THE EFFECT OF STRUCTURAL EMPOWERMENT AND PROSOCIAL VOICE ON THE PATIENT SAFETY CULTURE MODERATED BY SELF-MONITORING AND MEDIATED BY PSYCHOLOGICAL EMPOWERMENT IN SAUDI PUBLIC HOSPITALS

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ABSTRACT

The culture of patient safety has attracted more intention of researchers and healthcare decision makers to create safe environment for the patient. Therefore, through literature review there are theoretical gaps that have to be examined. Consequently, to contribute to the literature, the objectives of this research are to assess patient safety culture (PSC), structural empowerment (SE), to examine the relationship between structural empowerment (SE) and patient safety culture (PSC), to examine the relationship between prosocial voice (PSV) and patient safety culture (PSC), to examine the interaction between prosocial voice (PSV) and patient safety culture (PSC) moderated by self-monitoring (SM), and to examine the interaction between structural empowerment (SE) and patient safety culture (PSC) mediated by psychological empowerment (PE), in the Saudi Public Hospitals. Towards this end, this study has developed the proposed model based on the Structural Process Outcome (SPO) Theory. To examine the proposed model, the quantitative survey questionnaire research approach was followed where 3810 questionnaires were distributed, out of which 2117 were returned and only 1793 were usable ones. By using hierarchical regression and correlation analysis through SPSS, those data were analyzed. The results show that there was moderate level of patient safety culture and structural empowerment among public hospitals in Saudi Arabia. So, there are areas for improving dimensions of patient safety culture and structural empowerment. Additionally, there was significant relation between structural empowerment and patient safety culture. On the other hand, there was no significant relation between prosocial voice and patient safety culture at public hospital in Saudi Arabia. Furthermore, there is no significant moderating effect of self-monitoring and there is no mediating effect of psychological empowerment. Besides providing suggestions for future research, this study provides several recommendations for leaders of public hospital in Saudi Arabia.

Keywords: patient safety culture, structural empowerment, prosocial voice, self-monitoring, psychological empowerment.

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

AHRQ   Agency Of Healthcare Research And Quality

CEO   Chief Executive Officer

CFA   Confirmatory Factor Approach

CWEQ-11   Conditions Of Workplace Effectiveness Questionnaire-II

EFA   Exploratory Factor Approach

HSOPSC   Hospital Survey Of Patient Safety Culture

IOM   Institute Of Medicine

JCI   Joint Commission International

MOH   Ministry Of Health

NQF   National Quality Forum

PE   Psychological Empowerment

PES   Psychological Empowerment Scale

PSC   Patient Safety Culture

PSV   Prosocial Voice

PSVS   Prosocial Voice Scale

SA   Saudi Arabia

SE   Structural Empowerment

SM   Self –Monitoring

SMS   Self –Monitoring Scale

SPO   Structure , Process And Outcome

TJC   The Joint Commission

UK   United Kingdom

USA   United States Of America

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Culture plays a crucial role for organisational development and improvement, where it reflects individual behaviour and attitudes at the workplace. It is the set of moral values of a society that is revealed in their behaviours (Feng, *et al*., 2008) or the full range of learned human behaviour patterns. Currently issues related patient safety culture (PSC) has received more attention from society and many organisations, since it shows the importance of patient-related safety in the workplace (Milligan, 2007).

The study of patient safety is now an essential subject for healthcare organisations with the opportunity to solve specific problems (Fajardo-Dolci *et al*., 2010). The main factors that influences patient safety in medical industry is the culture of patient safety or was known the patient safety culture (PSC) (Abdolahzadeh, *et al*., 2012). The PSC in healthcare organisations can be examined at various stages and reflects the essence of organisations. Also, PSC is able to reveal the strengths and weaknesses that constitute the way that healthcare specialists practice to perform their work (Martin, 2008).

According to the Health and Safety Commission of England that defined the safety culture in the medical industry "the safety culture as producing individual and group values, attitudes, understandings, competence, and behavioural patterns that determine

the commitment, style, skills, and safety and health management of an organisation"
(Kho, *et a*l., 2005).

Patient safety is defined as avoidance and prevention of patient injuries or adverse events resulting from the procedures of health care delivery (The Patient Safety Group, 2012). In this study the PSC definition by Sorra and Nieva (2004) has been chosen as the product of individual and group values, perceptions, competencies, attitudes and behavioural patterns that all determine commitment, style, and proficiency of the health and safety management of an organisation. From previous definitions understood that The PSC of an institution acts as a guide as to how staff members is expected to perform in the workplace and how they learn from their mistakes. Accordingly, strong and proactive PSC can ensure that the leadership learns from errors and records, motivates and practices teamwork, overcomes possible threats, uses methods for reporting and analysing adverse events, and celebrates workers as heroes on improving safety rather than as villains committing errors (Al-Ahmadi,2009; Al-Ahmadi,2010; Aboul-Fotouh, *et al*., 2012).

Cooperation that will lead to achieve trustworthy and communication among staffs reflect the positive culture of an organisation. Moreover, a healthcare institution with a positive safety culture is characterised by communications founded on mutual trust, shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures (AHRQ, 2004). Although there is plenty emphasis on PSC in health care, few organisations have assessed the extent to which their staff culture supports patient safety.

Therefore, it is important to evaluate the patient safety and to create safety culture among staff. So that it can happen in intensify by evolving a culture of safety. Because it is the basic component of constant struggle to improve quality patient safety in healthcare organisations (Weaver *et al.*, 2013). The literature revealed that PSC is associated to practitioners values , behaviours and how they deal with errors such as error reporting (Braithwaite, *et al.*,2010; Al-Ahmadi, 2010), decreased in adverse events, and can minimise mortality (Mardon, *et al.*, 2010; Singer, *et al*, 2009). Therefore, the accreditation bodies identified leadership standards for safety culture measurement and improvement, and supporting a culture of safety (The Joint Commission, 2012)

1.2 Background of the Study

Healthcare management becomes more challenging and complicated due to the advance technology and environment. Technical sophistication significantly depends upon humans, which makes it an industry characterised by high-risk (Lyndon, 2006). Even following the first in the series of reports published by the Institute of Medicine (IOM, 2000) "To Err is Human; Building a Safer Health System", medical errors in hospitals continued to occur, causing patient injury and death (Dickey *et al.*, 2010). Specifically, a recorded 958,202 patient safety events took place among Medicare patients from 2006 to 2008, and 99,189 of these cases recorded patient deaths, where 99% of the deaths appeared to be preventable (Health Grades, 2010).

Thus, the hospitals employees should reinforce the PSC to reduce the medical errors. So it would be significant in workplace patient safety from the staff members' point of view (Milligan, 2007), especially in this critical industry. It is defined as the performance

shaping element guiding the behaviours of healthcare professionals towards considering patient safety among the top priorities (Aboshaiqah & Baker, 2013). The PSC is a result of the internalized values and beliefs of the hospital staff and the behaviour that contributes towards it (Hill, 2011).

Patient safety is the most important factor in concerning in health organisation and it is also defined as a clear guiding of and preventing patient injuries or negative occurrences stemming from healthcare procedure delivery (The Patient Safety Group, 2012). An institute's safety culture guides how the staff members perform their workplace activities. An effective and proactive safety culture guarantees that leadership learns from mistakes and records those mistakes in order to encourage and practice teamwork, to face potential threats, to utilise approaches of reporting and analysing negative events and to give workers their duty in enhancing safety as opposed to punishing them for committing errors (Ismail *et al*., 2012). Despite the stress on patient safety in healthcare, only a few organisations have conducted an assessment of the level to which their staff culture reinforces patient safety.

There are many sources which have been indicating the efficiency of health institution in order to reduce adverse events and create patient safety culture. Furthermore, existing literature supports the significance of PSC in minimising or steering clear of medical error; for instance, a previous study presented the association between hospital patient safety culture to medical errors indicators (Singer, *et al*., 2009). Developing a culture of safety is the basis of on-going struggles to enhance quality of patient safety in hospitals (Weaver *et al*., 2013).

Meanwhile, shedding a light on and minimising medical errors calls for understanding the way behavioural factors, like prosocial voice (PSV) and self-monitoring (SM), are linked with PSC through Saudi public hospitals.

One of the approach to report medical errors is the prosocial voice (PSV), which is described as a certain style of proactive and improvement-directed workplace communication behaviour (Hill, 2011). An employee practicing PSV is urged to report knowledge, information and views to bring about positive changes to the status quo, on the basis of the desire to maximise work processes despite disagreements from others (Van Dyne *et al*., 2003). When employees report and discuss about significant issues, organisations benefit from them. Although PSV is desired in the workplace, employees are often hesitant to speak up (Morrison and Milliken, 2000).

Therefore, the open communication is one of the important tools to identify the organisations employee errors. In context of hospitals, the failure of staffs to communicate the issues among them negatively influences the ability of the hospital to pinpoint medical errors and learn from their errors (Lyndon, 2006; Hughes *et al*., 2009). According to Soibel *et al*. (2012), there are many reasons why hospitals staff often refuse to speak out regarding patient safety concerns. One of these reasons is the psychological processes which consist of self-monitoring (SM) that will impact their expressive behaviour and communication. SM refers to a behavioural process in which individuals control their projected public image according to others' expectations (Oh, 2013). This may be attributable to the employee's decision to speak up (Premeaux and Bedeian, 2003).

Although proactive communication is linked with the organisational leaders' ability to solve mistakes, enhance processes, and develop solutions to organisational issues in several industries (Trevino, 2010), it has received little or no attention in scientific research. Consequently, little is known concerning the relationship between a certain type of proactive and upward-directed workplace communication behaviour, PSV, and PSC in the context of hospitals (Hill, 2012). Specifically, although communication among hospitals staffs for patient safety issues in literature is stressed, in studies of this calibre, the concept of speaking up is addressed through various variables that lack reliability and validity.

The PSC of a hospital has a key role in identifying and dealing with errors. Hospital leaders and management encouraging PSC is characterised by effective communication among all healthcare professions to take advantage of opportunities of procedures, practices, and processes enhancement (Armstrong, Laschinger, & Wong, 2009). Significantly, in literature that enhancing PSC minimises medical errors in healthcare.

However, despite the stress on effective communication, many healthcare providers do not often communicate concerns regarding unsafe practices and medical errors. According to a survey distributed among 196,462 hospital staff members employed in 622 U.S. hospitals, 63% of respondents showed no patient safety concerns or report medical errors (Agency of Healthcare Quality and Research, AHRQ, 2009). Failure to communicate appears to be the reason behind the potentially avoidable medical errors (IOM, 2006; The Joint Commission, 2010).

Furthermore, only a few operationalised factors are available throughout studies in literature. In addition, researchers call for the investigation of behavioural factors associated with PSV (Burris *et al*., 2008; Trevino, 2010). Several reported on the impact of SM behaviour in the workplace. Prior studies such as Grant and Mayer (2009) presented that SM may moderate employee PSV in several industries. It refers to the individual's ability to observe and modify expressive behaviour and self-presentation in reaction to social signals (Soibel *et al*., 2012).

Moreover, individual variances related to SM have a key role in shaping communication behaviour in the context of social situations. Superior self-monitors may be urged to adapt their behaviour to satisfy the expectation of others (Barrick et al., 2005).

Meanwhile from a different perspective, for example modifying the nurses' work environment was presented to impact patient outcomes (Armellino, 2010). In Cook et al.'s (2012) study, they employed administrative data from 799 hospitals located in 11 states to examine the association between increased hours by nursing care per day by registered nurses, and the rates of negative outcomes. In a related study, Hammer (2009) related patient-to-patient ratios and rate of patient mortality among 232,342 adult patients who were discharged from two hospitals in Pennsylvania. In another study, Curriculum (2012) examined the increased medical errors in patients when care is provided by uncertified nurses. Also, a study of more than 800 surveys of eight hospitals in Southern Michigan were conducted and brought forward that lack of power may add to the negative patient outcomes (Manojlovich & Decicco, 2007).

Specifically, the PSC can be described as a work environment with employees who value, have confidence in practice, and display safety behaviours and attitudes (AHRQ, 2003). On the basis of the integrative review on PSC conducted by Weigmann et al. (2004), PSC indicators include organisational commitment, management participation, employee empowerment, reward systems, and reporting systems. One potential strategy is to encourage structural empowerment among hospital staffs to hope of creating a good PSC (Armstrong & Laschinger, 2006). Also, organisations having a well-laid infrastructure of employees who are committed to the organisation and feel accountable for the provision of safety would contribute to a culture of safety (Armstrong & Laschinger, 2006).

1.3 Problem Statement

Culture of patient safety is an issue that receives much attention by both researchers and healthcare practitioners because it plays significant role in the way errors are determined and dealt with inside hospitals (Reiman, et al, 2009; Al-Ahmadi, 2009; Al-Ahmadi, 2010; Bagnasco, et al, 2010; Deilkås and Hofoss, 2010; Morello, et al, 2012). There are many factors which lead to the increases of medical errors in health organization. Consequently the existence of traditional blame and shame culture in healthcare organizations have long been criticized for being the main reason behind increasing medical errors and preventing the possibility of learning from errors (Ahmed et al, 2011; Amarapathy et al., 2013). One of the consequences of the blame culture is underreporting of the errors and the fact that the expected learning from adverse events and near misses does not take place on a broad scale; in several organizations, healthcare professionals are discouraged

of reporting errors because of accountability concerns or the fear of being considered as incompetent by colleagues (Wagner, et al., 2013).

Statistically speaking, medical errors account for avoidable injury or death of over 1.5 million Americans every year (Liang & Mackey, 2011). According to the findings which were conducted in eight Arabic countries by Najjar et al. (2013), 8.2% of records reviewed showed at least one adverse event, ranging from 2.5% to 18.4% per country. Eighty three percent of these adverse events were judged to be preventable (range 55%-93%). About 30% of adverse events were associated with death of the patient. This equates to nearly 2% of patients in hospitals across the Arab countries, included in the study, sustaining adverse events that were associated with their deaths.

Meanwhile, in the context of Saudi Arabia, reports provided by the Ministry of Health showed that the number of medical errors in 2009 reached 670 cases (Shaheen, 2011), but that number reached over 25,000 cases within five years, as shown in Table 1. This figure was a key issue that drew concerns when was presented in a conference held in Madinah 2011, with the theme "The Medical Mistakes and Malpractice in Saudi Arabia" as reported by Gulf News (2011). Table 1.1. Based on Table 1.1, the severity of medical errors in Saudi Arabia could be realised.

Table 1.1
The Number of Medical Errors Recorded/Reported Inside Saudi Arabia during the Period 2007-2011

Year	Number of Reported/Reported Medical Errors in Saudi Arabia from 2007 until 2011
2009	670 (cases reported by the Ministry of Health)
2007-2011	25,000

Alternatively, medical malpractice claims in the country were reported to be 1026 during 2007, while medical malpractice insurance purchased by the Saudi healthcare professionals increased by 116% from 2007 to 2008 (Aboshaiqah and Baker, 2013). Based on this data, it is evident that medical errors in Saudi Arabia are becoming worse.

It is widely believed that the desired improvements in patient safety need to shift the culture in the healthcare setting (NPSA, 2004; Fleming, 2005). The biggest hindrance to shift this problem towards a safer healthcare system is the practices of blaming individuals for errors, to one wherein errors are not attributed to personal failures, but as chances of system improvement and prevention of harm (Morello et al., 2013). Based on the findings from some other countries, bringing to a safety environment is becoming the key issue. In U.K., developing a safety culture has been the initial step enumerated by the National Patient Safety Agency's seven-step guide to enhancing patient safety. Meanwhile in Canada, safety culture is among the five patient safety goals of the Canadian Council on Health Services Accreditation that are required organizational practices (Fleming, 2005). According to the report published by the Institute of Medicine (IOM) "To Err is Human", status quo is no longer acceptable—healthcare organizations must develop a culture of safety (Croll et al., 2012).

In the Saudi Arabian hospitals, little efforts have been made to assess the level to which the organizational culture supports the patient safety (Al-Ahmadi, 2010). The most reported occurrence was concerning behavior and communication incidents which are manifested in the weak safety culture (Arabi et al., 2012). The most commonly reported issue by Saudi hospitals is the level to which staff perceived that their mistakes and errors

are not held against them. The elements of safety culture like communication openness, staffing, and non-punitive response to error in Riyadh hospitals were found and these elements need to be improved (Al-Ahmadi, 2009). In Saudi Arabia, healthcare organizations are attempting to maximize patient safety and quality of healthcare through the application of safety systems and the development of safety culture (Alahmadi, 2010). Hence, a need arises for hospital staff training on patient safety for public as well as private hospitals. This training should encapsulate strategies and plans needed to develop safety culture for leadership, employees, and patients (Al-Ahmadi, 2009).

Table 1.2
Dimensions of PSC in KAUH-SA compared to international Benchmark

Patient Safety Culture Component	Percentage inKAUH-SA[a]	International Hospital Benchmark
Overall perceptions of safety	45%[b]	57%
Frequency of events reported	57%	52%
Supervisor/Manager expectations and actions promoting patient safety	51%[b]	70%
Feedback and communication about error	58%	53%
Hospital management support for patient safety	61%	60%
Organisational learning and continuous improvement	74%	71%
Non-punitive response to error	16%[b]	42%
Teamwork within units	68%[b]	74%
Communication openness	36%[b]	60%
Teamwork across hospital units	51%[b]	53%
Staffing	15%[b]	44%
Hospital handoffs and transitions	47%[b]	46%

[a]KAUH-SA: King Abdulaziz University Hospital, Saudi Arabia (Al-Awa, 2012)
[b]Value is below benchmark standard for international hospital

Meanwhile, Table 2 shows that there are weaknesses in some PSC dimensions in King Abdul-Aziz University Hospital, such as overall perceptions of safety, supervisor/manager expectations and actions promoting patient safety, non-punitive response to error, teamwork within units, and communication openness. Therefore, these are the most important factors that need improvement to encourage perception of PSC at

public Saudi hospitals. The factors of non-punitive response to error and staffing are the worst performing PSC components, with 16% and 15% as compared to the 42% and 44% benchmark levels, respectively.

Therefore, many of the documented medical errors and adverse events can be attributed to nursing care. In other words errors were associated with nursing-sensitive patient outcomes or indicators (England, 2012).

Therefore, various theoretical and empirical attempts have been devoted to understand the factors associated with promoting a hospital patient safety culture which include communication (e.g., prosocial voice) and work environment (e.g., structural empowerment).

To enhance safety culture in organizations, the hospital leaders having a well-established safety culture which can encourage effective communication among healthcare professionals for the purpose of taking advantage of opportunities to enhance procedures, practices, and processes (Armstrong et al., 2009; IOM, 2000, 2004). Researchers (Burris et al., 2008; Detert & Trevino, 2010; Grant & Mayer, 2009; Tucker et al., 2008; Walumbwa & Schaubroeck, 2009) reported that prosocial voice, a distinct form of proactive and upward-directed workplace communication behavior, are associated with improved organizational effectiveness in other industries and may be effectively used in the health care industry. One study conducted by Hill (2011) on registered nurses' perception of prosocial voice, self-monitoring behavior, and patient-safety culture showed a weak positive correlation between registered nurses' prosocial voice and four dimensions, out of twelve, of the hospital patient-safety culture. Therefore, the results of

this study cannot be generalized because it has many limitations: it was conducted on nursing staff at one hospital, small size of the sample and it was nonprobability method of sampling the participants. Furthermore, it was with four dimensions of patient safety culture while there is twelves dimensions to reflect the patient safety culture at hospital. So, there is call to study prosocial voice and patient safety culture on larger subject populations in diverse hospital settings to explore and determine to which extend the prosocial voice is promote the patient safety culture on healthcare industry (Hill,2011).

Thus, there is identified gap to study prosocial voice and hospital patient safety culture at organization level. In addition, it is important to develop effective interventions to improve patient safety requirements and it is better to understand how behavioral factors, such as self-monitoring, impact on prosocial voice and hospital patient-safety culture. Self-monitoring can affect many important interpersonal dynamics, including cooperation, communication, and relationship building (Flynn& Ames, 2006). This is compounded by several studies that reported the impact of self-monitoring behavior in the workplace (Day, 2006). An in-depth understanding of these associations on the basis of existing evidence is of interest to researchers in both psychology and patient-safety fields, and it is important to plan suitable interventions to reinforce PSV, maintain PSC and minimize medical errors and patient harm. Self-monitoring may be a moderator of certain relationships in the workplace, including prosocial voice (Fuller et al., 2007; Premeaux & Bedeian, 2003; Grant & Mayer, 2009). A moderating variable is a separate independent variable which influences the relationship between the independent variable(s) and dependent variable (Baron & Kenny, 1986). The effect of the moderating variable is known as interaction effect. Self-monitoring (Snyder & Gangestad, 1986) was

computed as a moderating variable. On the other hand, another studies (Grant & Mayer, 2009; Hill, 2011) reported no relationship between self-monitoring and prosocial voice among employees. Further empirical research is required to substantiate the relationship between self-monitoring and prosocial voice.

Organizations that provide health care have a responsibility to deliver safe care. A healthcare organization must utilize organizational strategies to reduce and eliminate errors related to human error (Galvan et al., 2005). One potential strategy is to support structural empowerment within work environment to create a culture of patient safety (Armstrong & Laschinger, 2006).

Researchers (Armstrong & Laschinger, 2006; Armellino, et al., 2010; Avolio, et al.,2004;O'Brien, 2011; Boonyarit,et al., 2010) reported that structural empowerment is important to enhance the outcome of health industry. In spite of that, there are a limited number of studies on the health sector. There are two studies only that were conducted between structural empowerment and patient safety culture. First study was exploratory conducted to link structural empowerment and a culture of patient safety by Armstrong & Laschinger (2006). This study was limited to 34 completed surveys from staff nurses in a small rural hospital in Canada. The second study between structural empowerment and patient safety culture of nurses working in critical care units was carried out by Armellino et al., (2010). A convenience sample of 102 of the 257 registered nurses working within the critical care units participated in this descriptive correlation study. Registered nurses had a moderate level of structural empowerment and a positive perception of patient safety culture. Therefore, both studies concentrate on the structural empowerment and

patient safety culture from the nursing point-of-view while there is need to study it at the organizational level, at multiple hospitals, at different units and with a larger sample size of nursing to validate the relationship between the two variables (Armstrong & Laschinger, 2006; Armellino et al., 2010). Thus, there is gap in literature to study the relationship between the structural empowerment and the hospital patient safety culture at multiple hospitals. In addition to the structural empowerment, the psychological empowerment can be considered as a tool to urge employees to think on their own regarding their job requirements, develop meaning for their assigned tasks, and eventually improve their levels of competency (Laschinger, et al., 2004). More specifically, PE of hospital workers has been initiated to be a causal factor to positive outcomes such as high quality care of patients and patient safety (Bonias et al., 2010). Therefore it is important to identify the common understandings of PE. Basically PE can be divided into four cognitions namely meaning, competence, autonomy/self-determination, and impact (Atta et al., 2012). More importantly, the mediation impact of psychological empowerment (PE) on the structural empowerment (SE) has been studied by many researchers (O'Brien, 2010; Kimura, 2011; Arinl. et al, 2010) while its relationship with the patient safety culture (PSC) was not examined. Owing to the critical issues of quality healthcare in the international arena, the associations between the SE, the PSV, and the PSC should be understood by researchers and managers to help employ the most effective human resource management practices to guarantee the provision of high-quality patient care. Thus, there is a potential gap for studying the effect of PE as a mediator between SE and PSC. In addition, there is recommendation to study the

mediating effects of PE on PSC (Avolio et al., 2004; Khatri et al., 2009; Bonias et al., 2010).

Referring to all the previous literature review, this study addresses all of the pre-mentioned gaps that need further research by studying the relationship between the ten dimensions of patient safety culture, at one side, and the prosocial voice moderated by self-monitoring and the structural empowerment mediated by the psychological empowerment, at the other side, inside Saudi Public Hospitals.

Additionally, to best knowledge of this researcher, it is very difficult to find studies to date that examined the interactions between independent variables of SE and PSV with PSC moderated by SM and mediated by PE at Public Hospitals in the ministry of health in Saudi Arabia.

1.4 Research Questions

In order to establish the queries for the research, several research questions were formulated to provide a direction for this research effort. These questions are as follows:

1. Does patient safety culture (PSC) exist in Saudi Public Hospitals?
2. Does structural empowerment (SE) exist in Saudi Public Hospitals?
3. What is the relationship between structural empowerment (SE) and patient safety culture (PSC) in Saudi Public Hospitals?
4. What is the relationship between prosocial voice (PSV) and patient safety culture (PSC) in the Saudi Public Hospitals?

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5. What is the interaction between prosocial voice (PSV) and patient safety culture (PSC) moderated by self-monitoring (SM) in Saudi Public Hospitals?

6. Does psychological empowerment (PE) mediate the relationship between structural empowerment (SE) and patient safety culture (PSC) in Saudi Public Hospitals?

1.5 Research Objectives

From the established research questions, the research objectives for this research can be formulated to provide a clear goal to be achieved in this research effort. These objectives are stated as follows:

1. To assess patient safety culture (PSC) in Saudi Public Hospitals;

2. To assess structural empowerment (SE) in Saudi Public Hospitals;

3. To examine the relationship between structural empowerment (SE) and patient safety culture (PSC) in Saudi Public Hospitals;

4. To examine the relationship between prosocial voice (PSV) and patient safety culture (PSC) in Saudi Public Hospitals;

5. To examine the interaction between prosocial voice (PSV) and patient safety culture (PSC) moderated by self-monitoring (SM) in Saudi Public Hospitals; and

6. To examine the interaction between structural empowerment (SE) and patient safety culture (PSC) mediated by psychological empowerment (PE) in the Saudi Public Hospitals.

1.6 Scope of the Study

The present study aims to examine the relationship between prosocial voice (PSV), self-monitoring (SM), structural empowerment (SE), and patient safety culture (PSC) moderated by self-monitoring and moderated by psychological empowerment in Saudi Public Hospitals.

As such, the scope of the study covered all Saudi public hospitals and the respondents of study was nurses working in hospitals on the frontline of patient care as according to Despines et al. (2010), where nurses are the most likely individuals to be privy to risk or occurrence of medical errors. In addition to this, registered nurses work interact more with patients compared to physicians (Hill, 2011).

1.7 Definition of Key Terms

This section provides key terms used in this study, which are stated and explained as follows.

Structural Empowerment: According to Armstrong and Laschinger (2006), structural empowerment is where workers are authorised to learn and grow in their work setting when information, support, resources, and opportunities are at hand.

Patient Safety Culture: Patient safety culture was defined by Sorra and Nieva (2004) as the product of individual and group values, perceptions, competencies, attitudes and behavioural patterns that all determine commitment, style, and proficiency of the health and safety management of an organisation.

Safety Culture: Safety culture refers to the product of individual and group values, behavioural patents, attitudes, and competencies that emphasises the commitment, style, and proficiency of health and safety management of the organisation (England, 2012).

Medical Error: A medical error is described as a preventable incident caused by failure to accomplish an act as proposed, or the employment of an erroneous plan through the provision of healthcare (IOM, 2000).

Nursing Unit: A nursing unit refers to a selected patient-care area in the hospital context (Armstrong et al., 2009).

Patients: Patients are individuals, groups, or populations that demand care from healthcare professionals (Jenicek, 2010).

Patient Harm: Patient harm refers to accidental injury to a patient that stems from medical error requiring further monitoring, treatment, hospitalisation, or that leads to death (Jenicek, 2010).

Patient Safety: Patient safety is being free from accidental patient injury in the healthcare system (IOM, 2000).

Patient Safety Culture: Patient safety culture is defined as an underlying element of hospital organisational culture that is linked to the beliefs, behavioural norms, attitudes, and practices of registered nurses concerning patient safety (Feng et al., 2008).

Risk: The potential injury or negative outcomes to patient in the course of provision of healthcare (Vincent, 2006).

Self-monitoring: Self-monitoring is a cognitive method through which individuals acknowledge and control the public image they display in reaction to others' expectations (Snyder, 1974).

Prosocial Voice: Prosocial voice is composed of ideas that are work related or those perceptions based on cooperative motives. This specific type of voice behaviour is intentional, proactive, and other-oriented with the main focus of benefiting others like the organisation (Van Dyne et al., 2003).

Psychological Empowerment: Psychological empowerment theoretically refers to an individual's perception that he/she has control over the environment and perceives alignment between his/her values and those of the organisations (O'Brien, 2010). Psychological empowerment was also defined by Conger and Kanungo (1988) and Thomas and Velthouse (1990) as an intrapersonal sense of empowerment which arises from the cognitive process of the individual.

1.8 Significance of Study

The aim of the study is to discover the effect of structural empowerment and prosocial voice on the patient safety culture moderated by self-monitoring and mediated by psychological empowerment in Saudi Public Hospitals. If the findings of this study will be true and valid, the study will contribute to both theory and practice.

In terms of theory, the study contributes to the body of knowledge through the effect of structural empowerment and prosocial voice on the patient safety culture in Saudi Public Hospitals based on an organization perspective, and the influence of both the mediation

of psychological empowerment (PE) on structural empowerment (SE) and patient safety culture (PSC), and the moderation effect of self-monitoring (SM) on relation between prosocial voice (PSV) and patient safety culture (PSC),. Specifically, the present study will be the first study that carries out an examination of the effects of prosocial voice and structural empowerment on patient safety culture moderated by self-monitoring and mediated by psychological empowerment in Saudi Public Hospitals. Furthermore, it will be one of the rare studies on health care industry. Because only one previous study is examined the link between prosocial voice and four dimensions of patient safety culture moderated by self- monitoring through nursing perception in one hospital setting in the Midwest United States (e.g. Hill, 2011). While there is need for study prosocial voice and all dimensions of patient safety culture moderated by self –monitoring on varies hospitals and different population. In addition, the population of previous studies is nusrses while this study the population of study is hospitals. So, this study comes to fill the gap and examine these variables at all Saudi public hospitals. On the other hand, two studies are investigated structural empowerment and patient safety culture. The first one was among nursing are working in critical care units (e.g. Armellino et al., 2011). And the second study was Structural Empowerment, Magnet Hospital Characteristics, and Patient Safety Culture in a small community hospital in central Canada and both mentioned studies were separately and they were on an individual level. Furthermore, Referring to previous literature, there is a potential gap for studying the effect of PE as a mediator between SE and PSC. And there is recommendation to study the mediating effects of PE on PSC (Avolio et al., 2004; Khatri et al., 2009; Bonias et al., 2010).

The present study linked these separate studies in one study in order to offering a better understanding of effects of prosocial voice and structural empowerment on patient safety culture moderated by self-monitoring and mediated by psychological empowerment in Saudi Public Hospitals. In this context, the present study will contribute in particular to Structure-Process-Outcome (SPO) Theory by empirically incorporating the mediation effects between structural empowerment and patient safety culture, which was not considered previously. Furthermore, the present study also intends to add to the literature concerning patient safety culture among hospital nurses through the achievement of the following points: (a) providing empirical evidence regarding motivate open communication to report the adverse events (b) empowerment of nurses through the support and giving them the access to information, resources, and opportunities to improve their skills and their competences ; and (c) providing a Saudi perspective on the above issue pertaining to patient safety culture among hospital' nurses.

On the practical side, the study will possesses significance because it attempts to give insight into one of the major issues in Saudi Arabia's healthcare system –patient safety culture. According to Al-Ahmadi (2010), In Saudi Arabia, healthcare organisations are attempting to maximise patient safety and quality of healthcare through the application of safety systems and the development of safety culture. Furthermore, this research will help the stakeholders in the Ministry of Health to identify the factors which influence on patient safety culture among nurses. Finally, the research can be used by decision makers to create patient safety culture in order to minimize the medical errors in Saudi Hospitals. And raise the nurse executives' ability to achieve their respective hospitals' goals and contribute to the knowledge regarding nursing field.

1.9 Organization of the Study

This study includes five chapters. Chapter one has clarified the plan of the research over the identification of the present gaps in the existing literature. It has also defined significant justification to perform this study. Beside these, research questions and objectives have been emphasized as well as the scope of the research. Chapter two presents the literature review. In the hopes of locating relevant literature on different aspects of the topic, online search was conducted in various online databases including Web of Science, PubMed, ProQuest, EbscoHost online resources, ScienceDirect, Wiley InterScience, Google Scholar, and libraries including OPAC. Various search engines are employed through the snowball technique. The main goal of chapter two is to explore important empirical studies that will assist the researcher in formulating the research hypotheses. In addition, theoretical foundations that support the present study are also emphasized and deliberated. Chapter three is about the research methodology and it specifically deals in detail with the practical side of the research. In this chapter, methodological issues like sampling, data collection and instrumentation are explored as well as the proposed data analyses. In addition, Chapter three examines the effect of PSV and SE on patient safety culture moderated by SM, and moderated by PE in the context of Saudi public hospitals. Chapter Four provides the research findings through an overview of the study problem and study results. This is followed by Chapter Five, which contains the discussion, recommendation and the conclusion of the study. This chapter also provides the study limitations, implications for PSC at public hospitals in the Saudi Arabia. It further proposes a guideline for future research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The present chapter provides the broad discussion of literature on structural empowerment, psychological empowerment, prosocial voice, self-monitoring and patient safety culture. Firstly, the discussions focus on underpinning theory. The primary search terms are medical errors, empowerment, structural empowerment, prosocial voice, self-monitoring, psychological empowerment, working environment of nurses, safety, patient safety, safety culture and patient safety culture.

2.2 Underpinning Theory

There are many theories related to patient safety culture. The theories commonly employed for culture of patient safety include; Normal Accident theory by Perrow (1984) provides a complete interpretation of complex systems derived from a social sciences perspective, High Reliability Theory by Weick (1987) succeeded in avoiding disasters in workplace by expecting normal accidents which causes by risk factors and complexity , The Structure-Process-Outcome Framework by Donabedian (1992) is most often represented through the combinations of three boxes containing structure, process, and outcome that connected each other, Deming Systems Theory by Deming (1986) covers a narrow set of 14 points that work as guidelines for practice regarding quality management and appropriate organizational behavior, and Rosabeth Kanter's Theory

(1970) suggested that employees illustrate different behaviors based upon whether certain structural supports were in place or not.

In general, the healthcare services were examined through the use of Donabedian's theory. This is because Donabedian's theory is a conceptual model that evaluating the quality of care and it is considered to improve the healthcare service quality by healthcare professionals including nurses, doctors and administrators (Kobayashi, Takemura and Kanda, 2011). The quality of care of Donabedian is flexible enough to apply in diverse healthcare settings and among numerous levels within a delivery system. Basically, framework used to modify structures and processes within the workplace. As such, in the present study, the theory of Structure-Process-Outcome (SPO) proposed by Donabedian (1966) is employed as the study's theoretical framework.

In general, Donabedian Theory is commonly used in the health and safety field. This study used the theory of Structure-Process-Outcome (SPO) Theory (Avedis Donabedian, 1966) as a theoretical framework that guided this research:

| (Structure) | (Process) | (Outcome) |

Structure ⟶ process ⟶ outcome
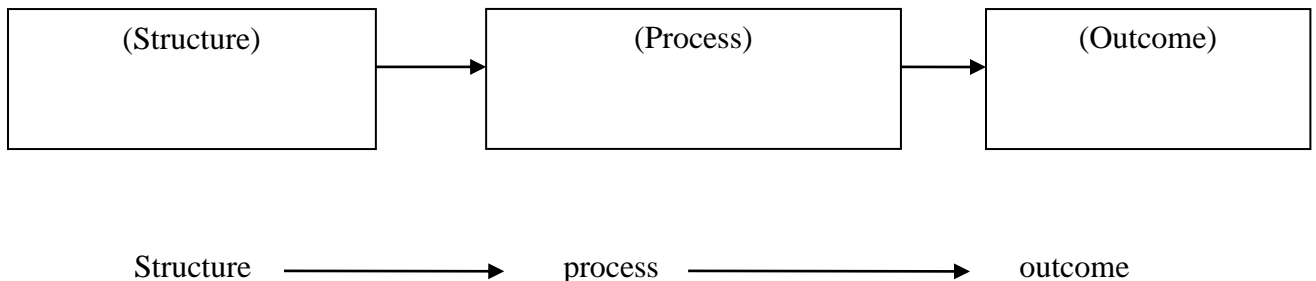
Figure 2.1
Framework based on Structure-Process-Outcome (SPO) theory

2.2.1 Structure-Process-Outcome (SPO) Theory

Based on previous studies, the researcher decided to use the Donabedian Theory because this theory sheds a light on healthcare excellence as an active linkage with three unified proportions in the following phases (Donabedian, 1988);

1. Hospital Composition

2. Hospital Procedures, and

3. The results (Donabedian, 1988).

The theory provides the critical association among structure, process and outcome in the organisation. SPO defines healthcare quality as an active relationship among organisational structure, organisational processes and organisational outcomes (Donabedian, 1988). It postulates basic relationships among the dimensions (structure - process - outcome). Hence, a good structure maximises the possibility of a productive process which in turn enhances a productive outcome (Donabedian, 1966). In healthcare organisations, the structural feature such as equipment and the situations that refer to the settings on delivering health care will influence the process of care and thus, quality may be controlled. Similarly, the process of care may increase or decrease the chances of optimistic outcome (Donabedian, 1992) since it plays a major role on influencing the outcome of this study. Therefore, the relationships among the variables are potentials as opposed to assurance – in other words, the higher the probabilities through evidence, the more dependable will be the decision quality (Donabedian, 1988).

The basic assumption of the SPO theory is the premise that there is no existence of accurate partition among the three components. In other words, quality attitude does not arise from any sole dimension but from the cooperation among the structure, process and outcome (Donabedian, 1992). Each of the dimensions carries the same importance and they cooperate among one another to determine quality (Donabedian, 1996). The following sub-sections explain each dimension. To examine study on structure, process and outcome concepts, it would necessitate adequately large samples of various structures, each with large samples of subjects and various processes being compared who have experienced the outcomes of those processes. (Loegering, Reiter, and Gambone 1994)

2.2.1.1 Structure

The structure refers to the physical environment and qualities of the organisational situation including the substructure and tangible resources (e.g. facilities, equipment and technology), the specialized resources (staff, punishments, and employee training) and finally the organisational features (position, size, task, financial resources and other possessions) (Donabedian, 1980).

Structure also encapsulates organisational leadership capabilities. Leadership is defined as the capability of organisational leaders to urge a group of workers to achieve a common goal (Donabedian, 1996). According to other authors (Glickman et al., 2007), effective leadership's abilities and capabilities of reinforcing others are considered as organisational characteristics associated with improved processes and outcomes. Prior, patient-safety literature has established the association between leadership and work

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atmosphere. For example, when leadership support the nurses, then the nurses will report the medical errors so this efforts reflect on the patient safety (Snijders et al., 2009).

Therefore, leadership should have high support to hospital staffs through open communication in order to improve the patient safety culture. Moreover, effective communication between hospital leadership and registered nurses affect the culture of patient safety (IOM, 2001, 2004, and 2006). Hospital leaders encourage efforts of patient-safety and deliver psychological safety and assist staff in communicating and learning from their errors that occur on the frontline of care delivery (Milliken et al., 2003).

Currently, structure has been described to include the socio-economic environment and financial environment as it is carried out in healthcare. Features like demographics, customer's expectations, legal requirements and competitive market were found to impact healthcare outcome (Qu et al., 2010).

The changes in this dimension becoming manifestations to the evolution of the healthcare environment. As a result, structure contains forceful interactions between the organisations' internal (such as number of employee, levels of hierarchy) and external factors (such as patient's satisfaction). Therefore, one of the organizational work environments is the structural empowerment (Manojlovich, 2005). Based on the above review, the structural empowerment considered as predictor variable. On the basis of the above contention, structural empowerment is included as a structure variable in the SPO model.

2.2.1.2 Process

Process refers to the features and transactional nature of the accurate behaviours and interactions that take place in the provision of care and all the interactions between patients and healthcare providers (Donabedian, 1980). According to Donabedian (1980), process is a two-dimensional concept containing two labour qualities namely, technical and process expertise, and the interpersonal manner in which healthcare is conducted. On the basis of psychological concepts that impact workplace motivation the former process indicates the level of development of skills needed to perform the process while the latter is the relationship between the employee's personality and the work activities related with the individual, (Donabedian, 1980).

Process also covers personal communication aspects. Thus, prosocial voice, self-monitoring and psychological empowerment are considered as dimensions of process in the SPO model. Additionally, active communication process is crucial in the healthcare safety culture. For example, when organisational process is promoting open communication, encouraging effective conflict management, and encouraging employees to report during the occurrence of an error may eventually minimise preventable medical errors (Milliken et al., 2003).

2.2.1.3 Outcome

Outcome is the results of the structure and process which consists of physical, social and psychological outcomes of healthcare (e.g. opinions and perceptions of care, changes in

health status, and quality of care (Donabedian, 1992). SPO theory divides outcomes into two namely technical results and interpersonal results (Donabedian, 1988).

Technical results refer to the physical and functional concerns of healthcare whereas personal results refer to patient behaviours, gratification with healthcare and affect of healthcare on the perceived patient's quality of life. The theory stresses on the premise that enhanced health results are the ultimate manifestation of quality. However, a change process should be associated with a conforming change in positive patient outcomes prior to the consideration of a successful intervention (Donabedian, 1996).

Furthermore, culture of patient safety can be presented as an outcome in the SPO model. It is defined as a product of common employee perceptions of norms, beliefs and values which concern decision-making and cooperation (Schein, 2006).

As a result in the SPO, organisational culture is achieved during the process phase; e.g. during communication, trust and mutual respect with leaders (Upenieks and Abelaw, 2006). Therefore, culture of patient safety in the hospital is considered in this study as an outcome variable in the SPO model.

2.2.1.4 Structure, Process and Outcome Studies

The SPO theory is employed by researchers to examine the association between structure, process and outcome. For instance, Schiller et al., (2010) established mixed results between the insurance plans of patients and access to health-care consultations. Patient health repayment policy did not disturb certain processes of care. Patients who had state-funded of the medical services packages had comparable rankings and reports of quality

of care as those with private health-care plans. On the other hand, previous study stated that access to additional insurance was positively related with improving quality in relations of access to care and getting precise essentials of recommended care (Hong et al., 2008).

Chou et al., (2008) stated that patient-safety culture can be enhanced through involvements designed to reinforce organisational leadership processes. Processes linked to decision making, communication, and interdepartmental direction which are positively related to an organisation's capability to raise and sustain a culture of worker belief in administration and patient safety. As a result, the culture of patient-safety was strongly linked that rely on data decision making. This mean, this results which support SPO theory in that organisational processes in hospital locations were related with outcomes encompassing the culture of patient safety.

Upenieks and Abelaw (2006) employed the SPO theory in their qualitative study of 24 nurses who work in a hospital. They revealed that stable organisational structures lead to greater management of information and communication through disciplines in order to enhance the culture of patient safety.

Similarly, Stone et al., (2007) conducted a quantitative study to examine the work situations of 1095 hospital nurses. The structure associated with organisational recruitment and overtime was found to relate with patient safety outcomes. Patient safety was negatively linked to recruitment levels and the overtime of nurses.

Additionally, in another quantitative study involving 600 hospital departments in Sweden, Kunkel, Rosenqvist and Westerling (2007) revealed a significant positive relationship between certain structure features (workers' availability, managerial structure and leadership support) and exact features of outcomes (organisational culture, collaboration and aim achievement).

More currently, Qu et al. (2010) defined the structural features of integrating environmental factors as quality of care causes. They stated that changes in compensation policy were related with the quantity of patient care and patient outcomes.

From the above studies, the provision of SPO theory of organisational structure and hospital locations features were linked to outcomes that encompass the entire culture of patient safety.

2.2.1.5 Summary of SPO Theory

SPO theory provides an overview of the interdependence of and relationships among organisational structure, process and outcome. This study uses the SPO as a framework to determine the relationship among structural empowerment (structure) prosocial voice (process), self-monitoring (process), psychological empowerment (process), and patient-safety culture (outcome) through Saudi public hospitals.

The theory postulates that for a strong culture of patient safety as outcome, hospital staffs are required to receive high support of structural empowerment as structure, and prosocial voice, psychological empowerment and self-monitoring as process. In view of exploring patient safety culture, the theory provides a general basis for determining

structural empowerment, prosocial voice, self-monitoring and psychological empowerment enclosed in a hospital setting and their interaction with patient safety culture.

2.2.1.6 Structure-Process-Outcome (SPO) Limitation

Like other theories, the SPO has some restrictions of its own – for instance, it reveals the relationships between structure, process and outcome from a direct and reductionist point of view. Minimising the complex interactions related to the five element dimensions helps expedite the study but the validity of associating distinction in structure and process on outcomes may be left unanswered. Several variables influencing the result and assessment of structure, process, and outcome are restricted to those selected by the researcher. Moreover, owing to the fact that quality is determined by the strength of the relations among the three dimensions, internal validity becomes basic in employing studies of this conceptual framework.

Despite these limitations, the SPO is considered to be capable of providing a reasonable and coherent explanation of the relationships among organisational structure, process and outcomes and their description in robust operational terms. The model provides a method that accurately describes the variables.

To sum up, SPO theory represents a robust framework in which to examine the hypothesised relationships of the present research.

2.3 Patient Safety Culture

The patient-safety culture concept is closely related with healthcare quality and has been defined by the National Patient Safety Foundation as the steering clear of, prevention, and amelioration of negative outcomes originating from the healthcare process (IOM, 2000). Although terminologies employed to describe patient-safety culture differ in studies found in literature, however each term describes an aspect of patient-safety culture. Specifically, terms in literature include non-punitive culture (Institute of Safe Medication Practices, 2000), blame-free culture (Ralston and Larson, 2005), open and fair culture (Vincent, 2006), culture of transparency (Gluck, 2010) and just culture (Vogelsmeier et al., 2010).

The above various terms indicate that patient-safety culture is a novel and still evolving concept as the researchers are still finding ways to describe and understand the construct. Consequently, patient-safety culture has been defined and measured in various methods (Ginsburg et al., 2010).

In a related study, Feng et al. (2008) conducted a systematic review of literature and revealed a dimensional concept analysis of patient-safety culture. Researchers' consensus that nurses' shared values and beliefs towards patient safety consists of overarching dimension of patient-safety culture, despite the differences in the concept's definitions.

The development and maintenance of an effective patient-safety culture was deemed to be a significant recommendation of the IOM in the hopes of promoting patient safety (IOM, 2004). IOM stressed on the main role of registered nurses in patient safety and

declared that nurses are strongly related to patient safety (IOM, 2004). Literature concerning patient-safety culture originated from safety science research concentrating on error prevention in aviation, aerospace and nuclear energy (Vincent, 2006) that are deemed as high-reliability industries. This type of industries exist in highly hazardous surrounding where the outcome of error is quite high but the error occurrence is low owing to the effective culture of safety (Lyndon, 2006).

Along a similar line of industry, healthcare is considered as a high-risk industry due to the technical complexity and dependence on humans to provide patient care. On the basis of the science of safety from high-reliability industries, patient-safety authors postulate that there is an existence of relationship between culture of patient-safety and safety outcomes (Kline et al., 2008; Singer et al., 2009). Moreover, Gluck (2010) revealed on the theoretical basis that initiatives to minimise medical errors may fail without a strong culture of patient-safety.

Patient-safety culture is described as a subset of the broader variable namely organisational culture. Organisational culture is the group of beliefs and assumptions that stem from group norms, values and behaviours (Schein, 1985). On the other hand, patient-safety culture in a hospital is a product of the innate values and beliefs of the hospital staff and the behaviour that creates the culture (Singer et al., 2009). The patient-safety culture construct presents a distinct dimension of organisational culture and it is the result of hospital staff's values and attitudes concerning patient safety in the hospital (Feng et al., 2008). Several studies have conducted an assessment of patient-safety culture in hospitals.

2.3.1 Patient Safety Culture in Hospitals

In U.S hospitals, based on previous literatures shown that medical errors kill between 44,000 and 98000 people each year. Therefore, an evaluation of the patient safety literature must necessarily begin with the seminal IOM report *To Err Is Human: Building a Safer Health System.* Based on lower estimation, it is found that more people die from medical errors in a year compare to those who are dying from breast cancer, highway accidents or AIDS (IOM, 1999). As referred to IOM committee recommendation, it is found that health care organizations form an environment in as culture of safety becomes a top priority, an explicit organizational goal, , and is driven by leadership (Kohn et al., 2000). As a response to the IOM recommendations, health care organizations initiated a process, focusing on improving the widespread deficits in patient safety which includes a focus on organizational safety culture (Leape et al., 2002). This headed health care leaders to question, "how will we know?" that when we have exactly created safety culture within our hospitals (Pronovost et al., 2006). Defining a safety culture is first step. By using the AHRQ definition derived from the Health and Safety Commission of Great Britain: The safety culture of an organization is the creation of attitudes, individual and group values perceptions, competencies, and patterns of behavior that regulate the commitment to organization's health and safety management, and the style and proficiency of health organizations (Organizing for Safety, 1993).

Basically it is not hard to express safety culture in words. Therefore by knowing and understanding the characteristics of safety culture and its consequences to health care organizations may be more indefinable.

In this review, the collected works judgmentally observed by the authors to identify studies which address the attitudes, important beliefs, and behaviors that are essential to a safety culture in hospitals. For a safety culture many authors offered a speculative framework, however, the evaluation sustained the concept that a broader framework could be intended incorporating a broader range of properties. Organizing the properties of safety culture addressed by many studies and develop and define a conceptual culture of safety model that could be a valuable tool was the main purpose of this review as it help to support hospital leadership in forming or refining an organizational safety culture. Identifying the precise components of what makes a health care organization as a safe organization becoming one of the difficult tasks. A common theme running through the role of senior leadership is a key element to scheme, raise, and foster a culture of safety the literature suggests the. Therefore, it is identified that leadership is an important subculture. This was predominantly typified when the National Quality Forum (NQF) adopted "Improving Patient Safety by Creating a Culture of Safety" with an attention on systems and leadership structures (National Quality Forum [NQF], 2006). Involved senior leaders are precarious to the successful development of a culture of safety in organizations. Involved leaders drive the culture by scheming strategy and constructing structure that monitors safety outcomes and processes (Yates et al., 2005). Blake, et al., (2006) recognized that administrative leadership is one of the most significant facilitators for upholding and creating a culture of safety. In an editorial on "Creating a Culture of Safety," Dickey (2005), recommends a culture of safety must initiate with the Chief Executive Officer (CEO), while it must also infuse throughout every level of the health care system.

Similarly, it has attributed that one of the barrier to safety culture is lack of leadership. In 2002 Dennis O'Leary, then President of The Joint Commission (TJC), stated hospital CEOs identified that there is no business case for safety of patient (DeWolf, et al.,, 2003). In an interview with Lucian Leape in 2004, the recognized father of patient safety, Buerhaus (2004) reported that deficiency of hospital level leadership as an obstacle to patient safety. "Most hospital CEOs and presidents are not in the vanguard of safety," Leape stated. While he addresses and travels towards patient safety, he perceives few CEOs in the audience. However, we found that several examples of hospital leaders took steps to assimilate a safety culture within their organizations. In 2005, St. Louis top executives of Mercy Health System, met to deliberate the moral and theological imperatives for creating a safety culture. Improved leadership as a key element to enhance patient safety has been identified by them (Ballard, 2006). Children's National Medical Center in Washington, DC reported a significant improvement in clinical outcomes, but stated improvement would not have occurred without a hospital-wide culture change emphasized by the CEO and Vice President of Patient Services (Chavanu, 2005). How leadership in one community hospital improved the quality of care by changing the safety culture was described by Cohen, et al., (2003). At Sentara Healthcare Patient safety, improved outcomes through an approach of targeted process and system improvements were a strategic focus. An integrated health cares that system in Virginia concerning the board of directors, senior administrators, and medical staff leaders (Yates et al., 2005).

There are no easy answers as to how leadership be developed or can develop to guarantee a safety culture while strong leadership is often cited as critical to an organization's

culture of safety,. It is cited by five articles that leadership education is a key for an organization to move toward a safety culture. Leaders require need rationales when focusing on patient safety and basic approaching into safety problems. They need to be well-informed on the power of data and the science of safety (Blake et al., 2006; Chavanu, 2005; DeWolf et al., 2003; Johnson & Maultsby, 2007; Ketring & White, 2002).

Health care continues to operate in as an unsafe system in relation to other industries, (Amalberti et al., 2005). Amalberti et al. (2005) states that health care systems currently that operating within the range of a "dangerous system". It is defined as having a risk of accident that is more than one accident per 1000 events; therefore health care systems simply cannot be classified as highly reliable (or ultra-safe systems) where the risk of a disaster is less than one accident per 100,000 or per 1,000,000 safety units (Amalberti et al., 2005). Some of the reasons have been outlined as to why this reliability gap remains in health care which consists of: a) vigilance and hard work are being dependent by current improvement methods in health care, b) the current practice of benchmarking to mediocre outcomes in health care gives leaders and clinicians a false sense of reliability process, c) a tolerant attitude toward clinical autonomy creates and allows for broad and indefensible performance variation and d) processes are hardly ever designed to meet specific and articulated reliable goals (Resar, 2006). A number of recommendations for health care reliability is suggested by Resar (2006). Specifically, leaders should focus on requiring human factors and reliability science in the design of improvements. Then they should focus on key processes, define clear performance variability limits by evenness of

the process, plan processes to meet specific uttered reliability goals and focus on one or two key processes to reveal the learning model of reliability.

Weick and Sutcliffe (2003) provide an analysis of a case in a UK hospital stress that cultural mindset about risk, danger and safety that was anchored by a process of behavioral commitment and shaped interpretation, action and communication would result poor performance on safety measures. This cultural mindset about what is valued in the organization (i.e., deferring to the experts in times of uncertainty) and how this is enacted as "the way things are done around here" is the link between culture and HRO theory. A culture that values and enacts the processes inherent to a HRO should be practices in order to have a strong and high dependability culture of safety.

There are some other key aspects of the culture have been recognized as it is essential to understand in a health care context. Singer et al. (2003) outline components of a safety culture (adapted from Roberts, 1990) signifying that at the highest levels of the organization it is essential to have a commitment towards safety. Pronovost et al. (2003) indicates that senior leaders needed to become more visible to front line staff in their efforts related to patient safety initiated as respondents apparent a stronger commitment to safety from their direct supervisors than from senior leaders,. Similarly, in other studies (Ruchlin, Dubbs & Callahan, 2004; VHA, 2000; O"Toole, 2002; Flin & Yule, 2004) have been discussed the importance of leadership commitment and management to safety as one of the highest priority. A number of barriers including competition for scarce resources to make safety changes are met while leadership efforts to improve safety (Akin & Cole, 2005). However, through the allocation of resources and also

through their time commitment to safety issues, senior leaders need to constantly show a commitment to safety (Flin & Yule, 2004).

It has been recognized that subgroups (i.e., health professions or unit based groups) may impact the perceptions of the culture. Pronovost et al. (2003) reported that differences in responses from the nurses and physicians in reference to reporting channels and screening safety as the priority. Similarly, Singer et al. (2003) initiated that the perceptions of the patient's safety culture varied drastically among individuals from different clinical status. Grant, Donaldson and Larsen (2006) listed that physicians reported a higher awareness of teamwork than other hospital staffs in the inpatient and operation room (OR) settings. Grant, Donaldson and Larsen (2006) also noted that a number of staff reported that an appropriate action does not taken for reporting significant accidents. In a Canadian study, managers professed a considerably better safety climate than other staff as measured by the Safety Climate Survey and Safety Culture Scale (Kho et al., 2005). A study of an paediatric acute and OR care unit initiate that safety culture dimensions were rated equal or a little lower than the whole hospital culture (Kaafarani et al., 2009). It is obvious that there are differences among professionals in their responses and their perceptions of the safety culture (Pronovost et al., 2003; Singer et al., 2003). This finding is significant as researchers must be aware of these differences when analyzing cultural data, for example from one organization, or even unit level, with a number of different professions and be sure to combined this data to the unit level and also the subculture group level.

Amarapathy, et al., (2013) carried out a study to evaluate a tertiary care hospital's current patient safety culture in Sri Lanka. A self-administered questionnaire was carried

out using eleven dimensions of patient safety culture, on with 389 respondents which consists of Administrators, Consultants, and Postgraduate trainees, Medical Officers, House officers and Nursing Officers. To assess the patient safety culture in the hospital, Pearson's correlation was used to measure correlation between overall patient safety and other independent variables. Findings of this survey showed that there is a positive response about patient safety culture inside the organization. Overall patient safety and other correlations of variables are found to be noteworthy. Existing patient safety culture of patient seems to be in a reactive stage but, with strong —blame Culture.

A study for measuring patient safety culture in Riyadh hospitals has been conducted by Al-Ahmadi (2009): Public and Private Hospitals were compared. The questionnaire was distributed to all hospitals' staff in Riyadh, which included nine public hospitals and two private hospitals. Overall 1224 (47.4%) questionnaires were returned over a six-month period. The finding of study shown that the organizational learning was the safety culture dimension with the highest positive response (75.9%), while the non-punitive response to error received the lowest positive response (21.1%). The key areas that need improvement in public hospitals include handoffs and transitions, communication openness, staffing, and non-punitive response to error. Staffing and non-punitive response to error are the two aspects that private hospitals need an improvement. Based on the result it shows that all types of mistakes were reported more frequency in private hospitals than in public hospitals. The percentage of not reporting being higher in private sector than public hospitals while most respondents reported "no events" in preceding twelve months events. Furthermore, high percent of "no event" reports may denote under-reporting in all hospitals. Event reporting was influenced by feedback and

communication about error, staff position, teamwork across units, non- punitive response to error, supervisor/managers expectations and actions promoting patients safety, and type of hospital which indicated through regression analysis. The study has come with some conclusion that Riyadh hospitals need improvement in many areas includes communication openness, handoffs and transitions, staffing and non-punitive response towards error. The fear of blame culture should reduce by healthcare organizations and generate an environment of continuous learning and open communication.

To assess the extent to which the culture supports patient safety at Saudi hospitals Al-Ahamadi (2010) conducted a study on Healthcare organizations in Saudi Arabia. The questionnaires were distributed in 13 general hospitals in Riyadh city. The finding of the study shows that areas of strength for most hospitals were organizational teamwork within units, learning/ continuous improvement, feedback and communication about errors. The study concluded with some important points that Leadership is a critical element to the effectiveness of patient safety initiatives while areas with potential improvement for most hospitals were underreporting of events, non-punitive response to error, staffing, teamwork across hospital units. An important determinant of safety culture in healthcare organizations is the response to errors. In order to create a culture of safety and improvement, health care organizations must create a climate of open communication and continuous learning while eliminating fear of blame. Wagner, et al., (2013) studied similarities and differences in hospitals patient safety culture in three countries: USA, Netherlands and Taiwan. The study was conducted in 622 hospitals in USA, 45 hospitals in the Netherlands and 74 in Taiwan. Results have shown that most hospitals have high scores on teamwork within units in all three countries. Handoffs and transitions are the

areas with a high potential for improvement in all three countries. The Differences between countries exist on the following dimensions: Feedback and communication about error, Non-punitive response to error, Management support for patient safety, Communication openness, and Organizational learning—continuous improvement. On the whole, compare to Dutch and Taiwanese, US respondents were more positive about the safety culture in their hospitals. However, there are even greater differences between hospitals within a country. Conclusions, there were similarities and differences within and between countries in comparison to patient safety culture. Areas of patient safety culture of all three countries can be improved. Countries can share and learn from each other while identifying best practices.

Sagiroglu, et al., (2013) conducted a study to analyze and evaluate the patient safety culture in General Surgery Department, Faculty of Medicine, Trakya University, Edirne-Turkey. A cross-sectional study, utilizing the Turkish version demographic questionnaire was distributed to 125 health professionals including nurses, technicians, managers and medical staff. 125 healthcare staff, including physicians, nurses, and health officers participated in this research of the Hospital Survey on Patient Safety Culture which developed by the Agency for Healthcare Research and Quality. The main outcome measure(s) the patient safety culture score including sub scores on 12 dimensions and 42 items on patient safety grade and number of events reported. Outcomes of this study discloses overall patient safety grade was rated as excellent 40% of respondents, acceptable by 46% and failing or poor by 14%. The highest percentage of positive responses was for 'staffing' (52%), while 'management support for patient safety (41%), 'non-punitive response to error" (40%), and the lowest for 'teamwork within units (11%),

feedback and communication about error (12%), organizational learning and continuous improvement (15%). Therefore, setting a national and organizational based patient safety system without fear of punitive action should be given priority among hospitals and national administrators to improve patient safety culture.

2.3.2 Patient Safety Culture and Nurses

The nursing profession occupies the largest segment of the U.S. healthcare workforce with over 3 million members (United States Department of Labor, 2010). According to the IOM (2000) report, nursing is crucial to enhancing patient-safety culture and individual registered nurses should be proactive and empowered in hospitals. Registered nurses should be the last barrier in preventing medical error as they are the frontlines of patient care. Their knowledge of possible or actual patient safety risks is important to enhancing the patient care safety.

2.3.2 Studies of Patient Safety Culture and Outcomes

The pioneering research regarding patient-safety culture can be traced back to the mid-2000s and was a consequence of the IOM report (2000) and the increasing interest in the assessment of safety culture in the context of healthcare organisations. Prior patient-safety culture, researches only conducted an assessment of staff perception of patient-safety culture for a hospital or group of hospitals. These studies are innumerable and were excluded in this review. Measurable outcomes linked with patient-safety culture have only recently received its fair share of attention from scientific literature and only a few studies included an outcome variable. Hence, empirical studies dedicated to the

relationship of patient-safety culture and medical errors are few and far between each other. More recent studies attempted to measure the effectiveness of a patient-safety culture through direct measures of patient-safety outcomes such as prevention of nosocomial (hospital-acquired) infections (Elder et al., 2008), frequency and level of severity of patient-safety occurrences (Kline et al., 2008; Mardon et al., 2010), frequency of reporting medical errors (Snijders et al., 2009), rates of medical errors (Singer et al., 2009) and patient mortality and length of stay at the hospital (Huang et al., 2010).

In a related research, Elder et al. (2008) conducted a study involving patients in 31 U.S. hospitals numbering 15, 846 housed in 51 AICU to examine the relationship between a subset of organisational culture (nurses' working environment) and certain patient-safety indicator. A total of 1095 staff nurses were surveyed through a measure of patient-safety culture to examine their perceptions concerning their work environment. They revealed that adverse working conditions and increased overtime among registered nurses were linked with the risk of patients' developing infections. This study was the pioneering study to relate infection observing data to the working conditions of the nurses and it supported the IOM (2004) report that insufficient staffing and long working hours are significant issues that may shape the environment and lead to medical errors.

Two studies stand out with regards to the investigation of contributing factors in predicting negative events in the context of hospitals. First, Kline et al. (2008) conducted a retrospective analysis of 5070 patient-safety incident reports and patient safety culture survey results from 298 employees in three hospitals in Canada. They revealed that a positive culture of patient safety in hospital units significant linked to minimised severity

of patient-safety incident. They urged for more future studies to examine acute care settings in order to determine factors linked with patient safety culture so that certain interventions may be developed to contribute to a positive patient-safety culture. Second, Mardon et al. (2010) conducted an exploratory analysis study of 179 U.S. hospitals and revealed that a more positive patient-safety culture was related to fewer negative events in the hospitals. They also revealed that hospitals having higher HSPSC scores displayed lower rates of patient-safety incidents. They concluded that communication failure among nursing staff is a contributing factor to medical errors. Their findings reinforced the significance of a positive patient-safety culture in the hospitals. They urged for further studies to examine the relationships between behavioural components of patient-safety culture.

In a similar study, the relationship between patient-safety culture and hospital performance was examined through indicators of potential safety events in 91 U.S. hospitals by Singer et al., (2009). The authors surveyed a total of 35,006 individuals out of which, 18,223 (52%) completed a patient-safety culture survey. Their results indicated that an effective patient-safety culture is related with minimised risk of medical error occurrences. Their study is specifically important to the present research as it is the first quantitative evidence of a positive association between patient-safety culture and hospital's safety performance. Singer et al. (2009) further urged for on-going efforts to enhance safety culture in healthcare organisations in order to decrease potential safety occurrences.

Moreover, Huang et al.'s (2010) multihospital cohort study investigated the association between patient-safety culture and two main outcomes namely patient mortality and length of staying in hospital. They reported that lower levels of patient-safety culture was a predictor of higher patient mortality and lower levels of patient-culture significantly related to longer length of staying in hospital.

Meanwhile, Sorra and Nieva (2004) developed a survey tool in an effort to measure patient safety culture. The survey components were; acknowledgement of an event, promotion of a blame-free environment to encourage event reporting, collaboration and teamwork, communication and support from leadership. These components represent indicators of safety culture that is similar to those provided by Weigmann et al. (2004). According to Sorra and Nieva (2004) the values, beliefs and norms of the organisation's patient safety culture direct its employees on how patient safety and errors are considered from the organisational point of view and the way that attitudes and behaviours linked with patient-safety are expected. They conducted pilot testing on the HSOPSC survey instrument among 1437 hospital employees in 21 hospitals throughout six states. Overall, they revealed a positive perception of patient safety where some participants perceived that patient safety is not compromised, while others reported an event within the prior year. Their study highlighted a relationship between perception of overall patient safety and patient safety grade as the event reporting frequency with feedback and communication concerning the error, and non-punitive response to error and reporting of event. They also employed the HSOPSC instrument to survey nurses' aides and top management employed in nursing homes.

Along the same line of study, Castle (2006) conducted a survey among 1579 nurses' aides in 72 nursing homes in five states and the results of the survey were revealed to be lower than hospital scores with lower scores presenting a less developed patient safety culture. Also, Castle, Handler, Engberg and Sonon (2007) employed the HSOPSC with a representative for national sample of nursing home administration where n=2840, with a response rate of 71%. They showed that nine out of the ten HSOPSC scales were significantly lower than hospital scores. The results of the two above studies indicated low culture of patient safety among administrative staff and nurses' aides.

Moreover, organisational culture is also shaped by leadership. In other words, support systems should be developed to give employees the opportunity to access organisational structure for their empowerment and increased work effectiveness. These opportunities for structural empowerment enhance employee attitudes and eventually achieve organisational goals, satisfaction and commitment (Laschinger et al., 2001). It is high time for nursing home administrators to modify their perspectives concerning cultures of patient safety prior to change the perceptions of others in the organisation.

In another study, Hellings et al. (2007) conducted a survey among 3940 healthcare personnel and received a response rate of 77% in five acute care hospitals in Belgian with the help of the Belgian version of the HSOPSC instrument. They assessed fourteen scales of patient safety culture with a sample comprising of 2813 nurses and assistants, 462 physicians, 397 physiotherapists, laboratory and radiology assistants and social workers, and 64 pharmacists and pharmacy assistants. Their findings revealed low to average positive scores on the overall scales of patient safety. Scales indicating a need for

enhancement included the development of non-punitive culture and enhanced organisational learning, and a concentration on hospital transfers and transitions throughout various hospital units.

The HSOPSC was also employed by Scherer and Fitzpatrick (2008) in their analysis of data indicative of patient safety culture in a peri-operative environment in a 174-bed community hospital. Their sample comprised of 43 registered nurses and 40 physicians. Over half of the participants perceived that the procedures and systems for error prevention were good and almost three quarters perceived them to be never compromised. On the other hand, over half of the sample surveyed was convinced that it was by luck that more serious errors did not occur and indicated that the peri-operative unit did have a patient safety problem. According to the participants, many mistakes were noticed before a patient was harmed and over half of them were convinced that mistakes resulted in positive changes. Fewer than half of them reported an event that happened in the prior year, over half felt that mistakes would be held against them if they report, and they are concerned that the mistake would be filed in their records, believing that the person and not the error is being kept track of. On the whole, the results showed a positive perception of patient safety.

Additionally, safety should be achieved for patients with good measurements. In a study by Frankel et al. (2003), they noted that structured walking rounds carried out by institutional leaders in a 700-bed tertiary care teaching hospital led to heightened awareness, discussion of issues, and education of staff on patient safety. Walk rounds that involve senior executives and/or vice presidents, senior director of quality/safety,

pharmacist, and a research assistant resulted in effective management and maximised number of patients maintained within the medication range. This study is supported prioritized patient safety, organisational learning and communication, and elaborate expectations of organisational goals for enhancing patient care, achieving goals and enhancing patient safety.

Similarly, Yates et al. (2004) revealed increased communication in their study involving a 569-bed tertiary hospital in the southern eastern region of the U.S. where the encouragement of safety-related behaviour reinforced the organisational culture of patient safety. This particular intervention results in 42% increase in expected communication and 84% decrease in ventilator-associated pneumonia, as well as a 63% decrease in device-related bacteraemia. In other words, with the increase in patient safety culture, the negative patient outcomes decreased.

Along the same line of contention, Pronovost et al. (2006) stated that decreased medication errors in transfer orders, decreased length of hospital stay and increased patient safety was observed among surveyed healthcare professionals. The above three factors were a part of an eight-step unit-based patient safety program in two surgical intensive care units at John Hopkins Hospital. Similarly, Rowan et al. (2004) highlighted a relationship between patient outcomes and the organisation's patient safety climate in a survey of 106 staff nurses in critical care units. The survey results showed that heightened treatment errors occurred when the organisation had a low safety priority. Overall, the above studies support the relationship between work environment and its influence on the patient safety culture (Pronovost et al., 2006; Armellino, 2010).

More recent studies conducted a measurement of the patient-safety culture effectiveness with the help of direct measures of patient-safety outcomes such as prevention of nosocomial (hospital acquired) infections (Elder et al., 2008), frequency and severity of patient-safety occurrences (Kline et al., 2008; Mardon et al., 2010), frequency of medical error reporting (Snijders et al., 2009), rates of medical errors (Singer et al., 2009) and finally, patient mortality and length of stay at the hospital (Huang et al., 2010).

2.3.3 Summary of Patient Safety Culture Studies

Patient safety culture is a dynamic and intangible entity that is reflected through perceptions. This is especially significant in high-risk fields like critical care units. Nevertheless, research that documenting the perceptions of registered nurses concerning patient safety is few and far between. A micro level initiative dedicated to improve patient safety culture which concentrated on medication errors, specific aspects of care and the decrease of frequency of events. At the macro level, attention is called for towards the organisation's patient safety culture. Owing differences in healthcare settings are characteristics, many external benchmarking being inappropriate. Patient safety culture begins with the assessment of staff perceptions in every distinct environment.

Specifically, an enhanced patient safety culture concentrates on the manner and the cause of problems as well as the correlation with the decrease in medication events in healthcare and the decrease in aviation pilot errors (Pronovost, et al., 2006; Sexton et al., 2000). The culture of the organisation and work environment influence the perception of the nurses about patient safety culture (Weigmann et al., 2004). In addition, an organisation's culture has to be assessed in light of its strengths and weaknesses. Efforts

towards the promotion of safe, quality care that influences patient outcomes may be enhanced through high culture of patient safety.

2.4 Prosocial Voice

Prosocial Voice refers to a group of larger classification of prosocial behaviour that refers to values, thoughts, and anticipatory reactions meant to assist an individual or a group (Eisenberg et al, 2002). Prosocial voice is a construct considered as a discretionary, primitive and challenging behaviour on the basis of cooperative motives (LePine and Van Dyne, 1998). Prosocial voice is described in literature as a certain type of proactive and upward-directed workplace communication behaviour that is meant to enhance rather than to criticize a situation (Van Dyne et al., 2003). It is a construct that is of interest to researchers and practitioners alike owing to the upward-directed communication of work-related ideas, information or opinions that may add to a positive and collaborative work environment, and eventually brings about organisational effectiveness (Burris, et al., 2008; Tangirala and Ramanujam, 2008). Prosocial voice enables organisations to pinpoint opportunities and threats and enhance themselves on the basis of employees' opinions or suggestions (Detert and Trevino, 2010; and Venkataraman and Tangirala, 2010). Scholars claimed that new approaches to researching prosocial voice are called for to provide insight into the concept of voice (Van Dyne et al., 2003, p.1371). In reaction to this call, researchers examined prosocial voice in various settings and used mediating and moderating variables to explore the nature of causal mechanisms linked to this behaviour.

Moreover, prosocial voice is important to healthcare organisations to employ this in reporting safety risks as it becomes potential impediments to patient safety and

organisational enhancement (Henriksen and Dayton, 2006). Hence, prosocial voice is significant to healthcare organisations that consider patient safety for enhancing outcomes of patient care.

2.4.1 Characteristics of Prosocial Voice

Prosocial voice is the ability of the employee and his/her decision to report in order to improve situations whether or not in the presence of agreement and support of his/her peers. Prosocial voice should not be considered as a criticism and an employee employing prosocial voice should be motivated to report proactive thoughts, ideas, information and opinions to bring about a positive change to the status quo, in order to improve work process in the organisation (Van Dyne et al., 2003). According to the definition, prosocial voice is associated with but separate from other types of self-serving employee communication behaviour, like communication in reaction to perceived wrongdoings like whistle blowing, and employee communication for issue selling (Milliken et al., 2003). The classification of prosocial voice into a discretionary primitive behaviour based on cooperative motivation separates it from other forms of voice which focusing on dissention or dissatisfaction.

Based on the literature review, researchers made use of various terms synonymously to provide a description of prosocial voice such as, improvement-oriented voice based on positively intended aims, employee voice behaviour, speaking up, and employee safety voice. For instance, these types of voice are those that suggest changes for improvement (Premeaux and Bedeian, 2003), self-initiated proactive expressions of creative solutions to organisational issues (Fuller et al., 2007), a challenging constructive idea to enhance

work circumstances (Venkataramani and Tangirala, 2010), communication directed toward enhancing job-related safety conditions (Tucker et al., 2008), innovative suggestions/recommendations (Walumbwa & Schaubroeck, 2009) and finally, communication addressed to a certain target holding the power in the organisation (Burns et al., 2008; Detert & Trevino, 2010). A typical theme observed among studies are the description of voice of an employee speaking up, distinct owing to the motivation and interaction that underlies the communication of ideas and the suggestions for enhancement of organisational activities.

2.4.2 Studies of Prosocial Voice

In the previous decade, studies have been dedicated to describing the mechanisms that urge or hinder prosocial voice in various organisational settings. Factors associated with prosocial voice include perceived quality of leadership support, management style, loyalty to an organisation and the level to which employees were treated fairly (Burns et al., 2008; Detert and Trevino, 2010; Walumbwa and Schaubroeck, 2009). The following sections further elaborate the factors of prosocial voice that is relevant to the present study.

Researchers have indicated the existence of a relationship between an organisation and prosocial voice. Detert and Trevino (2010) conducted a qualitative phenomenological approach examine prosocial voice. They conducted an interview of 89 high-tech industry employees to understand their perceptions concerning the supportive or hindering influences of leaders upon prosocial voice. They revealed that employee perception of supervisory supportiveness positively predict the inclination to use prosocial voice. In

other words, those who perceived supervisors as open, empathetic and tolerant would exercise their use of prosocial voice because leaders who encouraged informal interaction with employees at all levels urged their use of higher degrees of prosocial voice. However, future studies are required to examine the manner in which individual characteristics are linked to employee's hesitance to report (Detert and Trevino, 2010).

Over the past 15 years Scholarly interest in employee voice behaviour has increased dramatically. Even though some scholars have argued that it need not challenge the status quo or be well intentioned but Maynes & Podsakoff (2013) still had focused almost exclusively on voice as a positively intended challenge to the status quo. Thus to generate a prolonged view of voice; one that outspreads beyond voice as a positively intended challenge to the status quo to include voice may not be well intentioned. They built an outline based on this extended view that identifies 4 different types of voice behaviour (supportive, constructive, defensive, and destructive). They then improve survey measures for each of these. Evidence from 4 samples that consists of five studies provide a strong support for our new measures in that (a) a 4-factor confirmatory factor analysis model fit the data considerably better than 1-, 2-, or 3-factor models; (b) the voice measures joined with and yet remained distinct from conceptually related comparison constructs; (c) personality predictors demonstrated unique patterns of relationships with the different types of voices; (d) variations in actual voice behaviours had a direct causal impact on responses to the survey items; and (e) each type of voice considerably impacted important outcomes for voicing employees.

Alteration of social interactions especially prosocial behaviors are becoming an important aspect of development as it is one of the characteristics of autistic disorders. To improve communication skills or at least to reduce social impairments numerous strategies or therapies are used. Even though animal-assisted therapies relevant benefits have never been scientifically evaluated yet they are used widely.

A related qualitative study by Walumbwa and Schaubroeck (2009) involving 894 employees and their 222 immediate supervisors was conducted in a U.S. financial institution. They revealed that leadership personality traits of agreeableness and conscientiousness were linked to prosocial voice behaviour through the mediating effect of employee's perception of ethical leadership. In other words, employees were not as likely to determine problems or indicate improvements when they perceived minimal degrees of ethical leadership. They also revealed that ethical leadership perceptions significantly predicted greater levels of employee voice. This association was partially mediated by psychological safety perceptions where psychological safety is the level to which employees are convinced that they have a positive and collaborative environment and they are safe in reporting issues, new ideas, or recommendations for the organisation's benefit.

Along a similar line of contention, leadership's support for safety predicted employee prosocial voice in a quantitative study involving 213 bus drivers in the U.K. (Tucker et al., 2008). This study employed perceived co-worker support as a mediating factor between leadership support for safety and employee's prosocial voice. The perception of employee of peer support for workplace safety mediated the perceived leadership support

for safety-employee prosocial voice relationship. Employees used their prosocial voice to report safety issues when they perceived their leaders support for safety and this relationship was mediated by the level to which peers supported workplace safety. Moreover, use of employees' prosocial voice increased when their leaders encouraged them to provide suggestions and transformed them into actions.

Another notable quantitative study was carried out by Burris et al. (2008). The study involved 234 restaurant managers to examine the association between leadership and prosocial voice with the inclusion of two mediators. They examined employees' psychological attachment and detachment to the organisation as mediators between two independent variables linked to leadership behaviour and the dependent variable of prosocial voice. They revealed that employees who were psychologically detached had a tendency to withhold ideas that may be important for organisational improvement. In other words, when the relationship between employee and leader is poor, employees are detached, they think about quitting and they do not attempt to enhance their work surroundings. Also, abusive supervision was found to be significantly associated to employee detachment while the latter was significant associated to decreased levels of prosocial voice. They urged for future studies to investigate the prosocial voice-aspects of organisational culture relationship.

Only Tangirala and Ramanujam's (2008) study made use of registered nurses as the target population in a hospital organisation. Their study was a quantitative one which involves 606 registered nurses where they attempted to measure the impact of perceived climate of procedural justice upon employee silence. They defined procedural justice as

the level to which employees are convinced that their leaders are treating them fairly. Stated differently, employees perceive a sense of procedural justice when they perceive that their leaders' decisions are consistent, accurate, fair and bias-free. They revealed that despite the fact that individual factors may motivate nurses to employ their prosocial voice, the procedural justice climate of an organisation plays a key role in indicating whether the nurses speak up or remain silent. They also noted that prosocial voice increased with work-group identification, professional commitment, and perceptions of procedural justice.

By emerging and testing a theoretical model which stress the mediating mechanism on psychological safety between social exchange relations and voice, Cheng & Lu (2007) observed disentangle of subordinate's voice behavior. 685 data were collected from employees of a large trucking company in Taiwan. Via psychological safety the empirical results presented that supervisor relations influence employee's voice behavior. Moreover, psychological safety partly mediated the relationship between colleague relations and voices.

Leaders have a crucial impact on nurturing subordinate's observation and behavior of the work condition in separate ways (May, Gilson & Harter, 2004), such as satisfaction with leader (Cheng, Huang & Chou, 2002), task performance (Wang, Law, Hackett, Wang, & Chen, 2005), commitment (Avolio, Zhu, Koh & Bhatia, 2004), voice (Detert & Burris, 2007). It is clearly asserted in Social exchange theory that leader give tangible and intangible rewards to employee in hope of receiving benefits from them in return (Blau, 1964). According to this perspective, Dansereau, Graen, & Haga(1975) indicted that

good relationships with supervisor have a tendency to be characterized by feeling supportive management environment and collective respect, trust climate, and liking which reflects social exchange within the organization (Cropanzano, Prehar, & Chen, 2002; Masterson, Lewis, Goldman, & Taylor, 2000), while allowing themselves entirely to donate to organization in productive ways (Blau, 1964). In Deci and Ryan's(1987) study, it is observed that supervisors who strengthen a supportive work environment classically display concern for employee and provide positive feedback and encourage them to voice their concerns and solve on-the-job problems. It is found that supervisor-subordinate relations has a significant positive relationship with change-oriented OCBs based on 183 sales in retail setting sampled by Bettencourt (2004). Van Dyne, Kamdar & Joireman (2008) piloted two studies, demonstrated employees were more likely to involve in helping and voice behavior.

Iqbal, (2013) deliberate the influencing situations for prosocial behavior in men and women for both married and unmarried between the range of 20-40 years old. For this purpose 4 different situations was presented by a sample of 240 participants which includes Accident Victim, Neighbor fighting, Molestation and Shoplifting, then the participants decide from the options provided as to how they would interfere with the situation. There are 120 males & 120 females out of the 240 participants, of which 60 were married & 60 were not married. For calculation Chi square and t-test were used. Results were shown as follow: more people would help indirectly than directly and only a few would not help in any situations. It was also indicated that helping behavior would differ from situation. However there was no difference found between married or unmarried men and women that would help directly or indirectly.

2.4.2.1 Individual Factors and Prosocial Voice

Individual factors are another set of factors that have been investigated in prosocial voice research. LePine and Van Dyne (2001) investigated the relationship between personality, voice and contextual performance in a classic quantitative lab study, where contextual performance refer to activities contributing to the improvement of the social, psychological and organisational element of the organisation. The participants to the study were examined with the help of the Big Five personality dimensions namely, extroversion, emotional stability, agreeableness, conscientiousness, and openness to experience. On the other hand, voice was measured with the help of change-oriented and constructive communication. Based on the findings, prosocial voice positively associated with conscientiousness and extroversion while agreeableness negatively associated with the voice. These results were inconsistent with the view that personality alone predicts voice behaviour; in other words, , individuals employing the 'voice' strategy should be change-oriented and open to risks that could upset the status quo and interpersonal relationships in the short term.

In a related study, two variables, which are employees' task performance and their workgroup identification were considered as moderators of work-flow centrality (the level to which the employee is critical to a task), with personal influence as a mediator and prosocial voice behaviour. The centrality of employees' work-flow improved their personal influence in their work groups and encouraged them to engage in greater degrees of prosocial voice (Venkataramani and Tangirala, 2010). Since the sample study

was confined to Indian citizens, the researchers urged for future research to examine other cultural contexts.

2.4.2.2 Moderators of Prosocial Voice

Studies have considered self-monitoring as a moderator of specific relationships in the workplace like prosocial voice (e.g. Fuller et al., 2007; Premeaux and Bedeian, 2003). A moderating variable refers to a distinct independent variable that impacts independent variables-dependent variables relationship (Baron and Kenny, 1986). The moderating variable's impact is known as the interaction effect.

In the context of prosocial voice, Fuller et al. (2007) examined the relationship between self-monitoring and prosocial voice among 310 healthcare employees and revealed a significant interaction effect of previous performance appraisals. They also revealed that previous performance appraisals were moderators in the self-monitoring-prosocial voice relationship. Specifically, high self-monitoring employees employed self-monitoring in order to fit with the organisational culture and those with positive prior performance appraisals displayed high levels of voice. Future studies are suggested to examine personality factors like self-monitoring and voice behaviour to enlighten the employers with information that they need to encourage the employment of employee voice (Fuller et al., 2007).

Another study in the U.S. was conducted by Premeaux & Bedeian (2003) and it involved 291 U.S. telecommunication workers. Self-monitoring was tested as a moderating variable and its interaction effect was noted between two individual personality factors

namely self-control and locus of control, along with two contextual factors which are openness of top management, supervisor's trust, and prosocial voice. The study revealed that self-monitoring negatively moderated the relationships between all the four antecedents, and prosocial voice (Premeaux and Bedeian, 2003). A major difference in the operational definition includes declaring views and opinions which concerning others' opinions or behaviours. High self-monitors were not as likely to use their prosocial voice compared to low self-monitors. Premeaux and Bedeian (2003) encouraged more research to examine self-monitoring in the context of organisational behaviour.

In another related study, Grant and Mayer (2009) carried out a study involving 455 employees from various organisations to examine the relationship between prosocial motive (the desire to benefit the welfare of the organisation) and the level of prosocial voice. They considered self-monitoring as a moderator variable in the study and their findings revealed that prosocial voice was significantly predicted by prosocial motives but neither by interaction of impression management nor prosocial motive.

2.4.3 Summary of Prosocial Voice Studies

Majority of studies among the prosocial voice research conducted the quantitative measurement of the construct of prosocial voice with the help of PSVC (Van Dyne and LePine, 1998). The construct has been examined throughout various organisations but only two studies made use of healthcare workers as a sample population and of these two, only one employed registered nurses in the context of a hospital. Hence, a research gap is

evident among studies assessing how registered nurses employ their prosocial voice and its relationship to the patient safety culture of the hospital.

The prior discussion was presented to provide an insight to the contextual framework of prosocial voice. On the whole, the studies revealed that prosocial voice may be moderated by self-monitoring. In an attempt to provide a context for the moderator variable, the psychological construct of self-monitoring is presented in the following sections.

2.5 Self-Monitoring

Self-monitoring was proposed by Snyder (1974) as a psychological construct and is characterised as an individual's inclination towards and ability of self-observation and self-control on the basis of various social circumstances. Self-monitoring is described as cognitive process through which individuals observe and adapt to the public image that they perceive others to expect them (Snyder, 1974; Snyder & Gangestad, 1986).

According to the self-monitoring theory, individuals differ in the level to which they perceive situational cues and intentionally control their expressive behaviour and self-presentation in a social context (Gangestad and Snyder, 2000).

Themes associated with social cognitive theory stand out in self-monitoring theory. Social cognitive theory considers human behaviour as a reactionary interaction of personality factors, behaviour and the environment. The theory stresses on three major components namely, individuals learn through observing others, individuals hold beliefs that concerning specific situations and whether or not they think they will achieve a

desired outcome, and finally, individuals employ cognitive process for behaviour regulation and control (Bandura, 1991).

On the basis of the social cognitive theory, human functioning is an interaction between internal (dispositional) and external (situational) influence sources. Self-monitoring can be viewed according to social cognitive theory, especially in ways that the individual's expressive behaviour reflects their distinct self-constructs. The construct of self-monitoring divides the expressive behaviour of individuals in social situations into two major and opposite interpersonal orientations; individuals who possessing high self-monitoring abilities and individuals who possessing low self-monitoring abilities. The premise behind the self-monitoring theory lies in the fact that high and low self-monitors view and interact in their social worlds is basically in distinct ways (Leone, 2006).

High self-monitors are adept at observing and changing their self-presentation in reaction to various social situations. They are able to control their expressive behaviour in order to be more appropriate. Contrastingly, low self-monitors do not deliberately employ expressive control and they do not hold the same concern for the appropriateness in a situation (Snyder, 1974). Their behaviour more accurately displays their inner attitudes, emotions and feelings (Day and Kilduff, 2003). Hence, self-monitoring is brought about by concerning with control behaviour in an attempt to make an appropriate social impression, as opposed to displaying an actual representation of one's self.

The prototypical high self-monitoring individual's behaviour widely differs through the use of a list of expressive behaviours according to situations. High self-monitors are concerned with making positive impressions and are sensitive to their peers' behaviours.

They are considered as 'social chameleons' owing to their ability to modify their behaviour in an attempt to adapt too many social situations (Snyder, 1974). They make use of available information and cues from the surroundings to drive their behaviour as they are concerned with behaving appropriately and being accepted in a given social situation. In addition, behaviour is a product of situation orientation and therefore, high self-monitors frequently display contradictions between appearances and reality (Snyder, 1974).

Contrastingly, the prototypical low self-monitoring individual's behaviour is characterised as being controlled by his/her actual inner states and attitudes. Low self-monitors are not as sensitive to external cues and they are not as likely to modify their behaviours and attitudes to fit social situations. Hence, low self-monitors display higher behavioural consistency between appearances and their actual selves (Snyder, 1974).

2.5.1 Studies of Self-Monitoring

Several studies have been dedicated to investigate self-monitoring in the workplace. Pioneering empirical evidence revealed that high-self monitors were more sensitive to role demands in comparison to their low counterparts, and they displayed suitable emotional behaviour in an attempt to fit in social situation (Dabbs et al., 1980). There is a significant relationship between high self-monitoring and impression management where high self-monitors managed their impressions better than their low-self-monitoring counterparts (Turnley & Bolino, 2001). They are also basically considered as being more socially versatile when compared to their low counterparts (Leone, 2006). They are more

aware of the thoughts and feelings of those in the social group and they show better performance in group situations (Flynn & Ames, 2006).

Moreover, high self-monitors reach a certain status in social groups as viewed by their peers in maintaining their generous front (Flynn et al., 2006). They use voice behaviour in a way that it contributes to their images. According to Fuller et al. (2007), high self-monitors may become leaders through the effective use of communication to portray the image of competency.

Furthermore, high self-monitors have a tendency to speak first, break periods of silence, and to introduce a positive effect into social interactions with humour, and to exchange self-disclosures for personal advantage (Oh & Kilduff, 2008). In the current times, self-monitoring is considered as a positive trait as opposed to a deceptive one. It is most recently associated with sensitivity and understanding of the social situations (Oyamot et al., 2010). However, further studies are required to validate the relationship between self-monitoring and prosocial voice.

Among the few studies in this field is conducted by Premeaux & Bedeian (2003) where they identified high self-monitors as those that hesitate to express their opinions or voice their views as this may result in negative impression and potential negative outcomes. As a result, high self-monitors do not speak about concerning issues and problems at the workplace. On the other hand, Grant & Mayer (2009) reported the absence of a relationship between self-monitoring and prosocial voice among employees from various organisations.

2.5.2 Summary of Self-Monitoring Studies

Self-monitoring is a construct linked to the motivation of individual's behaviour in the social context. Accordingly, it sheds a light on basic dichotomy in psychological theory; whether human behaviour is situational (as observed in high self-monitors) or dispositional (as observed in low self-monitors). A review of literature showed that self-monitoring theory offers a framework for understanding the motivation of human beings in the work environment and contributes to knowledge in light of the implications behind the prediction of employee behaviour. The theory assists in explaining the level to which individual differences in self-monitoring have a role in driving behaviour and social interaction. Self-monitoring studies showed that employees viewed different situational information and made use of voice in various ways when giving their opinions or voicing their concerns. Specifically, high self-monitors perceive the dominant opinion concerning an issue and they have a higher tendency to speak up when they believe that their peers agree with their position. On the other hand, high self-monitors who think that their opinions are contrary to that of their peers are inclined to keep their silence. When voicing their opinions is considered as a chance to make a positive impression, high self-monitors voice their views and cast them in a positive light, while low self-monitors deem voicing their opinions as a way to honestly express their actual attitudes (Premeaux and Bedeian, 2003).

2.6 Structural Empowerment

Laschinger et al. (1996) conducted studies on structural empowerment, which were based upon Kanter's theory of organisational authority. This research examined empowering

organisation structures, which included having access to programmes that enable individuals to increase and develop their work experience, support in performing necessary tasks at a high achievement level, as well as access to appropriate resources in order to gain access to information. Structural empowerment, job appreciation, commitment and other work attitudes are constantly linked in these research studies.

2.6.1 Organisational Strategies that Influence Structural Empowerment

Theoretically, the main cause of worker behaviour on the organization is depend on responsibilities of structural empowerment model. Employee work behaviour is assumed to arise from conditions and situations in the workplace, and not from personal attributes, or workplace socialization (Laschinger & Havens, 1996). This happened through the lens of Kanter's empowerment model (1977, 1993). The theory of structural empowerment states that power in organizations is essential, and must be provide to all employees for greatest effectiveness and should be an ongoing success of the organization. Power and opportunity are operationalized through an organizational mind-set of structural empowerment. Therefore, effective use of available opportunities for power in such an organization is defined as the nurse managers(NM)'s ability to organize existing resources, to get things complete and have access to suitable structural and emotional supports needed to meet the goals that attempt to accomplish by them (Kanter, 1993). Consequently, Kanter's model (1977, 1993) assumes on the assumption that work power ascends from structural conditions in the work setting. Structural conditions provided in the acute care hospital organization with shared governance will determine employee power by extension, (Laschinger & Havens, 1996). From Kanter's (1993) perspective,

manager is responsible as NM behaviors are only a response to the structural conditions met in the workplace. Therefore, the nature of the job inside its environmental context suggests behaviors from the NM that determine the likelihood of work efficiency (Kanter, 1993). Some of the particular importance for development of worker authorization are the detailed structural conditions that must exist in the organization such as receiving support, having access to information, having access to resources necessary to do the job, and having the chance to learn and develop. While these situations are structured in such a way that employees feel empowered or authorized, the organization is probable to benefit in terms of organizational efficiency. Employees had access to information, support, resources and opportunities are the designated findings of researches whereby job strain reduced, feelings of independence amplified and higher levels of employee self-efficacy became evident (Laschinger, Finegan, Shamian, & Wilk, 2004). Confirmation of improved autonomy and self-efficacy in the existence of Kanter's structural conditions afford a theoretical link to extra approval components

Differences in the structural empowerment of staff nurses (n = 256) in two 1,000-bed teaching hospitals in Canada are discussed by Matthews et al. (2006). In one hospital, the chief nurse executive (CNE) had line authority on one hospital whereas, in another hospital, the CNE had staff authority. Between the two groups, there were no important differences in structural empowerment. Nurses in both organisations retained satisfactory levels of structural empowerment for staff ability and line authority. However, when the CNE had line authority, the global empowerment score was higher in the facility, with staff perceiving that they had greater access to resources for jobs, formal power, recognition and information.

The relationship between structural empowerment and organisational support were researched by Patrick and Laschinger (2006), which led to their findings on role satisfaction among 126 middle nurse managers working in Canadian acute care hospitals. A positive relationship was found between organisational support and structural empowerment. Organisational support was found to be the stronger among the two variables related to role satisfaction. A positive connection was also found between organisational support and structural empowerment. The relationship between empowerment structures and perceptions of organisational support were revealed to promote the role satisfaction of middle managers.

The perceptions of role satisfaction by managers are found to motivate staff nurses. It was suggested by Laschinger et al. (2001) that improved trust between nurses are revealed when their manager is seen to be empowered. The results of a voluntary survey, containing a random sample of 412 staff nurses from the College of Nurses of Ontario registry list, revealed that increased levels of trust leads to increased empowerment structures and empowering structures, which has a positive effect upon feelings of empowerment that encourage helpfulness at work.

Within a delicate care community hospital situated in the north east of the USA, Piazza et al., (2006) reported that certified nurses had higher structural empowerment scores than those nurses who were not certified. This 174-bed hospital employed 259 nurses, of which 103 (39.9%) were nationally certified. Total employment scores indicated that certified nurses were reasonably empowered, and that these nurses had a higher

perception of informal and formal power, as well as perceiving greater access to information than those nurses who were not certified.

The transformation of trust and responsibility for the quality of work produced is found to be one of the outcomes of structural empowerment. A study by Laschinger (2008), which involved 234 full-time and part-time nurses within different work settings in a tertiary care hospital in Canada, endorsed structural empowerment as having a positive effect upon the perception of their manager's leadership abilities by nursing staff. This also has a great influence upon their perception of involvement in decision-making, staffing sufficiency, as well as the collaborative relationship with physicians. Overall, Laschinger's study (1996) confirmed the link between job satisfaction and structural empowerment.

Positive associations between structural empowerment and nurses' perceptions of leadership and management structural empowerment were studied by Laschinger (1996). Work usefulness is influenced by structural empowerment, which is improved when nurses receive organisational support and guidance together with comments from supervisors, peers and subordinates.

2.6.2 Structural Empowerment and Work Effectiveness

Increased relationships within the organisation, increased knowledge and resources, together with the empowerment of nurses are seen as a result of nurses having control over their work. The relationship between the perception of nurses over their control of nursing practice, job satisfaction, structural empowerment, and work effectiveness were

examined in a study into the perception of structural empowerment and the degree of practice control of 127 randomly selected staff nurses from two urban teaching hospitals in the south eastern region of the USA (Laschinger and Havens, 1996). This study revealed that nurses were generally satisfied with their work.

It was found that there was a strong correlation between overall job satisfaction and access to empowerment structures. There was a positive correlation between structural empowerment and perception of work usefulness, with the most important variable being control over practice when predicting perceived work effectiveness. There was a strong positive connection between overall work satisfaction and access to empowerment structures. Kanter's the supported that environmental structures influence employee perceptions of work effectiveness, which was subsequently followed by other structural empowerment studies relating to the relationship between work place effectiveness and job satisfaction.

A secondary analysis of two studies of structural empowerment, as well as two different aspects of work conclusion involvement which were based upon Kanter's theory of structural empowerment in organisations are discussed by Laschinger et al., (1997). The Conditions of Workplace Effectiveness Questionnaire-II (CWEQ-II) was used in two studies which were designed to measure organisational structural empowerment. Perceptions of autonomy were measured with the Job Description Questionnaire among 170 staff nurses employed full-time in a medical-surgical specialty and severe care units within a large acute care teaching hospital in Study 1. The Work Unit Description scale was used in Study 2 to measure the perceptions of 233 staff nurses working in speciality

areas, general wards and delicate care relating to their involvement in making judgment within their units. The relationships between perceived access to empowerment structures and formal and informal power, together with control over the content and the context of nursing practice were examined.

Higher scores for access opportunities to demand support in work were associated with a moderate perception of structural empowerment. These findings suggested that perceptions of nurses of their content of practice or level of control over autonomy, as well as their context of practice or how they were involved in making decisions for their units were influenced by their perceived access to empowerment structures at work. These findings also indicated that staff nurses would have greater perceptions of workplace structural empowerment if their work environments enabled increased opportunity, information, support and resources, as well as fostering relationships, providing recognition and allowing discretion.

These findings provide a basis for the assumption that if nurses perceive their work environment is empowering, then their work practices would be effective, which should result in high quality care. Therefore, if nurses have the ability to suggest and achieve safety improvements, so that they contribute to decisions about safety, then they demonstrate control over the context and content of their work. Nurses could also take greater pride in their organisation's record on safety and hold themselves more accountable for their actions if they perceived they had control over the context and content of their work practices. In addition, job satisfaction, respect, commitment and organisational trust are likely to be influenced by structural empowerment.

Various studies have produced similar findings when evaluating commitment, organisational trust and structural empowerment. In one study, Laschinger et al., (2000) randomly selected more than 400 staff nurses from the registry list of the College of Nurses in Ontario that were working in a restructured environment to study the relationship between these elements. These findings suggested that empowerment could not predict commitment, but that higher levels of organisational trust were reported by nurses who felt empowered. Laschinger et al. (2000) also investigated the relationship between empowerment and organisational trust, and from a sample of 600 nurses selected randomly from the registry list of the College of Nurses in Ontario who worked at urban tertiary care hospitals, 412 surveys were completed and returned. These findings revealed that there was a negative association between structural empowerment and commitment, but that when nurses felt empowered they demonstrated higher levels of organisational trust.

In another study by Laschinger and Finegan (2005) a sample of staff nurses working in Ontario, Canada in serious care units and medical-surgical units in urban teaching hospitals were studied to examine the relationship between organisational trust, respect, justice and structural empowerment. These findings revealed that trust in management, feelings of respect in the work environment and nurses' perceptions that management practices were fair and directly influenced by structural empowerment.

Another study in Canada of a 450 bed delicate care teaching hospital evaluated a sample of 112 registered nurses to reveal organisational commitment and structural empowerment, and McDermott, Laschinger and Shamian (1996) found that years of

nursing experience and age had a positive correlation that was significant with job related structural empowerment. Other findings revealed that between commitment to the organisation and feelings of structural empowerment there was a significant positive relationship. The researchers suggested that nurses' keenness to ensure high quality and effective care, as well as achieving organisational goals were influenced by increased commitment to the organisation.

To test relationships within perceptions of organisational commitment, job satisfaction, organisational trust and job-related structural empowerment, Laschinger et al. (2001) adopted a design for their research that was non-experimental and predictive by using the Interpersonal Trust at Work Scale, Organisational Relationship Scale, Job Activities Scale and the CWEQ-II instrument to study 412 staff nurses chosen from a registry list in central Canada. These findings revealed that there was a strong relationship between trust in management and empowered nursing work environments; therefore, they made recommendations, based on Kanter's theory that access to work empowerment structures is directly influenced by trust in management, that if managers create empowering work environments, then trust is more likely to be achieved (Laschinger et al., 2000). High correlations were revealed in this study between affective commitment, satisfaction and trust in management.

Research findings have shown that between access to empowerment structures and official power, there is a strong association with structural empowerment variables, so that to achieve high quality patient care, increased nurse affective commitment and satisfaction will result from structural empowerment and fostering trust. Wiegmann et al.

(2004) evaluated security culture by adopting an integrative review, and they argued that one of the indicators of a safety culture was management commitment.

According to Faulkner and Laschinger (2008), the provision of resources and formal and informal power could be used by nurse managers to enhance working conditions for nurses, which influence their feelings of respect, as this was believed to make nurses feel more valued in the work environment. Other findings revealed a positive relationship between nurses' perceptions of respect and structural and psychological empowerment.

Laschinger and Havens (1996) investigated whether empowering structures could be related positively to feelings of respect by nurses, and in a survey of 500 acute care nurses selected randomly from the provincial registry of Ontario, their findings were based on 56% (282) of returned, completed surveys. The researchers argued that their hypothesis was supported by their findings to show that nurses' feelings of respect were positively related to empower structures. The researchers' definition of the level of respect was considered to be the degree they felt respected for their contributions and the degree they felt they were involved in decision making. These findings suggested that nurses would be more likely to feel respected in their work environment and have positive attitudes towards their work practices if they had access to empower structures. In contrast, the researchers also found that staff nurses working in disempowering environments often felt incapable of carrying out their work practices effectively, which led to the feel of failure and irritation (Laschinger and Havens, 1996).

Laschinger et al., (2003) carried out three independent studies in Canada in delicate care facilities involving one with nurse practitioners and two with staff nurses to analyse job

satisfaction, magnet hospital characteristics and workplace structural empowerment. The Magnet Recognition Programme recognises hospitals that demonstrate excellence in nursing that is demonstrated by collegial nurse-physician relations, resource sufficiency, staffing, support of nurses, leadership, nurse manager capability, quality of care as a foundation for nursing and nurse participation in hospital affairs. These findings suggested that job satisfaction was independently predicted by magnet hospital characteristics and structural empowerment, so that nurses who work in magnet hospitals were shown to have higher levels of perception of structural empowerment than nurses working in non-magnet hospitals that were shown to have only fair levels of empowerment.

According to Krebs et al. (2008), there is a strong connection between the characteristics of the work environment of nurses and structural empowerment, and in their study in rural Ohio in various nurse working environments they used a demographic survey with a response rate of 63% (n - 97), CWEQ-II and the Nursing Work Index (revised), which included medical-surgical departments, home health care and urgent situation care. These findings suggested there was a strong correlation between structural empowerment and characteristics of the working environment for nurses; however, perceptions of structural empowerment were different in the varied work environments that were surveyed. The scores revealed by the survey showed that structural empowerment scores were higher for home health care nurses when compared to nurses that worked in other environments.

2.6.3 Structural Empowerment and Culture of Patient Safety

The first research to link a culture of patient safety with structural empowerment was carried out by Armstrong and Laschinger (2006) in an exploratory study based on 34 completed surveys in Canada in a small rural hospital, which would limit its findings. Each concept was measured by adopting the Safety Climate Survey that was originally developed by Sexton and Thomas (2005), Lake's Practice Environment Scale of Nursing Work Index and CWEQ-II. The hypothesis for this study was tested by using multiple regression analysis, correlations and descriptive statistics.

These findings accepted the hypothesis that higher ratings of patient safety culture are associated with enhanced staff nurse workplace structural empowerment. The researchers found that the culture of patient safety perceptions of nurses was significantly positively related to the total empowerment score. In addition, there was a strong relation between patient safety climate and opportunities to learn and grow, informal power and access to support, which implies that supportive feedback on relationships and performance, and opportunities for continue learning contribute to the promotion of a positive patient safety culture.

Armstrong and Laschinger (2006) also found that a positive culture of patient safety resulted from access to empower structures of a hospital, and made recommendations that their research should be replicated in another health care setting with a larger sample to validate their results. A case study of safety culture and empowerment in the Midwest of USA in a teaching hospital of non-patient care department was carried out by Valadares (2004). These findings revealed that the director of the department demonstrated a

commitment to employee empowerment to enhance operational performance, and this notion of performance enhance through empowerment enthused staff level employees. However, this empowerment started to wane after one year, and focus on groups that revealed two supervisors had not supported the concept of employee empowerment, as they believed that their own authority had been directly impacted. Therefore, the culture became psychologically unsafe because the philosophy of empowerment had not been supported by supervisors.

These findings reveal that leadership needs to support the concept of empowerment to enable its benefits to influence safety and cascade across the organisation. Klakovich (1996) attempted to measure empowerment, connective leadership and organisational culture in an analytical study of 113 registered nurses working in an academic health centre. A relatively strong constructive culture was revealed by this study, which showed nurses having moderately high empowerment scores, and higher connective leadership scores as a result of higher levels of responsibility.

This study argued that empowerment is associated with perceptions of connective leadership and constructive culture that was based on a stepwise multiple regression analysis, which also agreed with Kanter's theory that a nurse's work environment needs to be supported. Recommendations included the importance to make access available to opportunities and power to promote empowerment by manipulating the work environment, and establish a positive relationship between connective leadership and empowerment and constructive culture. These findings implied that empowerment and culture could be influenced in a positive direction by effective leadership.

Armellino et al., (2010) examined the structural empowerment-patient safety culture relationship among 257 RNs working in the adult critical care units (ACCU) in a tertiary U.S. hospital. They employed background data sheet, the Conditions of Workplace Effectiveness and Hospital Survey. According to the results, structural empowerment and patient safety culture were correlated to each other significantly as structural empowerment heightened and RNs perception of patient safety culture increased with it.

2.6.4 Structural Empowerment and Patient Outcomes

In a study of the relationship between preferred patient outcomes, nurse-physician communication, nurses' practice environment and their perceptions of structural empowerment, Manojlovich and DeCicco (2007) adopted a care unit nurse-physician questionnaire with a response rate of 53% (462) from nurses working in 8 hospitals within 25 critical care units, as well as the Practice Environment Scale of Nursing Work Index and the CWEQ-II. The researchers reported that there was a strong correlation of the communication scale with practice environment and workplace structural empowerment scales.

Other findings suggested an inverse relationship with the practice environment and communication scale and errors, so that if there was an improved perception by nurses of effective communication with physicians, there was a decreased perception of medication errors. This study also identified the importance of the relationship with communication and patient outcomes, and knowledge of structural empowerment in the practice environment.

2.6.5 Structural Empowerment and Psychological Empowerment

In a study of 404 nurses working in Ontario, Canada in an urban tertiary care hospital to evaluate the relationships between work satisfaction, job strain, psychological empowerment and structural empowerment, an expanded organisational model was adopted (Laschinger et al., 2001). These findings suggested that job satisfaction was positively related to psychological empowerment, and psychological empowerment was positively related to structural empowerment. However, in an analysis of job strain and structural empowerment data, the researchers adopted a predictive and non-experimental design approach, which revealed that between structural empowerment and job strain there was an indirect negative relationship. These findings suggested that greater importance should be given to the relationship between job strain and psychological empowerment and structural empowerment.

Another study of 600 nurses selected randomly from the registry list of the College of Nurses in Ontario examined the relationship between structural empowerment and psychological empowerment by adopting a model that connected job satisfaction to psychological empowerment and structural empowerment. A three-year gap was used to measure work environment satisfaction, and structural and psychological empowerment, and these findings argued that psychological empowerment is influenced by structural empowerment, which contributes to job satisfaction (Laschinger et al., 2004).

A similar study to examine the relationship between the work environment and structural empowerment suggested a correlation with the mental and physical health of staff nurses. The survey used a sample of 500 nurses in Canada that work in urban teaching hospitals,

and from the 285 responses to the survey, the researchers found moderate levels of depression, few physical symptoms and average levels of burnout where nurses had some level of empowerment. However, these findings also suggested that the levels of structural empowerment were higher, psychological and physical materialisation of burnout were lower, which reflected a converse relationship between burnout and levels of structural empowerment. These findings suggested that workplace structural empowerment influenced organisational values, personal values and working relationships between managers and colleagues, fair procedures, recognition for contributing to organisational goals, workloads and control over work. These researchers argued that nurses responded positively to demand health care environments when they experienced increased satisfaction and decreased feelings of burnout, as a result of empowering conditions (Laschinger and Finegan, 2005).

Sexton et al ., (2000) claim that physical and mental effects of work pressure have been insufficiently acknowledged by health care professionals based on their findings from a survey of 1033 nurses and physicians working in urban teaching and non-teaching hospitals in critical care units and operating rooms. Perceptions of stress and error were measured by a questionnaire for critical care unit management attitudes, and another questionnaire for operating room management attitudes. Interestingly, although 26% of aviation personnel agree that fatigue affects their performance, 60% of the medical respondents to this survey thought they could perform their job effectively even when fatigued (Sexton et al., 2000). In terms of pilots, there are safety improvements and decreased errors shown in aviation, as they are less likely to deny effects of stress and

fatigue (Weigmann et al., 2002), which contrasts to health care where there are repeated reported errors (Agoritsas et al., 2005; Parshuram et al., 2008).

2.6.6 Summary of Structural Empowerment Studies

Research findings have revealed that when provision is made for an empowering work environment then it benefits the organisation, patients and nurses. Empowerment has also been shown to rely on effective workplace structural elements, such as increased job satisfaction, participatory management, autonomy, organisational commitment, motivation and self-efficiency to contribute to client satisfaction, cooperation and respect in the organisation, as well as success and achievement (Laschinger, 1996). Therefore, when a nurse works effectively, experiences positive influences from empowerment structures, and who has a working environment with established structures for informal and formal power, patients receive safe care and satisfaction (Laschinger, 1997).

2.7 Psychological Empowerment

Psychological empowerment is described as the process through which individuals acquire control (Peterson and Zimmerman, 2004; Rappaport, 1981; Zimmerman, 1995). According to Zimmerman (1995), psychological empowerment consists of the individual's interaction with his/her environment and the intrapersonal perception of empowerment. Psychological empowerment was also defined by Conger and Kanungo (1988) and Thomas and Velthouse (1990) as an intrapersonal sense of empowerment which arises from the cognitive process of the individual. They postulate that workers form their perceptions on the basis of their interpretation of the climate in the

organisation (whether constraining or empowering). Moreover, Thomas and Velthouse (1990) claimed that positive worker outcomes depend on the worker's personal perceptions of empowerment; in other words, psychological empowerment and not completely the organisation's empowerment structures.

Four dimensions of psychological empowerment were highlighted by Thomas and Velthouse (1990) namely competence, meaning, self-determination and impact. These four dimensions were further defined and measured by Spreitzer (1995).

Spreitzer (1995) defined competence as an individual's feeling that he/she is able to perform his/her task well. Competence is a dimension of psychological empowerment that comprises of the individual's belief that he/she able and technically competent to perform the tasks without organisational resistance. Meaning is the degree to which people care about their work (Spreitzer, 1995, pg.18) and Spreitzer contended that workers want to feel that what they are doing counts and is aligned with their value system. The work then obtains a personal meaning to them and offers them a sense of intrapersonal reward, a sense of personal identity and integrity and energizes and motivates them to do their best.

Self-determination is the degree to which workers take control over their work or are autonomous to select how they complete their tasks (Spreitzer, 1995). Workers who experiencing self-determination that have a higher sense of autonomy as they are free to decide and to take an initiative without organisational pressure, and this leads to a higher sense of accountability and responsibility.

The last dimension of psychological empowerment is impact and Spreitzer (1995) defined it as the degree to which people perceive that they have significant influence on their work environments, peers and the organisation. He claimed that individuals who are psychologically empowered are convinced that they can make a difference and they feel that their work significantly impacts others and others take their contributions seriously.

Additionally, workers think of themselves as active participants in forming the outcomes of the organisation and they are convinced that they significantly influence the organisational culture. Accordingly, Laschinger (1996) proposed that employees' positive responses to a work environment are more than the ability of the workers to access empowerment structures. She claimed that workers should feel personally empowered and hypothesised that structural empowerment should result in the worker's inner sense of empowerment in order to have a positive effect.

In the context of healthcare industry, Koberg, Boss, Senjen and Goodman (1999) made use of Spreitzer's instrument to measure psychological empowerment. They concentrated on the level to which certain characteristics (e.g. sex, ethnicity, and education, locus of control, group effectiveness, and trust among the group, mutual influence, leader prompt ability and hierarchical position) affect the psychological empowerment perception. Among the demographic variables included, only tenure was positively associated with the empowerment perception. This could be explained by the fact that workers who spent longer time with an organisation, are provided more leeway to act compared to new employees. In addition, perceived group effectiveness and leader prompt ability were revealed to have a weak, positive link with psychological empowerment perceptions

(Koberg et al., 1999). The positive relationship of feelings of psychological empowerment and organisational outcomes seems to be the most significant finding in the above study. Specifically, a positive relationship was found between feelings of psychological empowerment, job satisfaction and perceived effectiveness and a negative one was found between feelings of psychological empowerment and propensity to leave the organisation. It is evident that psychological empowerment decreases the rate of turnover (Koberg et al., 1999).

Taking a divergent direction from Spreitzer's line of reasoning, Lin (1998) carried out a study to examine the way age, sex, educational level, position, tenure, number of employees and geographical location influence the perceptions of psychological empowerment. Lin (1998) developed a four-component model where each component acts on the others. The model comprised of empowering culture, empowering leaders, empowering practices and empowered employees. Lin (1998) found that only education level impacts the perception of psychological empowerment and that most senior employees perceived their leaders to be more empowering compared to the younger workers. Employees holding a high school certificate or higher revealed a greater level of psychological empowerment.

In a related study, Siebert et al., (2004) proposed a multi-level model of psychological empowerment that included the work unit level, and the individual level. The model aimed to examine psychological empowerment as more than merely an individual construct as it investigates team performance in the psychological empowerment climate. The model also investigated individual performance in light of job satisfaction and

psychological empowerment (Siebert et al., 2004). An empowered climate is described as the shared perceptions that arise when managerial structures, policies, and practices encapsulate the psychological empowerment initiative. The three elements comprising a psychological empowerment climate comprise of autonomy through boundaries, sharing of information and team accountability. Sharing information comprised of the provision of data on costs, quality and financial information in all organisational levels. Autonomy through boundaries are described as organisational structures promoting autonomous actions and team accountability refer to the team accountable for performance measures and it has decision-making authority. Siebert et al. (2004) revealed that despite the distinct nature of the constructs, psychological empowerment climate and psychological empowerment, they are positively interlinked. They also found a positive relationship between psychological empowerment climate and work unit performance. In addition, individual job performance as well as job satisfaction positively related to psychological empowerment and psychological empowerment was found to mediate the psychological empowerment climate-individual job performance-job satisfaction relationship. They concluded that psychological empowerment may best be considered as an organisational construct as opposed to an individual one.

Criticisms of psychological empowerment can also be found in literature. According to Greasley et al. (2005), majority of previous researches were conducted from the perspective of management and not employees. They proceeded to explain that the most significant elements of psychological empowerment are managers and employees and they bring distinct perspectives and different dimensions to the understanding of the construct. They call for further studies to be conducted from the employees' point of

view of psychological empowerment as opposed to the prior concentration on managerial assessments of the construct.

Moreover, Spreitzer (1995) studied the validity of the psychological empowerment conceptualization through the use confirmatory analysis of the second-order along with two complementary samples in order to test the validity of empowerments (convergent and discriminate) of the four dimensions. The number and nature of latent factors were identified by exploratory factor analysis and were considered to affect study variables. The main study sample comprised of 393 managers who were selected randomly from different work units, and who represented the entire functions, branches and geographic locations of the company. The questionnaire was distributed at the beginning of the program and was further refined to tackle issues of leadership development, TQM and cross-functional integration. The second sample comprised of employees employed in an insurance company. The results of the second-order confirmatory analysis were consistent with the notion of psychological empowerment as a lone construct consisting of four different sub-dimensions.

In another study involving nursing professionals, Spreitzer (1995) made use of a four factor structure with a reproduction of data gathered a year later. The study supported the construct validity of scores specifically in the nursing environment. In the two analyses, the four empowerment dimensions converged on a lone factor (higher-order), which indicated both discriminate validity of the empowerment dimensions and convergent validity on the lone factor (Spreitzer, 1995). This model found a better fit compared to a one-factor model in both analyses, which further evidenced the discriminate validity of

the four empowerment dimensions. The entire dimensions of empowerment were association to a group of conceptual related variables and this revealed additional evidence of the scale scores validity (convergent and discriminate). In conclusion, the robust evidence of good validity indicates the possibility of acceptable reliability.

Kraimer et al., (1999) conducted an assessment of the scores validity (convergent, construct and discriminate) on Spreitzer's Psychological Empowerment Scale in the context of nursing. They conducted a confirmatory factor analysis on a sample data comprising of 169 nurses and the result showed support for the four empowerment dimensions proposed by Spreitzer namely meaning, competence, self-determination and impact. The original assessment of Spreitzer's four dimensions of empowerment was conducted on managers whereas this study was conducted in the context of nurses. Kraimer et al., (1999) conducted their study in a community hospital, where the ages of the nurses ranged from 19-65 years, and the average age is 37.7 years. The nurses were distributed according to their degrees as follows; those who had an associate degree in nursing constituted 35%, those who had a 3-year nursing diploma constituted 27%, and those who had BSN constituted 37%. As for the distribution of race, Asian nurses constituted 34%, Caucasian nurses constituted 61% while the rest were Hispanic/African American. The sample was comprised of female nurses (90%) and the rest were male nurses. Their average tenure with the hospital was 7.6 years. The authors examined Spreitzer's (1995) hypothesised four-dimensional factor structure through a dual second-order CFA, with Time 1 & 2 sample data, carried out with the help of LISREL 8. They obtained a good fit for the factor structure with X2=154.79, df=50, p< .001, CFI = .90, AGFI = .81, and RMSR = .10) at time 1. The modified CFA indicated that the scale items

identified with their suitable dimensions appropriately based on the parameter estimates as well as the fit statistics. Additionally, structural equation modelling results indicated job characteristics to relate differentially to the dimensions of empowerment, which provided evidence for convergent as well as discriminate validity of scores on the four dimensions of empowerment. Owing to the importance of this information to the presentation of instrument validity, more details are provided in the instruments section.

Moreover, Spreitzer (2004) studied the consequences of psychological empowerment, which are germane to the present study. Employees display positive attitudes in light of work satisfaction when they feel empowered (Spreitzer, et al., 1997) along with organisational commitment (Kraimer et al., 1999). Also, when lower level hospitality employees felt empowered, they are more satisfied and turnovers are decreased (Sparrow and Gaston, 1998). Similarly, employees who are empowered complain less of job stress (Spreitzer, 1997). Empowerment also impacts performance, effectiveness of management and employees (Spreitzer, 1997), employee productivity (Koberg, 1999), and performance of work units (Seibert et al., 2004). A review of literature by Thomas and Velthouse (1995) presents the empowerment history and development where two major empowerment theories were highlighted namely, the relational theory and the motivational/psychological theory. The former theory focused on the identification of the perceptions of the employees regarding their power to keep abreast with their peers, situations and events whereas the latter theory stresses less on power delegation, and advocates open communication, inspiration goal setting, encouragement and feedback.

Spreitzer's (1997) review of Conger and Kanugo's (1988) and Thomas and Velthouse's (1990) study and they developed a model of empowerment with four psychological cognitions. According to Spreitzer (1997) the research assessed various dimensions of psychological climate (e.g. role clarity, work structure, management support, cooperation, centralization of decision, and facilitation of leader goal). These were studied further and highlighted in literature. Spreitzer (1997) revealed that a climate that is supportive enhances the involvement of employee in making decisions and that work relationships that are supportive are associated with empowerment. He also revealed that both change-oriented and supportive leadership were associated with empowerment. She also found that participative work climate significantly predicted empowerment, and that feedback significantly predicted the psychological state of meaningfulness. On the basis of Spreitzer's (1995) research managers should ensure that employees understand the scope of their job and responsibilities and they should explain to the employees the commonality between organisational and individual goals, promote employees' participative decision-making and access training appropriate to such behaviours (Spreitzer, 1995).

In the context of organisations adopting TQM, Ugboro and Obeng (2000) studied the relationship between top management, leadership, employee empowerment, job satisfaction, and customer satisfaction. Their study highlighted a positive correlation between the above factors.

In Seibert et al.'s (2004) study, they conducted a survey among employees numbering 375, in one division of Fortune 100 manufacturers of high-tech offices and printing

technologies in the northeastern U.S. The study showed a positive and significant relationship between empowerment climate and psychological empowerment. They found slight significance in psychological empowerment and individual performance but no significance between empowerment and individual performance and no significance between empowerment climate and job performance. They concluded that psychological empowerment should be deemed as a theory of intrinsic motivation as opposed to a comprehensive theory of work performance.

Along the same line of study, Kirkman et al. (2004) examined the direct association between team empowerment and performance of virtual team, moderated by the role of face-to-face interaction level among the team members on the team empowerment-process enhancement and customer satisfaction relationship. They conducted a field study in a high-technology service organisation in the travel industry that formally adopted virtual teams. A positive link was found between team empowerment and team performance. They also found that number of face-to-face meetings significantly moderated the relationship between empowerment and process improvement, but not customer satisfaction.

In another study, Laschinger et al. (2004) conducted a longitudinal study to test a model that relates changes in structural and psychological empowerment to changes in job satisfaction. They found that changes in perceived structural empowerment directly influenced changes in psychological empowerment and job satisfaction. Also, changes in psychological empowerment failed to explain additional variance in job satisfaction over that which has been explained by structural empowerment. The study's result is

consistent with the notion that changes in perceptions of access to structural empowerment impacted changes in psychological empowerment and job satisfaction. Finally, no relationship was found between psychological empowerment and job satisfaction.

Similarly, Abd. Ghani et al. (2009) studied the psychological empowerment-innovative behaviour relationship and the effect psychological empowerment on the behavioural outcome. Their study involved a sample comprising of 312 lecturers working in 25 private higher education institutions in three Malaysian states. Based on their results, psychological empowerment significantly related to innovative behaviour and was a significant predictor of innovative behaviour.

Moreover, Ahearne et al.'s (2005) study concentrated on the leadership empowerment behaviour's (LEB) influence on customer service satisfaction as well as sales performance, as mediated by sale's people's efficacy and adaptability. The study data was gathered from 231 people working in sales in the field of pharmaceuticals, external satisfaction ratings from 864 customers and information regarding archival sales performance. Contrary to prior findings, employees possessing minimal degrees of knowledge and low experience benefited the most from empowering leadership behaviours in comparison to high-knowledge and experienced employees.

In the software industry, Covey (2012) investigated the industry's role in the contemporary world, which required the need for understanding the effect of psychological empowerment on job performance and job satisfaction in light of the industry. The study employed a questionnaire comprising of twelve items on

psychological empowerment, six on job performance and six on job satisfaction, gauged through a scale that ranges from (1) strongly disagree to (5) strongly agree. Data was gathered from 200 respondents from four software companies located in Chennai. The reliability of the instrument encouraged the researcher to conduct Parson's correlation and multiple regressions to shed a light on the effect of psychological empowerment on job satisfaction and job performance. Covey (2012) highlighted a significant relationship between employee psychological empowerment and job performance and job satisfaction.

Furthermore, Theron (2010) examined the effect of psychological empowerment and job satisfaction on organisational commitment of employees working in a multi-national firm. He adopted the quantitative, non-probability convenience sampling design to assess the three variables. The sample comprised of 120 permanent employees in the departments of administration, engineering, production, quality and commercial. The results showed a significant and direct association between psychological empowerment and job satisfaction.

The Price-Mueller (2000) model was employed by Jr et al., (2010) to adopt the definitions of variables (control, structured and environment variables) concerning employee turnover tendency, and introduced the employee psychological empowerment as the moderating variable to design and survey the questionnaire. He made use of the SPSS to regress in a stepwise manner. The result of the structured model indicated that the primary factors influencing the employee's inclination to quit include equal allocation, opportunity for promotion, routine and boring work, social internal support

and external work change. He concluded that psychological empowerment could modify this tendency.

A more recent study by Washington (2012) identified the impact of psychological empowerment on social network location and individual performance. The study aimed to test three hypotheses which were explained through an extensive review of literature dedicated to the association between social network centrality and individual job performance. Research from the review showed a positive association between network centrality and performance but others indicated performance to be better predicted by motivation. Hence, Washington (2012) developed a moderation model and tested it to determine the relationship between network centrality, PE and three types of individual job performance namely task performance, organisational citizenship behaviour (OCB), and counterproductive work behaviour (CWB). The results of the moderating effect showed that PE impacted the social network centrality-task performance and OCBs relationship. PE seemed to improve the relationship between network centrality and performance in way that, individuals having high PE perceptions displayed better performance compared to those having low PE perceptions of similar centrality.

Finally, Joo & Shim (2010) studied the impact of psychological empowerment upon organisational commitment and the moderating impact of organisational learning culture on the relationship. According to the results, psychological empowerment, organisational learning culture and demographic variables significantly affected organisational commitment of employees in Korea's public sector. Employees with higher perceptions of PE showed higher organisational commitment and higher organisational learning

culture. Additionally, the moderating impact of organisational learning culture on the psychological empowerment-organisational commitment relationship was revealed to be significant. Only educational level was found to be significant among the included demographic variables.

2.7.1 Mediating Role of Psychological Empowerment

Several studies revealed empirical support for the mediating role of psychological empowerment. For instance, Hochwalder (2007) study examined the relationship among psychosocial work environment, psychological empowerment and burnout among a sample of 1356 Swedish nurses and the mediating impact of psychological empowerment on the psychosocial work environment-burnout relationships was examined. Psychological empowerment was measured with the help of Spreitzer's Psychological Empowerment scale while burnout was measured with the help of the Maslach Burnout Inventory. On the other hand, the psychosocial work environment was measured through Karasek and Theorell's Scale. As with structural empowerment, Karasek and Theorell's Scale is commonly used to measure demand, control and social support in the work environment. The authors made us of regression analysis to examine the mediation model and their results showed that psychosocial work environment variables control and support a negative impact on burnout while demand positively impacted burnout. Upon introducing psychological empowerment into the regression model with psychological work environment variables, the psychosocial work environment's impact upon burnout was minimised, indicating that psychological empowerment is a mediator in the structural empowerment-burnout relationship among nurses in the context of hospital settings.

In addition, Laschinger et al., (2003) conducted a longitudinal study to examine the long-term effects of structural and psychological empowerment on burnout among a random sample of 192 nurses working in the hospital. . For the purpose of studying the relationship among variables, they used SEM. The model tested psychological empowerment as an intervening/mediator variable between structural empowerment and burnout. According to the model statistics, the data fit the hypothesised model but the p-value was not reported. Hence, the results provided empirical support for the theoretical notion that psychological empowerment may be a mediator in the structural empowerment-burnout relationship p in outpatient dialysis settings.

Moreover, Carless (2004) tested a model in their attempt to analyse the mediating impact of empowerment between psychological climate and job satisfaction. The study explained that psychological climate, like leadership style, interpersonal relationships, opportunities for professional development and individual-organisational goal congruence, directly and positively affected empowerment and indirectly impacted job satisfaction, as mediated by empowerment.

In a related study Tuuli and Rowlinson (2009) conducted an analysis of the psychological empowerment-job performance relationship. The study also attempted to determine whether or not performance opportunity, ability and motivation mediated the empowerment-performance relationship. The result of the study revealed that empowerment directly and positively affected job performance, as mediated by performance ability, performance opportunity and intrinsic motivation. The study also showed that empowered employees displayed positive performance behaviours and

therefore, psychological empowerment is a significant source for organisations to achieve desired outcomes.

Furthermore, Bonias et al. (2010) investigated the mediating effect of the psychological empowerment's four components on the relationship between high performance work systems (HPWS) and patient care quality perceptions among hospital employees. In order to examine the relationship, they surveyed hospital employees numbering 541 in a large Australian regional health service. Based on the findings of the regression analysis, psychological empowerment completely mediated the relationship between HPWS and quality of patient care perception. Three out of four individual components of psychological empowerment namely autonomy, competence and meaning completely mediated the HPWS-perception of care quality relationships but the effect of the fourth component was insignificant. The result indicated that requirement to acknowledge that the quality of patient care is impacted by clinicians and by allowing the hospital employees to be concerned of their work. Healthcare managers have to concentrate on ensuring that HRM strategy, policy and processes all reinforce the HPWS implementation at the unit level.

Along the same line of study, (Boonyarit et al., 2010)examined the teacher's perceived transformational leadership, structural empowerment, psychological empowerment- job satisfaction attitude outcomes and organisational commitment relationship. They distributed questionnaires to 154 public school teachers in Thailand and made use of the path analysis to test the hypothesised model. Based on their results, the hypothesised model failed to provide an acceptable fit to the empirical data. Nevertheless, after

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introducing the direct relationship between structural empowerment and job satisfaction, the model revealed a good fit. The direct supervisors' perceived transformational leadership was positively linked to the teachers' psychological empowerment, job satisfaction and organisational commitment. Based on the result, structural empowerment is positively associated with psychological empowerment and job satisfaction, while psychological empowerment is positively associated with job satisfaction attitude outcomes and organisational commitment. Psychological empowerment was also found to mediate the perceived transformational leadership-both attitude outcomes relationship as well as the structural empowerment-both attitude outcomes relationship. The adjusted model explained the variance in job satisfaction at the level of 38% and the variance in organisational commitment at the level of 28%.

The model of work engagement was also examined by Kimura (2011)Kimura in a proposed mediated moderation model. The model assumed that structural empowerment and Person-organisation Fit (P-O) interact to improve work engagement through psychological empowerment. Specifically, structural empowerment improves psychological empowerment, P-O fit functions as a moderator in this process, the structural empowerment's influence upon psychological empowerment is greater when a high level of P-O fit is experienced, psychological empowerment plays the role of a mediator, and psychological empowerment improved by structural empowerment interaction and P-O fit, results in greater degrees of work engagement. The proposed hypotheses were tested among a sample of 290 sales managers and sales supervisors in Japanese companies. According to the results, both structural empowerment and P-O fit positively impact work engagement through psychological empowerment and P-O fit

plays the role of a mediator; in other words, structural empowerment and P-O fit interacts to improve work engagement through psychological empowerment.

2.7.2 Summary of Psychological Empowerment Studies

Majority of prior studies supported the implication that psychological empowered individuals may perceive a sense of intrapersonal/psychological empowerment through environmental factors such as positive work environment structures. Researchers claimed that these structures result in psychological empowerments that in turn, lead to positive work outcomes. According to theorists, psychological empowerment may be the most crucial contributor of positive worker outcomes and they may mediate the effects of structural empowerment impact upon patient safety culture.

On the other hand, prior studies also provided empirical support for the theorized relationships among other factors and psychological empowerment –factors reflecting the significance of psychological empowerment via work environment. Additionally, the studies reinforce the notion that psychological empowerment mediates the structural empowerment-patient outcome relationship to promote patient safety culture.

Hence, healthcare organisations should develop organisational capacity through HRM capabilities to achieve a quality of patient care culture through the breakdown of functional silos and facilitation of effective communication and information sharing at good levels between the entire functions (Bonias, et al., 2010).

O'Brien (2010) provided the relationship among structural empowerment and psychological empowerment. But still there is a gap of previous literature to study

effecting of psychological empowerment as mediate between structure empowerment and culture of the patient safety. In addition, there is recommendation to study the mediating effects of psychological empowerment on culture of patient safety (Avolio et al., 2004;Dulk, 2013). Therefore, this study will fill the gap by testing the mediating effect of psychological empowerment on relationship between Structural Empowerment and culture of patient safety.

2.8 Hypothesis Development

After a thorough review and analysis of the existing literature regarding the relationships between research variables, structural empowerment, prosocial voice, self-monitoring, psychological empowerment and the safety culture of patient, the study came up with the following hypothesis:

H1: There is significant relationship between structural empowerment and patient safety culture in the Saudi public Hospitals.

Hospital staffs may influence their attitudes in the direction of a culture of patient safety through the support of an authorizing working situation. According to Armstrong & Laschinger (2006) and Armellino, et al., (2010) they had showed a study to observe the connection between patient safety culture among health staffs and perceptions of structural empowerment. The finding was discovered an important positive relationship between registered nurse's perception of structural empowerment and patient safety culture. Furthermore, Pearson's correlation has been shown a significant relationship between patient safety culture and structural empowerment perception among registered nurses. However, the previous studies have been conducted on developed countries and

they were on small and exclusive sample that were one of previous studies implications. Therefore, in this study the researcher expected that there is an important relationship between patient safety culture and structural empowerment at public hospitals in Saudi Arabia.

H2: There is significant relationship between prosocial voice and patient safety culture in the Saudi public Hospitals.

One of the methods to report medical errors is the prosocial voice (PSV), which is described as a certain style of proactive and improvement-directed workplace communication behaviour. Additionally, a healthcare with a positive safety culture is characterised by communications founded on mutual trust, shared perceptions of the importance of safety. Therefore, effective communication among staff reflects strong patient safety culture (Hill, 2011). From previous literature, the researcher found that one study has been examined the connection between prosocial voice and four dimensions: (continuous improvement, communication about errors, nonpunitive responses to errors, and hospital-management support) of patient safety culture in one hospital in the Midwest United States amongst registered nurses. The finding noticed that there was positive correlation among registered nurses' prosocial voice and four dimensions of hospital patient safety culture. In this study, it is hypothesized that there is significant relationship between prosocial voice and patient safety culture

H3: There is interaction between pro-social voice and patient safety culture moderated by self-monitoring in the Saudi Hospitals.

Based on Several studies have been conducted on self-monitoring in the workplace (Dabbs et al., 1980; Turnley & Bolino, 2001; Leone, 2006; Flynn & Ames, 2006). There

is high self-monitors reach a certain status in social groups as viewed by their peers by maintaining their generous front. They use voice behaviour in a way that it contributes to their image. According to Fuller et al. (2007), high self-monitors may become leaders through the effective use of communication to portray the image of competency. Furthermore, high self-monitors have a tendency to speak first, break periods of silence, and to introduce a positive effect into social interactions with humour, and to exchange self-disclosures for personal advantage (Oh & Kilduff, 2008). In the current times, self-monitoring is considered as a positive trait as opposed to a deceptive one. Among the few studies in this field, is conducted by Premeaux & Bedeian (2003) where they identified high self-monitors as those that hesitate to express their opinions or voice their views as this may result in negative impression and potential negative outcomes. As a result, high self-monitors do not speak about concerning issues and problems at the workplace. On the other hand, Grant & Mayer (2009) reported the absence of a relationship between self-monitoring and prosocial voice among employees from various organisations. Furthermore, according to Hill, (2010) self –monitoring was not moderate between prosocial voice and patient safety culture. Hence, further studies are required to validate the self-monitoring as moderated between prosocial voice and patient safety culture because this factor is significantly important as well in order to discover the effect of behaviour factors on work place environment. Furthermore, greater understanding essential in these relationships based on evidence of interest to researchers in the term of psychology and patient-safety and is essential to identify appropriate interventions in health field to promote prosocial voice and strengthen patient-safety culture while reducing medical errors and patient harm.Therefore, in this study the researcher

hypothesized that there is interaction between pro-social voice and patient safety culture moderated by self-monitoring in the Saudi Hospitals because this study consider as second research in health industry that attempt to investigate the moderating effect of self-monitoring between prosocial voice and patient safety culture.

H4: Psychological empowerment mediates the relationship between structural empowerment and patient safety culture in the Saudi Hospitals.

Human resource is the greatest valuable of an organization. So, one of the tool that encourage workers to think for themselves about the requirements of their job is psychological empowerment (.Bonias et al., 2010). According to Spreitzer (1995), Psychological empowerment can be categorized into four cognitions: competence, meaning, impact and autonomy or self-determination. Based on that, employees have experience psychological empowerment feel dedicated to their job consequential in higher levels of performance. Greater job satisfaction is linked by psychological empowerment, employee productivity and organizational commitment (Spreitzer 1995; Spreitzer et al., 1997; Harmon et al., 2003; Laschinger et al., 2004; Scotti et al., 2007), A number of studies have established that psychological empowerment to be an important antecedent of quality of patient care inside the healthcare sector (Laschinger and Wong 1999; Patrick and Laschinger, 2006). For example, quality of care provided by nurses was linked to their perceptions that their managers empowered them to deliver high-quality customer services (Scotti et al., 2007) which is found in a study in the United States. Moreover, hospitals that support their employees through horizontal interactions and interfere in eliminating structural and social constraints assist in minimizing the feelings of helplessness among clinicians (Koberg et al.,1999). The perceptions of

psychological empowerment among clinicians may have a positive effect on quality of patient care (Buenger et al., 1996; Conger and Kanungo 1988; Harmon et al., 2003; Joiner and Bartram, 2004; Scotti et al., 2007) furthermore, psychological empowerment has an important role in building an adaptive learning culture all over the hospital with the capacity to generate the values and behaviors connected with high quality of patient care (Khatri et al., 2009; Bonias et al., 2010). Basically, psychological empowerment was studied as a mediator for many studies (Avolio, Zhu, & Koh, 2004; Carless, 2004; Kimura, 2011; Arinl. et al, 2010; Boonyarit, et al., 2010; Kimura, 2011). The findings of these studies were that psychological empowerment fully mediated the relation between variables while study of O'Brien, (2010) didn't find the mediated effect of psychological empowerment on structural empowerment and burnout among nurses. On the other hand, the psychological empowerment was used as moderator in some studies (Yao, 2010; Washington, 2012). And it was finding that enhance the relationships between variables. More essentially, the mediation impact of psychological empowerment (PE) on the structural empowerment (SE) has been studied by many researchers (O'Brien, 2010; Kimura, 2011; Arinl. et al, 2010) while its relationship with the patient safety culture (PSC) was not yet examined. Due to the critical issues of quality healthcare, the associations between the SE, the PS, and the PSC should be understood by researchers and hospitals leaders to help employ the most effective human resource management practices to guarantee the provision of high-quality patient care. Thus, there is a potential gap for studying the effect of PE as a mediator between SE and PSC. furthermore, there is recommendation to study the mediating effects of PE on PSC (Avolio et al., 2004; Khatri et al., 2009; Bonias et al., 2010).

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The researcher hypothesized that psychological empowerment potentially mediate the relationship between structural empowerment and patient safety culture at Saudi public hospitals based on the connection which is found between structural empowerment and patient safety culture (Armstrong & Laschinger, 2006; Armellino et al., 2010).

2.9 Theoretical Framework

Independent variable	Intervening variable	Dependent variable

	Self-Monitoring (Moderator)	
1. Prosocial Voice		Patient Safety Culture
2. Structural Empowerment	Psychological Empowerment (Mediator)	
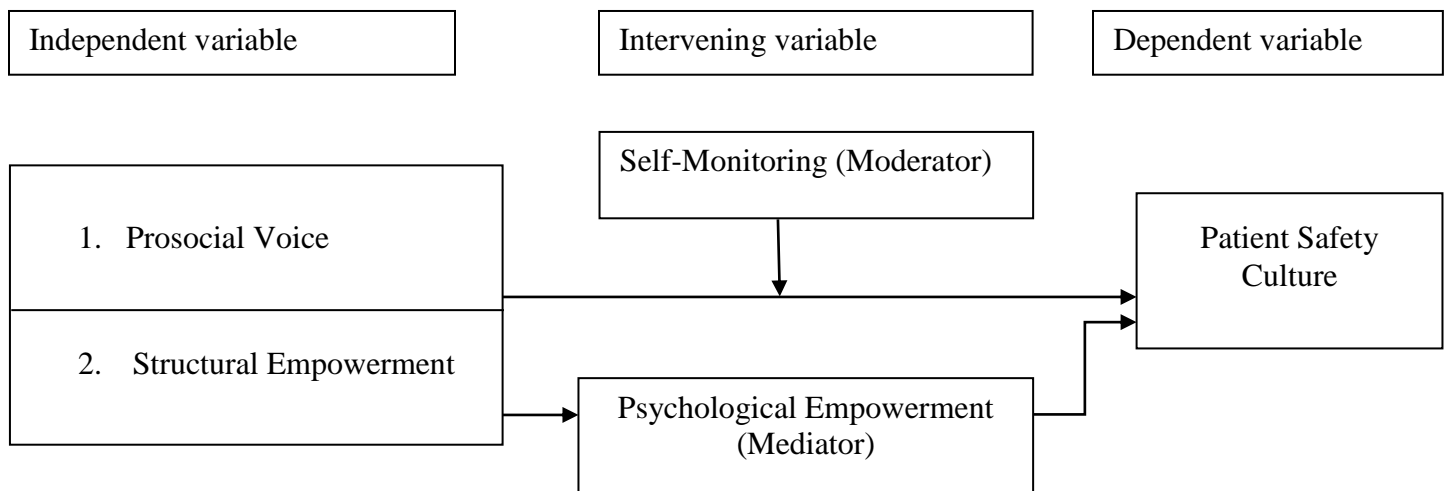
Figures 2.2
Study Theoretical Framework

The theoretical framework presented above contains independent variables namely nursing staff's prosocial voice and structural empowerment, where both variables impact the dependent variable namely patient safety culture, with the mediation of psychological empowerment. To date, no study has examined the mediating impact of psychological empowerment in the structural empowerment-culture of patient safety relationship and this is where the gap in literature lies. Therefore, this study attempts to do minimise this gap. Additionally, the present study considers self-monitoring of the nursing staff as moderating the relationship between perception of prosocial voice among nursing staff

and patient safety culture. This gap was highlighted by several researchers (Fuller et al., 2007; Detert and Trevino, 2010; Avolio et al., 2004; Khatri et al., 2009; Bonias et al., 2010). In their studies.

2.9.1 Summary of Theoretical Framework

Based on Hill's (2011) study, a weak relationship was revealed between the registered nurses' prosocial voice and the enhancement of patient safety culture in the context of hospitals. Nevertheless, studies dedicated to self-monitoring and prosocial voice revealed contradictory results. For instance, in Premeaux and Bedeian's (2003) study, they revealed that high self-monitoring individuals are concerned with their self-image and are not as likely to speak up compared to their low self-monitoring counterparts. In their study, they showed that self-monitoring negatively moderated the relationship between the four antecedents and speaking up behaviour. On the other hand, Grant and Mayer (2009) revealed no relationship between self-monitoring and prosocial voice. In addition, Milliken et al. (2003) stated that individuals with high self-monitoring significantly employ prosocial voice when they are convinced that speaking up would positively impact their reputation. Hence, if the organisation facilitated a positive context, where top management is open to suggestions in a culture that is supportive, prosocial voice is heightened. Hill (2011) further urged for examination of the moderating role of self-monitoring in the prosocial voice-culture of patient safety relationship.

In a similar line of study, Armstrong and Laschinger (2006) showed that a positive culture of patient safety originated from access to empowering hospital structures. Furthermore, Armellino (2010) revealed a significant relationship between structural

empowerment and culture of patient safety. In the present study, the potential mediating effect of psychological empowerment between structural empowerment and patient safety culture is examined on the basis of Avolio, et al., (2004); Khatri et al., (2009) and Bonias et al., (2010). Studies.

2.10 Summary of the Chapter

This chapter critically reviewed the theories available in the literature which are related to the patient safety culture field. During the review process, the researcher investigated previous studies and literature in order to obtain a selection of viable theories for use in this study. Through a critical evaluation, one theory was selected in order to explain the current phenomenon under study, which is the theory by Donabedian called Structure-Process-Outcome (SPO) Theory. Next, the researcher identified the variables in studies of patient safety culture, prosocial voice, structural empowerment, self-monitoring, and psychological empowerment that were evaluated and eventually the gap was identified. In order to fill this gap, the hypotheses for this study were developed, which led to the formulation of the theoretical research framework used in this research effort.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This research aims to provide an insightful overview into the relationship between structural empowerment (SE) and prosocial voice (PSV) (independent variables) and patient safety culture (PSC) (dependent variable). In addition, to moderate effect of self-monitoring (SM) on prosocial voice and patient safety culture and potential mediating effect of psychological empowerment (PE) between the relation of structure empowerment and patient safety culture in Saudi public hospitals. The present research attempts to address the gaps in literature concerning the above relationships. This chapter of the thesis explains the methodology was applied in this study which has been explained through research population, sample size, sampling technique, Data Collection Procedure, operational definitions, and, the research instruments, protection of participants' anonymity, data management and finally, data analysis.

3.2 Research Design

A research design details the research method employed to achieve the research objectives and answer the research questions. It lays down the overview of data collection, data measurement, and data analysis (Cooper & Schindler, 2008). Research design was defined by Zikmund, Babin, Carr, and Griffin (2010) as a main idea outlining the data collection and analysis methods, and procedures. Moreover, a research design

directs the research in providing appropriate sources by offering methodology alternatives (Cooper & Schindler, 2008).

There are two main research methods namely, quantitative and qualitative methods which are mentioned in literature (Cooper & Schindler, 2008; Zikmund et al., 2010). The qualitative is the former method which refers to an accurate count of behaviour, knowledge, opinion, or attitude (Cooper & Schindler, 2008), and the quantitative refers to empirical assessments that cover numerical measurement and analysis (Zikmund et al., 2010).

After considering the evidence in the literature, the primary research design employed in the present study is of quantitative method and cross-sectional which employs the survey. This is because it was the most suitable method due to its economy of design and a rapid turnaround in data collection (Creswell, 2003). Anderson, Sweeney and Williams (2000) argue that a quantitative research approach can reliably determine if one idea or concept is better than the alternatives. Furthermore, researchers enable to measure and control variables by using quantitative multivariate methods. Leedy and Ormrod (2005) suggest that quantitative research is used to answer questions about relationships between measured variables and the purpose of explaining, predicting, and controlling phenomena. Thus, quantitative research design can fulfill the needs of this study, as the researcher pursued to provide reliable and valid outcomes.

A survey refers to a measurement method that utilises a tool of measurement which known as instrument or questionnaire (Cooper & Schindler, 2008). A survey primarily provides description of details for the purpose of studying the reasons to explain a

phenomenon (Zikmund et al., 2010) of which the questionnaire is the most commonly utilised collection method in a survey study (DeVaus, 2002). The questionnaire comprises a list of questions or measures employed to gather respondents' answers (Hai et al., 2007).

Therefore, a survey method was deemed appropriate for the present study as the researcher aims to gather the research participants' views on certain issues of interest. Specifically, the researcher intends to gather information on participants' to determine relationships between independent variables (SE and PSV) and the dependent variable (PSC), as moderated by the moderating variable (SM) and mediated by the mediating variable (PE) in the context of Saudi public hospitals. More importantly, Zikmund et al. (2010) claimed that a survey is a quick, low-cost, efficient, and accurate method used for evaluation of data concerning a population. Owing to the fact that most survey studies are descriptive, the term survey is often related with quantitative findings (Zikmund et al., 2010).

The setting for this study was non-contrived since there is no manipulation of variables or manipulation of outcomes has been taken place. The study occurred in a real-life setting and it was conducted in the field with individuals responding to a questionnaire as the participants were asked to respond to the questions from their own personal experience.

3.3 Population, Sample, and Sampling Technique

This study's population, sample, and the study's sampling method are all explained in this section. It details the study population, the method of sample selection, and sampling method for the identification of the sample to represent the population.

3.3.1 Population

According to Cooper and Schindler (2008), population is defined as people, events, or records encapsulating the required information for the measurement questions. The present study aims to study the effect of prosocial voice and structural empowerment on patient safety culture moderated by self-monitoring and mediated by psychological empowerment at Saudi public hospitals. In this research, focus is placed on hospitals because there is call to study these mentioned variables from organizational level (Armstrong & Laschinger, 2006; Armellino, et al., 2010; Hill, 2011). Furthermore, some of these variables have been studied on individual level. Hence, the population of this study is Public Hospitals at Saudi Arabia covered under the authority of the Ministry of Health of Saudi Arabia. The Ministry of Health in Saudi Arabia is responsible to deliver general health services and prevention of diseases to the all level (MOH, 2013) while other government hospitals include King Faisal Specialist Hospitals and Research Centre, Red Crescent Society and the other government hospitals such as Armed Forces Hospitals, National Guard Hospitals Security Forces Hospitals, Ministry of Higher Education hospitals, ARAMCO hospitals, Royal Commission for Jubail and Yanbu health services which provide health services to distinct populations, particularly

employees and their dependents. In addition, several of them provide health services to residents during crises and emergencies (Almalki et al., 2011).

The distribution of services is such that 60% of healthcare services are delivered by the Ministry of Health while the remaining 40% are delivered by other governmental organisations and the private sector (Al-Khoshim, 2010). Based on population of study, the total number of public hospitals at ministry of health is 251. The distribution of Public hospitals at Ministry of Health in the region is displayed in Table 3.1.

Table 3.1
Total Number of Public hospitals at Ministry of Health in 2011

Region	No. of Public Hospitals
Riyadh	45
Makkah	10
Jeddah	12
Ta`if	13
Medinah	20
Qaseem	17
Eastern	18
Al-Ahsa	9
Hafr Al-Baten	5
Aseer	16
Bishah	7
Tabouk	11
Ha`il	11
Northern	7
Jazan	18
Najran	11
Al – Bahah	10
Al - Jouf	6
Qurayyat	3
Qunfudah	2
Total	251

Source: Ministry of Health in Saudi Arabia (2011)

3.3.2 Sample Size

Cooper and Schindler (2008) described sampling as the process where some population elements are chosen to represent the entire population. Sample size refers to the number of units required to get accurate findings (Fink, 2002). According to Gay and Diehl

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(1992) selecting a suitable sample size is very important as its quality will provide the generalised outcome of the analysis. Sampling is often conducted as opposed to collecting data from every population unit owing to practicality (Sekaran, 2003; Zikmund, 2003). In addition, selecting a suitable sample will result in a more effective outcome owing to exertion of minimal effort and faults, particularly when the number of units is insurmountable (Sekaran, 2003). Although there is no consensus among scholars concerning sample size, the general notion is that the larger the sample, the better as small samples tend to lead to unreliable correlation coefficients and hence, undermines the study aims. With bigger sample size, errors are also minimised (Zikmund et al., 2010). Thus, bigger samples frequently favour outcomes with statistical significance. According to the rule of thumb, a sample size of 30-500 can be suitable on the basis of sampling design and the research questions (Roscoe, 1975). In multivariate studies, the sample size must be several times (10 times) greater than number of study variables.

Therefore, a sample size is 127 out of 251 healthcare organizations were selected in the Saudi Arabia; 73 from the Central and 54 from the Western region. These are all public hospitals and operate under the Ministry of Health (MOH) in Saudi Arabia. 30 questionnaires were distributed in each of the 127 public hospitals of Saudi Arabia in two main regions; Central and Western because of the higher populations residing in these regions (MOH, 2013)

Therefore, the respondents in this study were the nursing staff at public hospitals. The nursing usually spend around 90% of their time taking care of patients compare to other hospital staff (Al-Awa et al., 2012). In addition, Studies such as Armellino (2010) and

Neamatallah (2011) stated that nurses positively affect the overall dimensions of PSC while other studies like Abbas (2008), and Bodur and Filiz (2010) highlighted negative perceptions of nurses concerning safety culture. Furthermore, several studies dedicated to PSC showed that the dimensions of communication, hospital management support for patient safety, organisational learning, and on-going improvement, and teamwork in the unit were provided a high positive rating by nurses, while the cultural dimension of non-punitive response to error and the staffing dimension were provided a negative rating (El-Jardali, 2010). The above studies indicated that the nurses' responses to the patient safety is often characterised by their work culture, a culture that shapes their specific viewpoints, so that they are in a suitable position to assess the effect of PSV and SE on PSC moderated by SM and mediated by PE. This study limited the sample to nurses working in the Ministry of Health Public Hospitals in the country and excluded those nurses who working in other government hospitals and private hospitals. The majority nursing of total nurses are working in Public hospitals (MOH, 2011). Additionally, by 2011, 58% of nursing care services was provided by nurses in Public Hospitals while 42% of these services were provided by the private sector and other governmental sectors (Al-Khoshim, 2010; Almalki et al., 2011; MOH, 2010). Therefore, the total of Questionnaires were distributed 3810. The staff workers in the nursing units have been the main focus for the data collection through these questionnaires. A total of 2117 questioners were received out of 3810 questioners which represented 55.5% of the respondent rate in this study

3.3.3 Sampling Technique

The present study employed an area sampling for the selection of the study's sample. This type of sampling is the most common type of cluster sample particularly when the design consists of geographic clusters (Sekaran, 2003). The primary aim of cluster sampling is to sample economically but to maintain the sample's characteristics where clusters are chosen randomly (Zikmund, 2003). The clusters are homogenous as the subjects comprise of individuals coming from multiple backgrounds, attitudes and behaviours with each cluster having similar characteristics with others (Gay & Diehl, 1992). Therefore, the researcher divided the kingdom of Saudi Arabia to five target locations (i.e., north, south, east, west, and central territories of Saudi Arabia , By using two major provinces (regions) were selected due to higher population therein. In this study, the geographic clusters sampling is viewed as the most suitable sampling method. Moreover, because Saudi Arabia is a country with a large area consisting of many regions (Aldossary et al., 2008) gathering data from every region is impractical, if not impossible. It is also believed that Public Hospitals located in various regions are similar to one another in light of their backgrounds of staff, jobs performed, and among other aspects, thus cluster sampling appropriate to be employed to achieve the research objectives.

Therefore, out of 251 healthcare organization, a sample size is of 127 hospitals were selected in the Saudi Arabia (MOH, 2011); it consists of 73 hospitals from the Central and 54 hospitals from the Western region. These are all public hospital and operate under the Ministry of Health (MOH) in the Kingdom. Basically, in each of the 127 public hospitals of Saudi Arabia 30 questionnaires were distributed as it focusses on two main

regions; Central and Western because of the higher populations residing in these regions. Therefore, the total of Questionnaires were distributed 3810. The staff workers in the nursing units have been the main focus for the data collection through these questionnaires. Total 2117 (55.5%) questions returned and therefore the response rate is calculated by dividing the number of questionnaires returned or completed with the number of participants of the survey (Zikmund et al., 2010).

3.4 Data Collection Procedure

In order to collect data from respondents, certain methods can be employed for questionnaires (Sekaran, 2003). A questionnaire refers to a pre-written set of questions, which is closely defined, that respondents are required to answer (Sekaran, 2003). It is an efficient data collection method but only when the researcher is aware of what is needed and of the variables measurement (Sekaran, 2003). Meanwhile in this study, a survey using questionnaires was employed for data collection, as the researcher aims to obtain certain responses toward the issues under study (effect of structural empowerment and prosocial voice on patient safety culture moderated by self-monitoring mediated by psychological empowerment in Saudi Public Hospitals through specific measurements.

Therefore, to obtain the needed data, self-administered questionnaires were used where participants are requested to read and answer the questions therein (Zikmund et al., 2010). Prior to the distributed of questionnaires, the researcher received letter from Othman Yoep Abdullah for post graduated and need to collect data. Then the letter forwarded to Saudi Cultural Attaché in Malaysia. After that the researcher got the letter that he wants to distribute study questionnaires among public hospitals staffs at Saudi

Arabia reported to the General Manager for health studies and research. Then, General Manager requested the researcher to fill some documents in order to get approval from the Ministry of Health. The researcher fulfils all the documents and submitted to the Ministry of Health. After around two months, a written approval copy is obtained from ministry of health to assist the data collection with Institutional Review Board Opinion Letter from King Abdullah Medical City. The official approval letter and copy of questionnaires have been sent from ministry of health to the selected Health Affairs Directorate to conduct the study. Then each Health Affairs Directorate forwarded this letter attached with the questionnaires to the hospitals to facilitate the researcher to distribute questionnaires and collected data.

Prior to distributing the surveys at hospitals, an employee at the executive level in each participating hospitals was contacted and was explained about the details of the survey procedure. The collection period was given as one month, yet the late responses were still acceptable. Once the key contact person had collected the questionnaires, and then the they were asked to contact the researcher. However, the minimum number was not specified in order to give flexibility and less pressure to them. Consequently, this technique was the most effective approach for gaining high response rate from a large sample size with minimum cost and time (Oppenheim, 2000; Sekaran, 2000)

3.5 Operational Definition and Measures

This present section explains the way in which each variable in the study is measured. There are altogether five main variables involved along with demographic variables which are all explained in the proceeding sections.

3.5.1 Operational Definitions

The development of specific research procedures known as operationalization of variables that will result in empirical observations signifying those concepts in the real world (Babbie, 1992). In short, it is stating the method on how variables will be measured. These variables that were being measured structural empowerment, prosocial voice, self-monitoring, psychological empowerment, and patient safety culture. These study variables are further elaborated upon and operationalised in the subsequent sections.

3.5.1.1 Patient Safety Culture

Patient safety culture is operationally defined as the total score of the overall perception of patient safety gauged through the HSOPSC instrument (Sorra & Nieva, 2004).

3.5.1.2 Prosocial Voice

Prosocial voice is the total score of prosocial voice scale (Van Dyne & LePine, 1998).

3.5.1.3 Self-Monitoring

Self-monitoring is defined as the total score of self-monitoring where scale questions are numbered from 1 to 17 (Oyamot et al., 2010).

3.5.1.4 Structural Empowerment

The nurses' perception of structural empowerment is defined by the total score on the CWEQ-II instrument (Laschinger et al., 2001).

3.5.1.5 Psychological Empowerment

The operational definition of psychological empowerment is the participants' score on the Psychological Empowerment Scale (Spreitzer, 1995).

3.5.2 Research Instruments

Quantitative approach was used in data collection process through this study. A survey method is most suitable due to the economy of design and a rapid turnover in data collection. Therefore, survey method was used to collect the data from the respondent (Creswell, 2003; Anderson, Sweeney, & Williams, 2000; Leedy & Ormrod, 2005; Oppenheim, 2000). The survey questionnaire used in this study was implemented from previous studies and represents an accumulation of survey items which have been already tested for reliability and used in the earlier empirical studies by other researchers in the field. As suggested by O'Sullivan, Rassel and Berner (2003), the questionnaires were evaluated by three dimensions of reliability which consists of stability, equivalence, and internal consistency. A minimum of three questions were developed to measure a given variable and to establish operational validity.

The survey questionnaire applied the closed-ended question format that gives a constant frame of reference for respondents to decide their answers (Weisberg & Bowen, 1977). According to Folz (1995), the hallmarks of survey questionnaire has clarity, simplicity, and attractiveness. Clear and logical questions with suitable response choices foster accurate and consistent responses. The flow of questions should be logical in order to

help the respondents as they would be able to see easily the relationship between the questions asked and the stated objectives of the research (Casley & Kumar, 1988).

To answer the research questions and to test the hypotheses, this survey questionnaire was developed with specific questions. The questionnaire was divided into six parts. First Part measured patient safety culture in to four sections A, B, C and D (34 questions), second part measured psychological empowerment (12 questions), third part measured structural empowerment (21 questions), and fourth part measured the prosocial voice (6 questions) and fifth part measured self-monitoring (17 questions). Demographic questions were included in the beginning of questionnaires to provide a profile of the respondents. To measure the intensity of the respondent's views, a five-point Likert scale was employed.

The questionnaire was reviewed by 4 experts in health and quality field for detecting content validity of measurement items. The idea was to identify and correct weaknesses, ambiguity, and invalidity of the questions. This would assist the researcher in determining the strengths and weaknesses of the questionnaire as it related to question format, wording, and order. After the review was completed, the researcher diagnosed problems and revised the wording of questions to solve problems. A clear, easy answering, comprehensive, and professional survey questionnaire was obtained. Face and content validity of the questionnaire was achieved through the review.

The questionnaire was also translated into Arabic language by an expert language translator who works in Yanbu Industrial Collage - English language Department. The questionnaire was then reviewed by the researcher and his supervisor, for any anomalies

that might be found due to the limited exposure of this translator with respect to the standard use of particular business and management terms. Once the questionnaire was edited for these anomalies, it was then sent back to another translator and was translated back into English to assure consistency in language to the extent possible. Additionally, back translation has been historically utilised in social science to examine the accuracy of translation and errors in it (Brislin, 1980; Douglas & Craig, 2007).

In this study, there are five instruments that applied, which are:

1) Conditions of Work Effectiveness Questionnaire-II Scale (CWEQ-II),

2) Prosocial Voice Scale (PSVS),

3) Self-Monitoring Scale (SMS),

4) Psychological Empowerment Scale, and

5) HSOPSC (Sorra and Nieva, 2004) as the basis for collecting the data.

All the above instruments used five-point Likert scales from 1 (strongly disagree), 2 (disagree), 3 (neither), 4 (agree), and 5 (strongly agree) for patient safety culture, psychological empowerment and prosocial voice scales. On the other hand, structural empowerment also used five-likert scale from 1 (None), 2 (slightly), 3(sometimes), 4 (a lot), and 5 (very much) while self-monitoring used 1 (certainly true), 2(true), 3 (neither), 4 (false) and 5 (certainly false). These instruments are explained in greater detail in the following sections.

3.5.2.1 Hospital Survey of Patient Safety Culture (HSOPSC)

Patient safety culture is measured by the hospital survey on patient safety culture (HSOPSC). It is a self-administered instrument developed to measure seven unit-level perspectives of patient safety culture, three hospital-level aspects, and three outcome variables. The HSOPSC is employed to measure perceptions of patient safety culture. The tool is sponsored by the Medical Errors Workgroup of the Quality Interagency Coordination Task Force, funded by AHRQ and developed by Westat under contract number 290-96-0004 (Sorra & Nieva, 2004b).

Specifically, AHRQ developed and tested the instrument for hospitals to employ in the assessment of values, attitudes, behaviour, and norms of patient safety culture (Sorra & Nieva, 2004). It consists of 44 items covered under 14 subscales developed to measure perceptions of PSC among managerial and staff members working in healthcare. The 14 subscales are categorised into three groups, namely unit-level aspects of safety culture (seven subscales), hospital-level aspects of safety culture (three subscales), and outcome variables (four subscales). This includes both open-ended and closed-ended questions that assess the organisation and its units. In addition, the survey can keep track of changes over time and evaluate interventions of patient safety.

For purpose of this research, 10 out of the 14 original subscales included in the final questionnaire, rated on a five-point Likert scale, which gives a total of 35 items rated along the scales of 1 (strongly disagree), 2 (disagree), 3 (neither), 4 (agree) and 5 (strongly agree). The other four subscales were omitted from the final questionnaire because in the original instrument, these four variables were used to measure the outcome

of patient safety culture, i.e., they are the dependent variable for that original survey by AHRQ. But for this study, the 10 used subscales utilised as the outcome of this study, i.e., they are the dependent variable for this study. From the 35 items that studied, after going through the validity process, a single item was identified to be not applicable in the Saudi general hospital setting. Therefore, the final questionnaire included a total of 34 items to represent the PSC dimensions. The survey generally takes 10-15 minutes to complete. On the basis of the Flesch-Kinkaid grade level, the survey's score is 8.2, which indicates that an eighth grader can easily read it.

For easy understanding of the survey items and to ensure its applicability to patient safety, it was pilot tested among 1437 hospital employees in 21 U.S. hospitals. Moreover, the HSOPSC has been widely employed in 24 countries with the inclusion of Serbia, Saudi Arabia, Korea, Brazil, and Spain (Battles, Sorra, & Nieva, 2008). The survey's response rate was 62%. The perceptions of the respondents regarding different aspects of patient safety were analysed using the 44 items. The analysis covered examination of each item's statistics, reliability of patient safety culture scale, and the survey's factor structure with the help of exploratory and confirmatory factor analysis. The pilot study revealed high quality psychometric properties for every item of the patient safety culture scales (Aboshaiqah, 2010).

3.5.2.2 Prosocial Voice Scale (PSVS)

The PSVS has been extensively employed as an objective and standardised measure of employee speaking up behaviour that aims to make a difference in the status quo in order to improve organisational performance (Walumbwa & Schaubroeck, 2009;

Venkataramani & Tangirala, 2010). It comprises six self-report items measuring an individual's perception of job related voice behaviour (Van Dyne & LePine, 1998). Each of the items is scored within a seven-point Likert type scale that ranges from strongly disagree (1) to strongly agree (7). Because there is not reverse coding of survey items, a mean score for the six items can be calculated, and lower scores indicate lower prosocial voice levels while higher scores indicate higher prosocial voice levels.

3.5.2.3 Self-Monitoring Scale (SMS)

Self-monitoring is measured through SMS, a scale consisting of 18 self-report items. The scale measures the level of an individual's concern with situational appropriateness and transforms self-presentation in reaction to social cues (Snyder & Gangestad, 1986). The SMS is widely employed to measure self-monitoring tendency (Flynn et al., 2006; Fuller et al., 2007; Oyamot et al., 2010). Every SMS item requests the selection of whether the statement is true or false. The items are then summed to obtain a single self-monitoring score for every participant that ranges from 0-18. From the 18 items that considered, after going through the validity process, one item was identified to be not applicable in the Saudi general hospital setting. Therefore, the final questionnaire included a total of 17 items to represent the self-monitoring dimensions. Greater scores show that the individual is more likely to monitor surroundings and to change self-presentation in social circumstances whereas lower scores show that he/she is more likely to consistently behave in various social situations. The calculated coefficient alpha for the SMS items is 0.70 (Snyder & Gangestad, 1986). In a more current study, Oyamot, Fuglestad, and

Snyder (2010) obtained an estimated scale reliability of 0.79 with the help of tetrachoric correlations, which rectifies attenuation caused by the dichotomous response scale.

However, information concerning the construct validity of the SMS is limited where SMS measures domains of social behaviour as well as general factors that are considered as self-monitoring (Snyder & Gangestad, 1986). An SMS factor analysis highlighted three factors namely expressive self-control, social stage presence, and other directedness (Gangestad & Snyder, 2000). The researcher obtained written permission from the author to use the SMS in this study.

3.5.2.4 Conditions of Work Effectiveness Questionnaire-II Scale (CWEQ-II)

The CWEQ-II instrument is made up of 19 questions and two additional items measuring global empowerment for construct validation. The instrument measures six structural empowerment perceptions components namely, access to opportunity, information, support, and resources (Kluska, Laschinger and Kerr, 2004). Other two additional scales, the Job Activities Scale – II (JAS –II) and the Organisational Relationships Scale-II (ORS-II) are employed to measure formal and informal power respectively (Laschinger, et al., 2001).

The CWEQ-II, JAS-II, and ORS-II scoring comprises a five-point Likert scale ranging from "none" to "a lot" for every item. The questions are positively worded with the higher score indicating a greater level of structural empowerment and vice versa. Items are aggregated and averaged to acquire a subscale scoring ranging from one to five. All six component scores are summed up to obtain the total structural empowerment score.

Each of the subscales sum and average are provided from the range of one to five, which are then totalled and averaged to obtain a total structural empowerment score. The scores of structural empowerment range from six to 30 with the greater number depicting higher perception of structural empowerment. Scores from six to 13 depict low levels of structural empowerment while scores from 14 to 22 depict moderate level structural empowerment. Lastly, scores from 23 to 30 depict high levels of structural empowerment. Moreover, the two global empowerment items were added and their average was taken to obtain a score that ranges from one to five, a score that is distinct from the structural empowerment score. The score of total structural empowerment consisting of six components along with the global structural empowerment scores are correlated for evidence of construct validity of structure empowerment measurement.

3.5.2.5 Psychological Empowerment Scale (PES)

Spreitzer's (1995b) psychological empowerment scale is employed to measure psychological empowerment. This scale is a self-report questionnaire created to measure the four dimensions of psychological empowerment conceptualised by Thomas and Velthouse (1988) as meaning, competence, self-determination, and impact. This instrument comprises of 12 items, with three items for every psychological empowerment dimension gauged through a Likert scale. The instrument's reliabilities was obtained through a sample of mid-level employees working in an industrial organisation and insurance company where n=393. The results revealed an excellent fit with Cronbach's Alpha reliability of 0.72.

All the responses in the present study are made on a five-point Likert scale on gauging questions pertaining to perceptions of PSC and SE. Meanwhile, previously PSV and PE questions were measured on seven-point Likert scale, while SM was measured through true or false responses, all of which is not consistent with the five-point Likert scale. In order to unify all scales, the researcher modified all the instruments to utilise the five-point scales, for three reasons, namely five-point Likert scales are more practical. It is more widely used, and it is easier for scholars (Akın et al., 2009; Çetİn, 2013).

3.5.2.6 Demographic Variables

The present study's participants requested to provide their personal information including their gender, age, academic qualification, and experience working as a unit nurse, and type of words, position in this hospital, shift during work, and Length of time working at current hospital. These demographic variables are measured through a categorical scale. The List of Items of the Main Variables is presented in Table 3.2.

Table 3.2
List of Items of the Main Variables

Variable	Items	Source	Scale
Structural Empowerment	-Opportunity in your present job (3 items)	(Laschinger et al., 1996).	The Conditions of Work Effectiveness Questionnaire (CWEQ-II). The 19 item instrument used a 5-point Likert scale From None to A Lot. Additionally, 2 extra items are included for construct validation.
	- Support in your present job (3 items)		
	- Access to information in your present job (3 items)		
	- Access to resources in your present job (3 items)		
	- Opportunity for these activities in your present job (4 items)		
	- Work setting/job (3 items)		
	- Overall (2 items)		

Table 3.2 (Continued)

Variable	Items	Source	Scale
Prosocial Voice Scale (PSVS)	six self-report items	(Van Dyne & LePine, 1998)	5-point Likert scale (6 items)
Self-Monitoring Scale (SMS)	17 self-report items	(Oyamot et al., 2010)	5-point Likert scale (17 items)
Psychological Empowerment Scale	four dimensions	(Spreitzer, 1995b)	5-point Likert-type scale (12 items)
	-meaning,		
	3 items		
	-competence		
	3 items		
	-self-determination		
	3 items		
	-impact		
	3 items		
Hospital Survey on Patient Safety Culture (HSOPSC)	• Safety Culture Dimensions (Unit Level) 1. Supervisor/Manager Expectations & Actions Promoting Safety (4 items) 2. Organisational Learning-Continuous Improvement (3 items) 3. Teamwork within Units (4 items) 4. Feedback and Communication about Error (3 items) 5. Non-punitive Response to Error (3 items) 6. Staffing (4 items) 7. Communication Openness (3 items) • Safety Culture Dimensions (Hospital Level) 8. Hospital Management Support For Patient Safety (3 items) 9. Teamwork Across Hospital Units (4 items) 10. Hospital Handoffs and Transitions (4 items)	Developed by Westat under contract number 290-96-0004 (Sorra & Nieva, 2004b) developed by the Agency for Healthcare Research and Quality (AHRQ).	Ten subscales are rated on a 5-point Likert scale. For 34 items, the ratings are 1 (strongly disagree), 2 (disagree), 3 (neither), 4 (agree), and 5 (strongly agree).

3.6 Translation of Questionnaire

The entire questionnaire measures are developed in the English language. However, these themes are addressed to local people, which therefore necessitated the translation of the questionnaire into Arabic. Accordingly, reincarnation which proposed by Brislin (1980) is employed. Back translation is commonly utilised to test the accuracy of translation in a survey study (Douglas & Craig, 2007) and in a multi-country study (Brislin, 1980). Furthermore, back translation used in social science to test the accuracy of translation and errors in it (Brislin, 1980; Douglas & Craig, 2007). For instance, in marketing, back translation is commonly used for problem identification and determination of mistakes (Douglas & Craig, 2007).

The original English version of the questionnaire is translated into Arabic by a native Arab, with full fluency in both languages and an expert in the field of health. The translated version is then translated back into English by a fluent expert to allow the researcher to conduct a comparison between the original and the back translated version. Following the comparison, no major paraphrasing is required for any item.

3.7 Questionnaire Design

The questionnaire's final look will be in a booklet form with 6 main parts. Sudman and Bradburn (1982) contended that a booklet type questionnaire has many benefits and these type of questionnaire include prevention of lost or misplaced pages, easier to turn pages, professional look and convenient handling, double page format for questions concerning multiple-events/persons. The participants in this survey were requested to indicate their

selected response. Furthermore, an introductory letter is attached to the questionnaire as mentioned previously. This letter will inform the participants regarding the research purpose, requesting their participation and assuring them of their anonymity and finally leaving instructions for return. The participants may communicate with the researcher if they wish to do so. This introductory letter assists in promoting high response from participants (Sekaran, 2003). So, in this study, a survey questionnaire which consist of components is explained in Table 3.3.

Table 3.3
Components of Questionnaires

No.	Component	No. Items
1	Demographics	9
2	Patient Safety Culture	34
	a) Work Area/Unit	
	b) Your Supervisor/Manager	
	c) Communication	
	d) Your Hospital	
3	Psychological Empowerment Scale	12
4	Structural Empowerment Scale	21
5	Prosocial Voice Scale	6
6	Self-monitoring	17
	Total	99

3.8 Pilot Study

A pilot study is a small-scale project that gathers data from the respondents in the same way it formed the actual study respondents (Zikmund et al., 2010). It is generally a guide that drives the researchers to the actual study and examines the inconsistencies of the research and determines whether or not the procedures will proceed as planned. Pilot studies are crucial as they improve survey questions and minimise study errors (Zikmund et al., 2010). Moreover, the importance of the pilot study is the fact that it enhances the

questionnaires (Neuman, 1997). The general size of the pilot study differs from 25 to 100 subjects (Cooper & Schindler, 2008).

Due to the above plausible reasons, the researcher conducted a pilot study and questionnaires were distributed to 65 hospital nurses in Yanbu's Royal Commission Medical Centre, located in Yanbu Alsinayah, Almadinah region, Saudi Arabia. As a result, 40 completed questionnaires were returned. In other words the response rate for the pilot test was 61%. The purpose of the pilot test is to test the reliability of the measurement tools in this study and feedback from respondent about the wording difficulties, and the questionnaire layout design. In addition to answering these questions, the nurses mentioned that the researcher should increase the writing size. The final questionnaire will be prepared by slightly increasing the writing size. The raw data from the pilot test was analysed by Social Package for Social Sciences (SPSS) version 19 to produce the descriptive and reliability test results.

In Table 3.4, the demographic profile shows most of the respondents were females with 87.5% from the total number. The average age of respondents in this pilot study is between 31-50 years, while the level of education is divided into associate degree (diploma equivalent) and baccalaureate (degree equivalent). The most experienced respondents in the nursing profession spanned between 11 to 15 years. Most of the respondents were staff nurses attached to the paediatric department of the hospital, 32.5% and 52.5% respectively.

Almost all of the respondents have been assigned mostly to the night shift (47.5%).

Finally, most of the respondents have been attached to the current hospital for five years

or more (64.0%).

Table 3.4
Demographic Profile of Pilot Study

Item	Profile	Frequency	Percentage
1. Gender	Male	5	12.5
	Female	35	87.5
2.Age	20-30	6	15.0
	31-40	12	30.0
	41-50	13	32.5
	51-60	9	22.5
3.Education	Associate degree	2	5.0
	Baccalaureate	38	95.0
4. Worked in nursing profession	1 to 5 years	7	17.5
	6 to 10 years	10	25.0
	11 to 15 years	13	32.5
	16 to 20 years	2	5.0
	21 years or more	8	20.0
5. Nursing currently assigned to work in	Medical	3	7.5
	Surgical	6	15.0
	Paediatrics	13	32.5
	Intensive Care	6	15.0
	Renal Unit	3	7.5
	Maternity	2	5.0
	ER	2	5.0
	Orthopaedic	5	12.5

Table 3.4 (continued)

Item	Profile	Frequency	Percentage
6. Position in this hospital	Staff Nurse	21	52.5
	Charge Nurse	14	35.0
	Head Nurse	5	12.5
7. Shift usually work	Day	8	20.0
	Evening	10	25.0
	Night	19	47.5
	Other	3	7.5
8. Length of time working at current hospital	less than one year	2	5.0
	More than one year to two years	11	27.5
	More than two years to five years	4	10.0
	Five years or more	23	57.5

3.8.1 Reliability Test

The instrumentation consistency was tested using the reliability, where Cronbach Alpha value was used to identify the scale in this study using SPSS version 20. The details of the Cronbach Alpha value results are shown in the Table 3.5.

Table 3.5
Result of Cronbach Alphas of the Main Variables in Pilot Study

Variables	Number of Items	Label	Cronbach Alpha
Patient safety culture (PSC)	34	B1to B34	.924
Psychological empowerment (PE)	12	C1to C12	.894
Structural empowerment (SE)	21	D1 to D21	.907
Prosocial voice (PSV)	6	E1 to E6	.937
Self-monitoring (SM)	17	F 1 to F17	.964
Overall	90	5 Sections	.925

By referring to Table 3.5, the Cronbach Apha values for all measurements are valued above 0.7, which is an ideal cut-off number for reflecting good internal consistency (Nunnally, 1978). Therefore, it was concluded that the measurement tool was consistent and reliable for data collection of the main survey.

3.8.2 Summary of Pilot Study

In the study, the result was based on a 40 questionnaire sample collected from respondents to examine the effect of SE and PSV on the PSC moderated by SM and mediated by PE in Saudi Public Hospitals. According to the suggestions provided by some respondents, the researcher will improve the final questionnaires by increasing the writing size, format, and layout to make the instrument more attractive and easier to answer for respondents. Overall, Cronbach Alpha is .925.

3.9 Data Analysis Techniques

The data in this study used for preliminary and inferential analyses. The techniques used in this study for data analysis were descriptive analysis, reliability test, content validity, factor analysis, correlation test, and multiple regression analysis. These analyses performed by using SPSS.

3.9.1 Descriptive Analysis

Sekaran (2003) and Trochim (2006) described descriptive statistics as a technique where in maximum, minimum, means, standard deviations, and variance can be obtained for variables measured on an interval scale. According to Sekaran (2003), descriptive

statistics described the phenomenon under study and accordingly, in the present one, descriptive statistics is run to obtain details concerning the data in general and the main variables in particular.

3.9.2 Reliability Analysis

Reliability analysis is used for the assessment of consistency level between measurements of a variable (Hair et al., 2010). Reliability refers to the level to which a variable or a set of variables is consistent with what it is expected to measure (Hair et al., 2010). For example, consistency of values remained even if multiple measures are taken. Hence, reliability indicates the measure's internal consistency. Zikmund et al. (2010) claimed that a measure is only reliable when different measuring tests reveal the same result. Reliability generally relates to measurement error, indicating that the higher reliability; the greater relationships between the construct and indicators where the construct explains more of the variance in every indicator (Hair et al., 2010).

The internal consistency is generally gauged through a coefficient alpha. A coefficient alpha is the most widely used estimate of a multiple-item scales' reliability and it represents internal consistency by calculating the average of all potential split-half reliabilities for a multiple item scale (Zikmund et al., 2010). The coefficient alpha reveals the convergence of different items or lack thereof (Zikmund et al., 2010). It ranges in value from 0 (no consistency) to 1 (complete consistency) (Hair et al., 2010; Pallant, 2007; and Zikmund et al., 2010).

Scales having coefficient alpha lying between 0.80 and 0.95 are viewed to possess very good reliability, those between 0.60 and 0.70 are viewed to possess fair reliability and those lower than 0.60 are considered to have poor reliability (Zikmund et al., 2010). According to Nunnally (1978), a minimum level of 0.60 reliability is required, while Hair et al. (2010) stated that the values of 0.60-0.70 are considered the lowest limit of acceptability. In other words, higher values indicate greater reliability (Pallant, 20070. The present study considered the threshold of acceptability level to be at least 0.70 as recommended by Nunnally (1978).

3.9.3 Content Validity

This refers to the sufficiency with which a measure is sampled from the intended universe or content field (Pallant, 2010). It depends on the effective ascertainment of the dimensions and elements of a concept (Sekaran, 2003) or the extent to which measurement scales encompass the questions under investigation sufficiently (Cooper and Schindler, 2008). Data is considered to have satisfied the content validity if judges are of the consensus that the instruments contain items that appropriately encompass the variables under measurement (Sekaran, 2003; Zikmund et al., 2010).

According to Hair et al. (2010), content or face validity of a scale includes a regular but subjective analysis of the ability of the scale to evaluate what it is intended to. Sekaran (2003) stated that face validity is considered as a basic, or minimum index of content validity. Hence, the researcher ensures that the content validity of the items is met on the basis of the health sectors' views and feedback.

3.9.4 Factor Analysis

Hair et al. (2010) and Pallant (2001) described factor analysis as a set of techniques that explain the underlying data matrix structure. The primary objective behind this type of analysis is to categorize the factors into groups (Sekaran, 2003). Factor analysis is also utilised to establish the scales goodness of fit as they are all adapted from other prior research. This analysis is also carried out to minimise the number of items utilised to measure the variables in order to maintain the minimum loss of information (Hair et al., 2010).

Factor analysis has two main approaches namely the exploratory approach and the confirmatory approach. The former type is conducted when the researcher is not sure of the number of factors exiting in a set of variables, while the latter type is conducted when the research holds theoretical expectations concerning the number of factors and the variables relationship to certain factors. The confirmatory factor analysis is suitable for testing construct validity as it determines how well the researcher's theory concerning the factor structure fits the real observations (Zikmund et al., 2010). However, because this study attempts to determine and observe the underlying dimensions of a set of variables, exploratory factor analysis (EFA) is considered justifiable and appropriate.

3.9.5 Correlation Analysis

This type of analysis is conducted when the researcher is desirous of describing the level, strength and direction of the relationship between two variables that are measured on a continuous scale. A positive correlation signifies that when one variable increases, the

other follows, while a negative correlation is when one variable increases, the other decreases (Pallant, 2007). Pearson Correlation analysis is employed in this study to test the main variables relationships.

3.9.6 Regression Analysis

Standard and hierarchical regression analysis used to analyze the data, descriptive analysis, content validity, factor analysis, test of reliability, correlation test, and multiple regression analysis were performed. These analyses were run on Statistical Package for Social Science program (Version 20). Standard and hierarchical regression analysis is often conducted to examine the relationship between variables and to test the hypothesis. Prior to this test, four assumptions are analysed namely, normality, linearity of the relationship, independence of error term and homoscedasticity (Coakes, et al., 2006; Hair et al., 2010). Normality is described as the score on each variable that is normally distributed and can be confirmed by examining the histogram scores of each variable (Pallant, 2007) while linearity is described as the linear relationship between two variables.

Homoscedasticity is when observing the scatterplot of scores, a rough straight line is observed as opposed to a curve (Pallant, 2007). It is the similarity of the variability of scores in both variables (X and Y), so that the scatterplot shows a fairly even cigar shaped figure along its length (Pallant, 2007). Normality, linearity and homoscedasticity assumptions are confirmed through the residual scatterplot, histogram and normal probability plot (P-P plot) of the regression standardised residuals (Coakes et al., 2006; Hair et al., 2010). On the other hand, independence of error term is assessed with the help

of Durbin-Watson statistics with the value between 1.50 and 2.50 indicating independence of observation (Coakes et al., 2006).

3.10 Summary of the Chapter

The present chapter explained the research design and approach used in the study. It discussed population and sampling design, development of research instruments, data collection procedures, and the statistical tests used for the analysis of data and for the hypotheses testing. A quantitative approach used to achieve the research objectives. The sampling method used is cluster sampling and the present study's sample comprised of 127 Public Hospitals in the central and eastern region in Saudi Arabia. 30 questionnaires distributed on each concerned hospital.

In this study, the instruments employed for the measurement of the main study variables are adapted from prior studies. Therefore, several statistical tests including factor analysis, reliability analysis, correlation analysis and multiple regressions had been conducted for data analysis.

CHAPTER FOUR

DATA FINDINGS AND ANALYSIS

4.1 Introduction

This chapter describes the outcome of the data which analyze through the distributed questionnaires among public hospitals at Saudi Arabia. The data subjected to the descriptive and inferential analysis. This chapter has been divided into 5 sections which consist of discussions about the data response rate, description of the sample, data normality, and reliability analysis and finally the last section presents the results obtained by multivariate analysis carried out. Those sections clearly define the effect of prosocial voice and structural empowerment on patient safety culture which moderated by self–monitoring and mediated by psychological empowerment at Saudi public hospitals. At the end, the results that show the effect of the relationships between among the variables to healthcare organization will be discussed.

4.2 Survey Distribution and Data Response Rate

By using the geographical cluster method of sampling, two major provinces (regions) were selected due to higher population therein. A sample of 127 healthcare organization were selected in the Kingdom of Saudi Arabia (KSA); 73 from the Central 54 from the Western region. These are all public hospital and operate under the Ministry of Health (MOH) in the Kingdom. There were 3810 survey questionnaire were distributed to 127 public hospitals. Before the survey was conducted, questionnaires were prepared in dwi-language which is the Arabic and English version to give flexibility for the respondents to

give theirs' response and feedback. Prior to distributing the surveys, an employee at the executive level in each participating hospitals was contacted and was explained about the details of the survey procedure. The time limit for collection was given as one month, however late responses were still acceptable. The key contact persons were asked to contact the researcher once they had collected some of the questionnaires. However, the minimum number was not specified as to give flexibility and less pressure to them. Accordingly, this technique was the most effective approach for gaining high response rate from a large sample size with minimum cost and time (Oppenheim, 2000; Sekaran, 2000).

The survey questionnaires were prepared in Arabic and English version to give flexibility for the respondents to respond in either medium they were comfortable with. Starting from 18th May 14 to 17th June 14, a total of 3810 survey questionnaires consisted of 1715 Arabic version (45 percent) and 2095 English version (55 percent) were handed over to the key contact persons for distribution. Progressively, 1550 questionnaires (40.6 %) were handed over in the first week followed by 1200 questionnaires (31.5 %) on the second week, 860 questionnaires (22.5 %) on the third week and 200 questionnaires (5.4 percent) on the middle of June 2014. The collection of the questionnaires from the contact persons began on the 26th May 2014 and extended until 4th July 2014. Table 4.1 demonstrates summary of the survey distribution and response.

Table 4.1
Summary of the Survey Distribution and Response

Description	N	%
Total questionnaires distributed to key contact persons	3810	
Arabic version	1715	45
English version	2095	55
Progress of questionnaires distribution:		
1st week 18th May 14	1550	40.6
2nd week	1200	31.5
3rd week	860	22.5
4th week	200	5.4
Total questionnaires collected from the key contact persons	2117	55.5
Arabic version	804	38
English version	1313	62

Total 2117 questionnaires returned and therefore the response rate is calculated by dividing the number of questionnaires returned or completed with the number of participants of the survey (Zikmund *et al.*, 2010). Out of 3810 questionnaires distributed, only 2117 participated (55.5 %) at the end of the data collection period. Based on reviewed, 208 questionnaires (5.4%) were excluded because of numerous missing data per survey.

To deal with missing data, the procedure was to identify the cases and variables that have a great percentage of missing data (10% or more). These cases and/or variables were then deleted from the analysis (Hair *et al.*, 2007). Under 10%, any of the imputation methods can be applied (Hair *et al.*, 2010). Because in the present study the missing data were lower than 10% of the total cases and/or variables, estimating the missing values by substituting the mean (replacing missing values was by calculating the mean and inputting them in data file) was performed (Hair *et al.*, 2007). Like missing data, outliers also can impact the validity of the researcher's findings and therefore must be identified and dealt with (Hair *et al.*, 2010). Outlier is a value that lies outside the normal range of the data. Box-and-whisker plot are particularly useful for spotting outliers (Zikmund *et*

al., 2010). The boxplot, or box-and-whisker plot, is a technique used frequently in exploratory data analysis; a boxplot reduces the detail and provides a different visual image of the distribution's location and outliers (Cooper & Schindler, 2008). Because factor analysis is sensitive to outlying cases, they need to be identified and dealt with either by removing them from the data set or transforming them (Coakes, Steed, & Ong, 2010). To detect outliers, all the variables were examined. Outliers can either be deleted from the data set or, alternatively, by given a score for that variable that is high but not too different from the remaining cluster of scores (Pallant, 2007). This study opted to delete every case that had outliers. As a result, 116 cases (3%) were excluded.

After deleting the missing data and outliers, the questionnaires that used for further data analysis were 1793 and this data yield a valid response rate of 47% from the total number distributed (1793/3810). The response rate of this study is similar to previous studies which has been reported on Saudi hospital staffs. For example, the response rate in Al-Ahmadi's (2010) study to Assessment of patient safety culture in Saudi Arabian hospitals was 47.4%, and the response rate of the study carried out by Mitchell (2009) on nurses living and working in Saudi hospitals was 48%. Furthermore, according to Damanhouri (2002), previous studies in Saudi Arabia have found low response rates, being approximately between 40% and 50%, for government hospital.

The responses of 1793 (or 47%) in this study was considered sufficient for the following reasons. First of all, the data were collected in a self-administered manner, without previous contact or personal relationship with the hospital nurses. Secondly, the total number of 1793 responses is greater than Bartlett, Kotrlik, and Higgins's (2001)

suggestion that for regression type analysis, the sample size should not fall below five times the number of independent variables because if this minimum is not followed, there is a risk for over fitting, thus missing generalizability (Hair *et al.*, 2010).. Thirdly, the response rate is somewhat similar to that reported in the previous study.

As a result of the process above, the obtained data was valid in proceeding with factor analysis, and multiple regressions.

Therefore, the collected data was valid in proceeding with factor analysis and inter-correlation. Table 4.2 demonstrates the response rate and usable response rate.

Table: 4.2
Sample Study Response Rate (n=1793)

Questionnaire Response	Frequency	Rate
No. of Questionnaire Sent	3810	100%
No. of Questionnaire returned	2117	55.5%
No. of Questionnaires excluded	324	8.5%
No. of usable questionnaires	1793	47%

4.3 Survey Results

The questionnaire survey results comprise the outcomes from a normality test, descriptive analysis, factor analysis and multiple regression analysis.

4.3.1 Normality Check

Normal distribution of data is vital for various type of computation for data analysis such as factor analysis and multivariate analysis (Pallant, 2007). Normality may be defined as a symmetrical, bell-shaped curve which has the highest frequency of data value in the

middle and smaller frequencies towards the edges of the curve. There are a number of statistical methods exists to assess the normality of these distributions. In this study, normality was assessed by determining the value of kurtosis and skewness statistic as recommended by Ferguson and Cox (1993). The skewness value supports a sign of the symmetry of the distribution whereas kurtosis value provides information about the peakness of the distribution. Perfectly normal distribution has a zero value of kurtosis and skewness, but it is not very uncommon occurrence in social sciences (Pallant, 2007). For a large sample size of higher than 200, bit of deviations would not make a substantive difference in the analysis (Tabachnick & Fidell, 2007). In addition to their argument, Muthen and Kaplan (1985) stated that some degree of univariate skew and kurtosis is acceptable for the majority of the variables if none of the value exceeds ± 2.0. Ferguson and Cox (1993) stated in terms of percentage where the variables adversely influenced by either skew and/or kurtosis should be calculated and less than 25 percent of the variables adversely affected by either skewness or kurtosis are taken as cut off point for acceptability.

By adopting these two recommendations for evaluating the normality, the analysis found that none of the items in the questionnaire exceeds the level of recommended skewness statistic. Similarly there is no item in kurtosis which exceeds the recommended limit of ±2.0 by the earlier researchers. Only variables of pro-social voice are adversely affecting the skewness and all other factors are positively skewed whereas item self-monitoring has a positive value in kurtosis and all other items are having negative kurtosis value. The impact of even these value is not very high because all of them ranging between -0.075 and 0.75. It was concluded that the majority of the data lies normally distributed and that

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the data set was appropriate for further analysis. Table 4.3 shows details analysis of the data normality assessment. Table also shows the value of Mean and Median which confirms the argument that both are very closely lying and the standard deviation among the data is not very high.

Table 4.3
Skewness Or Kurtosis Statistic outside ±2.0 Range With Mean And Median

Questionnaire Items	Skewness		Kurtosis		Mean	Median	Std. Dev.
	Statistics	Standard Error	Statistics	Standard Error			
Patient Safety Culture	.142	.215	-.202	.427	3.2848	3.2918	.20096
Psychological Empowerment	.344	.215	-.435	.427	3.3948	3.3526	.33841
Structural Empowerment	.254	.215	-.075	.427	3.3906	3.3680	.25328
Pro-Social Voice	-.362	.215	-.362	.427	3.4726	3.5128	.37282
Self-Monitoring	.558	.215	.724	.427	3.2158	3.2217	.22583
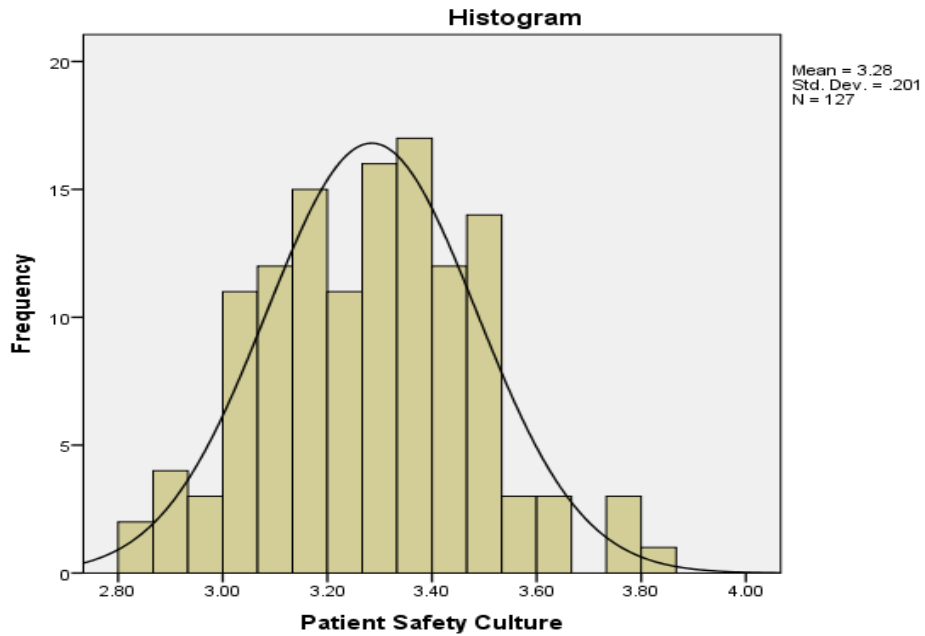
Figure 4.1
Normality of Patient Safety Culture
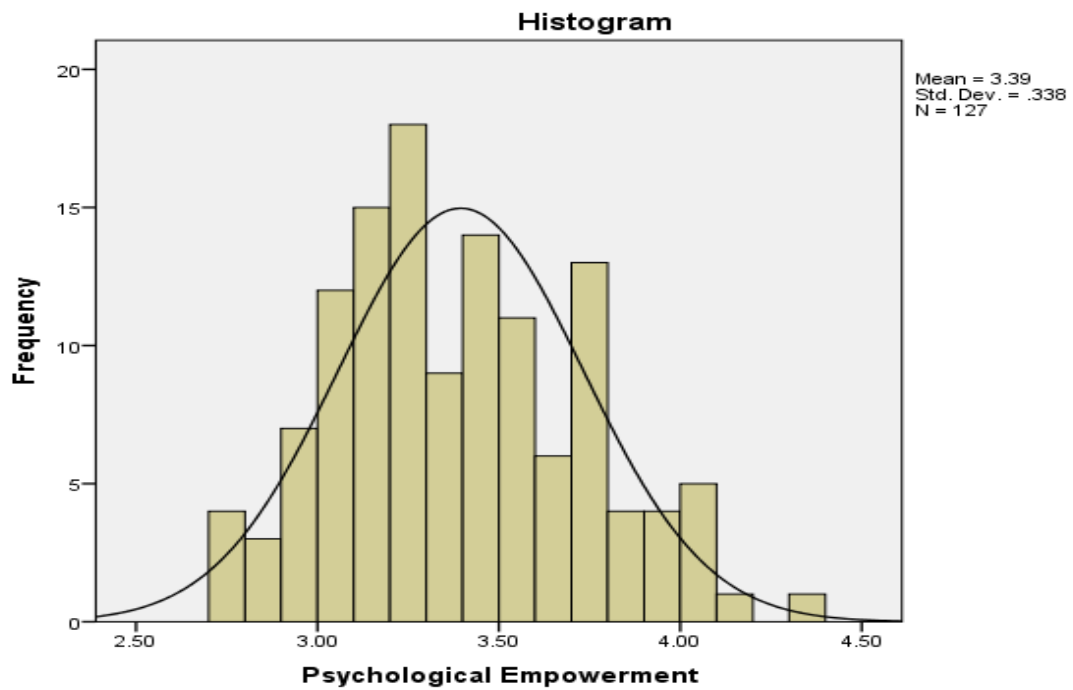
Figure 4.2
Normality of Psychological Empowerment
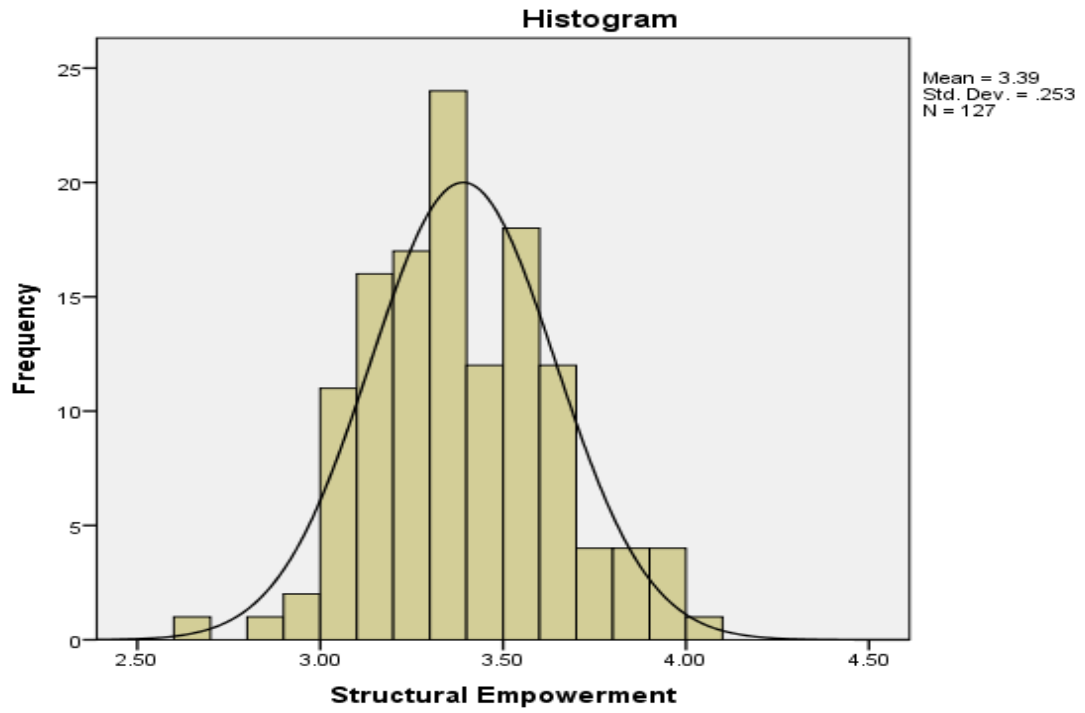
Figure 4.3
Normality of psychological empowerment
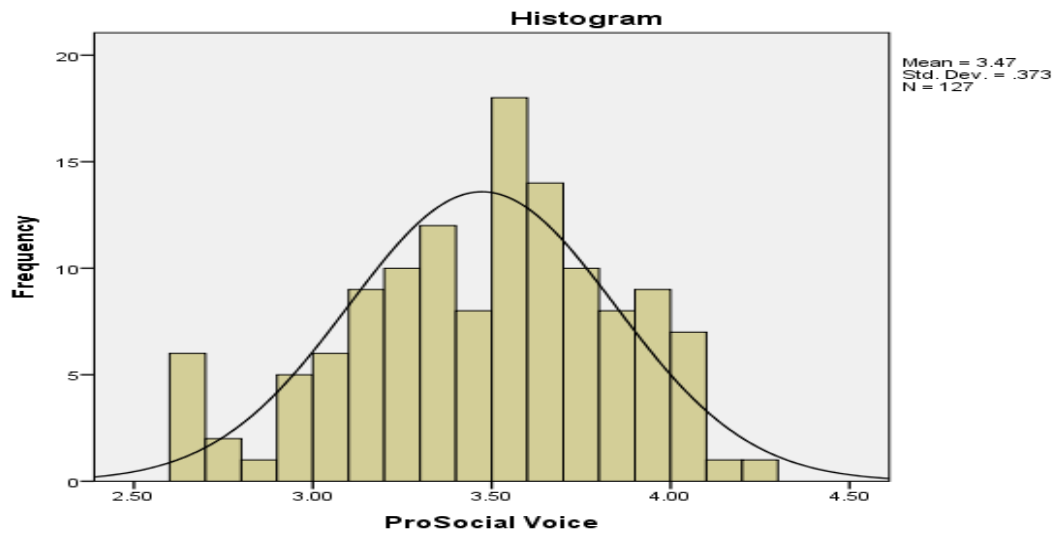
Figure 4.4
Normality of Prosocial Voice
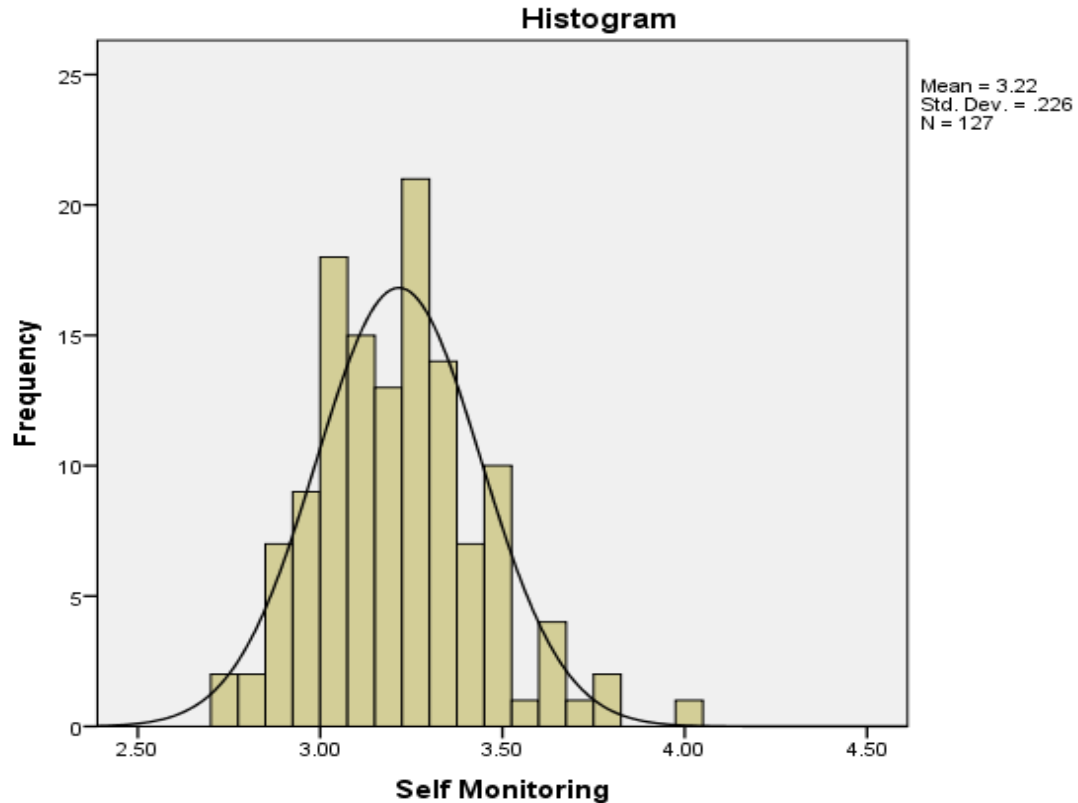
Figure 4.5
Normality Of Self-Monitoring

4.3.2 Demographic Information

30 questionnaires distributed in each of the 127 hospitals and healthcare units in Kingdom of Saudi Arabia in two main regions; Central and Western because of the higher populations residing in these regions. The staff workers in the nursing units have been the main focus for the data collection through these questionnaires. While discussing the demographic information, among the respondents, 29% and 71% have been female and male respectively. These respondents have been in various age brackets. Out of which, 13% were between the age of 20 and 30, 33% belong to 31 and 40 years age group, 24% were from 41 and 50 years of age and 30% were from 51 years or more.

Therefore, the survey conducted responded by the middle and senior aged nursing staff which approximately 87% of the total sample size. Majority of the nursing staff does not possess higher educational qualification because 50% of them earned only Associate Degree/Diploma where as 47% hold Bachelor's Degree and only 3% have acquired Masters' Degree in the sample.

Most of the nursing staff have overall manageable work experience and very few who have little experience in this profession within the collected sample data. Only 8% of the respondents are fresh nursing staff members. 21% of the sample data have work experience between 1 to 5 years, 22% have experience between 5 to 10 years, 37% have experience of working in the nursing field for 11 to 15 years, 11% are highly experienced i.e. have worked between 15 to 20 years and only 1% exists who have more than 21 years of work experience. This shows that nursing staff about 70% is quite experienced to work in Saudi Hospitals and healthcare units. While in the current employment in the healthcare organization about 41% of them work within a year, however, 23% have been working for the last two years and 36% working for the last five years or more in the current organization. This means about 59% of the respondents from various hospitals tend to stay because they service stay is 3 or more years in the current healthcare organization and the junior staff members as compared to this number is lesser (41%) only.

These nursing staff has been deployed in many sections of the healthcare units. Most of the staff responded in this sample is responsible to look after in the General Medical (15%), Surgical (27%), Pediatrics (26%), Intensive Care units (17%) and Renal Units

(11%). Only 4% of nursing staff has been deployed in Maternity, Orthopedic, Emergency and other units in the healthcare organization in the sample. The nursing staff has been assigned various positions in the healthcare organizations in the Kingdome. 6% of the respondents are working as Nursing Directors or similar posts, 46% of the respondents are working as Staff Nurse. Remaining nursing staff has been assigned various positions such as Deputy Nursing Head (9%), Head Nurse (15%), Charge Nurse (22%) and others (2%).

When a question asked about working time in the healthcare organizations such as Day, Evening, Night or any other arrangement, the respondents provided information about it. There has been 26% nursing staff works in the day time, 18% in the evening shift, 22% in the night shift and 33% works with different arrangement of working hours, which is one third of the total sample size. Following table 4.4 summarizes the demographic information of the participants:

Table 4.4
Respondents Demographic Information (n=1793)

Demographic Item	Classification	Frequency	Percentage
Gender	Female	527	29%
	Male	1266	71%
Age	Upto 30 Years	232	13%
	31-40 Years	586	33%
	41-50 Years	438	24%
	51-60	532	30%
Educational Level	Associate Diploma	888	50%
	Baccalaureate Degree	860	48%
	Master Degree	45	2%
Overall work Experience	Upto 1 Year	147	8%
	1 - 5 Years	375	21%
	6 - 10 Years	399	22%
	11 - 15 Years	667	37%
	16 - 20 Years	194	11%
	21 or more	11	1%

Table 4.4 (continued)

Demographic Item	Classification	Frequency	Percentage
Nursing Units / Departments	Medical	267	15%
	Surgical	479	27%
	Pediatrics	468	26%
	ICU	314	17%
	Renal Unit	199	11%
	Maternity	27	2%
	Emergency Room	18	1%
	Orthopedic	1	0%
	Others	20	1%
Job Titles	Nursing Director	115	6%
	Dep. Nursing Director	168	9%
	Head Nurse	266	15%
	Nursing Incharge	386	22%
	Staff Nurse	828	46%
	Others	30	2%
Nature of Shift	Day	470	26%
	Evening	327	18%
	Night	396	22%
	Others	600	34%
Current Job Experience	Upto 1 Year	249	14%
	1 - 2 Years	486	27%
	2 - 5 Years	417	23%
	5 or more	641	36%

4.3.3 Descriptive Analysis

The general statistical description of variables used in this study was examined by using descriptive analysis. Statistical values of means, standard deviation, minimum, and maximum were calculated for the independent variable SE and PSV, the mediating variable PE, the moderating variable SM, and the dependent variable PSC. The results of these statistical values are shown in Table 4.5. As mentioned in Chapter 3 the variables were measured on a five Likert point scale.

Table 4.5

Mean, Standard Deviation, Minimum, and Maximum of PSC, SE, PSV, SM and PE (N = 1793)

	N	Minimum	Maximum	Mean	Std. Deviation
PSC	1793	1.00	5.00	3.3053	.38263
SE	1793	1.00	5.00	3.3969	.47601
PSV	1793	1.00	5.00	3.4739	.69122
SM	1793	1.00	5.00	3.2153	.48915
PE	1793	1.00	5.00	3.4236	.57588
Valid N (listwise)	1793				

The standard deviation defines the spread or variability of the sample distribution values from the mean, and is perhaps the most valuable index of dispersion (Hair *et al.*, 2010; Zikmund *et al.*, 2010). So, if the estimated standard deviation is large, the responses in a sample distribution of numbers do not fall very close to the mean of the distribution. If the estimated standard deviation is small, the distribution values are close to mean (Hair *et al.*, 2010). In other words, if the estimated standard deviation is smaller than 1, it means the respondents were very consistent in their opinions, whereas in case the estimated standard deviation is larger than 3, it means the respondents had a lot of variability in their opinions (Hair *et al.*, 2010).

Table 4.5 shows the summary of means of the independent variables SE and PSV, dependent variable PSC, moderating variable SM and mediating variable PE. The mean for all variables was between 3.2 and 3.4. Standard deviations for all variables were less than 1.00, indicating that the variations on the participants' opinions were small,

4.4 Data Analysis Techniques

There are two type of data analysis were conducted in this study which are preliminary analysis and inferential analysis. The preliminary analysis consist reliability analysis, normality check and descriptive analysis, while the inferential analysis were factor analysis, correlation analysis, regression and other multivariate analysis.

4.4.1 Reliability Test (Cronbach Alpha)

the reliability test Cronbach's Alpha has also been applied to each section of the data; Patient Safety Culture, Psychological Empowerment, Structural Empowerment, Pro-social Voice and Self-Monitoring. The reliability test result seems good reliability among the variables used for recording the response from the nursing staff working at public hospitals. The Cronbach's Alpha of this study is similar to previous studied that have been conducted by Armellino (2010), Hill (2011) and Aboshaiqah (2013). Table 4.6 represents their respective value.

Table 4.6
Cronbach's Alpha Values for Each Section of the Data

Data Sections	Cronbach's Alpha	No. of Items
Patient Safety Culture	0.75	34
Psychological Empowerment	0.70	12
Structural Empowerment	0.73	21
Pro-Social Voice	0.60	6
Self-Monitoring	0.70	17
Overall Data	0.84	90

4.4.2 Factor Analysis

According to Hair *et al.* (2010) and Pallant (2001), factor analysis is a set of techniques used to explain the underlying structure of a data matrix. The main objective of this type of analysis is to divide the factors into more manageable groups of factors (Sekaran, 2003). A second reason for using factor analysis is to establish goodness of fit for the scales used since they are all adapted from other research. Factor analysis is also conducted to reduce the number of items used to measure the variables to keep the minimum loss of information (Hair *et al.*, 2010).

There are generally two main approaches to factor analysis – the exploratory factor approach (EFA) and the confirmatory factor approach (CFA). The EFA or the exploratory type is performed when the researcher is uncertain about the number of factors that exist in a set of variables, while the CFA or the confirmatory factor analysis is performed when the researcher has theoretical expectations about the number of factors and which variables relate to which factor. In other words, the CFA is appropriate for examining construct validity because it tests how well the researcher's "theory" about the factor structure fits the actual observations (Zikmund *et al.*, 2010). As the present study aimed to identify and observe the underlying dimensions of a set of variables, exploratory factor analysis (EFA) was considered as justifiable and suitable.

Statistical measures to help assess the factor ability of the data include the following:

1. The result of Bartlett's test of sphericity (BTS) should come out as significant ($p<$ .05) in order to pronounce the suitability of the factor analysis. If the situation is

otherwise, i.e. the associated probability is more than .05, then there is a danger that the identify matrix is manifested (where the diagonal elements are 1 and the off diagonal elements are 0) which would make it irrelevant for the next step in the analysis (Kinnear & Gray, 1994).

2. Kaiser-Meyer-Olkin (KMO), measures the adequacy of the sample and its index, should range from 0 to 1. For the purpose of an effective factor analysis, its lowest value should be 0.6 (Tabachnick & Fidell, 2007). In other words, if the index is lower than .60, then KMO test will be irrelevant. Similarly, Kinnear and Gray (1994) indicated that the KMO value should be higher than .50 for the result to be suitable for further factor analysis. Hair *et al.* (2010) have came up with a rule of thumb in interpreting KMO values, as follows: .90 indicates a marvelous result, .80 indicates a meritorious result, .70 a middling result, .60 is a mediocre one, .50 is acceptable but not recommended while below .50 is not acceptable. Therefore, the above factor analysis criteria were applied in this research. In this study, the threshold applied to an acceptable level of KMO was at least 0.6 and the BTS was significant as suggested by Tabachnick and Fidell (2007), indicating that the factor analysis is appropriate.

Factor analysis was performed on all items that measured the independent variables (structural empowerment and perception of prosocial voice), mediating variable (Psychological Empowerment), moderating variable (Self-Monitoring) and dependent variable (Patient Safety). Factor analysis is an established tool that helps determine the construct adequacy of a measuring device (Cooper & Schindler, 2008). Factor analysis was conducted on the data collected from 1793 nursing staff from 127 healthcare

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organizations. Tabachnick and Fidell (2007) suggest that it is comforting to have at least 300 cases for factor analysis. A sample of 100 cases is acceptable but a sample size of more than 200 cases is preferable (Coakes *et al.*, 2010). The researchers generally would not factor analyze a sample of fewer than 50 cases and preferably the sample should be 100 or larger (Hair *et al.*, 2010). In a similar vein, according to Bartlett *et al.* (2001), factor analysis should not do with less than 100 cases. In addition, some researchers even propose a minimum of sample size is five cases per variable (Bartlett *et al.*, 2001; Coakes *et al.*, 2010; Hair *et al.*, 2010), and a more acceptable sample size would have 10 cases per variable (Bartlett *et al.*, 2001; Hair *et al.*, 2010).

Other researchers even propose a minimum of 20 cases for each variable (Hair *et al.*, 2010). In the present study, the total number of usable questionnaires for factor analysis, that is, 1793 was greater than the 178 minimum number suggested by Bartlett *et al.* (2001), Coakes *et al.*, (2010), Hair *et al.* (2010), and Tabachnick and Fidell (2007). However, Meyers, Gamst, and Guarino's (2006) ratio of ten subjects per item, and Hair *et al.*'s (2010) ratio of 20 subjects per item was also met.

4.4.2.1 Factor Analysis of Patient Safety Culture

The 34 items in the patient safety culture have been analyzed subjected to principal component analysis using SPSS version 20. Following the steps outlined above, the first step was to determine the assessment of the suitability of the data for factor analysis. Inspection of the correlation matrix showed the presence of many coefficients of 0.2 and above which indicated the data was appropriate for factor analysis. The Kaiser-Meyer-Olkin value was 0.8 exceeding the minimum value of 0.6 (Tabachnick & Fidell, 2007).

The Bartlett's test of Sphericity reached statistical significant ($p<0.05$), supporting the factorability of the correlation matrix.

The principal components analysis revealed the presence of ten components with eigenvalues exceeding 1, explaining a total of 48.5 percent of the variance with component 1 through 10. Component 1 showed eigenvalue value of 11.5 while the values for component 2 through 10 were 6.8, 4.8, 4.5, 4.2, 3.6, 3.5, 3.3, 3.2 and 2.9 respectively. A review of the scree plot revealed a clear break after ten components. Using the Catell's (1966) scree test, it was decided to retain the ten components for further investigation.

Patient Safety Culture was measured using 34 averaged items responded by healthcare organizations. The items included 14 negatively worded items which were reverse coded (patient safety culture Part-A; #5, # 7, # 10, and # 12; Part-B; #3, #4; Part-C; #6; and Part-D; #2, #3, #5, #6, #7, #9 and #11). A principle component factor analysis using varimax rotation was then conducted on the 34 items to determine which items should group to form dimensions. The criterion developed by Igbaria, Iivari, and Maragahh (1995) was used in the present study for cross loading. They recommended that a given item should load .50 or higher on a specific factor and whose loading is lesser than .35 on other factors. The Kaiser-Meyer-Olkin criterion was applied to extract the number of factors with only an eigenvalues equal or greater than one can be extracted (Kaiser, 1960). As a result, 10 factors with an eigenvalue of more than 1 were extracted. Table 4.6 represents the Initial and Extraction value for patient safety culture variables.

The results of the factor analysis can be found in Appendix E. The summary of the factor analysis for Patient Safety Culture scale is presented and factor loading in Table 4.7, Table 4.8, Table 4.9 and Table 4.10 below.

Table 4.7
Summary of Factor Analysis (Principal Component Analysis) Result for Patient Safety Culture Items

No.	Factorability assessment	Results	Value required for factor analysis
1	KMO measure of sampling adequacy	0.787	Min. value is 0.6
2	Bartlett's test of Sphericity	Approx Chi Square 6421.614 df 561 Significant < 0.001	$P < 0.05$
3	Strength of inter-correlations among items	Almost all values greater than 0.3	Correlation coefficient > 0.3

No.	Method used to determine the number of factors	Results	Remarks
1	Kaiser's criteria	Ten factors exceeded Eigenvalue of 1	Minimum Eigenvalue of 1 is acceptable to retain the factors
2	Catell's scree test	Ten factors retained	These ten factors were above the value of 1 and above the elbow of the curve

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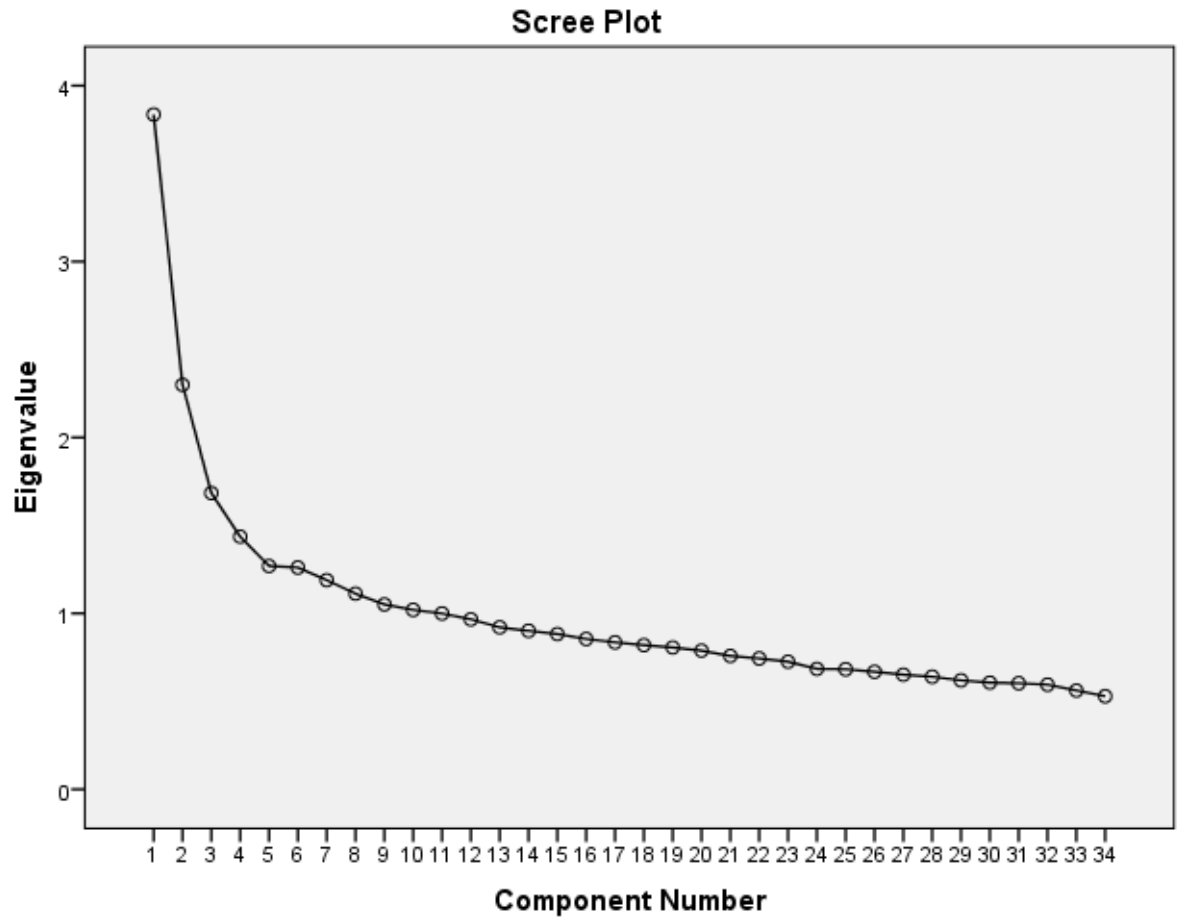
Fgure 4.6
Scree Plot of Patient Safety Culture

Table 4.8
Factor loading for Patient Safety Culture

Rotated Component Matrixa	Component									
	1	2	3	4	5	6	7	8	9	10
People support one another in this unit	.551							.110	.163	
We have enough staff to handle the workload	.668							-.117	-.108	.139
When a lot of work needs to be done quickly, we work together as a team to get the work done	.666	.168						.149		-.127
In this unit, people treat each other with respect	.574				.187	.134	.126	.187		
Staff in this unit work longer hours than is best for patient care	.494			.138	.326		.172			
We are actively doing things to improve patient safety	.201				.653				.107	
Staff feel like their mistakes are held against them					.714	.103				
Mistakes have led to positive changes here		-.176		.193	.276			.360	.579	.120
When one area in this unit gets really busy, others help out	.315		.142	.104				.573		
When an event is reported, it feels like the person is being written up, not the problem	.181				.317	.155		.430		.143
After we make changes to improve patient safety, we evaluate their effectiveness	.282	.131		.133	.160	.208		.434		

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Table 4.8 (Continued)

Rotated Component Matrixa	Component									
	1	2	3	4	5	6	7	8	9	10
We work in "crisis mode" trying to do too much, too quickly						.713		.103		
Staff worry that mistakes they make are kept in their personnel file		.134			.165	.718				
My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures	.108	-.177	.109	.161	-.185	.502	.250		.304	.164
We work in "crisis mode" trying to do too much, too quickly						.713		.103		
My supervisor/manager seriously considers staff suggestions for improving patient safety	.136					.200	.675		.146	
Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts		.152	.149				.694	.163		.109
My supervisor/manager overlooks patient safety problems that happen over and over	.108			.355		.471			-.155	-.249
We are given feedback about changes put into place based on event reports	.139		.391	.350	-.116	.166	.161			-.367
Staff will freely speak up if they see something that may negatively affect patient care			.707	.103						
We are informed about errors that happen in this unit		.149	.668							
Staff feel free to question the decisions or actions of those with more authority	.132	-.128	.475	.137		.166			-.367	.101

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Table 4.8 (Continued)

Rotated Component Matrixa	Component									
	1	2	3	4	5	6	7	8	9	10
In this unit, we discuss ways to prevent errors from happening again		.159	.525		.186					
Staff are afraid to ask questions when something does not seem right	.129	.115	.287		.344			-.393		.149
Hospital management provides a work climate that promotes patient safety		.205					.112	-.156	.607	
Hospital units do not coordinate well with each other	.120	.454	.292	-.174			.149		.201	.298
Things "fall between the cracks" when transferring patients from one unit to another	.179	.511						-.170	.355	
There is good cooperation among hospital units that need to work together		.581				.150				
Important patient care information is often lost during shift changes		.590	.182				.179			.124
It is often unpleasant to work with staff from other hospital units		.498		.437						
Problems often occur in the exchange of information across hospital units		.423		.433				.120	.151	.135
The actions of hospital management show that patient safety is a top priority		.225		.491				.111		.141
Hospital management seems interested in patient safety only after an adverse event happens				.177						.693

Table 4.8 (Continued)

Rotated Component Matrixa	Component									
	1	2	3	4	5	6	7	8	9	10
Hospital units work well together to provide the best care for patients				.661						
Shift changes are problematic for patients in this hospital				.234			.344	-.111	-.304	.466

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 11 iterations.

The above table 4.8 shows that the factor loading for Patient Safety Culture which is

highlighted revealed that 2 items load strongly on component 6. Item 2 showed the

highest loading (0.718) followed and item 1 (0.713). However, the lowest factor loading

showed on component 3 item 1 (0.391).

Table 4.9
The list of statement items in each factor for Patient Safety Culture (with questionnaire statement number given in the brackets)

Factor	Statement items
1	(C1) We are given feedback about changes put into place based on event reports (C2) Staff will freely speak up if they see something that may negatively affect patient care (C3) We are informed about errors that happen in this unit (C4) Staff feel free to question the decisions or actions of those with more authority (C5) In this unit, we discuss ways to prevent errors from happening again (C6) Staff are afraid to ask questions when something does not seem right
2	(A1) People support one another in this unit (A2) We have enough staff to handle the workload (A3) When a lot of work needs to be done quickly, we work together as a team to get the work done (A4) In this unit, people treat each other with respect
	(A5) Staff in this unit work longer hours than is best for patient care

Table 4.9 (Continued)

Factor	Statement items
3	(D1) Hospital management provides a work climate that promotes patient safety (D2) Hospital units do not coordinate well with each other (D3) Things "fall between the cracks" when transferring patients from one unit to another (D4) There is good cooperation among hospital units that need to work together (D5) Important patient care information is often lost during shift changes
4	(D6) It is often unpleasant to work with staff from other hospital units (D7) Problems often occur in the exchange of information across hospital units (D8) The actions of hospital management show that patient safety is a top priority (D10) Hospital units work well together to provide the best care for patients
5	(A6) We are actively doing things to improve patient safety (A7) Staff feel like their mistakes are held against them
6	(A12) We work in "crisis mode" trying to do too much, too quickly (A13) Staff worry that mistakes they make are kept in their personnel file (B1) My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures
7	(A9) When one area in this unit gets really busy, others help out (A10) When an event is reported, it feels like the person is being written up, not the problem (A11) After we make changes to improve patient safety, we evaluate their effectiveness
8	(B2) My supervisor/manager seriously considers staff suggestions for improving patient safety (B3) Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts (B4) My supervisor/manager overlooks patient safety problems that happen over and over
9	(D9) Hospital management seems interested in patient safety only after an adverse event happens (D11) Shift changes are problematic for patients in this hospital
10	(A8) Mistakes have led to positive changes here

Table 4.10

KMO and Bartlett's Test for sampling adequacy for PSC

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.787
Bartlett's Test of Sphericity	Approx. Chi-Square	6421.614
	df	561
	Sig.	0.000

4.4.2.2 Factor Analysis of Psychological Empowerment

There were 12 in the psychological empowerment which have been analyzed subjected to principal component analysis using SPSS version 20. Following the steps outlined above, the first step was to determine the assessment of the suitability of the data for factor analysis. Inspection of the correlation matrix showed the presence of many coefficients of 0.2 and above which indicated the data was appropriate for factor analysis. The Kaiser-Meyer-Olkin value was 0.8 exceeding the minimum value of 0.6 (Tabachnick & Fidell, 2007). The Bartlett's test of Sphericity reached statistical significant ($p<0.05$), supporting the factorability of the correlation matrix.

The principal components analysis revealed the presence of ten components with eigenvalues exceeding 1, explaining a total of 44.8 percent of the variance with component 1,2 and 3. Component 1 showed eigenvalue value of 24.11 while the values for component 2 and 3 were 11.45 and 9.43 respectively. A review of the scree plot revealed a clear break after the 3rd component. Using the Catell's (1966) scree test, it was decided to retain the three components for further investigation.

Psychological Empowerment was measured using 12 items responded by healthcare organizations. A principle component factor analysis using varimax rotation was then conducted on the 12 items to determine which items should group to form dimensions. The criterion developed by Igbaria, Iivari, and Maragahh (1995) was used in the present study for cross loading. They recommended that a given item should load .50 or higher on a specific factor and whose loading is lesser than .35 on other factors. The Kaiser-Meyer-Olkin criterion was applied to extract the number of factors with only an

eigenvalues equal or greater than one can be extracted (Kaiser, 1960). As a result, 3 factors with an eigenvalue of more than 1 were extracted. Table 4.10 represents the Initial and Extraction value for patient safety culture variables.

The results of the factor analysis can be found in Appendix E. The summary of the factor analysis for psychological empowerment is presented in Table 4.11, Table 4.12 Table 4.13 and Table 4.14 below.

Table 4.11
Summary of Factor Analysis (Principal Component Analysis) Result for Psychological Empowerment Items

No.	Factorability assessment	Results	Value required for factor analysis
1	KMO measure of sampling adequacy	0.805	Min. value is 0.6
2	Bartlett's test of Sphericity	Approx Chi Square 2399.697 df 66	$P < 0.05$
3	Strength of inter-correlations among items	Significant < 0.001 Almost all values greater than 0.3	Correlation coefficient $>$ 0.3
No.	**Method used to determine the number of factors**	**Results**	**Remarks**
1	Kaiser's criteria	Three factors exceeded Eigenvalue of 1	Minimum Eigenvalue of 1 is acceptable to retain the factors
2	Catell's scree test	Three factors retained	These three factors were above the value of 1 and above the elbow of the curve
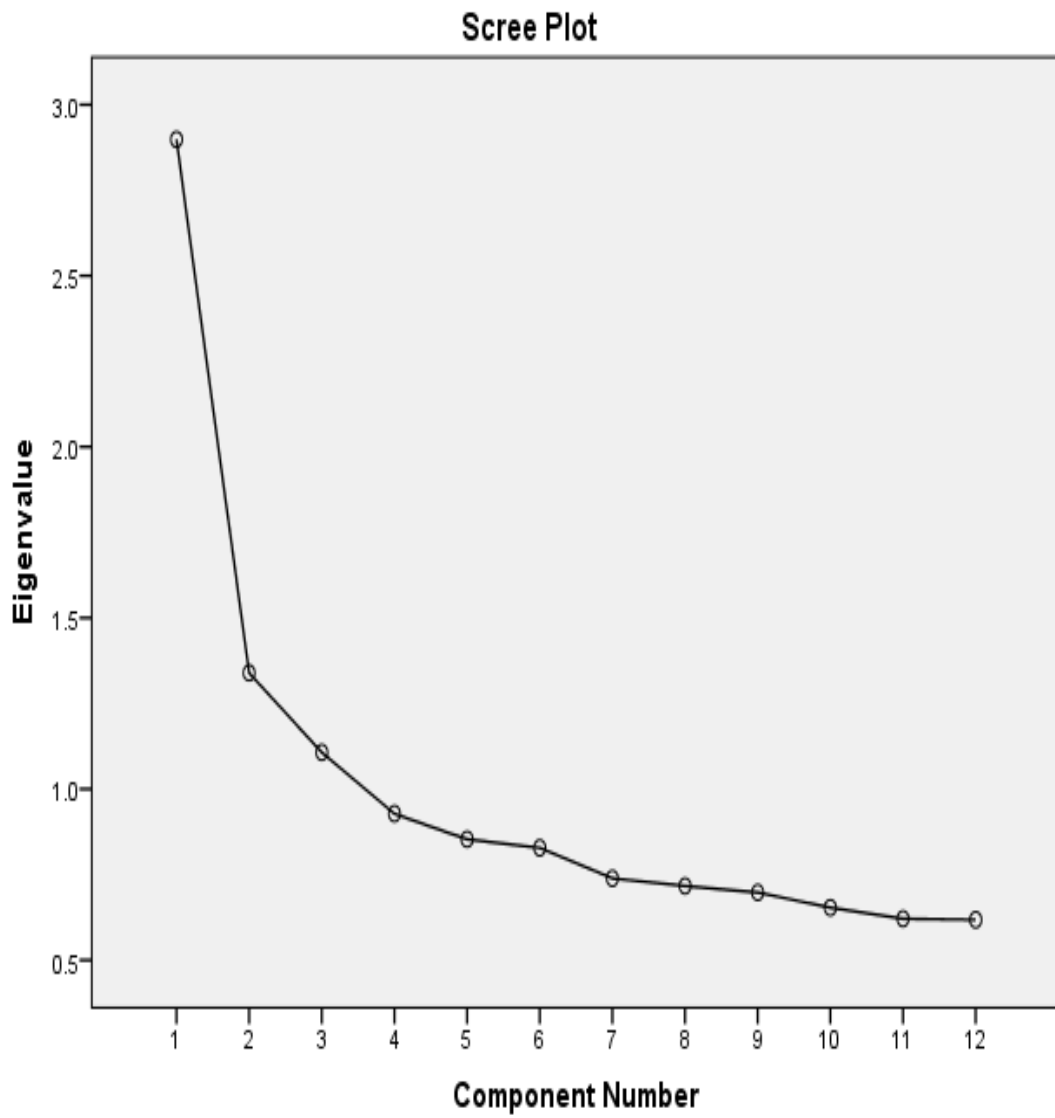
Figure 4.7
Scree Plot of Psychological Empowerment

Table 4.12
Factor loading for Psychological Empowerment
Rotated Component Matrix[a]

	Component		
	1	2	3
I am confident about my ability to do my job.	.119	-.199	.634
The work that I do is important to me		.193	.708
I have significant autonomy in determining how I do my job.		.234	.683
My impact on what happens in my department is large	.134	.729	
My job activities are personally meaningful to me		.735	.165
I have a great deal of control over what happens in my department	.337	.581	
I can decide on my own how to go about doing my own work	.584	.249	
I have considerable Opportunity for independence and	.457	.269	
I have mastered the skills necessary for my job.	.610	.114	
The work I do is meaningful to me	.562		.148
I have significant Influence over what happens in my department	.676		
I am self-assured about my capabilities to perform my work activities	.595		

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

The above table show that the factor loading for psychological empowerment which is highlighted, revealed that 2 items load strongly on component 2. Item 2 showed the highest loading (0.735) followed and item 1 (0.729). However, the lowest factor loading showed on component 1 item 2 (0.457).

Table 4.13
KMO and Bartlett's Test for sampling adequacy for PE

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	2399.697
	df	66
	Sig.	0.000

Table 4.14
The list of statement items in each factor for Psychological Empowerment (with questionnaire statement number given in the brackets)

Factor	Statement items
	(E4) My impact on what happens in my department is large
	(E5) My job activities are personally meaningful to me
	(E6) I have a great deal of control over what happens in my department
	(E7) I can decide on my own how to go about doing my own work
1	(E8) I have considerable Opportunity for independence and
	(E9) I have mastered the skills necessary for my job.
	(E10) The work I do is meaningful to me
	E11) I have significant Influence over what happens in my department
	(E12) I am self-assured about my capabilities to perform my work activities
2	(E2) The work that I do is important to me
	(E3) I have significant autonomy in determining how I do my job.
3	(E1) I am confident about my ability to do my job.

4.4.2.3 Factor Analysis for Structural Empowerment

A principal component factor analysis has been done to see the analysis of the respondents' data whether the data can be generalized for this opinion, but it has been found that all the values in the extraction columns are not very high but most of them lie in the middle. This also asserts our earlier discussion that most of the respondents provide very careful response and kept their opinion near to the neutral point. It might be one of the reasons of job security or lack of awareness or incompetence, we can not disclose at this point because certain questions have not been address in the designed survey questionnaire.

Structural empowerment was measured using 21 averaged items responded by healthcare organizations. A principle component factor analysis using varimax rotation was then conducted on the 21 items to determine which items should group to form dimensions. The criterion developed by Igbaria, Iivari, and Maragahh (1995) was used in the present

study for cross loading. They recommended that a given item should load .50 or higher

on a specific factor and whose loading is lesser than .35 on other factors. The Kaiser-

Meyer-Olkin criterion was applied to extract the number of factors with only an

eigenvalues equal or greater than one can be extracted (Kaiser, 1960). A review of the

scree plot revealed a clear break after the 3rd component. Using the Catell's (1966) scree

test, it was decided to retain the six components for further investigation.

 As a result, ten factors with an eigenvalue of more than 1 were extracted. Table 4.15

represents the Initial and Extraction value for Structural empowerment variable.

The results of the factor analysis can be found in Appendix E. The summary of the factor

analysis for structural empowerment is presented in Table 4.15, Table 4.16 Table 4.17

and Table 4.18 below.

Table 4.15
Summary of Factor Analysis (Principal Component Analysis) Result for Structural
Empowerment Items

No.	Factorability assessment	Results	Value required for factor analysis
1	KMO measure of sampling adequacy	0.787	Min. value is 0.6
2	Bartlett's test of Sphericity	Approx Chi Square 3837.916 df 210	$P < 0.05$
3	Strength of inter-correlations among items	Significant < 0.001 Almost all values greater than 0.3	Correlation coefficient $>$ 0.3

No.	Method used to determine the number of factors	Results	Remarks
1	Kaiser's criteria	Six factors exceeded Eigenvalue of 1	Minimum Eigenvalue of 1 is acceptable to retain the factors
2	Catell's scree test	Six factors retained	These six factors were above the value of 1 and above the elbow of the curve
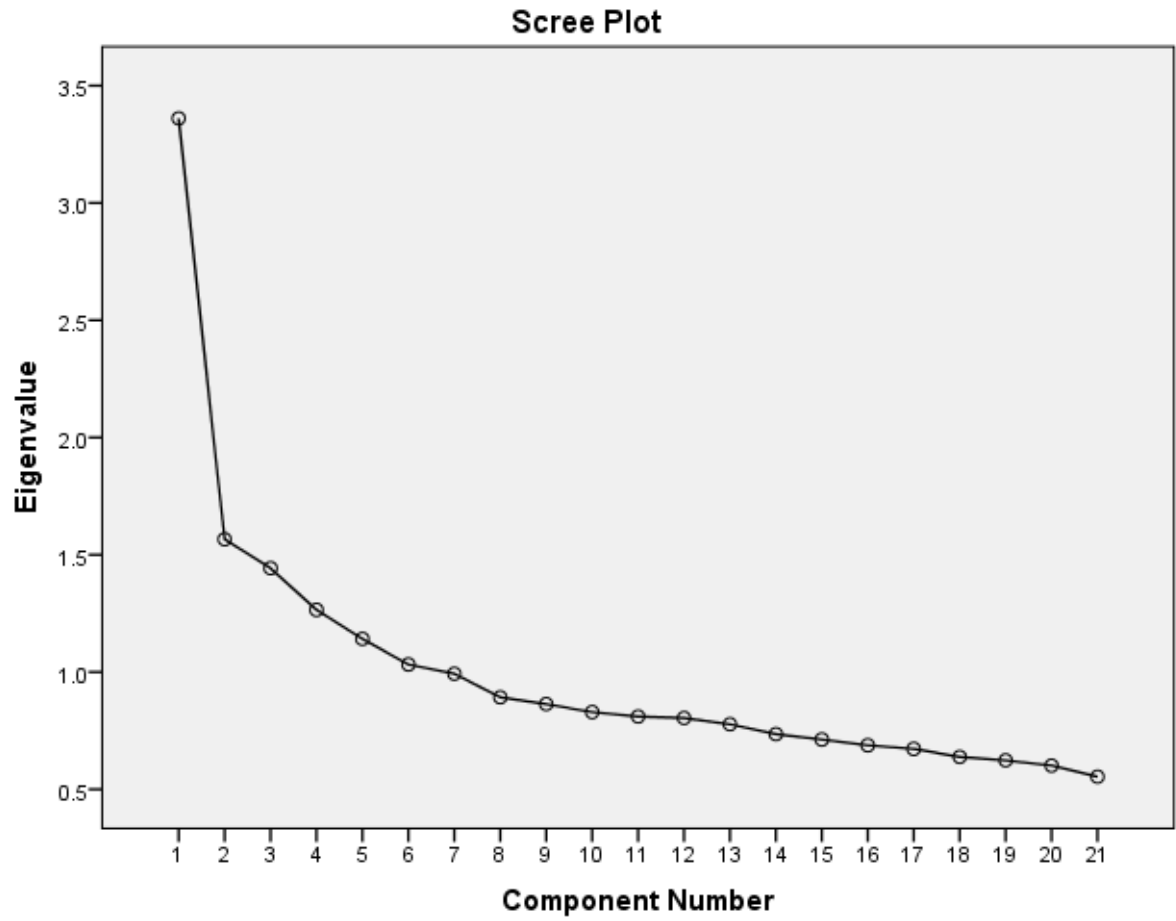
Figure 4.8
Scree Plot of Structural Empowerment

Table 4.16
Factor Loading For Structural Empowerment Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
Challenging work		.103	.125	.245		.520
The chance to gain new skills and knowledge on the job.				-.130	.144	.793
Tasks that use all of your own skills and knowledge.	.147			.293		.588
Specific information about things you do well.				.711		
Specific comments about things you could improve.				.713		.111
Helpful hints or problem solving advice.		.130	.263	.413	.218	.231
The current state of the center		-.101		.253	.649	.130
The values of top management		.286			.631	
The goals of top management		.245		.121	.605	
Time available to do the necessary paperwork		.631		.139		
Time available to accomplish job requirements.	.113	.682				
Acquiring temporary help when needed.		.674			.175	
Collaborating on patient care with physicians.	.172	.337	.483		-.103	
Being sought out by peers for help with problems			.686		.114	.167
Being sought out by managers for help with problems.			.749			
Seeking out ideas from professionals other than, physicians e.g. Physiotherapists, Occupational Therapists, and Dieticians.	.278		.513	.200		-.135
The rewards for innovation on the job are	.571		.105	.118		.113
The amount of flexibility in my job is	.639	.159				.135
The amount of visibility of my work-related activities with-in the institution is	.673			.207		.107
Overall, my current work environment empowers me to accomplish my work in an effective manner.	.559		.117	-.110	.275	-.121
Overall, I consider my workplace to be an empowering environment.	.424			-.125	.369	

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

The above table shows that the factor loading for structural empowerment which is highlighted revealed that 1 item load strongly on component 6. Item 2 showed the highest loading (0.793). However, the lowest factor loading showed on component 4 item 4 (0.413).

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Table 4.17
KMO And Bartlett's Test For Sampling Adequacy

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.787
Bartlett's Test of Sphericity	Approx. Chi-Square	3837.916
	df	210
	Sig.	0.000

Table 4.18
The List of Statement Items in Each Factor For Structural Empowerment (With Questionnaire Statement Number Given In The Brackets)

Factor	Statement items
1	(G2) Specific comments about things you could improve.
	(G3) Helpful hints or problem solving advice.
	(H2) The values of top management
	(H3) The goals of top management
	(I1) Time available to do the necessary paperwork
	(I2) Time available to accomplish job requirements.
	(I3) Acquiring temporary help when needed.
	(J1) Collaborating on patient care with physicians.
	(J4) Seeking out ideas from professionals other than, physicians
	(K1) The rewards for innovation on the job
	(K2) The amount of flexibility in my job
	(K3) The amount of visibility of my work-related activities with-in the institution
	(L2) Overall, I consider my workplace to be an empowering environment.
2	(F1) Challenging work
	(F3) Tasks that use all of your own skills and knowledge.
	(G1) Specific information about things you do well
3	(L1) Overall, my current work environment empowers me to accomplish my work in an effective manner.
4	(J2) Being sought out by peers for help with problems
	(J3) Being sought out by managers for help with problems.
5	(H1) The current state of the center
6	(F2) The chance to gain new skills and knowledge on the job.

4.4.2.4 Factor Analysis of Prosocial Voice

Factor analysis for the pro-social voice components carried out to see if the data is really useful for further explanation and KMO and Barttlett test shows that sampling accuracy is 0.699 is acceptable in this case and p-value ($p \leq 0.05$) has also achieved at degree of freedom of 15.

There were 6 items in the pro-social voice which have been analyzed subjected to principal component analysis using SPSS version 20. Following the steps outlined above, the first step was to determine the assessment of the suitability of the data for factor analysis. Inspection of the correlation matrix showed the presence of many coefficients of 0.2 and above which indicated the data was appropriate for factor analysis. The Kaiser-Meyer-Olkin value was 0.699 exceeding the minimum value of 0.6 (Tabachnick & Fidell, 2007). The Bartlett's test of Sphericity reached statistical significant ($p<0.05$), supporting the factorability of the correlation matrix. Using the Catell's (1966) scree test, it was decided to retain the two components for further investigation. The results of the factor analysis can be found in Appendix E. The summary of the factor analysis for structural empowerment is presented in Table 4.19, Table 4.20 Table 4.21 and Table 4.22 below.

Table 4.19
Summary of Factor Analysis (Principal Component Analysis) Result For Pro-Social Voice Items

No.	Factorability assessment	Results	Value required for factor analysis
1	KMO measure of sampling adequacy	0.699 Approx Chi Square 981.274	Min. value is 0.6
2	Bartlett's test of Sphericity	df 15	*P* < 0.05
3	Strength of inter-correlations among items	Significant < 0.001 Almost all values greater than 0.3	Correlation coefficient > 0.3

No.	Method used to determine the number of factors	Results	Remarks
1	Kaiser's criteria	Two factors exceeded Eigenvalue of 1	Minimum Eigenvalue of 1 is acceptable to retain the factors
2	Catell's scree test	Two factors retained	These two factors were above the value of 1 and above the elbow of the curve
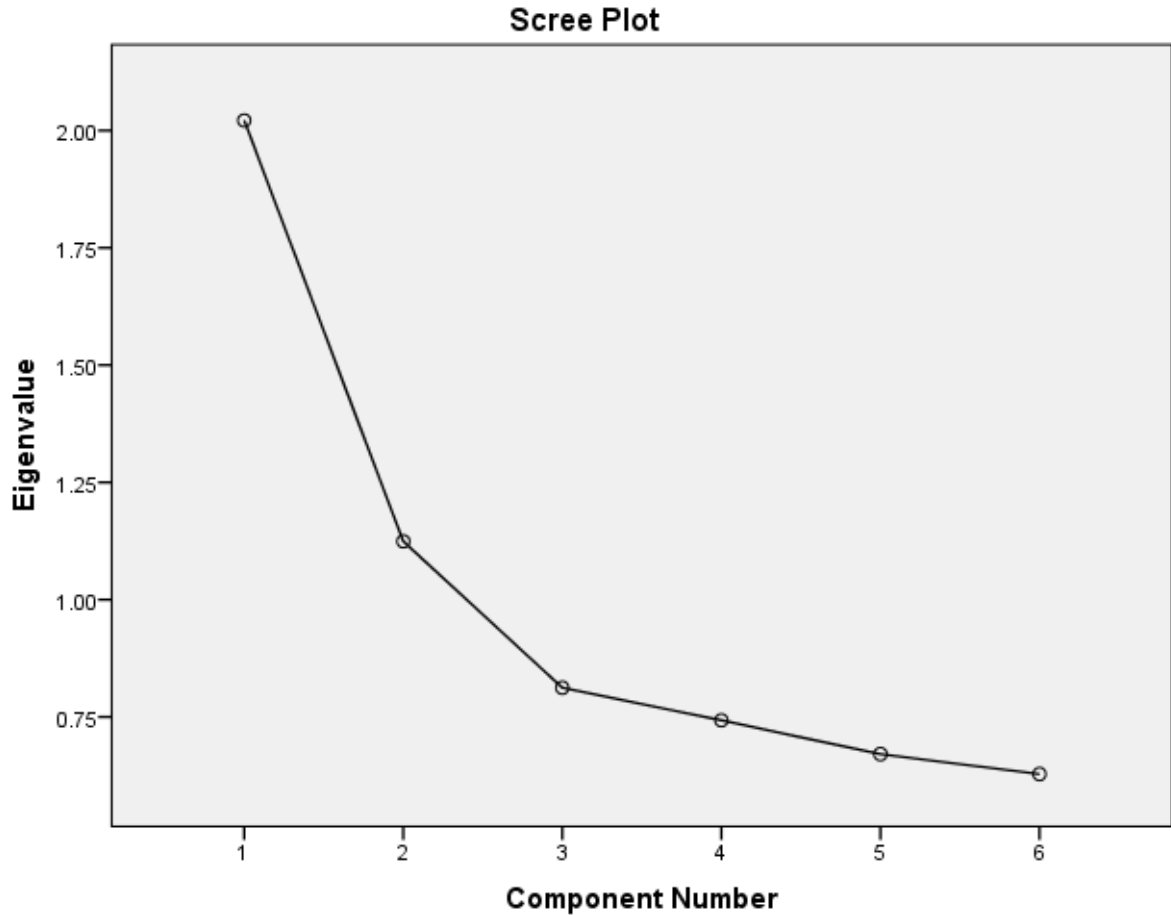
Figure 4.9
Scree Plot of Pro-Social Voice

Table 4.20
Factor Loading For Prosocial Voice
Rotated Component Matrix[a]

	Component	
	1	2
I develop and make recommendations about work-related issues		.669
I speak up and encourage others to get involved in issues that affect the organization		.797
I speak up with my opinion about work issues that affect the organization, even if my opinion is different and others may disagree	.239	.667
I keep informed about issues where my opinion might be useful.	.674	.135
I speak up with ideas for new projects for the organization.	.752	
I express ideas about changes in procedures for the organization	.700	.162

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

The above table shows that the factor loading for prosocial voice which is highlighted revealed that 1 item load strongly on component 2. Item 2 showed the highest loading (0.797). However, the lowest factor loading showed on component 2 item 3 (.667)

Table 4.21
KMO and Bartlett's Test in Factor Analysis for Pro-social voice

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.699
Bartlett's Test of Sphericity	Approx. Chi-Square	981.274
	df	15
	Sig.	.000

Table 4.22
The List of Statement Items In Each Factor For Pro-Social Voice (With Questionnaire Statement Number Given In The Brackets)

Factor	Statement items	
1	(M4)	I keep informed about issues where my opinion might be useful.
	(M5)	I speak up with ideas for new projects for the organization.
	(M6)	I express ideas about changes in procedures for the organization
2	(M1)	I develop and make recommendations about work-related issues
	(M2)	I speak up and encourage others to get involved in issues that affect the organization
	(M3)	I speak up with my opinion about work issues that affect the organization, even if my opinion is different and others may disagree

4.4.2.5 Factor Analysis of Self-Monitoring

Factor analysis for the self-monitoring components carried out to see if the data is really useful for further explanation and KMO and Barttlett test shows that sampling accuracy is 0.776 is acceptable in this case and p-value (p≤0.05) has also achieved at degree of freedom of 136.

There were 17 items in the self-monitoring which have been analyzed subjected to principal component analysis using SPSS version 20. Following the steps outlined

above, the first step was to determine the assessment of the suitability of the data for factor analysis. Inspection of the correlation matrix showed the presence of many coefficients of 0.3 and above which indicated the data was appropriate for factor analysis. The Kaiser-Meyer-Olkin value was 0.776 exceeding the minimum value of 0.6 (Tabachnick & Fidell, 2007). The Bartlett's test of Sphericity reached statistical significant ($p<0.05$), supporting the factorability of the correlation matrix. Using the Catell's (1966) scree test, it was decided to retain the five components for further investigation.

The results of the factor analysis can be found in Appendix E. The summary of the factor analysis for structural empowerment is presented in Table 4.23, Table 4.24 Table 4.25 and Table 4.26 below.

Table 4.23
Summary of Factor Analysis (Principal Component Analysis) Result for Self-Monitoring Items

No.	Factorability assessment	Results	Value required for factor analysis
1	KMO measure of sampling adequacy	0.776	Min. value is 0.6
2	Bartlett's test of Sphericity	Approx Chi Square 2890.301 df 136	$P < 0.05$
3	Strength of inter-correlations among items	Significant < 0.001 Almost all values greater than 0.3	Correlation coefficient $>$ 0.3
No.	Method used to determine the number of factors	Results	Remarks
1	Kaiser's criteria	Five factors exceeded Eigenvalue of 1	Minimum Eigenvalue of 1 is acceptable to retain the factors
2	Catell's scree test	Five factors retained	These five factors were above the value of 1 and above the elbow of the curve
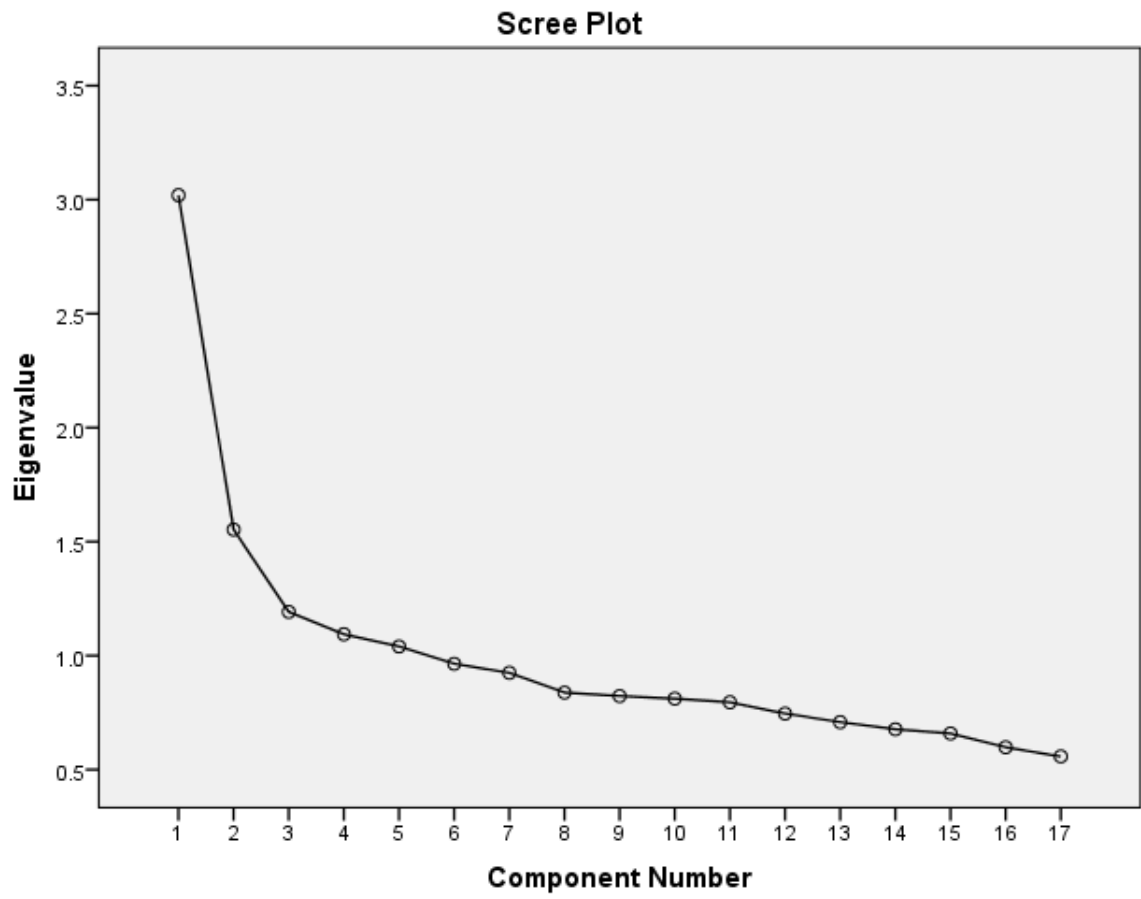
Figure 4.10
Scree Plot Of Self-Monitoring

Table 4.24
Factor Loading For Self-Monitoring
Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
I find it hard to imitate the behavior of other people®.				.820	
At parties and social gatherings, I do not attempt to do or say			.409	.595	
I can argue only for ideas that I already believe®.	.108		.615		.250
I can make impromptu speeches even on topics about which		.111	.772		
I guess I put on a show to impress or entertain others.		.369	.556	.106	
I would probably make a good actor.		.683	.161		-.125
In a group of people, I am rarely the center of attention®.	.135	.628		.226	
In different situations and with different people, I often act		.434	.109	-.188	.510
I am not particularly good at making other people like me®.	.136	.593			.169
I'm not always the person I appear to be.					.793
I would not change my opinions (or the way I do things)	.336	.270		.372	.304
I have considered being an entertainer®.	.431			.139	.373
I have trouble changing my behavior to suit different	.565		.152		
At a party I let others keep the jokes and stories going®.	.631	.159			-.174
I feel a bit awkward in company and do not come across	.599		.130	-.232	.110
I can look anyone in the eye and tell a lie with a straight face	.484				.187
I may deceive people by being friendly when I really dislike them.	.544	.106	-.125		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

The above table shows that the factor loading self-monitoring which is highlighted revealed that 1 item load strongly on component 4. Item 1 showed the highest loading (0.820). However, the lowest factor loading showed on component 4 item 3 (.372).

Table 4.25
KMO and Bartlett's Test For Self-Monitoring Variables

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.776
Bartlett's Test of Sphericity	Approx. Chi-Square	2890.301

df	136
Sig.	0.000

Table 4.26

The List of Statement Items In Each Factor For Self-Monitoring (With Questionnaire Statement Number Given In The Brackets)

Factor	Statement items
1	(N12) I have considered being an entertainer®.
	(N13) I have trouble changing my behavior to suit different
	(N14) At a party I let others keep the jokes and stories going®.
	(N15) I feel a bit awkward in company and do not come across
	(N16) I can look anyone in the eye and tell a lie with a straight face
	(N17) I may deceive people by being friendly when I really dislike them
2	(N6) I would probably make a good actor.
	(N7) In a group of people, I am rarely the center of attention®.
	(N9) I am not particularly good at making other people like me®.
3	(N3) I can argue only for ideas that I already believe®.
	(N4) I can make impromptu speeches even on topics about which
	(N5) I guess I put on a show to impress or entertain others.
4	(N1) I find it hard to imitate the behavior of other people®.
	(N2) At parties and social gatherings, I do not attempt to do or say
	(N11) I would not change my opinions (or the way I do things).
5	(N8) In different situations and with different people, I often act
	(N10) I'm not always the person I appear to be.

4.4.3 Correlation Analysis

Correlation analysis is carried out when the researcher desires to describe the magnitude or strength and direction of the linkage between two variables that are measured on a continuous scale. A positive correlation shows that when one variable goes up, so does the other, while a negative one shows that as one variable goes up, the other goes down (Pallant, 2007).

In this study Pearson correlation was used to test the relationship between the main variables as shown in table 4.26. Pearson correlation coefficient, *r,* symbolizes the

estimated strength of linear association and its direction between interval and ratio variables, based on sampling data and varies over a range of +1 to -1. The prefix (+, -) indicates the direction of the relationship (positive or negative), while the number represents the strength of the relationship (the closer to 1, the stronger the relationship; 0 = no relationship) (Cooper &Schindler, 2008).

After applying the correlation analysis to the variables; patient safety culture, psychological empowerment, structural empowerment, pro-social voice and self-monitoring, the analysis revealed that there is either no or insignificant correlation among these variables. First of all the correlation between patient safety culture and psychological empowerment exist significantly but the common percentage is just 21.4%. It means that only 21.4% of psychological empowerment affects the patient safety culture. Similarly the significant correlation exits between PSC and SE but the common percentage is not very high i.e. just 19.9% whereas there is no correlation exists between PSC and PSV and PSC and SM. There is significant correlation found between PSE and SM; SE and SM but at 2-tailed. It also has very high common percentage as will which is 41.6%. There is significant correlation exists between Structural empowerment and Pro-Social voice (0.36) and with Self-monitoring (0.382) at 2-tailed. Apart from PSV and SM it is not correlated with rest of the variables.

Table: 4.27
Correlation Analysis for All the Variables

Variables	Patient Safety Culture	Psychological Empowerment	Structural Empowerment	Pro-Social Voice	Self-Monitoring
Patient Safety Culture	1				
Psychological Empowerment	.214[*]	1			
Structural Empowerment	.199[*]	0.104	1		
Pro-Social Voice	0.138	.217[*]	.360[**]	1	
Self-Monitoring	0.084	.213[*]	.416[**]	.382[**]	1

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

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

4.4.5 Regression Analysis Technique and Hypothesis Testing

To analyze the data, descriptive analysis, content validity, factor analysis, test of reliability, correlation test, and multiple regression analysis were performed. These analyses were run on Statistical Package for Social Science program (Version 20).

Standard and hierarchical regression analysis is usually carried out to look into the relationship between the variables as well as to test the hypothesis. Before this test was run, four assumptions namely normality, linearity of the relationship, independence of error term, and homoscedasticity were analyzed (Coakes, Steed, & Dzidic, 2006; Hair *et al.*, 2010). Normality is referred to as the score on each variable that is normally distributed and can be checked by looking at the histograms of scores on each variable (Pallant, 2007). Linearity is referred to as the linear relationship between two variables. When looking at the scatterplot of scores, a rough straight line will be seen as opposed to a curve (Pallant, 2007). Homoscedasticity is the similarity of the variability of scores in

variable X with variable Y, so that when the scatterplot is looked at, it shows a fairly even cigar shaped figure along its length (Pallant, 2007).

H1: There is significant relationship between structural empowerment and patient safety culture in the Saudi Hospitals

In this study the hypothesis H1 has been tested with the existing data and has been observed that there is significant relationship exists between the structural empowerment and patient safety culture in the Saudi public hospitals. Table 4.28 shows the correlation coefficient value 0.199 between patient safety culture and structural empowerment is significantly and positively correlated. However this is just 20% supporting each other whereas there is almost no correlation found between patient safety culture and structural empowerment as the significant value of 2-tailed is just 0.25. Therefore, the hypothesis H1 is accepted but not as high impact over patient safety culture

Table: 4.28
Correlation between Structural Empowerment and Patient Safety Culture (N=127)

		Patient Safety Culture	Structural Empowerment
Patient Safety Culture	Pearson Correlation	1	.199[*]
	Sig. (2-tailed)		.025
Structural Empowerment	Pearson Correlation	.199[*]	1
	Sig. (2-tailed)	.025	

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

H2: There is significant relationship between prosocial voice and patient safety culture in the Saudi Hospitals

In order to test hypothesis H2 the correlation has been done between Prosocial Voice and Patient Safety Culture. The table 4.29 exhibits that there is no significant correlation exists between pro-social voice and patient safety culture. Value of pro-social voice 0.138 has no significance patient safety culture; therefore, the hypothesis H2 is rejected.

Table: 4.29
Correlation between Pro-Social Voice and Patient Safety Culture (N=127)

		Patient Safety Culture	Pro-Social Voice
	Pearson Correlation	1	.138
Patient Safety Culture	Sig. (2-tailed)		.123
	N	127	127
	Pearson Correlation	.138	1
Pro-Social Voice	Sig. (2-tailed)	.123	
	N	127	127

H3: There is an interaction between pro-social voice and patient safety culture moderated by self-monitoring in the Saudi Hospitals

In order to test the Hypothesis H3 which states that Self-Monitoring is moderating between the relationship of pro-social voice and the patient safety culture, a multiple regression analysis test was performed. First of all a moderating variable SM_Moderator has been computed by using SPSS software and a hierarchical multiple regressions analysis performed. Patient safety culture variable kept as dependent variable whereas Self-monitoring, pro-social voice and newly computed variable SM_moderator taken as independent variables. After performing the regression analysis, the results found that there has been no significance found in the moderator variable, therefore, the self-

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monitoring variable does not moderate between the relationship between pro-social voice and patient safety culture and hence the hypothesis is rejected. The value in the significance column is more than the p-value (0.05) as presented in the following tables 4.30, 4.31 and 4.32.

Table: 4.30
Model Summary and Coefficients in Regression Analysis Between Pro-Social Voice And Self-Monitoring.

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.161	2.276		1.389	.167
Self-Monitoring	-.034	.713	-.038	-.048	.962
ProSocial Voice	.007	.631	.014	.012	.991
SM_Moderator	.019	.196	.155	.094	.925

a. Dependent Variable: Patient Safety Culture

The value of R square is not very high particularly in Model 1 which is 0.19 and F value 2.415 which is much higher than the F-critical value of 0.123 and hence the hypothesis is rejected. There is some significant correlation exists between these variables but it is not very high to have an impact over patient safety culture.

Table: 4.31
Hierarchical Regression Analysis: Patient Safety Culture And Pro-Social Voice Moderating By Self-Monitoring (N=127)

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.138[a]	.019	.011	.19984	.019	2.415	1	125	.123	
2	.142[b]	.020	.004	.20053	.001	.147	1	124	.702	

a. Predictors: (Constant), Pro-Social Voice
b. Predictors: (Constant), Pro-Social Voice, Self-Monitoring

Table: 4.32
Regression Analysis Between Pro-Social Voice, Self –Monitoring And Patient Safety Culture Variables (N= 127)

				ANOVA[a]		
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.096	1	.096	2.415	.123[b]
	Residual	4.992	125	.040		
	Total	5.089	126			
2	Regression	.102	2	.051	1.273	.284[c]
	Residual	4.986	124	.040		
	Total	5.089	126			

a. Dependent Variable: Patient Safety Culture
b. Predictors: (Constant), Pro-Social Voice
c. Predictors: (Constant), Pro-Social Voice, Self-Monitoring

H4: Psychological empowerment mediates the relationship between structural empowerment and patient safety culture in the Saudi Hospitals

In order to test H4 that posited the mediating effect of psychological empowerment on the relationship between structural empowerment and patient safety culture, mediation analysis was conducted following the method suggested by Baron and Kenny (1986) and the Soble test. This is to be noted that there are three principal versions of the "Sobel test" one that adds the third denominator term (Aroian, 1944/1947 - this is the version popularized by Baron & Kenny as the Sobel test), one that subtracts it (Goodman, 1960), and one that does not include it at all.

In the Baron and Kenny (1986) methodology, the independent variables should be affecting on the dependent variable significantly. Furthermore, the effect of the independent variables on the mediator and the effect of the mediator on the dependent variable must be significant. These conditions must be fulfilled before the mediation effect is concluded. To decide whether the mediation is full or partial, one should examine the effect of the independent variable on the dependent variable when the mediator is accounted for. If the effect of the independent variable on the dependent

variable is still significant, the mediator is partial. However, if the effect significance has diminished, the mediator is said to be full mediator.

Fig. 4.11 presents the relationship between the psychological empowerment and the structural empowerment. Following the relationship between the psychological empowerment as dependent variable (Mediator) and Structural empowerment (independent variable).:
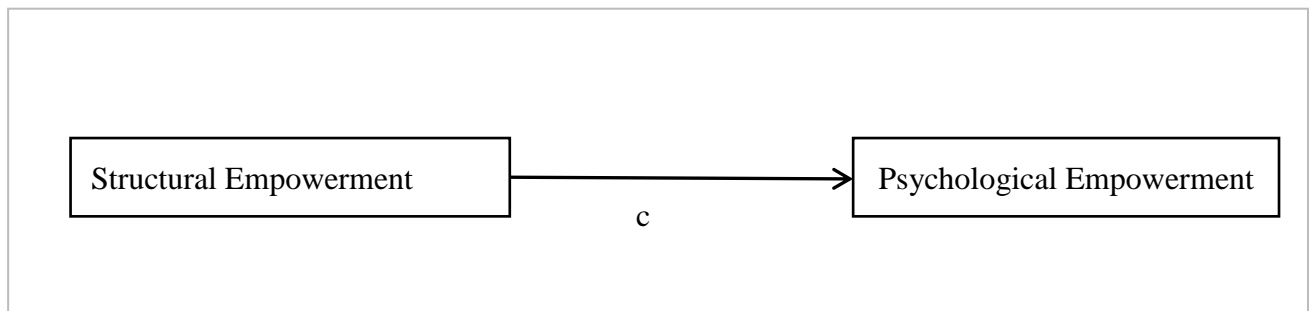
Figure 4.11
The Relationship between the Psychological Empowerment and the Structural Empowerment

Table 4.33 displays the coefficient value for structural empowerment and it is not significant over psychological empowerment because it is higher than the p-value (0.05)

Table 4.33
Coefficient Value for Structural Empowerment

Coefficients[a]					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.924	.404		7.235	.000
Structural Empowerment	.139	.119	.104	1.169	.245

a. Dependent Variable: Psychological Empowerment

A multiple regression analysis was done wherein the dependent variable was patient safety culture and the independent variables were structural empowerment and psychological empowerment. It represents that relationship between structural empowerment and psychological empowerment has Unstandardized Coefficients value (a =0.139) and standard error (Sa = 0.119) whereas the Unstandardized Coefficients value (b=0.116) and standard error (Sb = 0.052) with the patient safety culture variable as shown in figure 4.12.
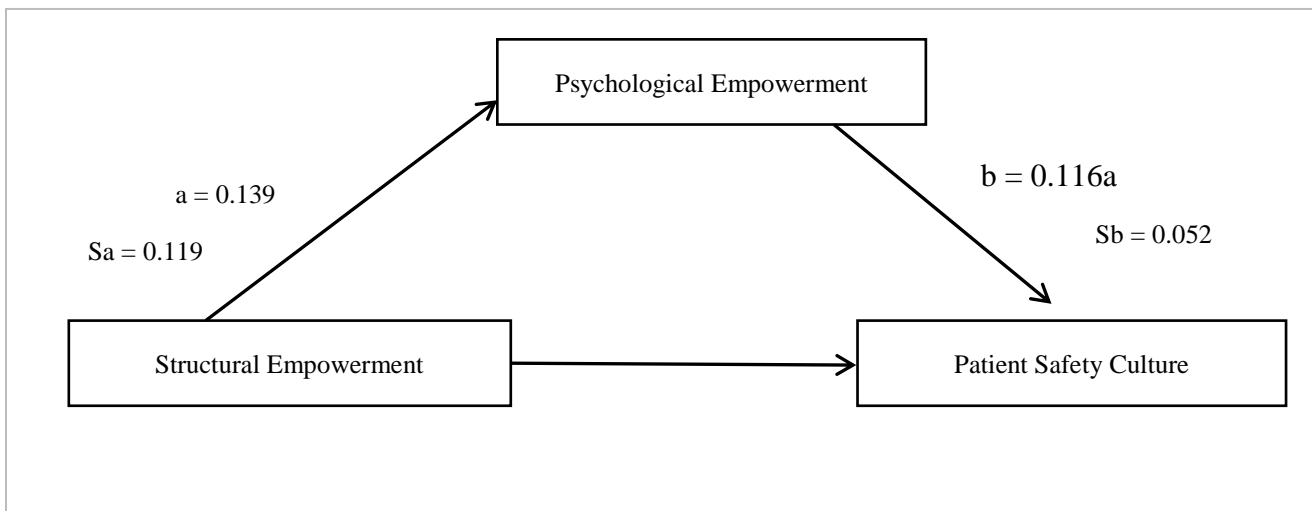

Figure 4.12
The Mediation of Psychological Empowerment between Structural Empowerment and Patient Safety Culture

In order to further investigation, Sobel test carried on over this model. The following table represents the values extracted after the Sobel Test as shown in table 4.35.

Table: 4.34

Multiple Regression Analysis Applied Over Patient Safety Culture As Dependent Variable And Psychological Empowerment And Structural Empowerment As Independent Variables:

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.411	.277		8.698	.000
	Psychological Empowerment	.116	.052	.196	2.256	.026
	Structural Empowerment	.141	.069	.178	2.056	.042

a. Dependent Variable: Patient Safety Culture

Since both the variables are significant as (p-value <0.05), therefore, the lower p-value was selected for sobel test in the following table 4.35.

Table: 4.35

Type of Mediating Effect Applying To Patient Safety Culture Mediated By Psychological Empowerment over Structural Empowerment Using Sobel Test

	Test	Test Statistics	Standard Error	p-Value	Result
Variable	Sobel Test	1.03479294	0.01558186	0.3007652	Not mediating
a = 0.139					
	Aroian Test	0.96173048	0.01676561	0.33618501	Not mediating
Sa = 0.119					
b = 0.116					
	Goodman Test	1.12751645	0.01430046	0.25952419	Not mediating
Sb = 0.052					

The results from the above table derived that none of the tests computes the p-value <0.05, therefore, the variable psychological empowerment is not mediating between the relationship of structural empowerment and the patient safety culture. Hence the hypothesis (H4) is rejected.

Table 4.36   shows that all hypotheses were supported and rejected for this study.

Table 4.36
Summary of Hypotheses Testing Analysis

Hypothesis	Description	Decision
H$_1$	There is significant relationship between structural empowerment and patient safety culture in the Saudi public Hospitals.	Supported
H$_2$	There is significant relationship between pro-social voice and patient safety culture in the Saudi Hospitals.	Rejected
H$_3$	There is an interaction between pro-social voice and patient safety culture moderated by self-monitoring in the Saudi Hospitals.	Rejected
H$_4$	Psychological empowerment mediates the relationship between structural empowerment and patient safety culture in the Saudi Hospitals.	Rejected

4.5 Chapter Summary

This chapter has presented findings based on the response rate of 47%, which was very similar to previous studies on healthcare organizations' performance particular in the context of Saudi hospitals. Factor analysis was conducted in order to test the construct validity of for all interval scale variables. The analysis revealed that healthcare organizations' performance was multi-dimensional of five factors, which upon inspection could be categorized as patient safety culture, psychological empowerment, structural empowerment, pro-social voice and self-monitoring as theoretically construed. Based on reliability analysis, all measures were internally consistent. Furthermore, a Normality check has been applied to verify the data existence within the recommended range of variation. It has been found that the data is quite close to the bell-shape curve of the normal distribution.

Apart from descriptive statistics to describe the main variables, this chapter is concerned with presenting the results of the hypotheses testing. The present study found that most of the Saudi public hospitals are moderately practicing the patient safety culture.

Furthermore, the hospitals staff perceived structural empowerment. However, there is absent of practicing pro-social voice. On the other hand, self-monitoring did not enhance the relationship between the prosocial voice and patient safety culture at Saudi public hospitals. In addition, the psychological empowerment did not explain the relationship between structural empowerment and patient safety culture at Saudi public hospitals.

Correlation and Regression analysis were conducted to test research hypothesis that showed there is relationship between structural empowerment and patient safety culture. However, there was no relationship between prosocial voice and patient safety culture. Furthermore, there was no effect of structural empowerment to patient safety culture mediated by psychological empowerment and pro-social voice on patient safety culture moderated by self-monitoring.

CHAPTER FIVE

DISCUSSION, IMPLICATION AND CONCLUSION

5.1 Introduction

In this chapter, the discussion of the study objectives and the hypothesis had formulated. Out of 4 research hypothesis formulated for this study, one of them accepted while three of them rejected. In this chapter attempts will be made to discuss the results found in the context of patient safety culture in Saudi healthcare organizations. At the end, this chapter will be planned as follows: once the discussions on the research questions and hypotheses are made, implications of the research to theory and practice combined with suggestions for future research will be presented. Next, the present research limitations will be highlighted, followed by the conclusion of this study.

5.2 Discussion

From the developed research questions, the research objectives for this study can be formulated to provide a clear goal to be achieved in this research effort.

What follows are discussions on each of the research hypotheses. Specifically, the last four part; the relationship between patient safety culture and pro-social voice, the relationship between structural empowerment and patient safety culture, examining the interaction between pro-social voice and patient safety culture moderated by self-monitoring, and examine the interaction between structural empowerment and patient

safety culture mediated by psychological empowerment in Saudi healthcare organizations.

5.2.1 To Assess the Patient Safety Culture in Saudi Public Healthcare Hospitals

The present study sought to discuss the existence of patient safety culture in the Saudi public hospitals, as specified by the first research objective. For the purpose of this study Ten dimensions were studied to assess the patient safety culture in Saudi public hospitals (Teamwork Within Units, Supervisor/Manager Expectations & Actions Promoting Patient Safety, Organizational Learning—Continuous Improvement, Management Support for Patient Safety, Feedback & Communication About Error, Communication Openness, Teamwork Across Units, Staffing, Handoffs & Transitions and Non-Punitive Response to Errors) these dimensions measured by 34 items. The empirical evidence found a mean value of 3.17 shows that patient safety culture merely exists in Saudi public hospitals. Through this study that could provide insight for health policy makers, managers and practitioners on how to maintain patient safety culture.

Table 5.1
Percent Positive Responses for This Study (Patient Safety Culture) And Pilot Study Conducted By Sorra And Nieves (2004)

Hospital Survey on Patient Safety Culture Instrument	Current Study	Sorra& Neives (2004)
Teamwork Within Units	56.6%	74.0%
Supervisor/Manager Expectations & Actions Promoting Patient Safety	47.0%	71.0%
Organizational Learning—Continuous Improvement	57.5%	71.0%
Management Support for Patient Safety	48.6%	60.0%
Feedback & Communication About Error	50.1%	52.0%
Communication Openness	50.0%	61.0%
Teamwork Across Units	46.8%	53.0%
Staffing	58.1%	50.0%
Handoffs & Transitions	47.5%	45.0%
Non-Punitive Response to Errors	56.9%	43.0%

The present study further revealed that patient safety culture can be discussed with the above explained ten dimensions as shown in table 5.1. Compare to assessment of PSC study of AHRQ (Agency of Health Research and Quality) which has been conducted in USA hospitals by Sorra and Nieves (2004). Hospital Survey on Patient Safety Culture Comparative Database has been reputable by AHRQ as a central repository for survey data from hospitals that have managed the AHRQ patient safety culture survey instrument. For hospitals that wish to compare their patient safety culture survey results to those of other hospitals in support of patient safety culture improvement, the database serves as an important resource (AHRQ, 2009). It is found that seven out of ten dimensions of PSC (Teamwork Within Units, Supervisor/Manager Expectations & Actions Promoting Patient Safety, Organizational Learning—Continuous Improvement, Management Support for Patient Safety, Feedback & Communication About Error,

Communication Openness and Teamwork Across Units) revealed that there are areas to improve these dimensions of the patient safety culture. While three out of ten dimensions (Staffing, Handoffs & Transitions and Non-Punitive Response to Errors) showed better results compare to USA hospitals findings. Therefore, there are most of areas for improving the patient safety culture among Saudi public hospitals. The result of this study is compiling with other studies that conducted to assess the patient safety culture in Saudi Arabia (Al-ahmadi, 2009; Al-ahmadi, 2010; and Aboshaiqah, 2013). The result of these studies emphasis on open communication among staff. Therefore, in order to strengthen patient safety culture among Saudi Arabia public hospitals, the hospital managers need to create open communications. The literature review established that open communication among employees is an integral component of a strong hospital patient-safety culture (Armstrong et al., 2009; Feng et al., 2008,). Basically, staff wants to be heard and acknowledged by managers as it was accentuate by Patient-safety scholars (Sammer et al., 2009). Results show that management interest is often only triggered after an adverse event occurs despite the widespread view that management actions indicate that patient safety is a top priority. Most attempts to improve safety in healthcare are reactive in nature as this is confirm by previous research, however, efforts to proactively eliminate hazards have the potential to significantly improve safety (Sorra.2004). The result of this study confirm findings by other researchers regarding the importance of effective leadership in building a strong and proactive safety culture and commitment to learning from errors, and encouraging and practicing teamwork (Piotrowski,2002). Leadership should view errors as an opportunity for workers as heroes of improving

safety and for learning as stressed by researchers rather than as villains committing errors (Al-Ahmadi, 2010).

System changes which including addressing difficult challenges such as eradicating the prevalent culture of blaming individual workers for errors require improvement of patient safety culture. Errors in healthcare that endanger patient safety can be tied to concealed failures deeply entrenched in the function of systems and structure.

5.2.2 The Level of Structural Empowerment in the Saudi Healthcare Organizations

One of these study objectives is that there is structural empowerment exists in the Saudi Hospitals. The structure empowerment has been divided into several sub sections receive a perception of structural empowerment in the healthcare organizations which may affect the performance of the hospital staff. The table shows the positive response for structural empowerment dimensions among Saudi public staff. Therefore, the results revealed moderate overall structural empowerment exist in the public hospitals in Saudi Arabia. Overall mean value for this factor has been 3.39. It is slightly above the mean response value but not very high. When data has been analyzed in the previous chapter, it has been found that p-value (0.012) is smaller than the alpha value 0.05. So, there is moderate level of structural empowerment exists in healthcare organizations and also the F value is higher than the F-critical. It also shows that individual components of this factors might have a little higher mean value ranging between 3.24 and 3.46 and sometimes maximum participants of the survey agreed or strongly agreed with the statement but their contribution is not that much high that support the statements. Therefore, the result of this study shows that there is chance for improving the structural empowerment among Saudi

public hospitals. Structural empowerment means that the staff receiving support, having access to information, having access to resources necessary to do the job, and having the chance to learn and develop (Laschinger, Finegan, Shamian, & Wilk, 2004). While these situations are structured in such a way that employees feel empowered or authorized, the organization is probable to benefit in terms of organizational efficiency. Therefore, structural empowerment has significant impact on the workplace that will enhance the outcome of patient safety. Furthermore, structurally empowering environment supports autonomy, control over the practice environment, organizational commitment, trust, and improved quality of patient care (Laschinger, 2008; Laschinger et al., 2001; Matthews et al., 2006).

Table 5.2
Percent Positive Responses for This Study (Structural Empowerment)

Hospital Survey on Structural Empowerment Instrument	Current Study
Opportunity in your present job	57.3%
Support in your present job	55.8%
Access to information in your present job	58.1%
Access to resources in your present job	56.1%
Opportunity for these activities in your present job	50.7%
Work setting/job	53.0%
Overall	54.2%

5.2.3 The Relationship between Structural Empowerment and Patient Safety Culture in the Saudi Hospitals

The idea was to test the relationship between structural empowerment and patient safety culture in the Saudi public hospitals and the results presented in the previous chapter reflect that there is significance relationship exists between the two factors. The results of this analysis exhibit that there is significant correlation exists between structural empowerment and patient safety culture but at a moderate level. This is only having an impact of about 20% of change in each other 80% do not have any effect of change between the two factors. So we draw a conclusion that the relationship between structural empowerment and patient safety culture in Saudi public hospitals is in moderate level therefore, we accepted the hypothesis that there is significant relationship exists between structural empowerment and patient safety culture in Saudi public hospitals.. It also shows that the patient safety culture is dependent upon the structural empowerment.

Research findings have revealed that when provision is made for an empowering work environment, this benefits the hospitals, patients and hospital staff. Empowerment has also been shown to rely on effective workplace structural elements, such as increased job satisfaction, participatory management, autonomy, organizational commitment, motivation and self-efficiency to contribute to client satisfaction, cooperation and respect in the organization, as well as success and achievement (Laschinger, 1996). Therefore, when a nurse works effectively, experiences positive influences from empowerment structures, and who has a working environment with established structures for informal and formal power, patients receive safe care and satisfaction (Laschinger, 1997).

This study significant correlation were found between the total structural empowerment score and subscales with each scale and single-item questions on the HSOPSC. These findings add to the current work done by Armellino (2010) and others who have studied structural empowerment. Structural empowerment has a link to culture of patient safety. According to SPO theory, when opportunities for structural empowerment are provided, employee attitudes improve, and the organization becomes more effective in achieving its goals ((Manojlovich, 2005). This study adds to the limited literature that provides a link between structural empowerment and culture of patient safety (Armstrong & Laschinger, 2006). Access to structural empowerment is an attribute of a culture of patient safety. These results support recommendations made by Page (2004) in the IOM's report "Keeping Patients Safe." The report recommended more research on work environment as it impact patient safety. The present research provides support for improvement of the staff work environment toward one that is structurally empowering to foster an increase in patient safety. Furthermore, the results of this study emphasize on important connections between workplace empowerment and the patient safety culture at public hospitals in Saudi Arabia. The results are consistent with suggestions made in the 2004 report by the IOM on workplace conditions that ensure patient safety (IOM, 2004).

5.2.4 The Relationship between Pro-Social Voice and Patient Safety Culture in The Saudi Hospitals

A correlation analysis was conducted to study if there is significance exists between the prosocial voice and patient safety culture at public hospitals in Saudi. The results revealed that there is no significant relationship exists between the two defined variables. And the correlation value between pro-social voice and patient safety culture in the Saudi

public hospitals is not significant at all. The r value has been 0.138 but it is not significant at any level of confidence either on p-value (0.01 or 0.05). It looks like that the variables of prosocial voice do not contribute towards the development of patient safety culture in the Saudi public hospitals. The finding is similar with Hill, (2011) study results that showed a weak positive correlation between registered nurses' prosocial voice and four dimensions of hospital patient-safety culture. Registered nurses were recruited from one hospital located in the Midwest United States. In spite, Hill study considered as first study to examine the relationship between variables (prosocial voice and four dimensions of patient safety culture). The previous study was conducted on nursing staff working in developed country and open culture that help the staffs to express his/her idea to improve situations. While the current study examine the prosocial voice with ten dimensions of patient safety culture at Saudi public hospitals. Furthermore, this study was conducted in many public hospitals to identify the effect of prosocial voice on patient safety culture. Most of these hospitals located in a small city and the most of the staffs do not have the ability to expose their knowledge. Prosocial voice is described in literature as a certain type of proactive and upward-directed workplace communication behaviour that is meant to enhance rather than to criticize a situation (Van Dyne et al., 2003). It is a construct that is of interest to researchers and practitioners alike owing to the upward-directed communication of work-related ideas, information or opinions that may add to a positive and collaborative work environment, and eventually brings about organisational effectiveness (Burris, et al., 2008; Tangirala and Ramanujam, 2008). Prosocial voice enables organisations to pinpoint opportunities and threats and enhance themselves on the basis of employees' opinions or suggestions (Detert and Trevino, 2010; and

Venkataraman and Tangirala, 2010).   Therefore, the workers at public hospitals under the ministry of health in Saudi Arabia might be not knowledgeable enough to reflect the prosocial voice among hospitals to improve patient safety. The Previous studies investigated prosocial voice as an outcome variable. Voice scholars have conceptually addressed prosocial voice as a distinct form of workplace communication behavior intended to improve processes and facilitate effective organizational functioning (Morrison & Milliken, 2000). Prosocial voice is especially important in hospital organizations, where hospital staff' prosocial voice about problems, opportunities, and issues related to patient safety enables leaders to detect errors and improve organizational approaches to patient safety (Tangirala & Ramanujam, 2008). The current study reported that there is no significant relationship between prosocial voice and hospital patient-safety culture at public hospital in Saudi Arabia.

Finally, prosocial voice has been examined throughout various organizations but only one study made use of healthcare workers as a sample population that employed registered nurses in the context of a hospital. Hence, a research gap is evident among studies assessing how hospital staffs employ their pro-social voice and its relationship to the patient safety culture of the hospital. This needs to address the issue for the improvement of the relationship between pro-social voice and patient safety culture.

5.2.5 The Interaction between Pro-Social Voice and Patient Safety Culture Moderated By Self-Monitoring in the Saudi Hospitals

First of all there is no significant correlation exists between pro-social voice and patient safety culture and pro-social voice and self-monitoring as moderating variable in this relationship. The correlation value between patient safety culture and pro-social voice is

0.138 and it is not significant as well at p-value 0.01 or 0.05. Similarly the correlation between patient safety culture and self-monitoring is also very low or almost none i.e. 0.084. This is also not significant too and the familiarity percentage is just 8.5%. Likewise, the F-value is also higher than the F-critical value, 2.451 and 0.123 respectively, therefore, this shows that variables of each factors do not support the arguments asked form the survey participants and the hypothesis is accepted because there is no role as moderator of self-monitoring to exist the relationship between pro-social voice and patient safety culture.

Therefore, in this study, self-monitoring was computed as the moderator variable. Individuals vary in the extent to which they consider situational cues and intentionally regulate their expressive behavior in a social context (Gangestad & Snyder, 2000) based on Self-monitoring theory. Studies of self-monitoring and prosocial voice have reported conflicting results. Self-monitoring did not moderate the relationship between prosocial voice and hospital patient-safety culture in the current study. Individuals with high self-monitoring tendencies, described as concern with self-image, were less likely to speak up than individuals with low self-monitoring tendencies (Premeaux and Bedeian, 2003). Premeaux and Bedeian described that self-monitoring negatively moderated the relationships between four antecedents and speaking up behavior. However, another study (Grant & Mayer, 2009) reported that there was no relationship between self-monitoring and prosocial voice. Milliken et al. (2003) reported that individuals with high self-monitoring engaged in increased prosocial voice when they believed speaking up would reflect positively on them. Thus, prosocial voice increased if an organization created a favorable context, described as one where top management is willing to listen

and the culture is perceived as supportive. The construct of self-monitoring is a process dimension in terms of SPO theory. Donabedian (1980) recommended that the relationship between employee personality and activity at workplace, coupled with the individual underlying psychological constructs that influence work motivation, donates to the culture of an organization (Donabedian, 1980). The specific processes involved in self-monitoring are still relatively unknown since self-monitoring is a complex cognitive, emotional, and social process. It is not known if self-monitoring behaviors unfolded or changed over time or if high self-monitoring individuals were concerned with maintaining a consistent pattern of behavior over time and setting because the current study was cross-sectional. The current study adds to the empirical research exploring the relationship between self-monitoring and prosocial voice in spite of these limitations. Therefore, to explain the complex nature of this relationship further investigation is required.

5.2.6 The Relationship between Structural Empowerment and Patient Safety Culture Mediated By Psychological Empowerment in the Saudi Healthcare Organizations

Results in Chapter 04 represent that there is no interaction between the patient safety culture and structural empowerment mediated by psychological empowerment. There is no correlation exists between structural empowerment and patient safety culture. This has already analyzed and proved in earlier section 5.2.3. as well that there is no correlation between these two factors. However, after hierarchal regression analysis, it has been found that the F value (5.134) is larger than the F-Critical value (0.25) and it is not significant at any p-value either ($\alpha \le 0.01$) or ($\alpha \le 0.05$).

The findings of this hypothesis was consistent with study of O'Brien, (2010) didn't find the mediated effect of psychological empowerment on structural empowerment and burnout among nurses. On the other hand, psychological empowerment was studied as a mediator for many studies (Avolio, Zhu, & Koh, 2004; Carless, 2004; Kimura, 2011; Arinl. et al, 2010; Boonyarit, et al., 2010; Kimura, 2011). The findings of these studies showed that psychological empowerment fully mediated the relation between variables.

Opposing to the hypothesis, findings did not support the theoretical proposition that psychological empowerment mediated the relationship between structural empowerment and patient safety culture at public hospitals in Saudi Arabia. Because may be there are many reasons behind this but most important would be that working staff in these healthcare organizations should realize the importance of psychological empowerment and practice them as it may require maintaining the patient safety culture and extending it at length. One of the theoretical gaps is that there is mediating effect of psychological empowerment on structural empowerment and patient safety culture. More essentially, the mediation impact of psychological empowerment (PE) on the structural empowerment (SE) has been studied by many researchers (O'Brien, 2010; Kimura, 2011; Arinl. et al, 2010) while its relationship with the patient safety culture (PSC) was not yet examined (Avolio et al., 2004; Khatri et al., 2009; Bonias et al., 2010).. Due to the critical issues of quality healthcare and the importance of human resource role, especially the psychological empowerment the associations between the SE, the PS, and the PSC should be understood by researchers and hospitals leaders to help employ the most effective human resource management practices to guarantee the provision of high-

quality patient care. Therefore, this study comes to fill the gap by investigating the mediating role of psychological empowerment.

5.3 Implications, Limitations and Future Research Directions

This section highlights some implications of the findings to both to theory and practice. In addition, this section will discuss the limitations of study and present several suggestions for future research.

5.3.1 Implications of This Research Study

This is important to specify that theories are formed within the practice and influence the development of new practices, which in turn are used as the guidelines for the evolution of new theory and new practices. To understand the context of Saudi healthcare organizations, the researcher applied Structure, Process and Outcome (SPO) theory focusing on structural empowerment (SE), pro-social voice (PSV) and patient safety culture (PSC) model with particular reference to the moderating role of self-monitoring (SM) and mediating role of psychological empowerment (PE).

5.3.1.1 Theoretical Implications

Findings from the main and interacting effects of the present study have extended beyond findings from other previous studies and thus have contributed new information to the body of knowledge in patient safety culture research. Based on model explained in Chapter three and analysis in Chapter four, model was developed to explain the factors that influence the patient safety culture.

The present study expanded the original model by including more patient safety culture dimensions (Teamwork Within Units, Supervisor/Manager Expectations & Actions Promoting Patient Safety, Organizational Learning—Continuous Improvement, Management Support for Patient Safety, Feedback & Communication About Error, Communication Openness, Teamwork Across Units, Staffing, Handoffs & Transitions and Non-Punitive Response to Errors). Similarly in the structural empowerment it has introduced work challenges, access to information, self-development and reward for performing better. The research suggests that power of patient safety culture would improve the healthcare units in Saudi Arabia after implementing the SPO theory which has developed a model used in this study and by considering the importance of psychological empowerment.

The findings generally indicated the validity of the SPO model in patient safety culture variables. The validity of the PSC and structural empowerment and its constructs in the health context at public hospitals in Saudi Arabia reflects the model's wide applicability, as shown earlier in different contexts (e.g., Bakker et al., 2004; Bakker & Demerouti, 2007; Demerouti & Bakker, 2011; Demerouti et al., 2001; Nielsen, Mearns, Matthiesen, & Eid, 2011; Schaufeli & Bakker, 2004; Schaufeli et al., 2009a).

This research has extended, elaborated and validated the patient safety culture model applicability to determine, predict and understand the factors of PSC in public hospitals in the Kingdom of Saudi Arabia. The findings showed that different PSC facts (i.e. Teamwork Within Units, Supervisor/Manager Expectations & Actions Promoting Patient Safety, Organizational Learning—Continuous Improvement, Management Support for

Patient Safety, Feedback & Communication About Error, Communication Openness, etc.) affected PSC differently and hence PSC applied accordingly, which provide empirical support for the proposition. Hence, some of the examined factors contributed significantly to provide in-depth understanding of how these factors influenced patient safety culture, and more importantly in a single study. However, given the mixed results shown on the mediating effect of psychological empowerment on specific facets of PSC, more studies need to be carried out to validate further the findings revealed. Hence, future research is needed to investigate the moderating role of self-monitoring in buffering the negative effects of PSC.

5.3.1.2 Practical Implications

In this study, structure-process-output (SPO) model, and the patient safety culture model were considered suitable to explain PSC. In addition, this theoretical knowledge will develop the patient safety culture sector of Saudi Arabia and PSC education in universities of Saudi Arabia. In particular, this study was designed to address the patient safety culture in Saudi Arabia by proposing a new safety guideline that can help the Ministry of Health in Saudi Arabia to prepare appropriate policies and PSC strategies. For instance, the Ministry of Health may want to examine the workplaces environment of the nursing staff so that they could be less stressful at work and hence perform better job and deliver better services to the public. Because the public healthcare is important in the wake of the Saudi government call for future human capital development for the country, good and quality services from the healthcare providers are imperative. In this section of the social welfare, nursing staff's quality delivery of healthcare services is one of the

good measures on how far the human capital development can be achieved, as envisioned by the Saudi government. In other words, to make sure that staff is capable to deliver excellent healthcare services in the Kingdom of Saudi Arabia, preparing and executing long-term strategies on the development of nurses are needed.

5.3.2 Limitations of Study

Whereas the present study has provided some insight into the importance of patient safety culture, structural empowerment, psychological empowerment, self-monitoring and pro-social voice, several weaknesses or limitations of this research, both conceptual and methodological, are notable that need to be acknowledged as follows:

1. Due to the small sample size (30) in each hospital and covering just two provinces in Saudi Arabia, the predictive power of PSC could be limited in the current study. But despite this limitation, the PSC has shown to be able to explain relationship between structural empowerment and patient safety culture and relationship between pro-social voice and patient safety culture quite obviously. To validate further the model, a bigger sample size may be required in the future.

2. Because some of the hypotheses unexpectedly resulted true but negatively to receive empirical support, common method bias (due to self-reported measures) might have played a role (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003; Rodriguez-Munoz, Sanz-Vergel, Demerouti, & Bakker, 2012), although recent studies showed that this influence may not be as high as expected (Spector, 2006). In the future, researchers should consider including more objective outcomes to

enhance the explanatory power of structural empowerment and psychological empowerment.

3. The response rate was 47%. Therefore, the present findings are tentative until replicated in studies with a higher response rate. Even though the study does not have any data on healthcare organizations that did not return the questionnaires, generally speaking, a response rate of 47% is not more enough.

4. Another weakness is that we could incorporate only a few aspects of patient safety culture in our questionnaire. Future studies may consider other characteristics to test the full potential of the SPO model in predicting relationship between structural empowerment moderated by psychological empowerment and relationship between pro-social voice and patient safety culture mediated by self-monitoring.

5. This study tried to examine the causes of decrease or increase in PSC from hospitals staff' perspective only. It did not consider other aspects such as weaknesses in the strategy and policies of the Ministry of Health in Saudi Arabia, weaknesses in human resources that may affect the quality of services provided by hospital staff at public hospitals in Saudi Ministry of Health, which could impact on perceptions of staff.

Despite of the weaknesses and limitations of this study the analysis and findings are still valid to understand patient safety culture in Saudi Arabia, and consequently provide some insight for the benefit to practitioners and managers on how to address issues related to enhancing patient safety culture in the healthcare organizations in the Kingdom.

5.3.3 Recommendations for Future Research

Based on the obtained findings, discussion and research implications, the following recommendations are formulated for academic researchers, Ministry of Health management and administrations, management and administrations and nursing staff to undertake in order to achieve a high level of patient safety culture in the Saudi healthcare organizations. Additional studies can be carried out to further examine some important areas:

1. In this research, the demographic variables were examined with descriptive analysis. Therefore, future research could possibly investigate the effects of these variables as moderators or antecedents to other factors and specifically to its related variables. For instance, because the nursing sector in sample consists of 53% of pediatric and surgical, rest of the nursing staff who is involved mainly in the patient safety culture belong to rest of the units in any healthcare organizations ,therefore, the effect of specialized units as moderator between structural empowerment and patient safety culture is needed in the future.

2. In order to further validate the acceptability of the conceptual model and the applicability of SPO theory, future researchers may wish to empirically test the constructs in other contexts, such as in private hospitals or other healthcare organizations.

3. In order to obtain a better representation for the entire population of those who deliver healthcare services, future studies may want to consider other hospital members such as

physicians, pharmacists and allied health personnel, in order to identify and determine the important factors that could affect patient safety.

4. The reported R-square yielded other additional variables that might be needed from all the variables; patient safety culture, psychological empowerment, structural empowerment, pro-social voice and self-monitoring. Therefore, future research could investigate and test the relationship between pro-social voice and patient safety culture with more additional variables.

5. The present research used only quantitative methods in collecting the data. Thus, it would be useful if future investigation could use qualitative techniques of data collection like in-depth interview, observation, and projective method which can help the researcher to understand and discern the experiences of nursing staff in the course of accomplishment of patient safety culture in the healthcare organizations.

6. The research examined the proposed factors in light of the structure-process-outcome (SPO) model as a theoretical basis. Future research could examine these factors with other acceptance theories or models. It could confirm and validate the significance of these variables in relation to other main indictors of acceptance in these models and theories.

5.4 Conclusion

This research comes with six objectives; assessment of patient safety culture at public hospitals in Saudi Arabia the factors influencing patient safety culture among the Ministry of Health public hospitals in Saudi Arabia using patient safety culture mode

based on structure-process-outcome (SPO) theory. The findings showed that the there is no significant relationship between pro-social voice and patient safety culture moderated by self-monitoring. In addition, there was no significant mediating role of psychological empowerment and structural empowerment and patient safety culture at Saudi Arabia public hospitals.

The present research model was tested and validated with 127 hospitals in two provinces; central and western, in Saudi Arabia. The study found the level of application of patient safety culture in the healthcare units in Saudi Arabia is needed to be addressed. Also the study found no direct significant relationships among the tested pro-social voice and patient safety variables while there was significant relation between structural empowerment and patient safety culture at public hospitals in Saudi Arabia.

In addition, the study found partial support for the role of organizational factors to develop and maintain the PSC. In sum, despite the mixed results, in general, the present study managed to find support for the SPO theory on patient safety culture in the healthcare organizations in Saudi Arabia.

In this study, the psychological empowerment has been considered an important and reasonable factor, to the stimuli in the work environment. The study also confirmed, although partially, the significance of organizational structure in mitigating the effect over patient safety culture. The findings in general have important implications to practice in particular on the need to address the effect of patient safety brought about by the characteristics in the healthcare organizations in Saudi Arabia.

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