistant          Taif University          Taif, Saudi Arabia          2016- Present</p> <p>Graduate Research Assistant          Arthur Labatt Family School of Nursing          Western University          London, ON, Canada          Jan 2020 – Present</p>

Graduate Research Assistant  
Arthur Labatt Family School of Nursing  
Western University  
London, ON, Canada  
March 2019 – Aug 2019

Palliative Care Coordinator  
King Abdullah Medical City  
Makkah, Saudi Arabia  
2012-2013

Intern Nurse Student  
King Abdullah Medical City  
Makkah, Saudi Arabia  
2011-2012  
Intern Nurse Student

Maternity and Children Hospital  
Makkah, Saudi Arabia  
2012

Professional Memberships:

Registered Nurses Association of Saudi Arabia