Jimma University

College of Public Health and Medical Sciences

Department of Health Services Management

Assessment of Patient Safety Culture and associated factors in Chiro and Gelemso Hospitals, West Hararge Zone, Oromia Regional State, EastEthiopia, 2013

By

EngidaNigatu, BSc

A Thesis submitted to the Department of Health Services Management, College of Public Health and medical Sciences for Partial fulfillment for, the Requirements of Master of Public Health.

February, 2013

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Abstract

Background: Patient safety is an important component of the quality of health care received by patients and clients. However, there is lack of evidence about patient safety /safety culture & associated factors in hospitals of Ethiopia.

Objective of the study: To assess the patient safety culture and associated factors in Chiro and Gelemso hospitals, West Hararge Zone, 2013.

Methods: A facility based cross-sectional study using quantitative method of data collection was conducted from September 10-October 10, 2013.Data were collected by self administered questionnaire method. The collected data were entered, coded, verified and prepared for final statistical analysis by using EPI data & SPSS computer packages. The data were analyzed by calculating frequency, percentage & summary statistics for back ground variables & patient safety culture dimensions and finally the data were presented using tables. After principal component analysis items with Eigen value greater than 1 were extracted &retained as a principal component to represent the dimensions for further analysis and then multiple linear regression analysis was performed to identify predictors of the dependent variable.

Result: Of the total of 12 dimensions of patient safety culture only three (3) dimensions: teamwork within hospital wards (84%), teamwork across hospital wards (70%), organizational learning & continuous improvement (61%) were identified to have composite scores above 50%.. However, nine (9) of patient safety culture dimensions had composite scores below 50%. All of the back ground variables & majority of the patient safety culture dimensions except the three (3):organizational learning/continuous improvement(p=0.003, B=0.296; 95%CI: 0.102-0.490), feedback and communication about error(p=000,B=0.390; 95%CI:0.202-0.577) & teamwork across hospital wards(p=0.021,B= -0.184;95%CI: -0.481-(-0.040) did not have statistically significant association with the outcome variable ‘‘frequency of event reporting’’.

Conclusion & recommendations: The study showed that only three of patient safety culture dimensions: teamwork within hospital wards, teamwork across hospital wards, organizational learning & continuous improvement were identified as areas of strength. The remaining 9 patient safety culture dimensions were identified as areas of improvements (gaps).This suggests that there is no a just/safe patient safety culture in the hospitals. Thus, system related factors of safety should get priority to improve patient safety in the hospitals. Moreover, majority of safety culture dimensions & all of background variables were insignificant to predict the dependent variable.

Keywords: patient safety, patient safety culture, patient harms, medical error.

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Acronyms

AHRQ	Agency for Health care Research and Quality
APPS	African Partnership for Patient Safety
CI	Confidence Interval
ED	Emergency Department
FA	Factor Analysis
HAI	Health care Associated Infection
HIV	Human Immune deficiency Virus
HSOPSC	Hospital Survey on Patient Safety Culture
IOM	Institute of Medicine
OPD	Out Patient Department
PCA	Principal Component Analysis
PSC	Patient Safety Culture
RA	Reliability Analysis
SPSS	Statistical Package for Social Science
WHO	World Health Organization

Chapter I: Introduction

1.1. Back ground

According to the report ''To Err is Human: building a safer health system'' published by the Institute of Medicine(IOM), the extent of patient harm was highlighted and the report was the catalyst for the international efforts to improve the quality of care, safety of patient and satisfaction of both patients and health providers [1].Evidences show that Patient safety is becoming an issue for all countries that deliver health services, whether they are developed or not [2,3, 4].Patient safety is defined as, protecting patients from any accidental Patient harm which are associated with medical errors during health care processes[5, 6,7].Patient harms are defined as unintended/unfavorable but preventable adverse events caused by medical errors or complication other than the underlying disease [8, 9, 10].

A medical error is defined as the failure of a planned action to be completed as intended (error of execution) or the use of a wrong plan to achieve an aim (error of planning) and omission or failing to plan or to do important safety procedures[2, 11].Generally errors are classified as slips, lapses and mistakes. Slips are errors that occur as part of the daily routine and the person is not aware that the slip has occurred until after the event, lapses results from incorrect choices or applying the wrong set of rules to a decision and mistakes are usually due to insufficient knowledge, lack of experience or training, inadequate information[12,13,14].

The safety culture of an organization is" the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment ,the style and proficiency of an organization's health and safety management''[15,16,17]. Literatures documented that safety culture, like quality, is a multidimensional and complex concept [2, 16,18].More importantly, the reports of Agency for Health care Research Quality(AHRQ) showed that the concept patient safety culture has 12 dimensions and 42 items [16]. Thus, this study assessed those patient safety culture dimensions like: communication openness ,supervisor/managers expectations& actions

promoting safety, organizational learning/continuous improvement, team-work within hospitals' wards, feedback and communication about error, no punitive response to error, staffing, hospital management support for patient safety, teamwork across hospital units, hospital handoffs and transitions, overall perceptions of safety, frequency of event reporting. Also background characteristics of respondents were assessed by this study.

Majority of Patient harms have been proven to be due to medical errors during health care processes and those harms in turn could result in numerous preventable injuries and deaths [1, 19, 20, 21].Reports indicated that worldwide adverse events have been estimated to occur in 4% to 16% of all hospitalized patients and more than half of these occur in surgical care and are preventable [7, 21]. Moreover, it was reported that globally more than half of all medicines are prescribed, dispensed or sold inappropriately and that half of all patients fail to take medicines correctly and this misuse of medicines results in widespread health hazards[9,22]. In addition, it was indicated that over 1.4 million people to suffer by patient harm like healthcare-associated infection (HAI) due to unsafe injections, blood transfusion and medicines [9, 23, 24].

It was reported that in America44,000 to 98,000 American people, died in hospitals each year due to preventable medical errors [1, 5, 25].Other reports also indicated that in addition to patient harm, errors in health care are also have negative economic impact by increasing either patient cost or health care cost and then diminishing both patient and health workers satisfaction due to increased patient's length of hospital stay and their loss of productivity, increased treatment cost for harms and this in turn reduces trust of health workers in the health system [24, 25, 26].According to the Institute of Medicine report errors have been estimated to result in total costs of between $17 billion and $29 billion per year in American hospitals nationwide[1].

In resource-limited countries the problem is more complex. It was shown that 25% of medicines consumed are believed to be counterfeit [7, 9, 11] and developing countries account for around 77% of all reported cases of counterfeit and substandard drugs [7, 9, 11, 26].Also, it was evident that in hospitals of developing countries 5% to 10% of patients acquire one or more infections and the risk is being 2 to 20 times higher than in developed countries [9, 11, 26]. Moreover as reports indicated, invasive procedures like endoscopic procedures, injections and blood transfusions are the major problems in developing countries [9, 11, 27, 28]. For instance :Seven percent (7%) of the countries in the African Region did not test all donated blood for HIV; 22% did not test for hepatitis B and 51% did not test for hepatitis C and the proportion of infections caused by syringes or needles reused without sterilization also ranges from 1.5% to 69.4%[7,9,11,29].

1.2. The problem statement

The major contributing factors for medical errors and associated patient harms in healthcare organizations of both developed & developing countries have known to be system failures rather than human or personal failures [13,14, 30,31]. Reports suggested that organization's safety culture is the basic cause for system failures& system failures results in human failures which in turn influence the safety of an organization [32, 33, 34].

Reports indicated that disclosure & reporting of events are two important concepts that affect the safety culture i.e. disclosing, reporting, & communicating mistakes with those involved or affected helps them to learn from past errors &to improve safety of the healthcare organization [35, 36]. Reporting and disclosure of errors in health care in turn are hindered by many factors as system factors which include: financial and legal barriers, an expectation of perfection by medicine, interactions within the provider-patient relationship, and a culture that focuses on individual responsibility (blaming culture) rather than system improvement and this contrasts with the physicians' professional responsibility to provide the highest quality of medical care [37,38, 39]. So**,** to achieve a culture of safety and then quality service, hospitals and their employees must understand the prevailing patient safety culture with regard to patient safety by administering a cultural assessment survey [14, 40, 41].

In Ethiopia, even if, there is no scientific evidence the problems regarding patient safety issues are assumed to be too complex. But after the first awareness raising workshop report of World Health Organization (WHO) African Partnership for Patient Safety (APPS) in Kigali, Rwanda, different conferences have been healed at different times with different objectives/agendas to stimulate & catalyze the concept of patient safety policies, strategies, & programs in African countries [7, 11, 42]. After those efforts Ethiopia had revised its health sector plan and the minister of health' National Patient Safety strategy& Program was established& incorporated in the 5 years growth and transformation plan& the programs are being implemented in 3 pilot hospitals of Ethiopia [42]

Despite the advancing trend of research in patient safety issues in some nations of developed world, in developing countries including Ethiopia understanding of the problems associated with patient safety and safety culture in health care organizations is hindered by inadequate or insufficient scientific data [2,7,41].Evidences indicated that due to the emerging nature of cultural assessment in health care, researchers lack consensus and clarity about important domains in a culture of safety [12, 41, 43, 44]. In addition, it was reported that without evidence it is not clear to know: how to understand the sources of variation in safety culture; how to score and present improvements in culture over time; how to know the relationship between culture and clinical outcomes; how to package a tool kit to measure, score, and improve patient safety culture [41, 45, 46, 47].Therefore, the aim of this study was to assess the current state of patient safety culture associated factors in Chiro & Gelemso Hospitals.

Chapter II: Literature review

2.1. Measuring the concepts of patient safety culture

The concept Safety culture is part of the overall culture of an organization and the term first became popular following the Chernobyl nuclear disaster when it was suggested that organizations can reduce accidents and safety incidents by developing a positive safety culture [48, 49, 50, 51].The positive safety culture is from the concept of high reliability organizations [52, 53, 54].Psychometric analysis indicated that patient safety culture like health quality has the property of multi dimensionality and there are 12 patient safety culture dimensions with a total of 42 items to assess those dimensions [16, 55].Nine back ground variables were also assessed by this study[16, 55].

Background variables: the background predictors of patient safety culture that assessed were: age, sex, education, marital status, working ward, experience in the hospital, number of working hrs/week, staff position, direct interaction with patients [16, 55, 56, 57].

Dimensions of patient safety culture: Evidences indicated that there are 12patient safety culture dimensions which may affect the patient safety of health care organizations all over the world &those dimensions include: 1, Supervisor/Manager expectations &actions Promoting safety (it was assessed using 4 questions/items) 2,Organizational Learning/Continuous Improvement (assessed by 3 items) 3,Teamwork Within wards (assessed by 4 items)4, Communication Openness (assessed by 3 items) 5, Feedback and communication about error (assessed by 3 items) 6,No punitive response to error (assessed by 3 items) 7, Staffing (assessed by 4 items) 8, Hospital Management Support for Patient Safety (assessed by 3 items)9,Teamwork across hospital wards(assessed by 4 items) 10**,** Hospital handoffs and transitions (assessed by 4 items)11,Overall Perceptions of Safety(assessed by 4 items) [16,55,56, 57].

Frequency of Event Reporting*:* the dependent or outcome measures of safety & one of the 12dimensions&was assessed by three Likert items which have values range from 1 to 5& the items are: 1,when a mistake is made, but is caught and corrected before affecting the patient, how often is this reported? 2, when a mistake is made, but has no potential to

harm the patient, how often is this reported? 3, when a mistake is made that could harm the patient, but does not, how often is this reported? [16, 55, 56, 57].

2.2. Findings of other researches

The AHRQ'S 2011 and 2012 user comparative database reports indicated that the composite scores: supervisor/manager expectations and actions promoting patient safety (75%), management support for patient safety (72%), communication openness(62%), frequency of event reporting(63%) & over all perception of safety (66%),communication about error(64%),&Staffing (56%) were identified as areas of strength whereas teamwork within hospitals' wards(48%),teamwork across wards(44%),organizational learning & continuous improvement(37%), no- punitive response to error (44%), handoffs and transitions (45%)were identified as areas with potential for improvement for most hospitals[57,58].

A comparative study on patient safety culture characteristics among healthcare workers in Japan &Taiwan with the U.S. "2010 HSOPS Comparative Database" as a base line provided by AHRQ found that for Japan, the highest & next highest scores were: team work within units (70%), frequency of event reporting (68%) and the lowest &next lowest were: hand-offs and transitions (35%), staffing (37%) while the remaining dimensions ranged from (43%--62%). For Taiwan, organizational learning/ continuous improvement (81%),teamwork with in units(79%)were the highest & next highest scores and the lowest &next lowest scores were: staffing(29%),frequency of event reporting(33%) and the remaining dimensions ranged from(36%--65%) For U.S. which is the base line data, the highest & next highest scores were: team work within units(79%), supervisor/manager expectations and actions promoting safety (74%) and the lowest &next lowest are: hand-offs and transitions(41%), non-punitive response to error (42%) whereas the remaining dimensions ranged from(54%--72%) [59].

A study conducted in Sri Lanka found that nine of the patient safety culture dimensions: teamwork within hospitals' wards (85%), organizational learning & continuous improvement(83%), overall perception of safety(81.3%),handoffs and transitions (75%), management support for patient safety (74%),supervisor/manager expectations and actions promoting patient safety (73%),team work across wards(66%), communication openness(62%), feedback &communication about error(62%) were identified as areas of strength& dimensions :non-punitive response to errors (39.4%) ,frequency of event reporting(36.3%),&Staffing (16%) were reported as areas of improvements[60].

A study in Cairo, Egypt found that the highest mean composite positive score was for organizational learning &continuous improvement (78.2%) & the second & third highest were team work across wards (69%) & team work with in wards (58%).But, the rest nine(9) were found to have scores below 50%: overall perception of safety(34%),handoffs and transitions (25%), management support for patient safety (27%),supervisor/manager expectations and actions promoting patient safety (46%), communication openness(35%), feedback &communication about error(40%),non-punitive response to errors (19.5%), frequency of event reporting(36.3%),&Staffing (49%)[61].

A survey in primary healthcare services in Turkey identified that the dimensions' score for overall perception of safety (59%), supervisor/manager expectations and actions promoting patient safety (58%), feedback & communication about error (50%) were found as areas of strength. However, dimensions: teamwork within hospitals wards (46%),team work across wards (36%),Staffing (49%), organizational learning & continuous improvement (47%),handoffs and transitions (44%), management support for patient safety (43%), communication openness (46%), non-punitive response to errors (18%) & frequency of event reporting (12%) were reported as areas of improvements [62].

2.3. Summary of literature review

Almost all of the research findings underline that inconsistent and insufficient findings were found in existing researches that have been undertaken in the area of patient safety culture and scientifically agreed up on (common knowledge) about important areas or dimensions of patient safety culture have not been clearly identified. All studies conducted so far in the area of patient safety culture are limited only in descriptive method &there are very limited studies which employed cross sectional study using predictive method to predict the association between predictor & outcome measure of patient safety culture in hospitals. For instance a study in Jima university specialized hospital [31] & studies in Lebanese [8] & Saudi Arabia (63) indicated that ‘’the effect of some predictors of safety culture dimensions on patient safety culture were not clearly examined’’. These inconsistent & inadequate research findings & methodological gaps to demonstrate about important domains in a culture of safety implies that a more comprehensive study in the areas of patient safety culture was important& this study was so intended to fill those gaps of scientific knowledge.

3. The conceptual frame work

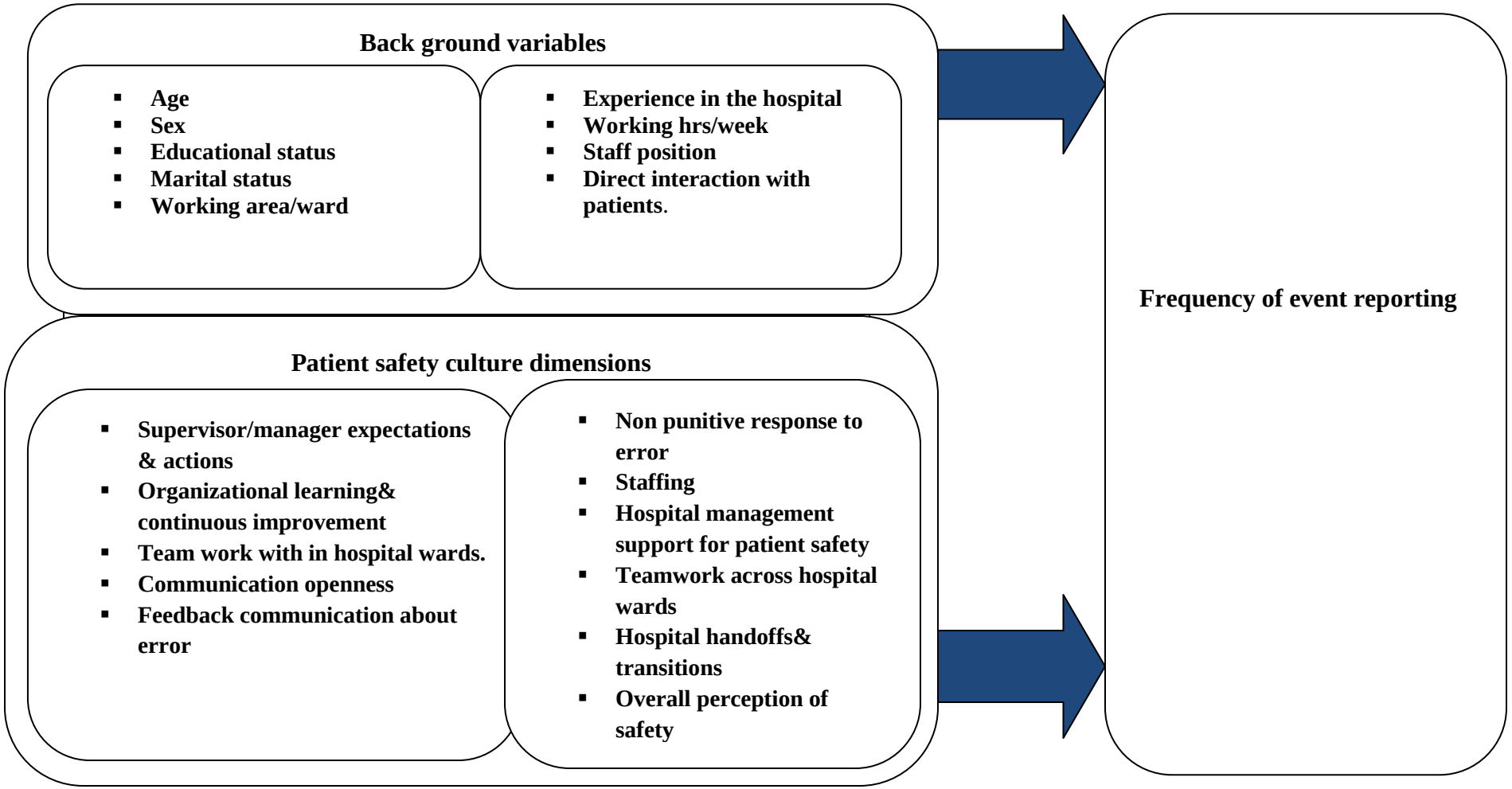

Fig1: Schematic representation of the conceptual frame work of the study assessment of patient safety culture & associated factors in Chiro & Gelemso Hospitals, Oromia regional state, East Ethiopia, 2013.

4. Significance of the study

The study was done to investigate & understand the current state of PSC& associated factors in Chiro & Gelemso hospitals and then it will be important: to contribute to the scientific knowledge in the field of patient safety by suggesting focus areas for further investigations and also it can be used as a reference in future studies by other researchers in the same area of inquiry. Moreover, this study will provide information for health stake holders like: health policy makers, managers, practitioners, donors etc. to plan, implement, monitor, and evaluate patient safety policies & strategies at different levels of the health care system. Finally, the findings will benefit the patients or the general public as a whole either in the study area or other parts of Ethiopia. Consequently, the findings of this baseline assessment survey will have practical significance in the effort of achieving the vision of healthy, productive and prosperous society in Ethiopia.

Chapter III: Objectives

3.1. General objective:

- To assess the Patient Safety Culture and associated factors in Chiro & Gelemso Hospitals West Hararge Zone, Oromia Regional State, EastEthiopia,2013.

3.2. Specific objectives:

- To describe the patient safety culture dimensions in Chiro & Gelemso Hospitals.
- To measure frequency of event reporting in Chiro & Gelemso Hospitals.
- To identify predictors of frequency of event reporting in Chiro & Gelemso Hospitals.

Chapter IV: Methods and materials

4.1. The study area& period

The study areas were Chiro and Gelemso towns in West Harargae Zone, Oromia regional state, East Ethiopia. West Harargae Zone has a total of 444 Government health institutions (2 Hospitals, 71 health centers, and 371health posts). Chiro town is the Zonal capital town and one of the study areas & located at 326 km from Addis Ababa & Gelemso town is also the second study area and located at 401 km from Addis Ababa. Chiro & Gelemso hospitals are the only referral hospitals in the Zone & they have a bed size of 145 and 143 respectively & they are providing: inpatient, outpatient, emergency, preventive & pro motive health services. The study was conducted from September 10 to October 11, 2013.

4.2. The study design

A facility based cross-sectional study design using quantitative methods of data collection was used.

4.3. Population:

4.3.1. Source population

The source population was all health professionals in Chiro & Gelemso hospitals.

4.3.2. Study population

The study population was all health professionals who fulfilled the eligibility criteria of the study.

4.4. The inclusion and exclusion criteria:

All health professionals who had at least 6months experience in the hospitals & were not managers included in the study.

4.5. Sample size and sampling procedures

As the source population was finite, easily accessible & manageable complete enumeration (census) method was employed.

4.6. Data collection procedures

First Contact persons were assigned from the two hospitals for the purposes of facilitating data collection process. A structured self-administered questionnaire which was adopted from the AHRQ'S Hospital Survey on Patient Safety Culture (HSOPSC)[16] was customized, pre-tested on15 health professionals in Chiro Hospital & distributed to the study participants after having both verbal & written consent from them.

4.7. Data processing &analysis

During data collection process questionnaires were examined for accuracy, consistency and completeness and incomplete questionnaires were excluded from the data set. Then data were entered, categorized, coded, and validated by exploratory analysis.

Data analysis included the following procedures: As univariate descriptive analysis: Calculation of summary statistics, frequencies and percentages for background variables, PSC dimensions was done; then findings were presented in tables. Moreover, abivariate analysis: simple linear regression analysis to select candidate variables for multivariate analysis was done. As multivariate analysis: After recording of negatively worded likert items, reliability analysis was done by calculating the reliability coefficient (Cronbach alpha value) & those scales with Cronbach alpha value>=0.6 were subjected to factor/principal component analysis. After PCA scales with Eigen value greater than 1 were extracted &retained as a principal component to represent the dimensions (Table 1). Finally multiple linear regression analysis was performed to predict association between predictor variables and the outcome variable. All data processing & analysis procedures were operated using EPI data & SPSS computer package and in all cases P-values < 0.05/0.25was treated as significant.

Table 1: A summary of RA & PCA for PSC dimensions in Chiro & Gelemso Hospitals, Weast Harargae, Oromia, East Ethiopia, 2013.

S.N	Dimension	No of items in PSCD	Cronbach-α value after RA	No of factor extracted after PCA	Eigen value	Total variance (%)
1	Organizational Learning & Continuous Imp.	3	0.73	1	1.962	65%
2	Teamwork Within Hospital Units	4	0.64	1	2.36	59%
3	Communication Openness	3	0.80	1	1.81	60.3%
4	Feedback and Communication About Error	3	0.79	1	2.114	70.5%
5	No punitive Response To Error	3	0.74	1	1.99	66.5%
6	Hospital Management Support for Patient Safety	3	0.70	1	1.937	64.6%
7	Teamwork Across Hospital Units	4	0.60	1	3.084	77%
8	Hospital Handoffs & Transitions	4	0.77	1	2.383	60%
9	Frequency of event reporting	3	0.78	1	2.081	69.4%
10	Supervisor/managers expectations & actions promoting safety	4	0.165	NA	NA	NA
11	Staffing	4	0.52	NA	NA	NA
12	Overall perceptions of safety	4	0.30	NA	NA	NA

NB: NA=Not Applicable, PSCD= Patient Safety Culture Dimension, RA= Reliability Analysis, PCA=Principal Component Analysis.

4.8. Data quality

A pre-test was done on15 health professionals of Chiro Hospital to test the reliability and validity of the questionnaire. Based on the pre-test questions were revised and those found to be unclear or confusing was removed/edited. All study participants in the Hospitals were oriented about the study & its purpose. To make the study subjects aware of about the study, pre-notification letter which was signed by the hospitals' officials was posted on the notice boards of the hospitals. Moreover, a reminder letter was posted in the same way to the pre notification letter on the notice board to thank those staffs returned the survey and to remind those not responded to the survey. During the data collection period the investigator was undertaking close supervision and follow up of responses and questionnaires which have problem of completeness, consistency, and validity were excluded from the data sets by checking some of questionnaires.

4.9. Study variables

Dependent Variable/Outcome Measure:

Frequency of event reporting

Independent variables:

Background variables (age, sex, education, marital status, working area, experience in the hospital, number of working hrs/week, staff position, direct interaction with patients)

Patient safety culture dimensions (supervisor/manager expectations and actions promoting patient safety ,organizational learning continuous improvement ,teamwork within wards, communication openness, feedback and communication about error ,no punitive response to error, staffing, hospital management support for patient safety, teamwork across hospital units ,hospital handoffs and transitions& overall perception of safety).

4.10. Operational definitions

For the purpose of this study the following concepts were defined operationally as follows:

Patient safety culture was measured by 12Patient safety culture dimensions assessed in the study: 1.supervisor/manager expectations 2.organizational learning & continuous improvement 3.Teamwork within wards 4.teamwork across wards 5.communication openness 6.feedback and communication about error 7.non punitive response to error 8.staffing 9.Hospital mgt support for Patient safety 10.hospital handoffs and transitions 11, overall perception of safety 12, frequency of event reporting.

Patient safety culture dimensions are latent variables which are not directly measured or observed but they are measured indirectly by other measurable variables (items) which have 5-point Likert scale with responses range from strongly disagree/never with value 1 to strongly agree/always with value of five(5).

Composite positive score is the total percentage of positive responses for each safety culture dimension (calculated as: total positive responses divide by the total response):if the composite positive score is >= 75%(*Good),*if 50%-75%,(Fair/acceptable)if < 50%(Poor).

Factor score is continuous data calculated by Factor Analysis (FA) & it represents the component extracted for further analysis.

4.11. Ethical considerations

A letter of ethical clearance was obtained from the Jima University Ethics Review Committee. Permission was obtained to start the study from West Harargae Zonal Health desk & Hospital management. Informed consent was also obtained from all of the study participants. To insure confidentiality/anonymity of staff's response, staffs were assured that no one at their hospital will see the completed surveys, as questionnaires were returned to contact persons who were outside the hospitals with envelop. Participants were also informed that, they could withdraw from the study at any time. Representativeness of the sample was insured by complete enumeration of study population and non-response rate was minimized by continuous tracking of response during data collection period. Validity of study findings was insured by using different data quality management measures from the design stage up to final stage of the survey process. The findings of the research will be shared with the Hospital Management Team, the zonal health office, Jima University scientific community.

4.12. Dissemination of findings

The scientific community, health stakeholders & the general public will be 3 main intended users of the study findings & these different groups of users need different channel of communication. To the research community, findings will be disseminated by publishing or plenary presentation of the findings. To the health stake holders (health policy makers, managers, practitioners, funding organizations, etc): Jima university, the hospitals in the study area & others it will be disseminated using either plenary presentation or submission in hard copies & to the general public, results of the study will be communicated by conferences/meetings.

Chapter V: Results

5.1. Back ground characteristics of the respondents

One hundred and eighty two (182) survey questionnaires were distributed& of those 159 were returned. From the returned questionnaires only 147 were filled completely. The response rate was therefore 81%.

It is noted from [Table2] below that the majority (61%) of the respondents were females & 53% of them were between the ages of 25 and 35 years. The study also found that the majority(45%) of the respondents were married & 62% of them have diploma. Moreover, it was found that the largest portion (89%) of respondents have direct interaction with patients & more than half (57%) of them worked for less than or equal to 40 hours per week in the hospitals. In addition, it was found that most of them (66%) had duration of service less than 5 years in the hospitals. With regard to staff positions the largest portions (76%) of respondents were staff nurses & the smallest portion comprises specialists (2%).

Table2:Background Characteristics of the respondents in Chiro & Gelemso hospitals, West Hararge Zone, Oromia, East Ethiopia, 2013.

	Variables	Number	Percent (%)
Sex(N=147)	Male	57	38.8
	Female	90	61.2
Age category in years(N=147	18-25yrs	47	32
	25-35yrs	78	53.1
	35-45yrs	18	12.2
	>=45yrs	4	2.7
Level of education(N=147)	Diploma	91	61.9
	1st degree	49	33.3
	2nd degree	3	2
	Health assistant	4	2.8
Marital status (N=147)	Married	66	44.9
	Single	31	21.1
	Separated	8	5.4
	Cohabiting	42	28

	Variables	Number	Percent (%)
working ward(N=147)	No specific ward	13	8.8
	Medical ward	18	12
	Surgical ward	15	10.2
	Pediatric ward	13	8.8
	Gynecology ward	14	9.5
	Pharmacy department	13	8.8
	OPD/ED	46	31.3
	eye clinics	11	7.5
	others (, ART clinics, MCH)	4	2.7
Experience in the hospitals(N=147)	<5 yrs	97	66
	5yrs-10yrs	39	26.5
	>=10 yrs	11	7.5
Working hours/week (N=147)	<=40 hrs	84	57.1
	>40 hrs	63	42.9
Staff position (N=147)	Staff nurse	112	76
	Staff physician	11	7.5
	Specialist	3	2
	Technician (lab. X-rayetc)	11	7.5
	Pharmacist/druggist	10	6.8
Direct interaction with patients(N=147)	Yes	131	89.1
	No	16	10.9

5.2. The Patient safety culture dimensions

This study found that the following three(3) PSC dimensions were identified to have summarized composite positive scores of greater than 50% : Teamwork within hospital wards(84%),Teamwork across hospital wards(70%), Organizational learning & continuous improvement (61%).On the other hand all the other dimensions had composite scores below 50%(Table: 3).Thus the three(3) PSCDs of the 12 were considered as areas of strength in the hospitals &the other nine (9) dimensions: communication openness(44%),supervisor/managers expectations & actions promoting safety(46%), feedback and communication about error(43%), no punitive response to error(24%), staffing(37%), hospital management support for patient safety(40%), hospital handoffs and transitions(47%), overall perceptions of safety(44%), frequency of event reporting(27%)were with composite positive scores below 50%&considered as areas of improvements.

Table3: Composite percentages& composite means of Patient safety culture dimensions in Chiro & Gelemso Hospitals, West Harargae Zone, Oromia, East Ethiopia, 2013.

S.N	Patient safety culture dimensions	Total responses		Negative responses [SDA+DA]		Neutral responses (N)		Positive response [A+SA]		composite Mean score
		N	%	N	%	N	%	N	%	
1	Supervisor/manager expectations & actions promoting safety	588	100	212	36	105	18	271	46	3.51
2	Organizational learning & continuous improvement	441	100	122	27	51	12	268	61	3.66
3	Teamwork within hospital wards	588	100	51	9	42	7	495	84	4.36
4	Communication openness	441	100	168	38	80	18	193	44	3.46
5	Feedback and communication about error	441	100	181	41	71	16	189	43	3.42
6	Non- punitive response to error	441	100	270	61	63	15	108	24	2.16
7	Staffing	588	100	300	51	69	12	219	37	2.3
8	Hospital management support for patient safety	441	100	217	49	46	11	178	40	3.46
9	Teamwork across hospital wards	588	100	131	22	46	8	411	70	3.92
10	Hospital handoffs & transitions	588	100	235	40	74	13	279	47	3.54
11	Over all perception of safety	588	100	262	45	66	11	260	44	2.32
12	Frequency of event reporting	441	100	249	56	72	17	120	27	2.43

NB: SDA- Strongly disagree, DA- disagree, N-Neutral, A- Agree, SA - Strongly Agree, Numbers 588 & 441 in the column of ''total response'' represent the total responses of all respondents(N=147) given for all Likert items with in the given dimension.

5.3. Predictors of event reporting

After RA & PCA, bivariate analysis (simple linear regression) was done to select candidate variables for multiple linear regression analysis (Table4).Then it was tried to build two models: The first model was fitted to identify the association between back ground variables & the outcome variable "frequency of event reporting". The study found that 6.8% of the variance in the variable was explained by back ground variables (R square = 0.068), but, none of the back ground variables showed statistical significant associations with frequency of event reporting (Table 5).

The second model was to predict frequency of event reporting with factor scores of PSCDs. The study indicated that about 37.5% of the variance in the frequency of event reporting was explained by those PSC dimensions(R square = 0.375). It was found that: organizational learning & continuous improvement (p=0.003, B=0.296; 95%CI: 0.102-0.490and feedback and communication about error (p=000,B=0.390; 95%CI: 0.202-0.577)were found to have positive & statistically significant correlation and the dimension teamwork across hospital units (p=0.021, B= -0.184; 95%CI: -0.481-(-0.040) have negative & statistically significant correlation with frequency of event reporting(Table 6).

From these findings it can be noticed that keeping all other confounding variables constant, increasing factor scores of feedback & communication about medical errors & organizational learning/continuous improvement by one unit can increase the factor scores of frequency of event reporting by 0.390 & 0.296respectively. But, increasing factor score of teamwork across hospital wards by one unit can decrease the factor score of frequency of event reporting by 0.184. On the other hand, the remaining patient safety culture dimensions have no statistical significant correlation with frequency of event reporting (Table 6).

Table: 4 Bivariate (simple linear regression) associations of predictor variables & frequency of events reporting in Chiro & Gelemso Hospitals, West Harargae Zone, Oromia, East Ethiopia, 2013.

Predictor variables		Categories	Un standardized B	standardized B	P-value	95% CI for B	
						LB	UB
	Sex	Female*					
		Male	0.653	0.165	0.15	-0.108	0.145
	Age categories	25-35yrs*					
		18yrs-25yrs	-0.404	-0.115	0.32	-1.102	0.294
		35-45yrs	0.698	0.168	0.081	-0.83	0.478
		>=45yrs	0.93	0.031	0.075	-0.488	0.674
	Educational status	Diploma*					
		1st degree	-0.505	-0.115	0.19	-1.288	0.277
		2nd degree	-0.399	-0.112	0.299	-1.99	0.274
		health assistant	0.633	0.1455	0.111	-0.101	0.137
Back ground variables	Marital status	Married*					
		Single	0.664	0.168	0.17	-0.111	0.129
		Separated	0.038	0.009	0.98	-0.74	0.817
		Cohabiting	0.351	0.0961	0.601	-0.107	0.119
		OPD/ED *					
	Working ward	Medical ward	-0.744	-0.159	0.074	-1.564	0.076
		Surgical ward	0.698	0.168	0.0852	-1.102	0.296
		Pediatric ward	0.631	0.146	0.12	-0.101	0.130
		Gynecology ward	0.146	0.071	0.045	-0.303	0.560
		Pharmacy department	-0.404	-0.115	0.245	-1.101	0.287
		No specific ward	-0.2006	-0.0097	0.441	-0.988	0.611
		eye clinics	0.072	0.0118	0.33	-0.220	0.586

		Categories	Un standardized B	standardized B	P-value	95% CI of B LB	UB
Predictor variables							
Back ground variables	Years of experiences in the hospitals	<5 yrs*					
		5yrs-10yrs	-0.404	-0.115	0.259	-1.101	0.294
		>=10 yrs	0.653	0.165	0.129	-0.118	1.415
	Working hours per week	<=40 hrs*					
		>40 hrs	-0.409	-0.115	0.219	-1.100	0.294
	Staff positions	Staff nurse*					
		Staff physician	-636	-0.168	0.047	-1.301	0.035
		Specialist	-0.404	-0.115	0.291	-1.102	0.288
		Technician (Lab. X-ray etc)	-632	-0.168	0.056	-1.307	0.035
		Pharmacist/ druggist	-0.404	-0.115	0.31	-1.102	0.292
	Direct interactions with patients	Yes*					
		No	-0.398	-0.116	0.252	-1.090	0.288
Patient safety culture dimensions	Organizational Learning & Continuous improvement= FAC1		0.437	0.472	0.213	0.327	0.617
	Teamwork within hospital units=FAC2		0.109	0.103	0.000	-0.064	0.283
	Communication openness= FAC3		0.440	0.440	0.215	0.292	0.587
	Feedback and communication about error= FAC4		0.569	0.569	0.000	0.433	0.704
	Non punitive response to error= FAC5		0.120	0.120	0.000	-0.043	0.283
	Hospital Management Support for Patient Safety= FAC6		0.426	0.426	0.148	0.278	0.575
	Teamwork across hospital units= FAC7		0.019	0.013	0.000	-0.213	0.251
	Hospital handoffs & transitions= FAC8		-0.099	-0.099	0.37	-0.262	0.064

NB***** reference category, LB - Lower boundary, UP - Upper boundary, CI-Confidence Interval,

Table: 5 Association of background variables & frequency of event reporting in Chiro & Gelemso Hospitals, West Harargae Zone, Oromia regional state, East Ethiopia, 2013.

Variables		frequency	Un standardized B	Standardized B	p-value	95% CI for B	
						Lower boundary	upper boundary
Constant	**-0.019**	-	0.283	-	0.932	-0.208	0.774
Sex(N=147)	Female*	90					
	Male	57	0.146	0.071	0.526	-0.308	0.60
Age category in years	25-35yrs*	78					
(N=147	18-25 yrs	47	0.099	0.0089	0.474	-0.237	0.551
	35-45yrs	18	0.93	0.031	0.752	-0.488	0.674
	>=45yrs	4	0.225	0.037	0.676	-0.838	1.288
Level of education	Diploma*	91					
(N=147)	1st degree	49	0.050	0.024	0.820	-0.385	0.483
	2nd degree	3	-0.0807	-0.0091	0.70	-0.633	0.119
	health assistant	4	-0.193	-0.059	0.602	-0.923	0.537
Marital status	Married*	66					
(N=147)	Single	31	-0.135	-0.055	0.581	-0.620	0.349
	Separated	8	0.038	0.00i9	0.68	-0.44	0.551
	Cohabiting	42	0.i23	0.0089	0.474	-0.237	0.551

Variables		frequency	Un standardized B	Standardized B	p-value	95% CI of B	
						LB	UB
Working ward	Medical ward	18	-0.505	-0.115	0.204	-1.288	0.277
	Surgical ward	15	0.653	0.165	0.092	-0.108	1.415
	Pediatric ward	13	0.038	0.009	0.924	-0.74	0.815
	Gynecology ward	14	0.698	0.168	0.079	-0.83	1.478
	Pharmacy	13	-0.404	-0.115	0.254	-1.102	0.294
	No specific ward	13	-0.2011	-0.0197	0.460	-0.788	0.411
	eye clinics,	15	0.110	0.008	0.297	-0.196	0.501
Experience in the hospitals (N=147)	<5 yrs*	97					
	5-10 yrs	39	-0.155	-0.061	0.458	-0.60	0.341
	>=10 yrs	11	-636	-0.168	0.063	-1.307	0.035
Working hours/week (N=147)	<=40 hrs*	84					
	>40 hrs	63	0.067	0.033	0.742	-0.334	0.467
Staff position (N=147)	Staff nurse*	112					
	Staff physician	11	-0.744	-0.159	0.075	-1.564	0.076
	Specialist	3	-0.424	-0.125	0.264	-1.002	0.233
	Technician (Lab. X-ray etc)	11	-0.211	-0.056	0.585	-0.973	0.551
	Pharmacists	10	-0.337	-0.110	0.37	-1.41	0.310
Direct interaction with patients (N=147)	Yes*	131					
	No	16	0.089	0.037	0.699	-0.364	0.542

NB: R=0.484 R2=0.234, Ad R^2=0.068, F statistics=1.411(p=0.110),***** reference category, CI-Confidence Interval.

Table: 6 Association of Patient safety culture dimensions & frequency of events reporting in Chiro & Gelemso Hospitals, West Harargae Zone, Oromia, East Ethiopia 2013.

Variable	Un-Standardized B	Standardized B	p-value	95% CI for B	
				Lower boundary	Upper Boundary
Constant	0.000		0.996	-0.129	0.129
Organizational Learning & Continuous improvement= FAC1	0.296	0.296	0.003**	0.102	0.490
Teamwork within hospital units=FAC2	-0.020	-0.019	0.791	-0.168	0.129
Communication openness= FAC3	0.139	0.139	0.124	-0.039	0.318
Feedback and communication about error= FAC4	0.390	0.390	0.000**	0.202	0.577
Non punitive response to error= FAC5	-0.146	-0.146	0.053	-0.293	0.002
Hospital Management Support for Patient Safety= FAC6	0.021	0.021	0.829	-0.173	0.215
Teamwork across hospital units= FAC7	-0.260	-0.184	0.021**	-0.481	-0.040
Hospital handoffs & transitions= FAC8	0.008	0.008	0.912	-0.134	0.150

R=0.639, R2=0.409, Ad R^2=0.375, F statistics=11.933(p<0.001), ** statistically significant association, CI=Confidence Interval

Chapter VI: Discussion

6.1. Discussion

In this study it was attempted to assess the current patient safety culture in Chiro and Gelemso Hospitals. According to the AHRQ handbook (September, 2004), PSCDs with Composite positive score >=50% are considered as areas of strength (i.e. 50%-75% *fair*,>=75% *good*) &those with< 50% considered as areas of improvements (poor culture). The survey revealed that the composite positive scores of the 3 PSCDs i.e. Teamwork within wards (84%) & team work across hospital wards (70%)&Organizational learning/continuous improvement (61%) with corresponding composite score in the brackets were found to have scores of>= 50% & they were considered as areas of strength in the two hospitals. This shows there is a good team sprit either within the hospital wards or across hospital wards& there is also a good culture of learning & improvement from past experiences in the hospitals. The findings are almost similar to studies in Egypt (61): teamwork with inward (58%), team work across wards (69%), organizational learning (78.2%) & in Sri-Lanka (60): teamwork with inward (84.8%), teamwork across ward (66%) organizational learning (83%) which found those dimensions as areas of strength.

The possible explanation for this similarity is may be that all of them are in developing countries & so they could share similar organizational safety culture in their hospitals. But, the findings are not similar with the study done in Turkey (62): teamwork with inward (46%), team work across wards (38%), organizational learning (47%) & the CDRs of AHRQ (57, 58): teamwork with inward (48%), team work across wards (44%), organizational learning (37%) which found those dimensions as areas of gaps. The difference is may be due to the difference of policy framework of patient safety & the health care system among those countries & Ethiopia.

All the other dimensions of patient's safety culture had composite scores < 50% and they were identified as areas of gaps. This suggests that those areas of PSC dimensions need interventions for improvement of safety culture in the hospitals. In the comparative database reports of AHRQ (57, 58) & studies in Sri-Lanka (60), Egypt (61), and Turkey (62) similar findings were obtained. The similarity is may be due to similarity of prevailing negative PSC among hospitals of those countries & hospitals in the study area. The findings imply that patient safety is not considered as apriority area in the hospitals.

6.2. Limitations of the study

Supervisor/manager expectations & actions promoting safety, Staffing & over all perception of safety had Cronbach alpha values below 0.60 & thus, these three PSC dimensions were not reliable. Information biases due to low-response rate & social desirability biases could be the possible limitations of this study.

Chapter VII: Conclusion & Recommendations

7.1 Conclusion

From the findings of the study reported so far the following conclusions have been made:

Teamwork within wards, team work across hospital wards &organizational learning/continuous improvement are areas of strength in the hospitals& so, there is a good team sprit & learning culture in the hospitals. The other nine (9) dimensions: supervisor/manager expectations and actions promoting patient safety, communication openness, feedback and communication about error, non-punitive response to error, staffing, hospital management support for patient safety, hospital handoffs and transitions, overall perception of safety & frequency of event reporting are identified as areas of improvement & so, they need attention to insure safe & quality health care in the two hospitals.

Organizational learning/continuous improvement and feedback and communication about error had positive and statistically significant correlation but, teamwork across hospital wards had negative and statistically significant correlation with frequency of event reporting. On the other hand, the remaining patient safety culture dimensions: teamwork within hospital units, communication openness, hospital management support for patient safety, non-punitive response to error, hospital handoffs & transitions and all of the back ground variables did not show statistically significant associations with the variable frequency of event reporting.

7.2 Recommendations

Based on the findings of this study, the following recommendations were forwarded:

To health managers: Continuous monitoring and evaluations of safety practices can be useful to determine aspects of the services that need safety improvement.

To the two hospitals*:* Patient safety issues especially system related factors like: communication openness, hospital handoffs /transitions, error recording & reporting, feedback, perception on safety, staffing & blaming/punishment for error reporting should get priority to improve patient safety in the hospitals.

To other researchers*:* As there was no any clear identification of important areas of PSC more comprehensive studies focusing on predictive methods to explore the association of predictor variables with the outcome variable is suggested.

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Annexes

1. Staff consent form

Declaration by the Participant

- By signing below, I with the code No of…….……..... agree to take part in a research study entitled: assessment of patient safety culture and associated factors *in Chiro&Gelemso Hospitals Weast Harare Zone, Oromiya Regional State, Ethiopia, 2013*.
- I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is voluntaryand I have not been pressurized to take part.
- I may choose to leave the study at any time and will not be penalized in any way.
- Signed at (*place*) .....…..... (*Date*) ……...…….. 2013
- Signature of participant.....

Declaration by the Researcher

- I Mr. EngidaNigatu declare that:

- I explained the information in this document to a guy with a code number of----------
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- Signed at (*place*) .....…..... (*Date*) ……...…….. 2013.
- Signature of Researcher.....

2. Questionnaire

This questionnaire prepared for "assessment of patient safety culture &associated factors in Chiro&Gelemso hospitals, west Hararge zone, oromia regional state, east Ethiopia, 2013.

Instructions:

Dear, Mister/Madam, this is a questionnaire developed for the survey with a title "Assessment of Patient Safety Culture and associated factors in Chiro and Gelemso Hospitals, West Harare Zone, Oromia Regional State, East Ethiopia, 2013''.

The survey asks for your opinions about patient safety issues, medical error, and event reporting in your hospital ward /department or the hospital as a whole. The survey will take about 10 to 15 minutes to complete. You may fill in the questionnaire on duty time or in your home. Please complete the questionnaire within **2 or 3** days and return it to **the contact person in the hospital** or **to the investigator.**

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

Patient safety ''is defined as the avoidance and prevention of patient injuries or adverse events resulting from the processes of health care delivery.''

Section I: Background Information *please* **Circle your answer**

S.N.	**Question**	**Answer**
Q 001	Sex?	**0,**male **1,** female
Q002	Age (years)?	----------years
Q003	Level of Education	**0** diploma **1** .First degree(BSC) **2.** 2nd degree (MSC or MPH) **3**. others(specify)----------
Q004	Marital status	**0,**married, **1**, single, **2,**divorced, **3,** separated **4,** cohabiting

Q005	What is **your working ward /department** in this hospital? *Mark ONE answer*	**0.** no specific ward/many different wards , **1.** Medical ward **2.**Surgical ward **3**.Pediatricward, **4**.Gynaecology ward **5**. Pharmacy/ dispensary **6.** OPD/Emergency department **7.** other ,please specify----------
Q006	**How long have you worked** in this hospital?	----------years
Q007	Typically, **how many hours per week**do you work in this hospital?	---------hours/week
Q008	What is **your staff position** in this hospital? Select one answer that best describes your staff position.	**0.**Staff Nurse **1.**Staff Physician **2.**surgeon **3.**Gynecologist/Midwife **4.**Pediatrician **5.** Technician(lab, X-ray, OR technician etc,) **6.** pharmacist/Druggist **7.** Administration/management (e.g. department heads, medical directors, hospital managers etc) **8.** other, please specify_____
Q009	In your staff position, do you typically have **direct interaction or contact with patients?**	**0.**Yes, **1.** No,

Section II-Patient safety culture dimensions

- ***Think of your ward /Department*** *and please indicate your agreement or disagreement for statements from question* ***No 10--33*** *by selecting one of the numbers***. (Circle your answer)**

1.Supervisor/manager expectations & actions promoting patient safety

Q010	My supervisor/manager **says a good word when he/she sees a job done according to established patient safety procedures** (D11).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q011	My supervisor/manager **seriously considers staff suggestions for improving Patient safety** (D12).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q012	Whenever **pressure builds up**, my supervisor/manager **wants us to work faster, even if it seems dangerous for patients** (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q013	My supervisor/manager **overlooks patient safety problems that happen over and over** (D14). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

2.Organizational Learning Continuous improvement

Q014	We are actively doing things **to improve patient safety** (D21).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q015	Mistakes have led **to positive changes here** (D22).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q016	**After we make changes** to improve patient safety, **we evaluate their effectiveness** (D23).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

3.Teamwork within Hospital wards

Q017	**People support one another** in this ward (D31).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q018	**When a lot of work needs to be done quickly**, **we work together as a team** to get the work done (D32).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q019	In this ward, **people treat each other with respect** (D33).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q020	**When one area in thisward gets really busy**, others help out (D34).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

4.Communication Openness

Q021	**Staffs freely speak up** if they see **something that may negatively affect patient care** (D41).	**1** never	**2** rarely	**3** Some times	**4** Most of the times	**5** always
Q022	Staffs feel free **to ask about the decisions** or **actions of those with more authority** (D42).	**1** never	**2** rarely	**3** Some times	**4** Most of the times	**5** always
Q023	**Staffs are afraid to ask questions** when **something do not seem right(**D43).(R)	**1** never	**2** rarely	**3** Some times	**4** Most of the times	**5** always

5. <u>Feedback and Communication about Error</u>

Q024	We are given **feedback about changes** put into place **based on event reports** (D51).	**1** never	**2** Rarely	**3** Some times	**4** Most of the times	**5** always
Q025	We are informed **about errors that happen in this ward** (D52).	**1** never	**2** Rarely	**3** Some times	**4** Most of the times	**5** always
Q026	In this ward, **we discuss ways to prevent errors from happening again** (D53).	**1** never	**2** rarely	**3** Some times	**4** Most of the times	**5** always

6. Non punitive Response to Error

Q027	Staffs feel **like their mistakes are held against them** (D61). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q028	When an event is reported, **a person feels like he is being punished or blamed for his/her report** (D62).(R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q029	Staff worry that **mistakes they make are kept in their personnel file** (D63). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

7. <u>Staffing</u>

Q030	**We have enough staff** to handle the workload in this ward (D71).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q031	Staff in this ward work **longer hours than is best for patient care** (D72). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q032	We use **more agency/temporary staff** than is best for patient care (D73).(R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q033	We work **in "crisis mode**," trying **to do too much**&**too quickly (**D74).(R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

❖ ***<u>Think of your hospitalasawhole</u>*** *<u>and please indicate your agreement or disagreement for statements from question</u>*
<u>N0 034--044</u> *<u>by selecting one of the numbers. (Circle your answer)</u>*

8. <u>Hospital Management Support for Patient Safety</u>

Q034	Hospital management **provides a work climate that promotes patient safety** (D81).	**1** Strongly disagree	**2** disagree	**3** neutral	**4** agree	**5** Strongly agree
Q035	The actions of hospital management **show that patient safety is a top priority** (D82).	**1** Strongly disagree	**2** disagree	**3** neutral	**4** agree	**5** Strongly agree
Q036	Hospital management **seems interested in patient safety** only **after an adverse event happens** (D83).(R)	**1** Strongly disagree	**2** disagree	**3** neutral	**4** agree	**5** Strongly agree

9. Teamwork across Hospital wards

Q037	There is **good cooperation among hospital wards** that **need to work together** (D91).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q038	Hospital wards **work well together to provide the best care for patients** (D92).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q039	Hospital wards **do not coordinate well with each other** (D93). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q040	It is often **unpleasant to work with staff from other hospital wards** (D94). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

10. *Hospital Handoffs & Transitions*

Q041	There is a big safety problem **when transferring patients from one ward to another ward** (D101). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q042	Important patient care **information is often lost during shift changes (D102). (R)**	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q043	Problems often occur **in the exchange of informationacross hospital wards**(D103).(R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q044	**Shift changes are problematic** for patients in this hospital (D104). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

11. <u>Overall Perceptions of Safety</u>

Q045	Patient safety is **never sacrificed to get more work done** (O11).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q046	Our procedures and systems are **good at preventing errors from happening** (O12).	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q047	It is just by chance that **more serious mistakes don't happen around here** (O13). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree
Q048	We have **patient safetyproblems in this ward** (O14). (R)	**1** Strongly disagree	**2** Disagree	**3** neutral	**4** agree	**5** Strongly agree

Section III- Frequency of event reporting

Q049	When a mistake is made, **but is caught and corrected before affecting the patient,** how often is this reported? (O21).	**1** never	**2** rarely	**3** Some times	**4** Most of the times	**5** always
Q050	When a mistake is made**, but has no potential to harm the patient,** how often is this reported? (O22).	**1** never	**2** rarely	**3** Some times	**4** Most of the times	**5** always
Q051	When a mistake is made **that could harm the patient**, **but does not,** how often is this reported? (O23).	**1** never	**2** rarely	**3** Some times	**4** Most of the times	**5** always

Thank you for completing this questionnaire!