

Measuring the current patient safety culture in public general hospitals of Southern Nations Nationalities and Peoples Region (SNNPR), Ethiopia: perspective of health care workers

By:

Tekle Ejajo (BSc)

A research report submitted to Jimma University, College of Health Sciences, Department of Health Economics, Management and Policy; In Partial Fulfillment of the Requirements For The Degree of Masters of Public Health in Health Service Management

JUNE 2015

JIMMA, ETHIOP

Measuring the Current Patient Safety Culture in Public General Hospitals of Southern Nations Nationalities and Peoples Region (SNNPR), Ethiopia: perspective of health care workers

By:

Tekle Ejajo (BSc)

Advisors:

1st. Dr. Mirkuzie Woldie (MD, MPH) Associate professor

2nd. Mr Ayinengida Adamu (BSc, MPH)

JUNE 2015
JIMMA, ETHIOPIA

Abstract

Background: Patient safety is crucial to the quality of patient care and remains challenging for countries at all levels of development. There is a popular acknowledgement of the importance of establishing patient safety culture in healthcare organizations. As a result, assessing patient safety culture and frequent event reporting in healthcare organizations has become a common activity to improve quality of health care.

Objective: The aim of this study was to examine the current patient safety culture from the perspective of healthcare workers in Southern Nations Nationalities and Peoples Region Public General Hospitals.

Methods: A cross-sectional study conducted from February 16 to March 16, 2015 using Hospital Survey on Patient Safety Culture questionnaire, which has 12 dimensions. Overall, we distributed 540 questionnaires and received 433 respondents. Patient safety grade and number of event reports computed descriptively. Then, the effect of various independent variables on frequency of events reported had assessed using multiple linear regressions analysis. Data were analyzed using SPSS version 16.0. In all cases, $P < 0.05$ and 95% confidence interval had used to check statistical associations.

Results: The overall patient safety grade as rated by the participants was acceptable (58.4%) and poor (20.1%). PSC (patient safety culture) dimensions found to have a significant association with frequency of events reported in the studied hospitals. Overall perceptions of safety and Non-punitive response to error were positively associated with frequency of events reported ($\beta=1.052, 0.44, P=0.000$). Organizational learning and continuous improvement, Communication openness and feedback about error, Teamwork across and within hospital unit were also positively associated with frequency of events reported at ($P < 0.001$).

Conclusion: This study indicated that poor PSC dimension system and low event reporting frequency in the respective hospitals, and there should be strong work on PSC dimension to increase frequency of event reporting.

Key words: Patient safety culture; Frequency of events reported; an event

Acknowledgment

All thanks and praises be to the almighty God for the numerous blessing that he has given upon me during the course of the entire master program and this research.

I must express my sincere gratitude to the following people whose love, guidance and encouragement enabled me to complete this work:

Firstly, sincere thanks go to my first Advisor, Dr. Mirkuzie Woldie (MD, MPH) Associate professor and second Mr. Ayinengida Adamu (BSc, MPH), who helped me throughout this piece of work, from the formulation of the research framework until the very end. They offered continuous support and opened their door to me for comments and suggestion.

I would like to express my heartfelt thanks to staff and Department of Health Economics, Management and Policy for the great moments I had over the cause of my study in Jimma University. I really learned a lot from the lectures and instructors and I know that the lessons learnt will help me in my future career.

I have thanks to QEMH, Yirgalem, and Butajira Hospitals administrative body.

Great thanks go to supervisors, data collectors, and all the respondents.

I would also like to thank Shashogo district health office for providing me with a sponsorship letter to study at Jimma University.

My special thanks and appreciation goes to all my family members and friends.

Finally, my heartfelt thanks go to my love Yemsirach Girma for her maximum patience and sacrifice during this period of my absence.

TABLE OF CONTENTS

Contents

Abstract.....	I
Acknowledgment.....	II
TABLE OF CONTENTS.....	III
List of figures.....	V
List of tables.....	VI
Acronyms.....	VII
CHAPTER ONE.....	1
1. INTRODUCTION.....	1
1.1. Background.....	1
1.2. Statement of the problem.....	2
1.3. Significance of the study.....	4
CHAPTER TWO.....	5
2. LITERATURE REVIEW.....	5
2.1. The concepts of patient safety culture.....	5
2.2. Measurement of patient safety culture and dimensions of PSC.....	5
Patient safety grade and number of events reported.....	12
CHAPTER THREE.....	13
3. Objectives.....	13
3.1. General objectives.....	13
3.2. Specific objectives.....	13
CHAPTER FOUR.....	14
4. METHODS AND MATERIALS.....	14
4.1. Study area and period.....	14
4.2. Study design.....	14
4.3. Population.....	14
4.4. Inclusion criteria.....	15
4.5. Sample size and sampling technique.....	15
4.6. Data collection tools.....	15

4.7.	Data collection procedures.....	16
4.8.	Study variables.....	16
4.9.	Operational definitions.....	16
4.10.	Statistical analysis procedures	19
4.11.	Data quality management.....	21
4.12.	Ethical consideration.....	21
4.13.	Dissemination plan.....	22
CHAPTER FIVE		23
5.	RESULTS	23
5.1.	Characteristics of the study respondents.....	23
5.2.	Patient safety grade and number of events reported	25
5.3.	Frequency of the positive respondents towards patient safety dimension	26
5.4.	Comparison of positive response of the PSC dimension scores among the three hospitals	27
5.5.	Respondent character as Predictors of Patient Safety	28
5.6.	Dimensions of Patient Safety as Predictors of Frequency of events reported	30
5.7.	Linear multiple regression for patient safety composite component scores and respondents characteristics.....	32
CHAPTER SIX.....		35
6.	DISCUSSION	35
	Limitations of the study	37
CHAPTER SEVEN		38
7.	CONCLUSIONS AND RECOMENDATIONS	38
7.1.	Conclusions.....	38
7.2.	Recommendations.....	38
References.....		40
	Annex 1 questionnaire	43
	Annex Amharic.....	51
DECLARATION		59

List of figures

Figure 1 Patient Safety Culture conceptual framework adapted after reviewing different literatures.....	12
Figure 2 Percentage of respondents on patient safety grade to patient safety culture at SNNPR Public general hospitals February 16 to March 16, 2015	26
Figure 3 Percentage of respondents on number of events reported to patient safety culture at SNNPR Public general hospitals February 16 to March 16, 2015	26

List of tables

Table 1 Descriptions of patient safety measure dimensions after item reduction using PCA at SNNPR Public general hospitals February 16 to March 16, 2015	21
Table 2 Characteristics of the study respondents at SNNPR Public general hospitals February 16 to March 16, 2015 (n=433)	23
Table 3 Distribution of percentages of patient safety grade and number of events reported at SNNPR Public general hospitals February 16 to March 16, 2015	25
Table 4 Frequency of the Positive respondents towards patient safety dimension at SNNPR Public general hospitals February 16 to March 16, 2015	26
Table 5 Comparison of positive response of the PSC dimension scores among the three hospitals at SNNPR Public general hospitals February 16 to March 16, 2015.....	27
Table 6 Model one respondent characteristics as predictors of frequency of events reporting at SNNPR Public general hospitals February 16 to March 16, 2015	28
Table 7 Dimension of Patient Safety as Predictors of Frequency of events reported score at SNNPR Public general hospitals February 16 to March 16, 2015	31
Table 8 multiple regression results showing the relationship between all variables and frequency of events reported score at SNNPR Public general hospitals, February 16 to March 16, 2015 ...	33

Acronyms

AHRQ -Agency for Healthcare Research and Quality

AIDS- Acquired Immune Deficiency Syndrome

B.C -before Christ

BSc -Bachelor of Science

CEO -Chief Executive Officer

CPOE -Computerized Physician Order Entry

DSS -Decision Support System

HMIS -Health Management Information System

HSM -Health Service Management

HSOPSC -Hospital Survey on Patient Safety Culture

ID -Identification number

JU -Jimma University

KMO -Kaiser-Meyer-Olkin

MD -Medical Doctor

MPH -Masters of Public Health

NGO -Non-governmental Organization

PSC -Patient Safety Culture

QEMH-Queen Eleni Mohamed Memorial Hospital

SNNPR -Southern Nation Nationalities and Peoples Region

SPSS -Statistical Package for Social Science

UK -United Kingdom

US -United State

US\$ -United State Dollar

WHO -World Health Organization

CHAPTER ONE

1. INTRODUCTION

1.1. Background

Patient safety is the central theme and ultimate objective of health care quality. The World Health Organization (WHO) has defined patient safety as “the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum” (1).

Health care organizations around the world have lately observed to pay more attention to the importance of establishing a culture of safety. To achieve a culture of safety, it is necessary to understand the principles, attitudes, and standards related to an organization and what behavior related to patient safety are expected and appropriate (2).

In 1999, a landmark report of the Institute of Medicine, “To Err is Human”: Building a Safer Health System” was, released, and patient safety came to the forefront of the world’s attention (3). The report revealed that an estimated 44,000 to 98,000 people die every year from medical errors that occur in US hospitals, more than those that die from motor vehicle accidents, breast cancer, and AIDS combined (4). The media coverage of the report was swift and widespread, resulting in a sudden public awareness of the problem (5). The public expressed shock and the issue attracted the concern of policy makers, healthcare administrators and researchers, and consequently, our understanding of patient safety continues to increase.

It has become well recognize; globally that hospitals at different setting and other healthcare organizations are not as safe as they should be. In October 2004, the WHO launched the World Alliance for Patient Safety (1). The Alliance described patient safety as a global issue affecting countries at all levels of development. Patient safety problems are believed to be hidden in health care organizations, especially in developing countries where less is still known about impact of problem (1).

Adverse events exert a high toll in financial losses, as well. In the UK, consequent additional hospital stays alone cost about £2 billion per year, and paid litigation claims cost the National Health Service around £400 million annually (6). The total national cost of preventable adverse medical events in the USA, including lost income, disability and medical expenses, is estimated

at between US\$ 1.7 billion and US\$ 2.9 billion annually. Added to these costs is the erosion of trust, confidence, and satisfaction among the public and health care providers (6). This is a universal phenomenon affecting all countries at all levels of development.

Resolution 55.18 of the Fifty-fifth World Health Assembly, passed in May 2002, called upon member states to pay the closest possible attention to the problem of patient safety (1). Developing a patient safety culture was one of the recommendations made by the Institute of Medicine to assist health care organizations in improving patient safety. Patient safety culture has typically defined as “the shared attitudes, beliefs, values and assumptions that underlie how people perceive and act upon safety issues within their organization” (7). It has advocated that an organization’s safety culture is a fundamental factor that influences system safety. Therefore, current efforts to improve patient safety focus on system problems, rather than individual culpability, by promoting a culture of patient safety (8). Establishing a culture of patient safety and embedding it within all levels of an organization is vital.

There is now a substantial body of evidence demonstrating the benefits of patient safety culture for both patient and health care organizations: because all constituencies win when patient, safety improves. It has believed that as patient safety culture improves, patient safety improves, employee satisfaction improves, organizational citizenship improves, patient satisfaction improves, quality of care improves, malpractice cost decreases, and the overall reputation and financial security of the organization assured (9).

Medical errors are an inevitable and a sad reality of medical practice (8). However, establishing patient safety culture in health care organizations has shown to be a potential strategy for improving patient safety.

1.2. Statement of the problem

According to WHO estimates tens of millions of patients worldwide endure disabling injuries or death each year that relate directly to unsafe medical practices and care. “It also affects the lives of doctors, nurses and other health care staff who become the 'second victims' in a chain of events.” The incidence of medical errors during healthcare procedures is 7.5%, and majorities of the adverse events has identified as preventable (10). For instance, a Harvard Medical Study of an acute care hospital in 1984 found an adverse event rate of 3.8%. Similarly, in 1992, a study on

quality in Australian acute care hospitals found the rate to be 16.6%. Furthermore, studies conducted in acute care hospitals in UK (1999-2000), Denmark (1998), New Zealand (1998) and Canada (2001) found the adverse event rates to be 11.7%, 9.0%, 12.9%, and 7.5% respectively (6).

It is likely that millions of patients globally suffer from injuries, disabilities or even death due to medical errors. WHO reported an adverse event rate of about 10 percent (1), which would mean that one in every ten patients facing suffers from adverse events. Twenty five percent of patients in ambulatory care practices experience adverse drug events (11). Commonwealth Fund studies in 2002 revealed that 25 percent of patients across four countries reported that they had experienced some form of medical error in the past two years (12). Although medical errors happen in countries at all levels of development, there is a fear that developing countries may affected disproportionately.

In developed countries, information technologies are increasingly been used in healthcare to improve patient safety. Studies have shown that Computerized Physician Order Entry (CPOE), especially when combined with Decision Support System (DSS), improves patient safety (13).

“In the African Region, most countries lack national policies on safe health-care practices. Inappropriate funding and unavailability of critical support systems including strategies, guidelines, tools and patient safety standards remain major concerns in the region.” Furthermore, the report implied that understanding of the problems associated with patient safety has hampered by inadequate data (14).

As Tsion et al indicated that, “Ethiopia is not an exception to this state of the problem. There exists little empirical evidence about patient safety culture and medical errors in the region in particular and the health system of Ethiopia in general. However, circumstantial evidences show that almost all medical errors have been treated traditionally through blaming, shaming and punishment. Moreover, most medical errors have not reported and/or hidden. Consequently; health professionals and managers are not in a position to learn from mistakes committed in the health care institutions” (15). Therefore, this study concerning to measure the current patient safety culture in public general hospitals of the southern nations nationalities and peoples region.

1.3. Significance of the study

For the effective improvement of all aspects of health care quality, it is believed that establishing a culture of patient safety within healthcare organizations is the best strategy. This belief has led to growing interests in patient safety culture among policy makers, healthcare managers, practitioners, and researchers.

This study seeks to assess, the current patient safety culture in the SNNPR public general Hospitals from the perspective of healthcare professionals. The findings will be beneficial to respective hospitals, healthcare workers, managers, health policy makers, and future researcher in terms of improving patient safety culture and the image of the care organizations.

CHAPTER TWO

2. LITERATURE REVIEW

2.1. The concepts of patient safety culture

While patient safety might appear to be a new and emerging issue, historical evidence shows a concern for patient safety that existed long before modern medicine. Hippocrates, for example, had known the possible harm that arises from the well-intentioned actions of healers. In the 4th Century B.C., Greek healers wrote the Hippocratic Oath, “in which they indicated their commitment for the good of their patients, according to their ability and judgment and to avoid patient harm” (18). However, it is true that patient safety has become a prominent topic recently, especially ever since President Bill Clinton introduced “a nationwide system of reporting for medical errors in response to the Institute of Medicine report of 44000 to 98000 American deaths each year from medical mistakes”. He also required all 50 states to adopt the error reporting systems (19).

Several and varied definitions of safety culture have been arisen in literatures. It has been observed that some studies use the terms patient safety climate and culture interchangeably. There has been considerable discussion about the relationship between safety culture and safety climate. It is now generally accepted that the two concepts are closely related and that safety climate consists of the surface elements of the safety culture (20). When using questionnaires to study group-level perceptions, the most appropriate term to use is climate. Climates are more readily measurable aspects of safety culture (21).

2.2. Measurement of patient safety culture and dimensions of PSC

Patient safety culture measuring tools

The increasing need for assessing patient safety culture has led to development of numerous instruments for specifically measuring patient safety in the healthcare industry. These include the Safety Attitude Questionnaire, the Stanford Instrument (22), and the Hospital Survey on Patient Safety Culture (23). The availability of different varieties of instruments raises the question: which instrument is the best? Not surprisingly, there is no one best instrument, as the all have strengths and weaknesses (23). However, the Agency for Healthcare Research and Quality (AHRQ) encourages healthcare organizations to conduct safety culture surveys using HSOPSC,

with its high reliability and validity. This instrument is the most recent, and has been used in over 31 countries, such as the United States, Saudi Arabia, Canada, the United Kingdom, Belgium, Denmark, Norway and Taiwan. The HSOPSC has much strength, such as good psychometric properties, cross-country comparisons are possible and comprehensive coverage of safety culture (20).

Adverse event reporting

It is widely believed that people can learn from their past mistakes and if the lessons learned have shared, more people become aware. If people can learn from the experience of others, then they would become more effective in preventing similar mistakes. An effective safety event reporting system is an essential part of a comprehensive patient safety culture. Patient safety has received increasing attention over past decade, but efforts to address the problem have yielded modest results, as recently as 2007, nearly one in five Canadians reported that someone in their family had experienced an adverse events (24). A study in Lebanon found event reporting to be a major predictor of a positive patient safety culture in health care organizations, even though the study report indicated that respondents working at accredited hospitals were more likely to report more than 5 events (7.7%) over the past 12 months (25). WHO reported an adverse event rate of about 10 percent (1), which would mean that one in every ten patients facing suffers from adverse events. Twenty five percent of patients in ambulatory care practices experience adverse drug events (11).

Hospital with a patient safety culture are transparent and fair with staff when incidents occur, learn from mistakes, and, rather than blaming individuals, looking at what went wrong in the system (26). A study of pediatrician in the United State indicated willingness among them to report errors to hospital, but the belief that current reporting system are inadequate and struggle with errors disclosure and only 39% thought that current error reporting systems were adequate (27). Hospitals should improve their reporting systems and encourage staff to report adverse events and even near misses because this could help prevent future errors and improve patient safety. Most respondents (84.3%) agreed that reporting errors improves the quality of care for future patients (28). However, it should consider because PSC scores decreased as seniority increased (10).

Advocates of patient safety have called strongly for the removal of blame and shame from the reporting of medical errors (28). Health care organizations should even seek to reward error reporting. Interests are also increasing in encouraging health care organizations to report these events to central entities such as government patient safety institutions to improve patient safety throughout the healthcare system (8).

Management and culture of patient safety

A managerial commitment to safety was identified as the most strongly positive attributes of a patient safety culture (29). If the staff in any health care organization is to believe that patient safety is a priority, the message must come from Chief Executive Officer (CEO), supervisors, and the board (5). It is vital that this message be visible and consistent, not only through memos, but by directly visiting staff and discussing patient safety (5). Therefore, the commitment of health care organizations' leadership to patient safety issues is essential for an optimal patient safety culture.

The leaders communicate the importance of patient safety in the priorities they set, the decisions they make about resource allocation, and the patient safety-related employee feedback they provide (17). Engagement between the leadership and the staff will not only promote teamwork, but also improve confidence among staff to improve patient safety culture (17).

Characteristics of a strong a proactive safety culture include the commitment of the leadership to discussing and learning from errors by documenting and analyzing adverse events, as well as encouraging and practicing teamwork (17).

Non-punitive response to errors

Healthcare organizations need to trust their employees and technically establish a non-punitive environment. This can encourage staff to discuss errors openly with their colleagues. Common sense should lead us to understand that humans by nature are prone to errors, despite the aim of healthcare workers to provide the best possible patient care. Therefore, healthcare organizations should make the environment conducive to facilitate error reporting, ensuring that healthcare workers are free of shame and blame as the result of a mistake, while the non-punitive response to error received the lowest positive response 21.1% (28).

Half of the nearly 600,000 staffers surveyed at more than 1,110 hospitals nationwide said they believe their mistakes are held against them, and 54% said that when an adverse event is reported, "it feels like the person is being written up, not the problem." Nearly two-thirds said they worry that mistakes are being held in their personnel file. A little less than half of respondents said they "feel free to question the decisions or actions of those with more authority." These numbers have not substantially improved since AHRQ released its first patient-safety culture report in 2007. About one-fifth of hospitals have improved their performance in the category of "no punitive response to error." However, 16% have worsened with time, while the majority of hospitals have treaded water on this key indicator of safe culture (30).

Communication openness and feedback

Studies have indicated that a lack of proper communication among healthcare workers is one of the leading causes of adverse events. A review of reports from the Joint Commission reveals that communication failures implicated at the root of over 70 percent of sentinel events (31). Communication failures can compromise optimal patient care and are one of the most common root causes of medical error and adverse events. It is therefore vital for health care organizations continuously remove all barriers to open communication such as blaming, shaming, and a lack of feedback mechanisms (32). Of the 25 000 to 30 000 preventable adverse events that led to permanent disability in Australia, 11% were due to communication issues (2).

Healthcare managers need to provide feedback to healthcare workers about errors and listen to the concerns of staff. This will encourage staff to speak up about near misses and adverse events. A study conducted in South Australia found that almost two thirds of respondents believed a lack of feedback was the greatest deterrent to reporting (33). More than 90% of consumers believe that healthcare workers should report errors and peak quality and safety organizations recommend incident reporting to better understand errors and their contributing factors. This indicates that when staffs are not getting any feedback from the management after reporting an adverse event, they will begin to question the necessity of sending any future reports (33).

Learning and continuous improvement

Organizational learning and continuous improvement are crucial to patient safety culture because they enhance awareness and skill. Hospitals should therefore continue efforts to create learning environments in which error discussions are valued and those who discuss their own errors have respected. An environment with an effective learning culture where people constantly and consistently seek to bring about improvement is very important. The majority of physicians agreed that to improve patient safety, they should report errors to their hospital or health care organization (92 percent, serious errors; 77 percent, minor errors; and 73 percent, near misses). Physicians were also very interested in learning about errors. Ninety-five percent agreed that to improve patient safety, they needed to know about errors that occurred in their hospital or health care organization, and 89 percent agreed that they should discuss errors with their colleagues (8). A survey of 1,082 U.S Physicians found that most of them wanted to be trained in new skills to prevent common errors. Health care organizations must learn about actual and potential errors. New methods to improve patient safety must be disseminated to health care workers and implemented (8). Continuous education within the healthcare organization can facilitate staff awareness concerning new methods as well as enhances skills effectively deal with patient safety issues and facilitates a forum where all issues concerning patient safety can be improved (8).

Teamwork

When people work in teams they tend to help, each other identify errors and prevent unnecessary hazards from reaching the patient. Teamwork has great potential for preventing errors compared to working individually. Adverse event reports found communication and teamwork issues to be among the most frequent contributory factors (i.e. in 22-32% of reports)”. It facilitates valuable contributions and encourages participation in decision-making from staff. It fosters collaboration in terms of the strengthening of shared goals and the creation of mutual respect and trust among team members (34).

Patient safety depends on teamwork and it is not just about people coming together, but also about the willingness to cooperate over shared goals such as maintaining health status and avoiding medical error. Patient safety for trainees through a study of malpractice claims that conclude that teamwork breakdowns contributed to 70% of errors among trainees (35). A well-structured teamwork environment creates shared mental models among the team members that produce a shared perception of a situation, an understanding of team structure and team tasks and

roles. Teamwork in a safety culture can promote adaptive coordination for instance, dynamic task allocation when new members join the team and increased information exchange and planning in critical situations. It can also promote openness of communication, quality of communication, and specific communication practices. In particular, fewer physicians (54%) than nurses (84%) perceived encouragement from their supervisors to report safety concerns. Fewer physicians (46%) than nurses (86%) indicated they were aware of the proper channels to report adverse events. In addition, fewer physicians (54%) than nurses (63%) were aware that patient safety was a major initiative for the hospital (17).

Perceptions on patient safety culture in health care organizations

The current thinking on patient safety recognizes the growing need for establishing a patient safety culture in health care organizations to improve patient safety and quality of care. Establishing an environment of patient safety may be challenging because it is associated with a change of behavior. The perception one may draw from the literature is that, once a health care organization succeeds in changing the perceptions of frontline healthcare workers patient safety, it can be assured of having the most reliable and effective strategy for achieving quality of patient care.

Positive patient safety culture reduces adverse events (36). Empirical studies have found that, fewer medical errors tend to occur in hospitals that embrace a culture of patient safety (37). A culture of patient safety is recursive in nature, in that it influences the behavior of healthcare workers. The behavior of healthcare workers, in turn, influences the safety culture of the organization. A positive safety culture guides the many discretionary behaviors of healthcare workers toward viewing patient safety as one of their highest priorities

Summary of literature review

Patient safety culture described as a comparative new area and the current thinking for improving patient safety in health care organizations mainly focused on generating a culture of patient safety. Many tools have developed for the evaluation of this culture. It has believed that the impact of a positive patient safety culture in changing behavior among healthcare workers is stronger than any rules or regulations. It has found that mistakes could be still occurring even

among a collection of the best employees. However, a culture of patient safety usually influences the entire system and improves patient safety.

A strong patient safety-oriented leadership will foster a spirit of teamwork that will encourage event reporting without fear of blame and shame among staff. This will support learning and continuous improvement through open communication and feedback mechanisms. Subsequently, the overall perceptions of staff regarding patient safety will improve, especially among the frontline staff.

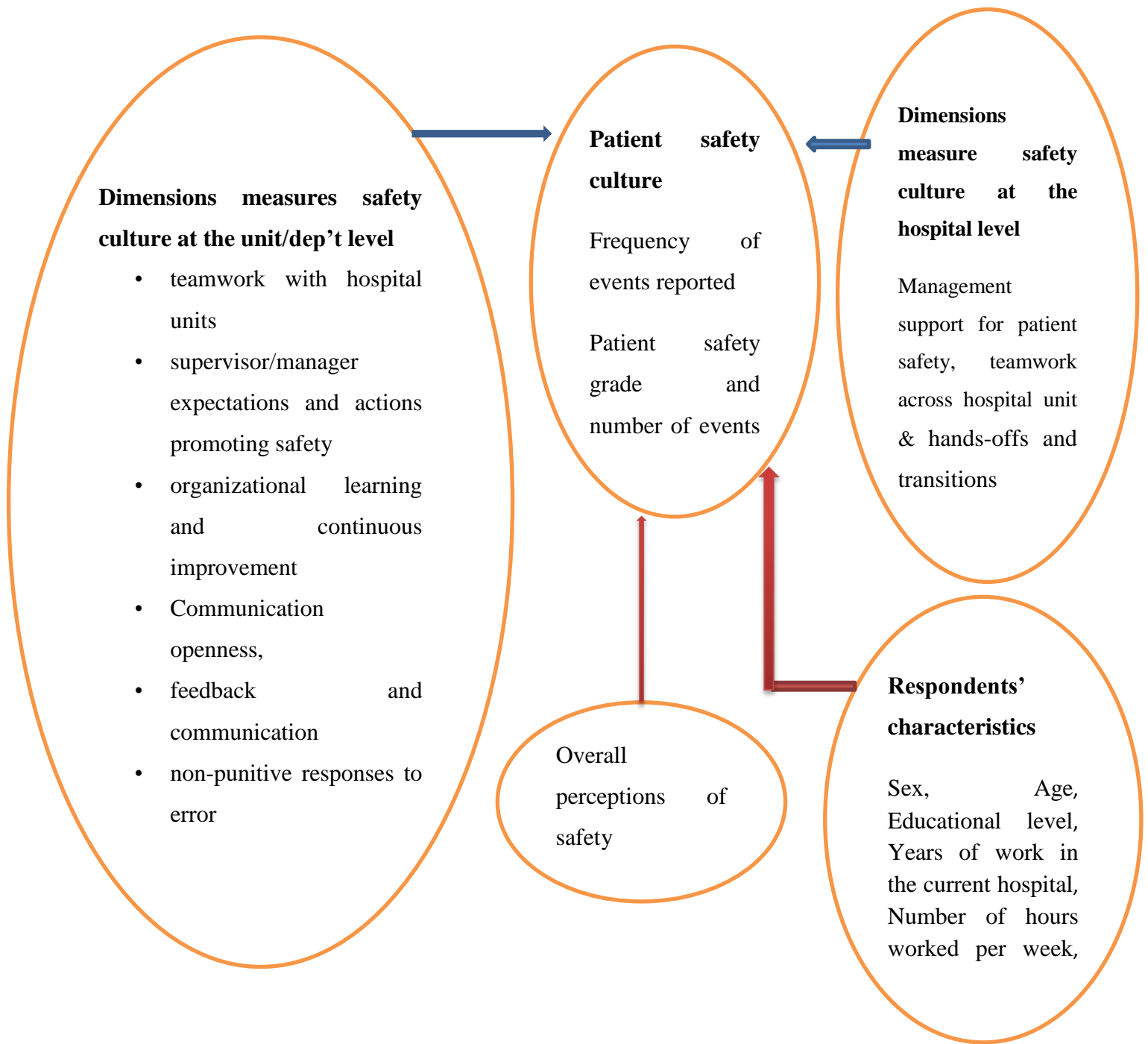


Figure 1 Patient Safety Culture conceptual framework adapted after reviewing different literatures

CHAPTER THREE

3. Objectives

3.1. General objectives

To measure the current patient safety culture within perspectives of health workers in public general hospitals of the Southern Nations Nationalities and Peoples Region, 2015

3.2. Specific objectives

- ◆ To assess the level of patient safety culture in SNNPR public general hospitals
- ◆ To assess attitudes and perceptions of health care workers towards patients safety culture in SNNPR general public hospitals
- ◆ To identify the factors related to patient safety culture as measured by frequency of events reported

CHAPTER FOURE

4. METHODS AND MATERIALS

4.1. Study area and period

The study had conducted from February 16 to March 16, 2015 in the SNNPR. The region is located in the Southern and south-western part of Ethiopia. Its capital city Hawassa is located 275km far away from Addis Ababa. The region has 15 zones, 4 special woredas, 156 woredas, 22-reform town, 3602 rural kebeles, and 324 urban kebeles. Astronomically, the region is roughly lies between 4^o.43-8^o.58 North latitude and 34^o.88-39^o.14 East longitudes. The region has bordered with Kenya in South, Sudan in South West, Gambella region in North West and surrounded by Oromiya region in North West, North and East directions. The total area of the region estimated to be 118000 Sq.km, which is 10% of the country and inhabited by a population size of about 18,951,895 accounting nearly 20% of the total population of the country. The region is a multination, which consists of about 56 ethnic groups with their own distinct geographical location, language, cultures, and social identities living together. In the three hospitals, there are 540 health professionals. The region has 19 public, 2 NGO and 4 private hospitals and of government hospitals, only six are general hospitals.

4.2. Study design

A cross-sectional institution based study design was conducted.

4.3. Population

4.3.1. Source population

The source population for study included all health professionals in six public general hospitals of SNNPR.

4.3.2. Study population

The study population was comprised of all health professionals in three selected general hospitals of SNNPR.

4.4. Inclusion criteria

The study had included health workers in the hospitals from all units of the hospital and they were full-time current employees.

4.5. Sample size and sampling technique

In the study, 50% of the general hospitals in the region have selected randomly by lottery method; Butajiara from Gurage, Queen Eleni Mohammed from Hadiya, and Yirgalem general hospital from Sidama zone were included.

The list of health workers compiled from the management of each participating hospital. This helped us to track the distribution and collection of the questionnaire.

To have sufficient number of participants from each of the general hospitals, average number of staff was looked at each hospital. "All health workers fulfilling the inclusion criteria were included in the study" (15). A total 540 questionnaires distributed to hospitals.

4.6. Data collection tools

The AHRQ Hospital Survey tool for patient safety culture, which was already used in various countries (United States, Saudi Arabia, Canada, the United Kingdom, Belgium, Denmark, Norway, Ethiopia and Taiwan), was used to ask hospital staff about patient safety issue, medical error and event reporting (15, 19, 20, 22, 25, 39, 40, 42). For this study, the questionnaire translated into the Amharic language using forward translation technique. To confirm the linguistic validity and contextual relevance to the target population, the translated version pre-tested before administration at Dilla General Hospital by using 5% of the sample.

Five-point Likert scale of agreement (strongly disagree, disagree, neutral, agree and strongly agree) or frequency (never, rarely, sometimes, most of the time, always) were used to ask respondents to rate each item of patient safety dimensions. The instrument includes eight items that ask respondents to provide limited background information related to their work. WAGNER C. et al recommended in their study "The hospital survey on patient safety culture questionnaire places most of its emphasis on safety culture at the unit level, because staff will be most familiar with safety culture at this level" (43). The tools also included questions on the number of events reported over the past 12 months and the patient safety grade that respondents gave to their work area/unit.

4.7. Data collection procedures

The questionnaire distributed at a single location inside the hospital where hospital employees check in at the beginning of a working day. The first step in data collection process was developing a tracking log, which would have a list of unique study IDs. Each unique study ID printed on the questionnaire cover letter. A research assistant facilitated the distribution of the questionnaire. The assigned study ID in the log should match the ID on the survey cover letter received by the respondents.

Although the questionnaire taken only 10-15 minutes to complete, respondents given enough, time to think about responses and not be distracted during their work hours. They asked to return the completed survey tool in the following 2-3 days to the research assistant while checking into the hospital. The list of health workers used to track the returning completed questionnaire as well as other staff members who might have not received the survey either because they were on night duty or on leave. The data collection in one hospital has taken approximately 1 week.

4.8. Study variables

The dependent variable was patient safety culture as measured by frequency of events reported. Independent variables:- teamwork across and within hospital units, Management expectation and support to patient safety, hospital handoffs & transitions, organizational learning and continuous improvement, communication openness and feedback about errors, non-punitive responses to error, , overall perceptions of patient safety, and respondents characteristics and work experiences.

4.9. Operational definitions

Patient safety culture: - Patient safety is the absence of avoidable harm to patients during the process of health care. It measured by proxy indicator “frequency of events reported”, and number of events reported over the past 12 months and the patient safety grade that respondents gave to their work area/unit.

An event: - is defined as any type of error, mistakes, incident, accident, or deviation, regardless of whether or not it results in patient harm.

Communication openness: - It refers to whether staff freely speaks up if they see something that may negatively affect patient care, feel free to question those with more authority and afraid

to speak up if something does not seem right. It was measured using three items considering three different scenarios (staff will freely speak up if they see something that may negatively affect patient care, staff feels free to question the decisions or actions of those with more authority, and finally staffs are afraid to ask questions when something do not seem right). It was measured by asking respondents to evaluate these issues on 5- point frequency (1 never to 5 always).

Feedback and communication: - It measures whether staffs are informed about errors that happen, given feedback about changes put into place based on event reports, and discuss ways to prevent errors occurring again. It was measured using three items considering three different scenarios (we are given feedback about changes put into place based on event reports, we are informed about errors that happen in this unit and in this unit, we discuss ways to prevent errors happening again). It was measured by asking respondents to evaluate these issues on 5- point frequency (1 never to 5 always).

Teamwork within hospital units: - It measures weather staff support one another treats each other with respect and work together as a team. It has measured using four items considering four different scenarios (people support one another in this unit, when a lot of work needs to be done quickly, we work together as a team to the work done, in this unit, people treat each other with respect, and fourth when one area in this unit gets busy, others help). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Hands-offs and transitions: - It refers to patient care and patient information transfer across hospital units and drug shift changes. This domain was measured on the following sub-dimensions; problems during patient transfer from one unit to another, loss of patient care information, and problems in information exchanges between units. It was measured using four items considering four different scenarios (things “fall between the cracks” when transferring patients from one unit to another, important patient care information is often lost during shift changes, problems often occur in the exchange of information across hospital units and finally shift changes are problematic for patients in this hospital). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Management support for patient safety: - It measures whether hospital management provides a work climate that promotes patient safety and shows if patient safety is a top priority or is only of interest after an adverse event occur. It has measured using three items considering three different scenarios (hospital management provides a work climate that promotes patient safety, the actions of hospital management show that patient safety is a top priority, and hospital management seems interested in patient safety only after an adverse event happens). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Non-punitive responses to error: - It measures whether staff feel free to report adverse events and that their mistakes are not held against them. It was measured using three items considering three different scenarios (staff feels like their mistakes are held against them, when an event is reported, it feels like the person is being written up, not the problem and staff worry that mistakes they make are kept in their personal file). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Organizational learning and continuous improvement: - It refers to whether staffs are doing things to improve patient safety by learning from their mistakes and evaluate the effectiveness of new interventions put place. It was measured using three items considering three different scenarios (we are actively doing to improve patient safety, mistakes have led to positive changes here and after we make changes to improve patient safety, we evaluate their effectiveness). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Overall perceptions of patient safety: - It refers to how staffs think about work procedures and system in preventing errors in hospital units as well as how they deal with work pressure in relation to preventing medical errors. It had measured using four items considering four different scenarios (it is just by chance that mistakes that are more serious did not happen around here, patient safety is never sacrificed to get more work done, we have patient safety problems in this unit and our procedures and systems are good at preventing errors from happening). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Supervisor/manager expectations and actions promoting safety: - It refers to whether leadership consider staff suggestion, praise staff for following patient safety procedure for improving patient safety and do not encourage faster work by taking short cuts. It was measured using four items considering four different scenarios (my supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures, my supervisor/manager seriously considers staff suggestions for improving patient safety, whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts and finally my supervisor/manager overlooks patient safety problems that happens over and over). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Teamwork across hospital unit: - This domain refers to whether hospital units cooperate, coordinate with one another and encourage teamwork among staff from other units to provide the best care for patients. It was measured using four items considering four different scenarios (Hospital units do not coordinate well with each other, There is a good cooperation among hospital units that need to work together, It is often unpleasant to work with staff from other hospital units, and Hospital units work well together to provide the best care for patients). It was measured by asking respondents to evaluate these issue on 5- point Likert scales (1 strongly disagree to 5 strongly agree).

Frequency of events reported: - It refers to how often staff report all types of mistakes, such as latent errors, accidents, and near misses that may appear due to omission or commission error. It was measured using three items considering three different scenarios (when a mistake is made, but is caught and corrected before affecting the patient, how often is this reported, when a mistake is made, but has no potential to harm the patient, how often is this reported, and when a mistake is made, that could harm the patient, but does not, how often is this reported). It was measured by asking respondents to evaluate these issues on 5- point frequency (1 never to 5 always).

4.10. Statistical analysis procedures

The Hospital Survey on Patient Safety Culture (HSOPSC) is composed of 42 items that measure 12 composites. The HSOPSC included both positively and negatively worded items. Items had scored on a five-point frequency scale (including a neutral category).

Descriptive statistics for the characteristics of respondents and survey items had analyzed. It used to present frequency information about the characteristics of all the respondents as a whole, for example, the units to which they belong, how long they have worked in the hospital or their unit, their staff position, etc. Negatively worded items reversed to ensure that positive answers indicated a higher score.

To obtain the dimensions scores, item percent positive scores computed first and then the scores had averaged, which gives weight to each item in a composite.

The HSOPSC also included questions on the number of events reported over the past 12 months and the patient safety grade that respondents gave to their work area/unit and they had described by their frequency.

Reliability test was performed using the patient safety dimensions involved in measuring patient safety as frequency of events reported and Cronbach's alpha was calculated to be greater than 0.7. The variables, which employed to compute the alpha value, entered in to the principal component analysis. Factors having Eigenvalue greater than one after the scale was treated. At the end of the principal component analysis, the dimensions obtained as a continuous scale.

All originally defined items used, except staffing due to cronbach's alpha below 0.7. Internal consistency became more acceptable with the factors, "communication openness and feedback and communication about error" combined into one six-item factor, "teamwork across hospital units and teamwork within units" combined into one eight-item factor, "supervisor/manager expectations and actions promoting patient safety and hospital management support for safety", combined into one seven-item factor, supporting 7-factor model. All the components/factors had summarized (Table 1).

One-way ANOVA Analysis assessed the mean differences in each of the positive response scores among the three hospitals in our study.

Three different models to assess the effect of various variables on frequency of events reported conducted linear regression analysis. In the first model, the effects of respondents' characteristics, work experience and access to patient has assessed. In the second model, effects of different dimensions of PSC factors had assessed to test their association with patient safety culture as measured by frequency of events reported. In the previous two models those had significant association were included in the final model.

The data entered into EpiData version 3.1 to edit and clean for inconsistencies and missing values and analyzed using SPSS 16.0. In all cases, $P < 0.05$ and 95% confidence interval used to check statistical significance.

Table 1 Descriptions of patient safety measure dimensions after item reduction using PCA at SNNPR Public general hospitals February 16 to March 16, 2015

Patient safety measure dimensions	Number of items	Cronbach's alpha	KMO	variance
Management expectation and support to patient safety	7	0.75	0.5	60.5
Organizational learning and continuous improvement	3	0.76	0.5	64.5
Teamwork across and within hospital unit	8	0.83	.58	63
Communication openness and Feedback and communication about error	3	0.78	0.68	82.3
Non-punitive response to error	3	0.79	0.56	74
Hospital handoffs and transition	4	0.8	0.5	87
Overall perceptions of safety	4	0.74	0.5	60
Staffing	3	0.43		

4.11. Data quality management

Two bachelor nurses and three diploma nurses as supervisors and data collectors respectively trained for one day. Those trained assistant facilitated the data collection from the different units of the hospital. During pre-test comment parts from the tool removed, because not almost all the respondents did willing to answer those parts. Each survey examined for completeness, prior to entering the survey responses into the data set. Before entering data into an electronic file, the research assistant was determined the coding for illegible, mismarked, and multiple-marked responses.

4.12. Ethical consideration

Institutional Review Board of college of Health sciences of Jimma University approved the proposal before the conduct of the study. Letter of permission obtained from the SNNPR Health

Bureau and from the respective hospitals. All the study participants informed about the purpose of the study and finally their verbal consent obtained prior to giving them self-administered questionnaire. The respondents assured their right to refuse or terminate at any point of the interview. The information provided by each respondent kept confidential. .

4.13. Dissemination plan

This study will be presented to JU community as part of MPH thesis and it will be Disseminated or communicated to the SNNPR regional health Bureau, the respective hospital, to JU College of health sciences, department of health economics, management and policy to NGOs working on this area . Further attempt will made to publish it on national and international scientific journals.

CHAPTER FIVE

5. RESULTS

5.1. Characteristics of the study respondents

The Hospital Survey on Patient Safety Culture questionnaires distributed to 540 health workers and 433 respondents completed the survey (response rate of 80%). From the respondents 165 (38.1%) are working in Queen Eleni Mohamed Memorial Hospital (QEMH). More than half of the respondents were male 53.8 % (233), and the age of the respondents falls between 30 to 40 years. They were mainly nurses, 54.7% (237) and followed by medical doctors 17.1% (74). Most of the respondents, 49.9% (216), held college diploma, while 45.3% (196) held bachelor degree. About 77.4% (335) of respondents indicated 1 to 5 years work experiences in their current hospital, and 56.1% (243) indicated 1 to 5 years experiences in their current unit. A majority of respondents, 63% (273), work between 40 to 59 hours per week on average, while 100% (433) respondents indicated that they have access to patients. The largest percentage of health workers work in surgery, 26.6% (113), followed by medical non-surgical, 15.2% (66).

Table 2 Characteristics of the study respondents at SNNPR Public general hospitals February 16 to March 16, 2015 (n=433)

Variables	Category	Frequency (N)	(%)
Hospitals	Queen Eleni Mohamed	165	38.1
	Yirgalem	128	29.6
	Butajira	140	32.3
Sex	Male	233	53.8
	Female	200	46.2
Age	<30	196	45.3
	30-40	225	52.0
	41-50	12	2.8
Highest level of education achieved	Diploma	216	49.9
	Bachelor degree	196	45.3
	Masters and above	21	4.8

Variables	Category	Frequency (N)	(%)
Staff position/profession	medical doctor	74	17.1
	Nurse	237	54.7
	technician/lab, radiology	46	10.6
	pharmacy	59	13.6
	other specify*	17	3.9
	Duration of experience in this hospital	<1 year	5
	1-5 year	335	77.4
	6-10 year	86	19.9
	11-15 year	7	1.6
Duration of experience in work area/unit	<1 year	175	40.4
	1-5 year	243	56.1
	6-10 year	15	3.5
Number of hours per week	20-30 hours	14	3.2
	40-59 hours	273	63.1
	60-79 hours	127	29.3
	80-99 hours	19	4.4
Primary work area or unit	many different units	26	6.0
	emergency	38	8.8
	medical non-surgical	66	15.2
	surgical	113	26.1
	obstetrics	48	11.1
	pediatrician	24	5.5
	pharmacy	59	13.6
	laboratory	29	6.7
	other specify**	30	7

(Reference others*=anesthesia, health officer, midwives; other**=radiology, physiotherapy)

5.2. Patient safety grade and number of events reported

The percentage of respondents who gave an excellent or very good grade to their hospitals was 2.1% and 16.9%. The majority, 58.4%, in the studied hospitals felt that the situation is just acceptable or medium, while 20.1% and 2.5% gave a poor and failing grade respectively. Substantial numbers of an event never or rarely reported over the last 12 months. The results apparently show that 34.4% of respondents had not reported a single event and just 62.8% had reported 1 or 2 events.

Table 3 Distribution of percentages of patient safety grade and number of events reported at SNNPR Public general hospitals February 16 to March 16, 2015

Variables	Category	Frequency	Percent
Patient safety grade	Excellent	9	2.1
	Very good	73	16.9
	Acceptable	253	58.4
	Poor	87	20.1
	Failing	11	2.5
Number of events reported	No events reported	149	34.4
	1 to 2 events reported	279	62.8
	3 to 5 events reported	9	2.1
	6 to 10 events reported	2	0.5
	11 to 20 events reported	1	0.2

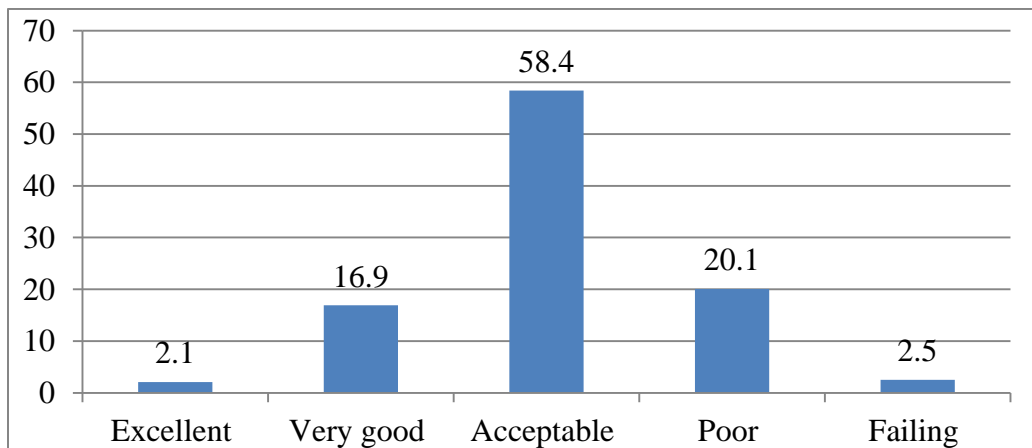


Figure 2 Percentage of respondents on patient safety grade to patient safety culture at SNNPR Public general hospitals February 16 to March 16, 2015

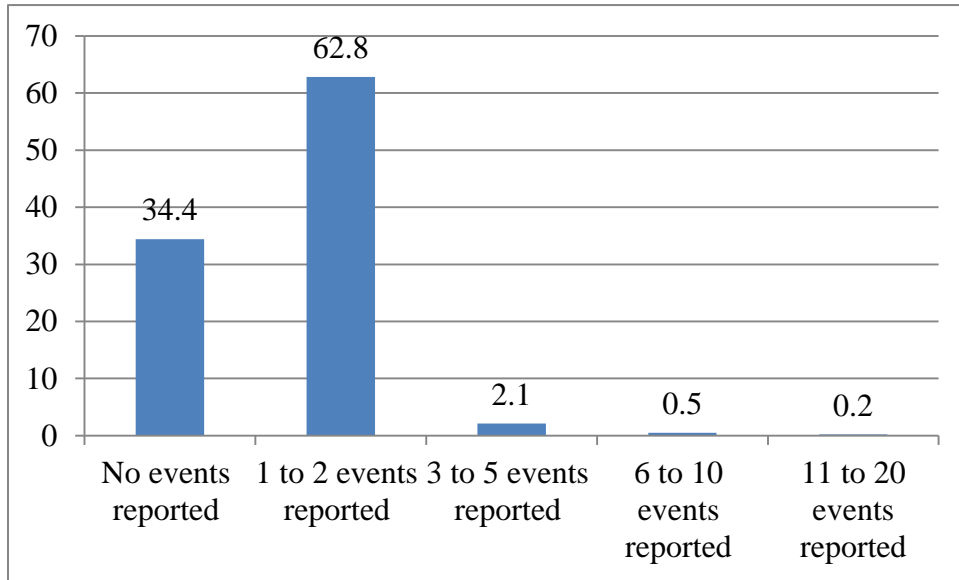


Figure 3 Percentage of respondents on number of events reported to patient safety culture at SNNPR Public general hospitals February 16 to March 16, 2015

5.3. Frequency of the positive respondents towards patient safety dimension

Positive responses to PSC components have ranged from 6.5% to 79.7% (Table 4). Areas of strength in our hospitals were teamwork across and within hospital unit (79.7%). Others with PSC components below 75% are areas with potential for improvement (25). The lowest positive responses identified by the respondents were hospital handoffs and transition (6.5%). No respondents answered neutral scale in our study.

Table 4 Frequency of the Positive respondents towards patient safety dimension at SNNPR Public general hospitals February 16 to March 16, 2015

Dimensions of patient safety	Category	Frequency	Percent
Overall perceptions of safety	Disagree	315	72.7
	Agree	118	27.3
Hospital handoffs and transition	Disagree	405	93.5
	Agree	28	6.5
Non-punitive response to error	Disagree	193	44.6

Dimensions of patient safety	Category	Frequency	Percent
	Agree	240	55.4
Organizational learning and continuous improvement	Disagree	188	43.4
	Agree	245	56.6
Management expectation and support to patient safety	Disagree	135	31.2
	Agree	298	68.8
Communication openness and feedback about error	Not frequent	127	29.3
	Frequent	306	70.7
Teamwork across and within hospital unit	Disagree	88	20.3
	Agree	345	79.7

(Agree = strongly agree & agree, Disagree = strongly disagree & disagree, not frequent = never, rarely & sometimes, frequent = most of the time & always, neutral= neutral)

5.4. Comparison of positive response of the PSC dimension scores among the three hospitals

One-way ANOVA Analysis conducted to assess the mean difference of positive percentage responses for each of dimension scores of PSC across the hospitals in our study (Table 5). Significant differences had found among the three hospitals in four dimensions. “Teamwork across and within hospital unit” was 75% for QEMH, 72.3% for Yirgalem hospital, and 91% for Butajira hospital at a significant level of $p=0.046$. “Organizational learning and continuous improvement” was 49.55% for QEMH, 47.7% for Yirgalem hospital, and 72.1% for Butajira hospital at a significant level of $P=0.001$. “Management expectation and support to patient safety” was 59% for QEMH, 67% for Yirgalem hospitals, and 80.45% for Butajira hospital at a significant level of $P=0.023$. “Communication openness and feedback about error” was 63% for QEMH, 59.5% for Yirgalem hospital, and 89.4% for Butajira hospital at a significant level of $P=0.0025$.

However, Overall perceptions of safety, Hospital handoffs and transition, and Non-punitive response to error were no significant differences of dimensions score among the three general hospitals.

Table 5 Comparison of positive response of the PSC dimension scores among the three hospitals at SNNPR Public general hospitals February 16 to March 16, 2015

Dimensions of patient safety	Hospitals positive response score			
	QEMH	Yirgalem	Butajira	P-value
Overall perceptions of safety	19%	30%	33.6%	0.56
Hospital handoffs and transition	2.7%	12.6%	4.5%	0.78
Non-punitive response to error	52%	46%	65.5%	0,67
Organizational learning and continuous improvement	49.5%	47.7%	72.1%	0.001
Management expectation and support to patient safety	59%	67%	80.4%	0.023
Communication openness and feedback about error	63%	59.5%	89.4%	0.0025
Teamwork across and within hospital unit	75%	72.3%	91%	0.046

(P-value \leq 0.05)

5.5. Respondent character as Predictors of Patient Safety

The impact of respondents' characteristics on patient safety culture as measured by frequency of events reported scores in the first model assessed (Table 6). In this model respondents character predictor variables such as sex, age, duration of experience in hospital unit, duration of experience in work unit, staff position and primary work area or unit explained 41% of the variance in the frequency of events reported given by the participants (R square = 0.411,). Females respondents had directly related with the score of frequency of event report ($\beta=0.194$, $p=0.044$). Respondents whose age ranged below 30 years had associated with the frequency of events reported score ($\beta=-0.201$, $P=0.04$). Duration of experience in work hospital ranged from 6 to 10 years was directly related with the score of frequency of events reported ($\beta =0.369$, $P=0.002$). Moreover, significant association were observed for pharmacy taken together frequency of events reported score ($\beta =0.756$, $P= 0.000$). Working at Butajira hospitals had direct relation with frequency of events reported score ($\beta=1.13$, $p=000$) and working at Yirgalem hospital had association with scores of the frequency of events reported ($\beta =0.815$, $P=000$). Here all the variables that had $p<0.05$ candidate for final multiple linear regression model to check effects on outcome variable.

Table 6 Model one respondent characteristics as predictors of frequency of events reporting at SNNPR Public general hospitals February 16 to March 16, 2015

Respondents characteristics		Unstandardized		p	95% Confidence	
		Coefficients			Interval for β	
		B	Std. Error		Lower Bound	Upper Bound
(Constant)		5.628	0.770	0.000	4.109	7.146
Hospitals	QEMH*					
	Yirgalem	0.815	0.103	0.000	0.613	1.017
	Butajira	1.13	0.1	0.000	0.933	1.327
Sex	Male*					
	Female	0.194	0.0961	0.04419**	0.01	0.38
Age	<30	-0.201	0.097	0.04***	-0.393	-0.009
	30-40*					
	41-50	-0.062	0.295	0.834	0.643	0.519
Highest level of education achieved	Diploma*					
	Bachelor degree	0.032	0.099	0.746	-0.162	0.226
	Masters and above	-0.199	0.229	0.384	-0.649	0.251
Duration of experience in work hospital	<1 year	0.949	0.445	0.034**	0.074	1.823
	1-5 year*					
	6-10 year	0.369	0.119	0.002**	0.134	0.603
	11-15 year	-0.258	0.377	0.494	-0.999	0.483
Duration of experience in work area/unit	<1 year	-0.068	0.098	0.492	-0.261	0.126
	1-5 year*					
	6-10 year	-0.823	0.264	0.002***	-1.341	-0.305
Number of hours per week	20-30 hours	-0.033	0.172	0.846	-0.371	0.304
	40-59 hours*					
	60-79 hours	0.165	0.182	0.363	-0.192	0.522
	80-99 hours	-0.241	0.193	0.211	-0.62	0.137
	Medical doctor	0.153	0.128	0.233	-0.099	0.406
Staff position	Nurse*					
	Laboratory	0.005	0.155	0.972	-0.3	0.311

Respondents characteristics	Unstandardized		p	95% Confidence		
	Coefficients			Interval for β		
	B	Std. Error		Lower Bound	Upper Bound	
Pharmacy	0.756	0.14	0.000**	0.48	1.031	
Other specify	0.768	0.242	0.002**	0.293	1.244	
Many different units	-0.146	0.2	0.467	-0.539	0.247	
Emergency	-0.402	0.17	0.018***	-0.736	-0.069	
Primary work area or unit	Surgical*					
	Obstetrics	0.291	0.154	0.06	-0.012	0.593
	Pediatrician	0.282	0.207	0.174	-0.125	0.69
	Pharmacy	0.68	0.142	0.000**	0.401	0.959
	Laboratory	-0.185	0.191	0.333	-0.559	0.19

R=0.46, R square=0.41, Adjusted R square=0.34

(* = reference, ** = direct relation, *** = inverse relation)

5.6. Dimensions of Patient Safety as Predictors of Frequency of events reported

In the second model, PSC factor scores were included and tested the association on patient safety culture as measured by frequency of events reported (Table 7). After the reduction of composite variable by using principal component analysis, one composite variable identified from each safety culture dimensions. In this part the effect of each independent variables/safety culture dimensions (Overall perceptions of safety, Hospital handoffs and transitions, Non-punitive response to error, Organizational learning and continuous improvement, Management expectation and support to patient safety, Communication openness and feedback about error and Teamwork across and within hospital unit) were tested for association on frequency of events reported. About 61% of the variance in the frequency of events reported is explained by this model (R square = 0.613, P = 0.000). Overall perceptions of safety was directly related with frequency of events reported ($\beta=1.052$, $P=0.000$). Hospital handoffs and transitions was inversely associated with frequency of events reported ($\beta=-0.076$, $P=0.015$). Non-punitive response to error was positively associated with frequency of events reported ($\beta=0.44$, $P=0.000$). Organizational learning and continuous improvement, Communication openness and feedback

about error, Teamwork across and within hospital unit were positively associated with frequency of events reported at ($P < 0.001$), and Management expectation and support to patient safety was negatively associated at ($P = 0.000$). Variables/components those tested for association with outcome variable and $p < 0.05$ had retested together with other variables in final multiple linear regression models in (Table 8).

Table 7 Dimension of Patient Safety as Predictors of Frequency of events reported score at SNNPR Public general hospitals February 16 to March 16, 2015

Safety culture dimensions	Unstandardized Coefficients		Standardized Coefficients		t	P.	95% Confidence Interval for β	
	β	Std. Error	Beta				Lower Bound	Upper Bound
(Constant)	2.31	0.018			0	0.004	0.036	2.61
Overall perceptions of safety	1.052	0.065	1.052		16.213	0.000	0.925	1.18
Hospital handoffs and transition	-0.076	0.031	-0.076		-2.45	0.015	-0.137	-0.015
Non-punitive response to error	0.44	0.05	0.38		8.717	0.000	0.342	0.539
Organizational learning and continuous improvement	0.25	0.039	0.25		6.477	0.000	0.174	0.326
Management expectation and support to patient safety	-0.752	0.08	-0.752		-9.442	0.000	-0.909	-0.595
Communication openness and feedback about error	0.886	0.034	0.886		26.318	0.000	0.82	0.952

Safety dimensions	culture	Unstandardized		Standardized		95% Confidence		
		Coefficients	Std. Error	Coefficients	t	P.	Interval for β	
		β		Beta			Lower Bound	Upper Bound
Teamwork and within unit	across hospital	0.297	0.08	0.297	3.713	0.000	0.14	0.454

5.7. Linear multiple regression for patient safety composite component scores and respondents characteristics

In the final model, component scores, and respondents characteristics were included and tested the impact on patient safety culture as measured by frequency of events reported (Table 8). Variables in the above two models that show association with dependent variable had entered in to multiple regression analysis to quantify the amount of effects. In this, model some variables that did not show association in the first model had removed; like age, highest level of education achieved, duration of experience in work area/unit and number of hours per week. From the second model hospital handoffs and transition component had removed, because no association in the final model. Only variables directly or inversely related had discussed as indicated in (Table 8).

In this model variable included, explain 69% of the variance in the frequency of events reported score (R square = 0.69). Respondents working at Butajira hospitals had 0.63 unit greater frequency of events reported score ($\beta=0.63$, $p=0.034$) and those working at Yirgalem had 0.47 unit greater scores in the frequency of events reported ($\beta =0.47$, $P=0.028$) when compared to those from the QEMH respectively. Females respondents had 0.14 higher score frequency of event reported than male ($\beta=0.14$, $p=0.031$). Duration of experience in work hospital ranged from 6 to 10 years was directly related with the score of frequency of events reported ($\beta =0.302$, $P=0.02$). This implies that respondents whose experience in work hospital ranged from 6 to 10 years had 0.302 higher score for event reported than respondents experiences ranged from 1 to 5 years. Moreover, significantly higher scores in the aggregate frequency of events reported score were observed for pharmacy ($\beta =0.564$, $P= 0.01$). This implies that respondents who had pharmacy

position had 0.68 better frequencies of events reported score to nurses. Respondents who had working in many different area were found to have a significantly lower frequency of events reported score ($\beta = -0.312$, $P = 0.031$). This implies that respondents working as unit many different areas had 0.312 lower frequencies of events reported score to surgical unit.

Overall perceptions of safety was directly related with frequency of events reported ($\beta = 0.92$, $P = 0.01$). This implies that a unit increase overall perceptions of safety resulted in an increment in the event reporting score by 0.92. Organizational learning and continuous improvement had directly related with frequency of events reported ($\beta = 0.75$, $P = 0.002$). This implies that a unit increase organizational learning and continuous improvement resulted in an increment in the event reporting score by 0.75. Non-punitive response to error was directly associated with frequency of events reported ($\beta = 0.11$, $P = 0.012$). It indicates that frequency of event reporting score increased by 0.11 as non-punitive response to error changed with unit. Management expectation and support to patient safety was inversely associated with frequency of events reported ($\beta = -0.502$, $P = 0.038$). This implies that a unit increase with management expectation and support to patient safety resulted in a reduction in the frequency of event reporting score by 0.502. Communication openness and feedback about error had direct relation with frequency of event reported score ($\beta = 0.607$, $P = 0.012$). This implies that a unit increase in communication openness and feedback about error resulted in an increment in the event reporting score by 0.607. Teamwork across and within hospital unit were directly associated with frequency of events reported at ($\beta = 0.12$, $P = 0.027$). It indicates that a unit increase in teamwork across and within hospital unit, resulted frequency of events reported score increase by 0.12.

Table 8 multiple regression results showing the relationship between all variables and frequency of events reported score at SNNPR Public general hospitals, February 16 to March 16, 2015

Variables	Category	Unstandardized			95%	
		Coefficients			Confidence Interval for β	
		β	Std. Error	p	Lower Bound	Upper Bound
(Constant)		0.84	0.143	0.000	0.558	1.122
Hospitals	QEMH*					

Variables	Category	Unstandardized		p	95%	
		Coefficients			Confidence Interval for β	
		β	Std. Error		Lower Bound	Upper Bound
	Yirgalem	0.47	0.043	0.028	0.27	0.917
	Butajira	0.63	0.03	0.034	0.451	1.12
Sex	Male*					
	Female	0.14	0.0361	0.031**	0.012	0.37
Duration of experience in work hospital	1-5 year*					
	6-10 year	0.302	0.017	0.02**	0.114	0.523
Staff position	Nurse*					
	Pharmacy	0.564	0.013	0.01**	0.34	0.902
Primary work area or unit	Many different units	-0.312	0.065	0.031***	-0.583	-0.204
	Emergency	-0.384	0.025	0.001***	-0.407	-0.108
	Surgical*					
Components/composite	Overall perceptions of safety	0.92	0.018	0.01	0.995	1.32
	Organizational learning and continuous improvement	0.75	0.066	0.002	0.61	0.934
	Non-punitive response to error	0.11	0.01	0.012	0.024	0.413
	Management expectation and support to patient safety	-0.502	0.05	0.038	-0.814	-0.378
	Communication openness and feedback about error	0.607	0.024	0.012	0.71	0.911
	Teamwork across and within hospital unit	0.12	0.06	0.027	0.03	0.304

CHAPTER SIX

6. DISCUSSION

The incidence of medical errors during healthcare procedures is 7.5%, and majorities of the adverse events has identified as preventable (10). For instance, a Harvard Medical Study of an acute care hospital in 1984 found an adverse event rate of 3.8%. Similarly, in 1992, a study on quality in Australian acute care hospitals found the rate to be 16.6%. Furthermore, studies conducted in acute care hospitals in UK (1999-2000), Denmark (1998), New Zealand (1998) and Canada (2001) found the adverse event rates to be 11.7%, 9.0%, 12.9%, and 7.5% respectively (6). Our study indicated that health workers in the respective hospitals rated their hospital as acceptable/medium grade (58.4%) and event reported rate no event reported (34.4%) and 1 to 2 event reported (62.8%) in 12 months. There is similarity with above findings, as our study result the patient safety culture is in risk, because this trend may leads to high adverse events and medical errors.

In this study with regard to the grading of hospitals' patient safety culture, very few of the respondents, either grades their hospitals excellent or very good, 2.1% and 16.9% respectively. It is much fewer when compared with benchmark data of AHRQ 2012, 30% and 45% respectively (38). On the other hand, with respect to the number of events reported over the past 12 months, more than half of the respondents indicated 1 to 2 events reported. Indicated in the similar study; Health care workers are less likely to grade excellent/very good and report events, especially physicians and nurses more likely grade poor/failing and no events reported (25,33). This had attributed to many reasons including blame, shame and lack of proper reporting system in place. Encouraging health professionals, specifically nurses, to report events in a non-punitive environment is crucial for improving patient safety. Frequency of events reported had found to increase with increasing how often staff reports all types of mistakes, such as latent errors, accidents, and near misses. Reporting errors improves the quality of care for future patients (25, 28). In our study, the analysis of results identified those patient safety culture predictors such as sex, duration of experience, staff position and primary work area in accordance with characteristics of respondents were associated with the patient safety culture as measured by frequency of events reported.

The overall perceptions to safety score for this study was 27.3%, lower than the AHRQ (2012) score of 63% (38). This result indicates that healthcare workers are not highly positive about patient safety culture in SNNPR public general hospitals. There is also the same study in Taiwan had 53% score, it is higher than our finding and indicates there is room for improvement in our hospitals (7).

In the SNNPR, we found that the majority of dimensional-level scores were lower than the AHRQ (2012) benchmark report. The dimensions 'Teamwork across and within hospital unit' received the highest positive response rate. Similar results had found in studies conducted in Taiwan (16). Teamwork is an essential part of the development of patient safety culture, and staff should be encouraged and supported in their efforts to establish good relationships with people working in the same unit and other units (10). We believe that teamwork in the SNNPR public general hospitals is a strength that has used to create an enabling environment to develop a patient safety culture.

In our study variables included in the final model explain 69% of the variance in the frequency of events reported score (R square = 0.69). The finding implies that system/PSC dimension factors are the most important factors in patient safety culture and causes of medical errors in the hospital and poor frequency of events reported. Overall perceptions of safety, Non-punitive response to error, Organizational learning and continuous improvement, Management expectation and support to patient safety, Communication openness and feedback about error and Teamwork across and within hospital unit explained frequency of events reported.

Likewise, as experiential evidences have revealed the root causes of medical errors are primarily the system factors include poor communication, unclear lines of authority between care providers, disconnected reporting systems within hospitals, and inadequate reporting frequency systems of events to share information about errors (42).

In our finding system/PSC dimension related factors such as management expectation and support to patient safety, overall perceptions to safety, non-punitive response to error, organizational learning and continuous improvement, communication openness and feedback about error and teamwork across and within units were associated with the patient safety culture as measured by frequency of events reported. In the same study communication openness and feedback about errors, teamwork across hospital units and non-punitive response to error was significantly associated with frequency of event reporting at ($p < 0.05$) (32). Teamwork within and

across hospital units is critical in a healthcare environment as the patient is usually treated by several healthcare practitioners and specialists in multiple settings (25). In the other study our finding was strengthened that teamwork across and within hospital unit were directly influencing patient safety outcome ($p < 0.05$) (15).

Proper communication within and across healthcare teams is essential to remove any threats to safety of patients and essential to increase frequency of events reported. Communication problems have identified as major contributing factors to adverse events (31). An analysis of 2,455 sentinel events reported to the Joint Commission on the Accreditation of Healthcare Organizations showed that 70% of the cases were a result of failure in communication (31). We found that communication openness was directly associated with frequency of events reported.

In order for a patient safety program to be, successful, strong leadership needed. When leadership and management is committed to a culture of safety, the whole organization will follow and thus disclosing an events and finding their root causes will become an organizational process (5).

This finding also answered the final objectives of this study “To identify the factors related to patient safety culture in SNNPR public general hospitals.” Using regression analysis most of the dimensions was significant ($P < 0.001$), which means each dimensions has an influence on the patient safety culture (16). However, using multiple regression analysis, found all dimensions to be associated with patient safety culture as measured by frequency of events reported except hospital handoffs and transition. The slight variation in our results compared other finding could be due to the differences in the study settings and time.

Limitations of the study

This study was limited to only public general hospitals in SNNPR; therefore, the result cannot apply to other categories of health care organizations. Future studies to include all categories need to be conducted to develop a generalized representation of the entire region and country.

In addition, the sample included only health workers. That perception of other administrative body was not included.

CHAPTER SEVEN

7. CONCLUSIONS AND RECOMENDATIONS

7.1. Conclusions

The majority of the respondents considers to the present patient safety culture in our hospitals just acceptable/medium and more than half of the respondents indicated that 1 to 2 events reported in the past 12 months. The realization of an acceptable environment of patient safety depends on the changing the perceptions of the healthcare workers towards positive patient safety culture. As indicated in the result section PSC is poor and need special attentions.

The strong relationships between independent and dependent variable (patient safety culture) as measured by frequency of events reported in this study also revealed in the result of multiple linear regression analysis. These result indicated that most of the independent variables have influence on the patient safety culture in the SNNPR public general hospitals.

However, our result shown that all factors (patient safety dimensions) except hospital handoffs and transition pertaining to patient safety culture had found to significant relationship with patient safety culture as measure by frequency of events reported in respective studied hospitals. There as a result great effort has needed to improve frequency of event reporting.

7.2. Recommendations

There is a need for concrete interventions to implement the concept of patient safety culture. The strengthening and further integration of the patient safety concept especially event reporting into the continuous professional training curriculum for health care professionals is highly recommended. In order to achieve that, patient safety should have prioritized on the agenda of the SNNPR health bureau and all stakeholders to improve patient safety in the region.

They should establish and strong follow up patient safety committee to assess every aspect of activities related to patient safety culture in the SNNPR general hospitals.

On the contrary, health care workers should be encouraged to report errors for the purpose of learning and improvement. This would require formulation of policies that promote the establishment of non-punitive environments. There is need for broadly based research in to

patient safety culture, which should include all categories of health care organizations in the region. That our study was only focused general hospitals.

Our study finding suggested that an effective event reporting frequency should initiated, supported, and maintained in the SNNPR general hospitals. Generally, patient safety can best achieved by paying close attention to patient safety culture. Health care organizations should implement patient safety culture and give strong support for safety activities to improve patient safety.

Therefore, in an effort to implement patient safety culture all these patient safety system related factors should be considered, without disregarding any single dimension especially those with strong associations/significant differences with frequency of events reported.

Finally, SNNPR public general hospitals should focus on each of these dimensions in order to improve frequency of events reported that improve patient safety culture.

References

1. World Health Organization(WHO). Conceptual framework for the international classification of patient safety Version 1.1; Final technical report, January 2009
2. World Health Organization(WHO). Communication during Patient Hand-overs; Patient Solutions Volume 1, Solution 3; May 2007
3. Kohn, L.T, Corrigan, J.M., & Donaldson, M.S. To Err Is Human: Building a Safer Health System. Committee on Quality of Health Care in America, Institute of Medicine 1999
4. Brickell, T.A., & Carla, M.A. Emergency Issues and Challenges for Improving Patient Safety in Mental Health.): A Qualitative Analysis of Expert Perspectives. *Journal of Patient Safety* 2011
5. Ransom ER, Joshi MS, Nash DB, Ransom SB. The healthcare quality Book Second Edition 2010
6. WHO Library Cataloguing-in-publication Data, World Alliance for Patient Safety Forward program ISBN, 2004
7. Lee W.C, et al., Hospital Safety Culture in Taiwan: A Nationwide Survey Using Chinese Version Safety Attitude Questionnaire. *BMC Health Services Research*: 2010, Aug 10
8. Garbutt J, Waterman A.D, Kapp J.M, Dunagan W.C, Levinson W, Faser V & Gallagher T.H. Lost Opportunities: Washington University, St. Louis, Missouri, USA. How physicians communicate About Medical Errors *Health Aff. (Millwood)*. 2008
9. Krause T.R & Hidley J.H. Taking the lead in Patient Safety: How Healthcare Leaders Influence Behavior and Create Culture 2009
10. Bondur S and Fizi E: A survey on patient safety culture in primary healthcare services: Turkey; 2009.
11. Gandhi T.K, Weingart S.N, Borus J, Segar A.C, Peterson S, Burdick E, et al. Adverse drugs event in ambulatory care: *New England Journal of Medicine* 2003
12. Blendon RJ, Schoen C, DesRoches C, Osborn R, & Zaper K. Common concerns amid Diverse System: *Health Affairs* 2003 106-21
13. Ball M.J. & Douglas J.V: Redefining and Improving Patient Safety Health Link. Baltimore, Maryland, USA: Johns Hopkins University School of Nursing; 2002.
14. Regional Committee for Africa of WHO: Patient safety in African health services: Issues and solutions: Yaounde, Republic of Cameroon 2008

15. Tsion Assefa, Mirkuzie Woldie, Shimeles Ololo, Kifle Woldemichael. Patient safety practices and medical errors: Perception of health care providers at Jimma University Specialized Hospital, Southwest Ethiopia 2012, Vol.2, No.2, 162-170 (2012)
16. Chen C & Li H. Measuring patient safety culture in Taiwan using the Hospital Survey on Patient Safety Culture (HSOPSC): BMC Health Service Research 2010, 10:152
17. Pronovost, P.J, et al. Evaluation of the culture of safety: survey of clinicians and managers in an academic medical center. BMJ quality & safety 2003
18. Greek Medicine - The Hippocratic Oath Exhibitions, 2002
19. Charatan, F. Clinton Acts to Reduce Medical Mistakes. BMJ (British Medical Journal): 2000 320 (7235), 597
20. Fleming M. Patient Safety Culture Measurement and Improvement: A “How to Guide” *Healthcare Quarterly*, 2005
21. Sexton BJ, Robert LH, Torste K, BN, Kathy R, Keryn V, James B, Peter RR. & Eric JT. The safe attitude questionnaire: psychometric properties: BMC Health Service Research 2005
22. Singer S.J, Gaba A.D, Sinaiko A.D, Howard S.K, & Park K.C. The Culture of Safety results of an organization-Wide Survey in 15 California Hospital. *Quality and safety in Healthcare* 2003 12: 112-18
23. Sorra JS, Dyer N. Multilevel psychometric properties of the AHRQ hospital survey on patient safety culture, BMC Health Services Research 2010, 10:199
24. Cochrane D, Annemarie T, Georgene M, Valoria H, Irene M, Manish B & Patrick D. Established a Provincial Patient Safety and Learning System: Pilot Project Results and Lessons Learned *Healthcare Quarterly*, 2009 12 (Sp) 147-153
25. El-Jardali F, Jaafar M, Dimass H, Jamal D, & Hamdan R: The current state of patient safety culture in Lebanese hospitals: a study at baseline. *International Journal for Quality in Health Care* 2010; Volume 22, November 5: pp. 386-395
26. Cox S.J. & Cox T. The structure of employee attitude to safety: a European example: *Journals of Working and Stress*, 1991
27. Garbutt J, Brownsein D.R, Klein E.J, Waterman A, Krauss M.J, Marcuse E.K, Hazel E, Dunagan W.C, Fraser V & Gallagher T.H. Reporting and disclosing medical errors: pediatricians’ attitudes and behaviors 2007

28. Kaldjian L.C, Jones E.W, Wu B.J, Hoffman V.L.F, Levi B.H & Rosenthal G.E. Reporting Medical Errors to improving Patient Safety: A Survey of Physicians in Teaching Hospitals 2008 Vol. 168 no. 1, January 14
29. Hughes L.C, Chang Y & Mark B.A. Quality and strength of patient safety climate on Medical-surgical units 2009
30. Kevin B. O'Reilly. Fear of punitive response to hospital errors lingers 2012
31. Dingley C, Daugherty K, Derieg M.K. & Pressing R. Improving Patient Safety through Provider Communication Strategy Enhancements 2009.
32. Jasti H, Sheth H, Verrico M, Perera P.S & Simak D, et al. Assessing Patient Safety Culture of Internal Medicine House Staff in an Academic Teaching Hospital 2009
33. Evans S.M, Berry J.G, Smith B.J, Esterman A, Selim P.O, Shaughnessy J & DeWit M. Attitudes and barriers to incident reporting: a collaborative hospital study, 2006
34. Manser T. Teamwork and patient safety in dynamic domains of healthcare: a review of The literature 2008
35. Salas E, Sims DE, Klein C & Burke CS. Can Teamwork enhance patient safety? 2003
36. Mardon R. Survey of Patient Safety Culture in U.S. Hospital: External Validity Analysis CAHPS SOPS Annual Conference, 2008
37. Navon T, Naveh & Stem Z. Safety climate in healthcare organizations: Multidimensional approach: Academy of Management, 2005
38. AHRQ Hospital Survey on Patient Safety Culture: 2012 User Comparative Database Report: Agency for Healthcare Research and Quality 2012
39. Alahmadi H.A. Assessment of patient safety culture in Saudi Arabia hospitals: Quall Safe Health Care, 2009
40. Canadian Patient Safety Institute. The Safety Competencies Enhancing Patient Safety across the Health Professions first edn: Canada, Canadian Patient Safety Institute, 2009
41. Duke University, Patient Safety – Quality improvement 2005
42. Institute of Medicine, To err is human: Building a safer health system. National Academy Press, Washing- ton DC; 1999
43. WAGNER C., SMITS M., SORRA J., and HUANG C.C: Assessing patient safety culture in hospitals across countries, 2013

Annex 1 questionnaire

Jimma University College of Health Sciences, Department of Health Economics, Management and Policy in Health Service Management

A questionnaire prepared on the title; measuring the current patient safety culture in Southern Nations Nationalities and Peoples Region Public General Hospitals, Ethiopia.

Questionnaire cover letter:

Hello, my name is _____ and I am research assistant and working with Mr. Tekle Ejajo from Jimma University. He is doing a research on measuring the current patient safety culture as partial fulfillment for Master's Degree in Public Health/ Health Service Management.

We would like to ask you to complete self-administered questionnaire about your opinion about patient safety issue, medical errors and event reporting in your Hospital and will take about 10-15 minutes. If you do not have time to complete the questionnaire right now, please complete and return it within 3 days. If for any reason you do not want to answer a question, leave it blank. We hope that the results can be used further improve quality of patient care and working conditions.

Patient safety: - is defined as the avoidance and prevention of patient injuries or adverse events resulting from the processes of healthcare delivery.

An event: - is defined as any type of error, mistakes, incident, accident, or deviation, regardless of whether or not it results in patient harm.

Please feel free to answer the entire questions to the best of your ability, as your participation in this study will be completely anonymous.

Do not hesitate to contact research assistant in case of any ambiguity.

Yes ----- (Thank you continue)

No ----- (Thank you stop)

1. Hospital name -----
2. Questionnaire code -----
3. Name and signature of research assistant
4. Date of interview -----

I. Background information of respondents

No.	Questions	Respondents categories	Skip/Remark
101	How old are you?	<ol style="list-style-type: none"> 1. Below 30 2. 30-40 3. 41-50 4. Over 50 	
102	What is your sex?	<ol style="list-style-type: none"> 1. Male 2. Female 	
103	What is the highest level of education you have completed?	<ol style="list-style-type: none"> 1. Diploma level 2. Bachelor degree 3. Master & above 	
104	How long have you worked in this hospital?	<ol style="list-style-type: none"> 1. Less than 1 year 2. 1-5 year 3. 6-10 year 4. 11-15 year 5. 16-20 year 6. 21 year or more 	
105	How long have you worked in your current hospital work area/unit?	<ol style="list-style-type: none"> 1. Less than 1 year 2. 1-5 year 3. 6-10 year 4. 11-15 year 5. 16-20 year 6. 21 year or more 	
106	Typically, how many hours per week do you work in this hospital?	<ol style="list-style-type: none"> 1. Less than 20 hours per week 2. 20-39 hours per week 3. 40-59 hours per week 4. 60-79 hours per week 5. 80-99 hours per week 6. 100 hours per week or more 	
107	What is your staff position in this	<ol style="list-style-type: none"> 1. Medical doctor 	

	hospital?	2. Nurse/nurse assistant 3. Technician(e.g.,lab, Radiology 4. Pharmacy assistant 5. Administration/Management 6. Other; specify	
108	In your staff position, do you typically have direct interaction or contact with patient?	1. Yes 2. No	

II. Your Work area/Unit

In this section, think of your “unit” as the work area, department, or clinical area of the hospital where you spend most of your work time or provide most of your clinical services.

109. What is your primary work area or unit in this hospital? Select one

1. Many different units/No specific units
2. Accident/Emergency Department
3. Medical Non-surgical
4. Surgery
5. Obstetrics
6. Pediatrics
7. Pharmacy
8. Laboratory
9. Other, please -----

Instructions: - this survey asks your opinion about patient safety issue, medical error and event reporting only at your general hospitals and will take about 15 minutes to complete Please answer all the questions as best as you can from your own perspectives.

Please indicate your agreement or disagreement with the following statements about your general hospitals. For each item, please circle the single most appropriate number.

III. Supervisor/Manager expectations and actions promoting patient safety

No	Items of dimension	Scale of agreement				
		Strongly disagree	Disagree	Neither	Agree	Strongly agree
		1	2	3	4	5
201	My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures	1	2	3	4	5
202	My supervisor/manager seriously considers staff suggestions for improving patient safety	1	2	3	4	5
203	Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts	1	2	3	4	5
204	My supervisor/manager overlooks patient safety problems that happens over and over	1	2	3	4	5
IV. Organizational learning and continuous improvement						
301	We are actively doing to improve patient safety	1	2	3	4	5
302	Mistakes have led to positive changes here.	1	2	3	4	5
303	After we make changes to improve patient safety, we evaluate their effectiveness	1	2	3	4	5
V. Teamwork within units/dep't						
401	People support one another in this unit	1	2	3	4	5
402	When a lot of work needs to be done quickly, we work together as a team to the work done.	1	2	3	4	5
403	In this unit, people treat each other with respect.	1	2	3	4	5
404	When one area in this unit gets really busy, others help out	1	2	3	4	5

How often do the following things happen in your general hospitals? For each item, please circle the single most appropriate number.

VI. Communication openness						
No	Items of dimension	Scale of agreement				
		Never	Rarely	Sometimes	Most of the time	always
501	Staff will freely speak up if they see something that may negatively affect patient care	1	2	3	4	5
502	Staff feels free to question the decisions or actions of those with more authority	1	2	3	4	5
503	Staff are afraid to ask questions when something does not seem right	1	2	3	4	5
VII. Feedback and communication about error						
601	We are given feedback about changes put into place based on event reports	1	2	3	4	5
602	We are informed about errors that happen in this unit	1	2	3	4	5
603	In this unit, we discuss ways to prevent errors happening again	1	2	3	4	5

Please indicate your agreement or disagreement with the following statements about your general hospital. For each item, please circle the single most appropriate number.

VIII. Non-punitive response to error						
No	Items of dimension	Scale of agreement				
		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
701	Staff feels like their mistakes are held against them	1	2	3	4	5
702	When an event is reported, it feels like the person is being written up, not the problem	1	2	3	4	5

703	Staff worry that mistakes they make are kept in their personal file	1	2	3	4	5
IX. Staffing						
801	We have enough staff to handle the workload	1	2	3	4	5
802	Staff in this unit work longer hours than is best for patient care	1	2	3	4	5
803	We use more agency/temporary staff than is best for patient safety	1	2	3	4	5
804	We work in “under pressure” trying to do too much, too quickly	1	2	3	4	5
X. Hospital management support for patient safety						
901	Hospital management provides a work climate that promotes patient safety	1	2	3	4	5
902	The actions of hospital management show that patient safety is a top priority	1	2	3	4	5
903	Hospital management seems interested in patient safety only after an adverse event happens	1	2	3	4	5
XI. Teamwork across hospital dep’t						
1001	Hospital units do not coordinate well with each other	1	2	3	4	5
1002	There is a good cooperation among hospital units that need to work together	1	2	3	4	5
1003	It is often unpleasant to work with staff from other hospital units	1	2	3	4	5
1004	Hospital units work well together to provide the best care for patients	1	2	3	4	5
XII. Hospital handoffs and transition						
2001	Things “fall between the cracks” when transferring patients from one unit to another	1	2	3	4	5
2002	Important patient care information is often lost	1	2	3	4	5

	during shift changes					
2003	Problems often occur in the exchange of information across hospital units	1	2	3	4	5
2004	Shift changes are problematic for patients in this hospital	1	2	3	4	5
XIII. Overall perceptions of safety						
3001	It is just by chance that more serious mistakes didn't happen around here	1	2	3	4	5
3002	Patient safety is never sacrificed to get more work done	1	2	3	4	5
3003	We have patient safety problems in this unit	1	2	3	4	5
3004	Our procedures and systems are good at preventing errors from happening	1	2	3	4	5

XIV. Frequency of Events Reported

In your hospital work area/unit, when the following mistakes happen, how often are they reported? For each item, please circle the single most appropriate number.

No	Items of dimension	Scale of agreement				
		Never	Rarely	Sometimes	Most of the time	always
4001	When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	1	2	3	4	5
4002	When a mistake is made, but has no potential to harm the patient, how often is this reported?	1	2	3	4	5
4003	When a mistake is made, that could harm the patient, but does not, how often is this reported?	1	2	3	4	5

I. Patient safety grade

5001. Please give your work area/unit in this hospital an overall grade on patient safety.

1, Excellent 2. Very Good 3. Acceptable/Medium 4. Poor 5. Failing

II. Number of Events Reported

6001. In the past 12 months, how many event reports have you filled out and submitted?

1, No event reports 2. 1 to 2 event reports 3. 3 to 5 event reports 4. 6 to 10 event reports
5. 11 to 20 event reports 6. 21 event report

Annex Amharic

በጂማ ዩኒቨርሲቲ በጤና ሳይንስ ኮሌጅ የጤና ኢኮኖም ፣ ማናጅመንትና ፖሊስ የጤና አመራር ትምህርት ክፍል

መጠይቁ የተዘጋጀበት ርዕስ: - ወቅታዊ የታካሚዎችን/በሽተኞችን ደህንነት ሁኔታ መለካት

መግቢያ

ጤና ይስጥልን: ስሜ ----- ይባላል በጂማ ዩኒቨርሲቲ ከአቶ ተክሌ እጃጆ ጋር በጥናት ስራ ላይ እየተሳተፍኩ ስሆን ወቅታዊ የታካሚዎችን/በሽተኞችን ደህንነት ሁኔታ መለካት ላይ የ2ኛ ድግሪያቸውን ለመመረቅ እየተሰራ ይገኛል።

ከ10-15 ደቂቃዎች ለሚፈጅው ጊዜ የሚወስደውን መጠይቅ በታካሚዎች ደህንነት ፣ በህክምና ስህተት እና ክስተቶችን ሪፖርት በማድረግ ረገድ በሆስፒታሉ ምን መልክ እንዳለ የእርሶን አመለካከት በሚመለከት እንድሞሉ በአክብሮት እንጠይቃለን። በአሁኑ ሰዓት ጊዜ እጥረት ካለቦት ቤት ወስደው ወይም በሶስት ቀን ውስጥ በሚመቸው ሁኔታ ሞልተው እንድመልሱ እንጠይቃለን። ለመመለስ የማይመች ወይም የማይፈልጉ ጥያቄ ካጋጠመዎት መዝለል ይቻላል። የዝህ ጥናት ውጤት በሆስፒታሉ ውስጥ በሚሰሩ የስራ ሁኔታዎችና በታካሚዎች ደህንነት ጥራት ላይ መሻሻል እንደሚያመጣ ተስፋ እናደርጋል።

Patient safety: - is defined as the avoidance and prevention of patient injuries or adverse events resulting from the processes of healthcare delivery.

An event: - is defined as any type of error, mistakes, incident, accident, or deviation, regardless of whether or not it results in patient harm.

የሚሰጡን መረጃ ሙሉ በሙሉ በምስጥር ይጠበቃል፤ ለዝህ ጥናት አላማም ብቻ ይውላል፤ ከጥናቱ በኋላ ውሳኔ ለሌላ ሰነድ አካል ተላልፎ አይሰጥም። በመረጃው ላይ ስምዎትን አድራሻዎት አይጠቀስ።

ዩተኛውም ግልጽ ያልሆነ ጉዳይ ላይ የጥናቱን ተባባሪ ለመጠየቅ ወደ ኋላ አይበሉ

አዎ ----- (እናመሰግናለን ይቀጥሉ)

አይደለም ----- (እናመሰግናለን ያቁሙ)

- 5. Hospital name (የሆስፒታል ስም)-----
- 6. Questionnaire code (የመጠይቅ መለያ) -----
- 7. Name and signature of research assistant (የመረጃ ሰብሳቢ ስምና ፊርማ) -----
- 8. Date of interview (የቃለ-መጠይቅ ቀን) : -----

1. የመልስ ሰጪው ጠቅላላ መረጃ

ተ.ቁ	ጥያቄዎች	የመልስ ሰጪው/ዋ መለያ/ክፍል	ወደምቀጥለው ይለፉ
101	ዕድሜዎት ስንት ነው?	5. ከ30 በታች 6. 30-40	

		7. 41-50 8. ከ50 በላይ	
102	የታዎ/ት ምንድንነው?	3. ወንድ 4. ሴት	
103	የደረሰብት ክፍተኛ የትምህርት ደረጃ	4. ድግሎማ ደረጃ 5. ዲግሪ 6. ማስትሬትና በላይ	
104	በዝህ ሆስፒታል ለምን ያህል ጊዜ አገልግለዋል?	7. ከ1 ዓመት በታች 8. 1-5 ዓመት 9. 6-10 ዓመት 10. 11-15 ዓመት 11. 16-20 ዓመት 12. 21 ዓመትና በላይ	
105	አሁን ባሉበት የሆስፒታል የስራ ክፍል/ኬስ ቲም ለምን ያህል ጊዜ አገልግለዋል?	7. ከ1 ዓመት በታች 8. 1-5 ዓመት 9. 6-10 ዓመት 10. 11-15 ዓመት 11. 16-20 ዓመት 12. 21 ዓመትና በላይ	
106	በሆስፒታሉ በሰዓት ውስጥ ለስንት ሰዓታት ያገለግላሉ?	7. በሰዓት ከ20 ሰዓታት በታች 8. በሰዓት 20-39 ሰዓታት 9. በሰዓት 40-59 ሰዓታት 10. በሰዓት 60-79 ሰዓታት 11. በሰዓት 80-99 ሰዓታት 12. በሰዓት 100 ሰዓታት እና በላይ	
107	በዝህ ሆስፒታል የስራ ሀላፊነት ምንድን ነው?	7. ሐኪም 8. ነርስ 9. ላብ 10. ፋርማሲ 11. የአስተዳዳሪ ክፍል 12. ሌላ ይገላጽ	

108	እርሶ ባሉበት ክፍል ከበሽተኞች ጋር ቀጥታ ግንኙነት አለዎት?	3. አዎ 4. አይደለም	
-----	--	-------------------	--

2. የስራ ክፍል/ኬዝ ቲም

በዝህ ክፍል አብዛኛውን ጊዜ በስራ የሚታሳልፍበትን የሆስፒታሉ የስራ ክፍል አስብ

109. በዝህ የሆስፒታል ውስጥ ዋና ኃላፍነትዎ በምንድን /ኬዝ ቲም/ ክፍል ነው? አንዱን ይምረጡ

- 10. የተለያዩ ክፍሎች/ያልተገለጸ ክፍል
- 11. የድንገተኛ ታካሚ ክፍል
- 12. ተመላላሽ ህክምና ክፍል
- 13. ቀዶ ጥገና ክፍል
- 14. መሀጸንና ጽንሰ ክፍል
- 15. የህጻናት ህክምና ክፍል
- 16. ፋርማስ
- 17. ላቦራቶሪ
- 18. እባኩትን ሌላካላይገለጽ -----

እባክዎትን ከታች ባሉት እርስዎ ስለምሰሩበት የሆስፒታል በተገለጹ ሀሳቦች መስማማት/አለመስማማትዎን ይጠቁሙ

ለእያንዳንዱ ጥያቄ የሚስማማዎትን ያክብቡ

3. Supervisor/Manager expectations and actions promoting patient safety						
	መለኪያ ጥያቄዎች	Strongly disagree u×U • ›MeTTU	Disagree • አልፎTTU	Neither ÑKM}— ~	Agree • እስማማለሁ •	Strongly agree u×U • እስማማለሁ
201	አለቃዬ የታካሚን ደህንነት በጠበቀ መልኩ ስራ ስተገበር ደስ ይለዋል	1	2	3	4	5
202	አለቃዬ ከሰራተኞቹ የሚመጡትን የታካሚዎችን ደህንነት ለማስጠበቅ የሚረዱ ሀሳቦችን ይቀበላል	1	2	3	4	5
203	የስራ ጫና በሚፈጠርበት ጊዜ	1	2	3	4	5

	ስራውን በፍጥነት እንድንሰራ ያደርጋል አማራጭ መንገዶችንም ተጠቅመን ብሆን እንኳን					
204	አለቃዬ በታካሚዎች ደህንነት ላይ የሚፈጠሩ ችግሮችን ችላ ይላል	1	2	3	4	5
4. Organizational learning and continuous improvement						
301	የታካሚዎችን ደህንነት ለማሻሻል በንቃት እየሰራን ነው	1	2	3	4	5
302	ግድፈቶች/ስህተቶች ለአወንታዊ ለውጦች ያመሩናል	1	2	3	4	5
303	የታካሚዎችን ደህንነት ለማሻሻል ለውጥ ካደረግንም በኋላ ውጤታማነቱንም እንገመግማለን	1	2	3	4	5
5. Teamwork within units/dep't						
401	በስራ ክፍላችን እርስ በርስ እንደጋገፋለን	1	2	3	4	5
402	የስራ ጫና ስኖር በጋራ ተባብረን እንሰራለን	1	2	3	4	5
403	በስራ ክፍላችን ተከባብረን እንሰራለን	1	2	3	4	5
404	በተቋማችን በሌላ ስራ ክፍል ክፍተት ስኖር እንተጋገዛለን	1	2	3	4	5

ከዝህ ቀጥሎ የሚቀርቡ ጥያቄዎች ምን ያህል ጊዜ በሆስፒታላችሁ ይከሰታል፣ ለእያንዳንዱ ጥያቄ የሚስማማዎትን ያክብቡ

6. Communication openness						
No	መለኪያ ጥያቄዎች	የስምምነት ደረጃ				
		Never ምንም	Rarely ጥቅት ጊዜ	Sometimes አንዳንድ ጊዜ	Most of the time ግብዓት ጊዜ	Always ሁሉ ጊዜ
501	ሰራተኞቻችን የታካሚዎችን አገልግሎት የሚጎዳ ነገር ባዩ ጊዜ በነጻነት ይገልጻሉ	1	2	3	4	5

502	ሰራተኞቻችን በኃላፊዎች ውሳኔ ወይም ድርጊት ያልገባቸውን በነጻነት ይጠይቃሉ	1	2	3	4	5
503	አንድ ድርጊት ትክክል ካልመሰላቸው ሰራተኞች ደፍረው አይጠይቁም	1	2	3	4	5
7. Feedback and communication about error						
601	በስራችን ስለመጠው ለውጥ ግብረመልስ ይሰጠናል	1	2	3	4	5
602	በስራ ክፍላችን ስህተት ሲከሰት እንድናውቅ ይደረጋል	1	2	3	4	5
603	በስራ ክፍላችን ስህተት ዳግም እንዳይፈጠሩ መከላከያ መንገዶችን እንወያየለን	1	2	3	4	5

እባክዎትን ከታች ባሉት እርስዎ ስለምሰሩበት ሆስፒታል በተገለጹ ሀሳቦች መስማማት/አለመስማማትዎን ይጠቁሙ ለእያንዳንዱ ጥያቄ የሚስማማዎትን ያክብቡ

8. Non-punitive response to error						
No	የመለኪያ ጥያቄዎች	የስምምነት ደረጃ				
		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
701	ሰራተኞቹ ስህተቶቻቸው የሚያስወቅሳቸው መስሎ ይሰማቸዋል	1	2	3	4	5
702	አንድ ድርጊት ሲፈጸም ለችግሩ መፍትሔ ከመስጣት ይልቅ የችግሩ ፈጣሪ ግለሰብ ተወቃሽ መስሎ ይሰማናል	1	2	3	4	5
703	ሰራተኞቻችን ስህተቶቻቸው በማህደራቸው የሚቀመጥ ይመስላቸዋል	1	2	3	4	5

9. Staffing						
801	የሥራ ጫናውን ለመወጣት የሚያችሉን በቂ ሰራተኞች አሉን	1	2	3	4	5
802	በዝህ ክፍል ሰራተኞች ረጅም ሰዓት መስራት ለታካሚዎች ጥንቃቄ በጣም ጥሩ ነው					
803	ጊዜያዊ ሰራተኞች መጠቀም ለታካሚዎች የተሸለ ደህንነት ጥሩ ነው	1	2	3	4	5
804	ብዙ ስራ በፍጥነት ለመስራት ጫና ውስጥ እንገባለን	1	2	3	4	5
10. Hospital management support for patient safety						
901	የሆስፒታሉ አስተዳደር የታካሚዎችን ደህንነት የሚያበረታታ ምቹ የሥራ ሁኔታ ያመቻቻል	1	2	3	4	5
902	የአስተዳደሩ ድርጊቶች ለታካሚዎች ደህንነት ቅድሚያ መስጠቱን ያሳያል	1	2	3	4	5
903	አስተዳደሩ ስለታካሚዎች ደህንነት የሚያነሰው ችግሮች ከተከሰቱ በኋላ ነው	1	2	3	4	5
11. Teamwork across hospital department						
1001	የሆስፒታሉ ያሰራ ክፍሎች በቅንጅት አይሰሩም	1	2	3	4	5
1002	በሆስፒታሉ የሥራ ክፍሎች ጥሩ የሆነ ተባብሮ የመስራት ሁኔታ አለ	1	2	3	4	5
1003	ከሌላ የሥራ ክፍል/ኬዝ ቲም/ ሰራተኞች ጋር መስራት አይመችም	1	2	3	4	5
1004	ለታካሚዎች የተሸለ የህክምና አገልግሎት ለመስጠት ኬዝ ቲሞች በጋራ ይሰራሉ	1	2	3	4	5
12. Hospital handoffs and transition						
2001	ህመምተኞች ከአንድ የሥራ ክፍል ወደ ሌላ ክፍል ሲዘዋወሩ ክፍተት	1	2	3	4	5

	አለ					
2002	አስፈላጊ የታካሚዎች መረጃ በፈረቃ ልውውጥ ጊዜ ይጠፋል	1	2	3	4	5
2003	በመረጃ ልውውጥ ጊዜ በአብዛኛው ችግር ይከሰታል	1	2	3	4	5
2004	በሆስፒታላችን የፈረቃ ልውውጥ ለታካሚዎቻችን አስቸጋሪ ነው	1	2	3	4	5
13. Overall perceptions of safety						
3001	እዚህ የጠና ችግር ያልተከሰተው የአጋጣሚ ጉዳይ ሆኖ ነው	1	2	3	4	5
3002	Patient safety is never sacrificed to get more work done	1	2	3	4	5
3003	እዚህ የስራ ክፍል የህመምተኛ ደህንነት ችግር አለ	1	2	3	4	5
3004	የስራ ሂደታችንና ደንባችን ችግሮች እንዳይፈጠሩ ለማድረግ ጥሩ ናቸው	1	2	3	4	5

14. Frequency of Events Reported

ከዝህ ቀጥሎ የሚቀርቡ ጥያቄዎች ምን ያህል ጊዜ በሆስፒታላችሁ ይከሰታል፣ ለእያንዳንዱ ጥያቄ የሚስማማዎትን ያክብቡ

No	የመለኪያ ጥያቄዎች	የስምምነት ደረጃ				
		Never	Rarely	Sometimes	Most of the time	always
4001	የተፈጠረው ስህተት በህመምተኛው ጉዳት ከማድረሱ በፊት ቢታወቅ እና እሪማት ቢደረግ ምን ያህል ሪፖርት ይደረጋል?	1	2	3	4	5
4002	ስህተት ቢፈጠር እና	1	2	3	4	5

	ህመምተኞችን የማይጎዳ ቢሆን እንኳ ምን ያህል ሪፖርት ይደረጋል?					
4003	ህመምተኞችን የሚጎዳ ስህተት ቢፈጠር ጉዳት ባያደርስ እንኳ ምን ያህል ሪፖርት ይደረጋል?	1	2	3	4	5

15. Patient safety grade (የታማሚዎች ደህንነት ደረጃ)

5001. Please give your work area/unit in this hospital an overall grade on patient safety.

1, Excellent 2. Very Good 3. Acceptable 4. Poor 5. Failing

16. Number of Events Reported

6001. In the past 12 months, how many event reports have you filled out and submitted?

1, No event reports 2. 1 to 2 event reports 3. 3 to 5 event reports 4. 6 to 10 event reports
5. 11 to 20 event reports 6.21 event reports

DECLARATION

I, the undersigned, declare that this thesis is my original work, has not presented for a degree in this or any other university and that all sources of materials used for the thesis have fully acknowledged.

Name: _____

Signature: _____

Name of the institution: _____

Date of submission: _____

Approval of the advisors

Name and Signature of the first advisor

Name and Signature of the second advisor

