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Patient Safety Culture among Health Workers in Addis Ababa regional Hospitals, Ethiopia

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Abstract

Background: *Improving patient safety highly depends on achieving a culture that supports health workers to report their errors without the fear of punishment. Despite policy emphasis on patient safety in Ethiopia only little studies examine the perception of health workers on patient safety.*

Objective*: The main objective of this study was to assess the magnitude of patient safety culture and associated factors among health workers in Addis Ababa regional hospitals.*

Methods*: Facility based cross sectional study was conducted to assess the magnitude of patient safety culture and associated factors.*

Results*: Magnitude of patient safety culture among health workers in Addis Ababa regional hospitals was 44% CI [42.75,45.36]. Among the 12 dimensions of patient safety " Team work with in Units " (74.78%) was the highest. The least score was for the dimension of " Nonpunitive Response to Errors " (28.70). Five of the 12 dimensions scored above 50%. Only 35 % of respondents gave very good and excellent grades and only 44% of respondents reported at least one event in the past 12 months.*

Conclusion: *Magnitude of patient safety culture for regional hospitals in Addis Ababa was 44 % which is below the acceptable average value (50%), which requires responsible parties' attention.*

Keywords*: Patient safety, Advert events, patient safety culture.*

Background

Patient safety is a new healthcare discipline that emphasizes the preventing, reducing, reporting and analysis of medical error that often leads to adverse healthcare events. Patient safety. (**Wikipedia.org**, 2014)

Studies in Ethiopia showed that hospitalized patients are exposed to health care errors that compromise there safety from different aspects, some include medication related safety issues like medication prescribing errors which was at a rate of 40% (Sada, Melkie, & Shibeshi, 2015) , 52% (Woldie, Agalu, Ayele, & Bedada, 2011),and 58% (Zeleke, Chanie, & Woldie, 2014) in different parts of the country, and incidence of medication administration error was also as high as (56.4 %). magnitude of ADR related hospitalization among adult patients was 10.3 %. (Angamo, Curtain, Chalmers, Yilma, & Bereznicki, 2017) The incidence rate of hospital acquired infection (HAI) was 28.15 per 1000 patient days with the overall prevalence of 19.41% and was associated with prolonged hospital stay and increased in hospital mortality.(Ali et al., 2018).

Improving patient safety highly depends on achieving a culture that encourages health care workers to report their errors. Among instruments identified to evaluate patient safety culture, the Hospital Survey on Patient Safety Culture questionnaire (HSOPSC) and the Safety Attitudes Questionnaire(SAQ) had the greatest international use, since they were adapted, validated and used in different continents and contexts.(Viana De Lima Neto et al., 2017).

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The Hospital Survey on Patient Safety Culture questionnaire (HSOPSC) was developed by The Agency for Healthcare Research and Quality (AHRQ), it has 42 patient safety items categorized in to 12 patient safety dimensions distributed on five-point likert scales. It also includes six demographic information questions. The 12 patient safety culture composites are Communication openness, Feedback and communication about errors, Frequency of events reported , Handoffs and transitions, Management support for patient safety, Non-punitive response to error, Organizational learning and continuous improvement, Overall perceptions of patient safety, Staffing, Supervisor/manager expectations and actions promoting safety and Teamwork across units and Team work within units.(Sorra J, Gray L, Streagle S, et al ,2016).

There are relatively few studies in Africa that assess patient safety culture, and if we compare those used the same tool (HSOPSC) like Tunisia, Mozambique, Egypt and Ethiopia, perception of patient safety culture was the least in Egypt (26.13%) (Mahmoud Mahran, 2016) followed by Ethiopia (46%) (Wami, Demssie, Wassie, & Ahmed, 2016), (Mekonnen, McLachlan, Brien, Mekonnen, & Abay, 2017), Tunisia (50.75) (Cheikh et al., 2016) and finally Mozambique (57%). (R & Cl, 2016). Level of patient safety culture in south Africa was also below average (42.4%) even though the result was not comparable to the others since used a different tool called the Standard Manchester Patient Safety Framework (MaPSaF). (Mayeng & Wolvaardt, 2015).

Both Jimma zonal hospitals (south west Ethiopia) and Amhara region public hospitals (North Ethiopia) found more or less same patient safety score 46.7 % and 46% respectively. with the highest being team work with in units (82%) for Jimma Zonal hospitals and teamwork within units and organizational learning (continuous improvement) (72%) for Amhara region hospitals. The lowest, being Non punitive response to error (23%) for Jimma zonal hospitals and staffing (26%) for Amhara region hospitals (Wami et al., 2016), (Mekonnen et al., 2017) . The results were comparable to findings of other middle and high income countries (Elmontsri, Almashrafi, Banarsee, & Majeed, 2017) , (Wagner, Smits, Sorra, & Huang, 2013) in which teamwork within units was highest score.

Relatively level of patient safety culture was higher in china (62.5%) with a range of 36% for Supervisor/Manager Expectations & Actions Promoting Patient Safety dimension and 89 % for organizational learning and continuous improvement. (Yanli Nie, Xuanyue Mao et al, 2013) The same was true for middle east countries in which organizational learning and continuous improvement was the highest (73.2%). (Elmontsri et al., 2017).

Factors associated with patient safety culture included age (El-Jardali, Sheikh, Garcia, Jamal, & Abdo, 2014), (Gallego, Westbrook, Dunn, & Braithwaite, 2012), work experience (El-Jardali et al., 2014), (Gallego et al., 2012) , profession (El-Jardali et al., 2014), (Mayeng & Wolvaardt, 2015), Hours worked per week (Wami et al., 2016), Team work within hospital (Wami et al., 2016) , participation in quality circles (Gehring et al., 2013), communication openness (Wami et al., 2016), Level of staffing (Wami et al., 2016), and reporting an event and giving feedback when error happened (Wami et al., 2016).

In Ethiopia patient safety is a relatively new issue, there isn't enough evidence on current status of patient safety culture in Addis Ababa regional hospitals. The main objective of this study was to assess the magnitude of patient safety culture and associated factors in Addis Ababa regional hospitals.

Methods

Study design, settings and population

This cross-sectional study was conducted among health workers working for four public hospitals in Addis Ababa over three months period (October to December, 2018) Addis Ababa is the capital city of Ethiopia, seat of the Ethiopian federal government. It has an estimated total population of 3,433,999 consisting of 1,624,999 male and 1,809,000 females. 100% of the population are urban dwellers (FDRE CSA population projection of Ethiopia for all regions 2014-2017). An estimated area of 526.99 square kilometers, this region has an estimated density of 5,535.8 people per square kilometer According to the 2016 Health and Health Related Indicators published by FMOH, Addis Ababa has 11 public hospitals

which are under direct supervision of Addis Ababa Regional Health bureau and ministry of health in Ethiopia.(Health and Health related indicators,2016) In Ethiopia Referral or specialized hospitals estimated to serve 5,000,000 population and general hospitals 1,500,000 population. Currently in Addis Ababa hospitals to population ratio is 312182. All the 11 public hospitals in Addis Ababa are referral hospitals serving patients from both Addis Ababa and other regions of the country through the referral system. All Physicians and Nurses working for the four public hospitals under Addis Ababa regional health bureau was used as a sampling frame for this study. Stratified sampling technique was used to decide number of participants from each hospital and from each profession. Healthcare workers was stratified based on their profession. The number of sample points was determined by using proportional allocation formula for each stratum. Samples were selected conveniently from each stratum.

Data collection instrument

The study adopted the "Hospital Survey on Patient Safety Culture' (HSOPSC)" developed by the Agency for Healthcare Research and Quality (AHRQ) (Sorra J, Gray L, Streagle S, et al , 2016), as a safety culture assessment instrument. The original HSOPSC has been validated and widely employed to assess perceptions of hospital staff about patient safety issues, medical error, and event reporting in developing countries.(Aveling, Kayonga, Nega, & Dixon-Woods, 2015).

The instrument consists 42 items that measure 12 patient safety culture composites: Communication openness (3 items), Feedback and communication about errors (3 items), Frequency of events reported (3 items), Handoffs and transitions (4 items), Management support for patient safety (3 items), Non-punitive response to error (3 items), Organizational learning and continuous improvement (3 items),Overall perceptions of patient safety (4 items), Staffing (4 items), Supervisor/manager expectations and actions promoting safety (4 items), and Teamwork across and within units (4 items each). In our study, however, there was one item that was not applicable to fit the Ethiopian context. The questioner was used as it is except use of agency/temporary staff for patient care was excluded since was not applicable in Ethiopian context.

The response to each item in the questionnaire was assessed using a 5-point Likert scale of agreement (from 1: Strongly disagree to 5: Strongly agree) or frequency (from 1: Never to 5: Always). There were also two single-item outcome variables: the overall patient safety grade (measured on a scale of Excellent, very good', Acceptable, Poor, and Failing) and the number of events reported in the past 12 months.

Background characteristics of participants include questions like work unit, staff position, Number of years worked (professional, hospital and unit), hours worked in a week.

The questionnaire was kept in English, as English is the working language in Ethiopian hospitals. Questionnaires were distributed by Nurses working for the respective hospitals, it took 20-25 minutes to complete the questionnaire.

Data management and analysis

Data entry was done using EPi info version 7 and imported to SPSS Version 20 for analysis. Descriptive statistics was used to summarize the demographic data and scores of patient safety culture dimensions/items and safety outcomes (patient safety grade, the number of events reported).

The HSOPSC included both positively and negatively worded items. For easier interpretation of the results, the AHRQ (Sorra J, Gray L, Streagle S, et al ,2016) recommend the use of average positive for calculating each item scores. Percent positive is the percentage of positive responses (e.g. Agree, strongly agree) to positively worded items or negative responses (e.g. Disagree, strongly disagree) to negatively worded items.

Composite-level scores were computed by summation of the items within the composite scales and dividing by the number of items with non-missing values. Items for which 75% of the respondents answered positively was regarded as strength, and below 50% as requiring improvements. (Sorra J, Gray L, Streagle S, et al ,2016).

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Descriptive statistics was used to summarize the demographic data and scores of patient safety culture dimensions/items and safety outcomes (patient safety grade, the number of events reported). chi square was used to identify factors associated with patient safety culture. ANOVA was used to examine differences in patient safety culture composites across these characteristics. Cronbanach's alpha (α) was used to evaluate the reliability of the questionnaire. Reliability greater than or equal to 0.6 (indicating that the items measure the same concept) was taken as an acceptable level of internal consistency as recommended by the questionnaire adopted.

Result

Demographic characteristics

Three hundred sixty questionnaires were distributed and of which 346 were returned with a response rate of 96%. Majority of the respondents were Nurses (74.7%), and the rest were medical doctor's .97% of the respondents worked in their respective hospitals for at least one year and from whom only 63% worked a year and above in their current department(unit). Departments (units) majority of the respondents (93.4%) worked for include Medicine, Surgery, Emergency, ICU, Obstetrics, Operation theater, Pediatrics and ophthalmic unit.

Professional work experience in their current profession was more than one year for 76.7% of respondents. Majority (74.4%) of respondents worked for more than 40 hours per week. Almost all (98%) of respondents had direct contact with patient care. Table 1 summarizes demographic characteristics of respondents.

Table 1. Socio-demographic characteristics of health workers in addis ababa regional hospitals, 2018

Characteristics	**Number (%)**
Staff Position of Respondents	
Registered Nurse	248(71.3)
General Practitioner	45(12.9)
Specialist Doctors	39(11.2)
Work area or unit	
Medicine	79(22.7)
surgery	72(20.7)
Operation Theater	40(11.5)
Emergency	37(10.6)
Pediatrics	36(10.3)
Obstetrics	32(9.2)
ICU	18(5.2)
Ophthalmic	11(3.2)
Other	14(4)
Number of years worked in current	

Profession	
< 1 year	73(21)
1 to 5 years	182(52.3)
> 5 year	85(24.4)
Number of years worked in current Hospital	
< 1 year	76(21.8)
1 to 5 years	174(50)
> 5 year	89(22.6)
Number of years worked in current Unit	
< 1 year	121(34.8)
1 to 5 years	148(42.5)
> 5 year	60(17.2)
Participants Current Hospital	
Dagimawe Minilk Hospital	81(23.4)
Ras Desta Damtew Hospital	77(22.3)
Zewditu Memorial Hospital	99(28.6)
Yekatit 12 Hospital	89(25.7)
Hour worked per week	
>40 hours per week	68(19.6)
< 40 hours per week	259(74.4)

Patient safety culture out comes

Patient safety grade

Only 35 % of respondents scored very good and excellent patient safety grades for their respective hospitals from whom 38.58% were Nurses and 25% were medical doctors, but majority (47.7%) graded as acceptable (59.52% medical doctors and 43.9% Nurses).15.5% of medical doctors and 17.4% Nurses scored as poor and failing. please see figure 1.

Based on the hospitals the respondents were working Ras Desta hospital scored the highest on very good and excellent scores (45%) compared to Menelik hospital (38.7%), Zewditu hospital (39%), and Yekatit hospital (22%). please see figure 2.

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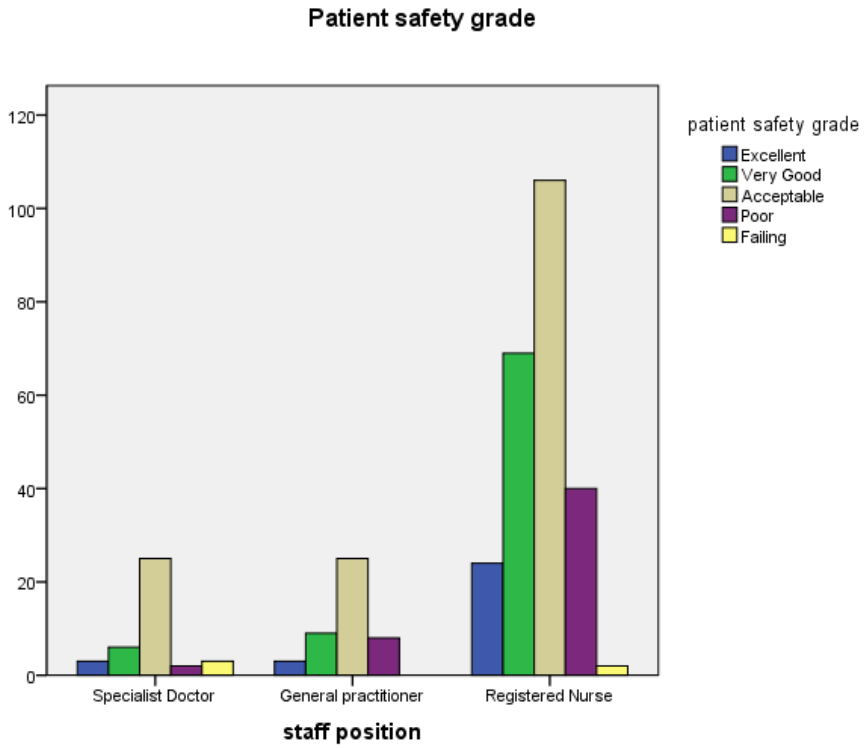

Fig 1: patient safety grades scored by different staff positions of Addis Ababa regional hospitals,2019

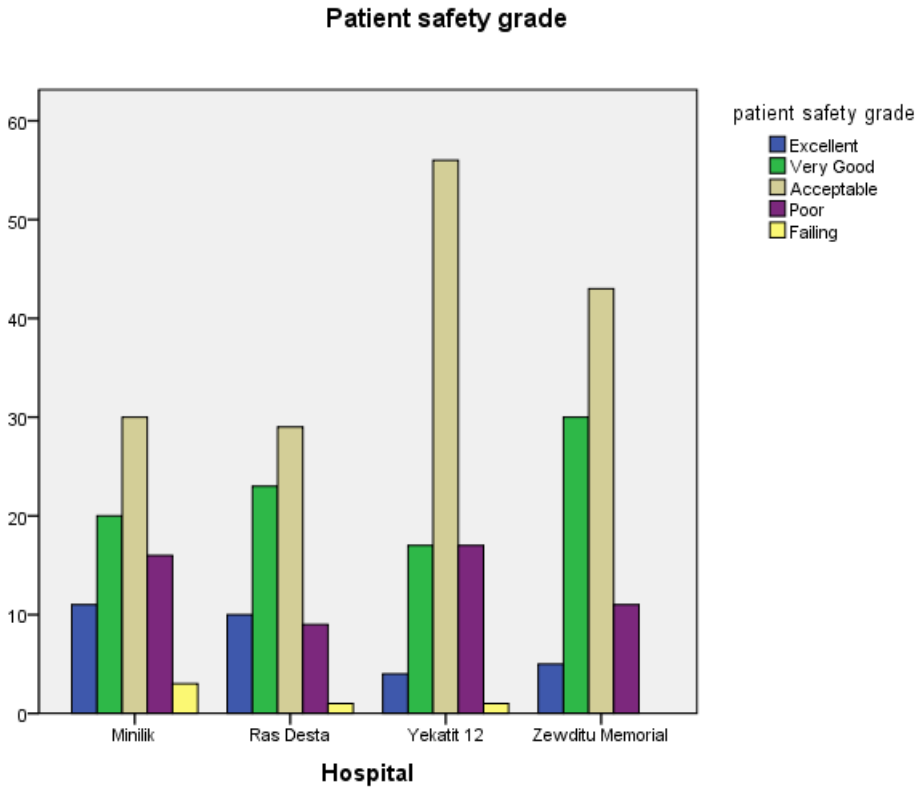

Fig: 2 Patient safety grade scored by health workers of four Addis Ababa regional hospitals,2018

Number of events reported

Only 44% of respondents reported at least one event in the past 12 months and of whom 48% were made by Nurses, 43.6% by specialist doctors and 23% by general practitioners. About 52% of participants made no event report at all in the past one-year period. please see figure 5 below to see the comparison. Based on hospitals respondents were working those who reported at least on event in the past 12 months were 52% for both Minilk and Ras Desta hospitals ,45% for Yekatit hospital and 25% for Zewditu hospital.

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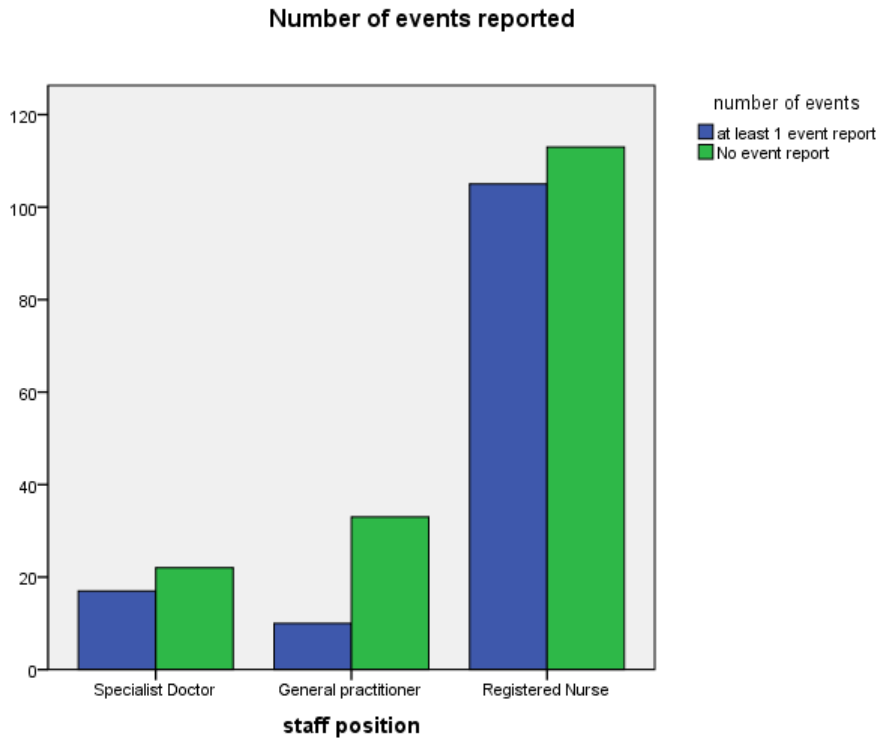

Fig:3 Number of events reported by health workers in Addis Ababa regional hospitals ,2018

Patient safety culture items

The 41 patient safety culture items were analyzed based on Hospital Survey on Patient Safety Culture' (HSOPSC)" user guide in which Percent positive was the percentage of positive responses (e.g. Agree, Strongly agree, Always, Most of the time) to positively worded items or negative responses (e.g. Disagree, Strongly disagree, Rarely, Never) to negatively worded items.

The highest (82.4%) was for the item " When a lot of work needs to be done quickly, we work together as a team to get the work done". And the lowest was 15% for the item " After we make changes to improve patient safety, we evaluate their effectiveness" The average patient safety culture for the 41 items was 44% CI [42.75,45.36].

Twenty-five (61%) of the 41 patient safety items were scored below 50%, only 4 items were scored 80% and above. Please see table 4 for detailed results of all the items.

Patient safety culture dimensions

Composite level scores for the 12 dimensions were computed by summation of the items within the composite scales and dividing by the number of items with non-missing values. Items for which 75% of the respondents answered positively was regarded as strength, and below 50% as requiring improvements.

Among the 12 dimensions "Team work with in Units" (74.78%) was the highest followed by Management Support for Patient Safety (53.6%). The least score was for the dimension of " Nonpunitive Response to Errors " (28.70). Five of the 12 dimensions scored above 50%. Table 2 shows patient safety culture positive scores for the items as well as the dimensions.

Table 2. Positive responses for the items and composites for Addis Ababa regional hospitals, 2018

Composites and Items	% positive	Mean (SD)
Team work with in Units (cronbach's α = 0.60)		**74.78(27.61)**
A1. People support one another in this unit.	80.1	80(40.0)
A3. When a lot of work needs to be done quickly, we work together as a team to get the work done.	82.4	82(38.2)
A4. In this unit, people treat each other with respect.	80.3	80(39.8)
A11. When one area in this unit gets really busy, others help out.	56.4	56(49.7)
Supervisor/Manager Expectations & Actions Promoting Patient Safety (cronbach's α = 0.46)		**52.38(27.90)**
B1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.	63.9	64(48.1)
B2. My supervisor/manager seriously considers staff suggestions for improving patient safety.	61.8	62(48.6)
B3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts.	29.5	29(45.7)
B4. My supervisor/manager overlooks patient safety problems that happen over and over	54.3	54(49.9)
Organizational Learning—Continuous Improvement (cronbach's α = 0.53)		**50.67(22.86)**
A6. We are actively doing things to improve patient safety.	81.8	82(38.6)
A9. Mistakes have led to positive changes here.	55.2	55(49.8)
A13. After we make changes to improve patient safety, we evaluate their effectiveness.	15	15(35.8)
Management Support for Patient Safety (cronbach's α = 0.30)		**53.6(32.11)**
F1. Hospital management provides a work climate that promotes patient safety.	53.5	53(50.0)
Composites and Items	**% positive**	**Mean (SD)**
F8. The actions of hospital management show that patient safety is a top priority.	60.1	60(49.0)
F9. Hospital management seems interested in patient safety only after an adverse event happens.	47.4	47(50.0)
Overall Perceptions of Patient Safety (cronbach's α = 0.24)		**43.71(24.34)**
A15. Patient safety is never sacrificed to get more work done.	49.7	50(50.1)
A18. Our procedures and systems are good at preventing errors from happening.	63.9	64(48.1)
A10. It is just by chance that more serious mistakes don't happen around here.	30.1	30(45.9)
A17. We have patient safety problems in this unit.	31.2	31(46.4)
Feedback & Communication About Error (cronbach's α = 0.73)		**33.9(30.34)**
C1. We are given feedback about changes put into place based on event	35.8	36(48.0)

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reports.		
C3. We are informed about errors that happen in this unit.	32.9	33(47.1)
C5. In this unit, we discuss ways to prevent errors from happening again.	32.9	33(47.1)
Communication Openness (cronbach's α = 0.60)		**33.62(29.32)**
C2. Staff will freely speak up if they see something that may negatively affect patient care.	30.3	30(46.0)
C4. Staff feel free to question the decisions or actions of those with more authority.	37	34(48.3)
C6. Staff are afraid to ask questions when something does not seem right.	33.5	34(47.3)
Frequency of Events Reported (cronbach's α = 0.71)		**34.20(35.56)**
D1. When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?	37	37(48.3)
D2. When a mistake is made, but has no potential to harm the patient, how often is this reported?	26.9	27(44.4)
D3. When a mistake is made that could harm the patient, but does not, how often is this reported?	38.7	39(48.8)
Teamwork Across Units (cronbach's α = 0.37)		**51.15(32.89)**
Composites and Items	**% positive**	**Mean (SD)**
F4. There is good cooperation among hospital units that need to work together.	58.7	59(49.3)
F10. Hospital units work well together to provide the best care for patients.	63.9	64(48.1)
F2. Hospital units do not coordinate well with each other.	40.8	41(49.2)
F6. It is often unpleasant to work with staff from other hospital units	41.3	41(49.3)
Staffing (cronbach's α = 0.24)		**37.37(25.05)**
A2. We have enough staff to handle the workload.	57.8	58(49.5)
A5. Staff in this unit work longer hours than is best for patient care.	27.7	24(42.6)
A14. We work in "crisis mode" trying to do too much, too quickly.	30.6	31(46.2)
Handoffs & Transitions (cronbach's α = 0.61)		**34.53(31.95)**
F3. Things "fall between the cracks" when transferring patients from one unit to another.	32.7	33(47.0)
F5. Important patient care information is often lost during shift changes.	40.2	40(49.1)
F7. Problems often occur in the exchange of information across hospital units.	22.3	22(41.7)
F11. Shift changes are problematic for patients in this hospital	43.1	43(49.6)
Nonpunitive Response to Errors (cronbach's α = 0.14)		**28.70(29.12)**
A8. Staff feel like their mistakes are held against them.	27.5	27(44)
A12. When an event is reported, it feels like the person is being written up, not the problem.	33.8	34(47)
A16. Staff worry that mistakes they make are kept in their personnel file.	24.9	25(43)

Reliability and validity

Reliability analysis of the 41 items showed satisfactory internal consistency with cronbach's α=0.76. and for the dimension's cronbach's α ranged from 0.21 to 0.62 with "management support for patient

safety" has the lowest cronbach's α value and "frequency of events reported" has the highest cronbach's α value.

Table 5 shows that the inter-correlation of the 12 dimensions and correlation between the total patient safety score and each dimension. Team work across unit with over all perception of patient safety has the highest correlation (r=0.39) and also the least correlated was team work with in units with frequency of events reported (r=0.10). All of the 12 dimensions were significantly correlated with the total score, with team work across units has the highest correlation with the total score (r=0.65).

Table 3. Inter correlation of the 12 patient safety culture dimensions and correlation with total score in Addis Ababa regional Hospitals, 2018

Correlations													
	1	2	3	4	5	6	7	8	9	10	11	12	Total score
Teamwork within units	1												
Supervisors expectation	.165**	1											
Organizational learning	.205**	.083	1										
Management support for safety	.220**	.218**	.049	1									
Overall perception	.125*	.246**	.071	.074	1								
Feedback and communication	.211**	.101	.092	.156**	.070	1							
Communication openness	-.009	.141**	.002	-.037	.067	.094	1						
Frequency of event report	.106*	.027	.112*	.168**	.079	.274**	.092	1					
Teamwork across unit	.277**	.366**	.050	.398**	.224**	.178**	.085	.127*	1				
Staffing	.040	.086	.029	.002	.030	.018	-.028	-.055	.056	1			
Handover and transition	.011	.176**	.130*	-.076	.115*	.169**	.157**	.010	.331**	.066	1		
Non punitive response	-.040	.156**	.039	-.047	.064	.032	.077	-.068	.094	.061	.159**	1	
Total score	.446**	.538**	.328**	.446**	.399**	.491**	.330**	.413**	.655**	.226**	.456**	.295**	1
**. Correlation is significant at the 0.01 level (2-tailed).													
*. Correlation is significant at the 0.05 level (2-tailed).													

Factors affecting patient safety culture outcomes and dimensions

Chi square analysis findings showed that Hospital type ($x^2 = 24.4$, df=12, p= 0.01), Staff position ($x^2 = 21.12$, df=8, p= 0.007), Teamwork with in units ($x^2 = 33.20$, df=8, p= 0.000), Supervisor expectation ($x^2 = 34.10$, df=8, p= 0.000), Management support for patient safety ($x^2 = 29.99$, df=6, p= 0.000), Overall perception of patient safety ($x^2 = 24.96$, df=8, p= 0.002), Teamwork across unit ($x^2 = 53.58$, df=8, p= 0.000) and Hands off and transition ($x^2 = 16.40$, df=8, p= 0.03) were significantly related with patient safety grade. Staff position ($x^2 = 9.04$, df=2, p= 0.01) and years of experience in current unit ($x^2 = 10.59$, df=2, p= 0.05) had statistically significant relationship with number of events reported.

ANOVA was used to examine differences in patient safety culture composites in terms of demographic characteristics. Comparison of scores for the dimensions showed statistically significant mean difference based on the type of hospital participant is working in terms of team work with in units (p= 0.03) and Management support for patient safety (p= 0.01), Team work across unit (p= 0.01), Hands off and transition (p= 0.00)

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Based on work area (unit) teamwork with units (P=0.05) and team work across units (p=0.00) showed significant mean difference.

Also based on respondents' current position (profession) team work across units (p=0.00) and hands off and transition (p=0.03) showed statistically significant mean difference among respondents.

Based on professional experience of participants management support for patient safety showed statistically significant mean difference (p=0.01) among respondents.

Based on Number of years worked in current hospital organizational learning (p=0.02) and based on years worked in current unit (p=0.00) showed statistically significant mean difference among respondents.

Discussion

Magnitude of patient safety culture in this study was 44%, which is less than average and is slightly low when compared to the other two studies conducted in Ethiopia in which both found 46.7% and 47 % for Amhara regional hospitals and Jimma zonal hospitals respectively. (Wami et al., 2016), (Mekonnen et al., 2017) It is also lower than study findings of other African countries as well who scored at least the average like Tunisia (50%)(Cheikh et al., 2016), and Mozambique (57%) (R & Cl, 2016). Our finding is much higher than the findings in Egypt (26.13%)(Mahmoud Mahran, 2016).

The highest (82.4%) was for the item " When a lot of work needs to be done quickly, we work together as a team to get the work done". The highest item for the Amhara region was "We are actively doing things to improve patient safety"(85%).(Mekonnen et al., 2017) And the lowest was 15% was for the item " After we make changes to improve patient safety, we evaluate their effectiveness" The lowest for the study in Amhara regional Hospitals was (26%) "staff in this unit work long hours than best for patient care".(Mekonnen et al., 2017)

Among the 12 dimensions "Team work with in Units" (74.78%) was the highest, which is comparable to the other two studies in Ethiopia which both found "Team work within units" as the highest and well above the average(72%).(Wami et al., 2016), (Mekonnen et al., 2017)

The least of the dimensions in this study was "Nonpunitive Response to Errors" (28.70), which is comparable to the findings of Jimma zonal hospitals with the lowest, being Non punitive response to error (23%) . (Wami et al., 2016)

Among the factors associated with patient safety culture grade Hospital type, staff position were comparable to a study conducted in Ethiopia. (Mekonnen et al., 2017).Team work with in unit and team work across units were also comparable to other study in Ethiopia. (Wami et al., 2016).

Over all patient safety grade (Excellent and very good) was 35.7 which was comparable to the findings from Amhara regional hospitals in Ethiopia which also finds 37.6%.(Mekonnen et al., 2017) And Number events reported was 44% in this study which is higher than the other studies in other regions of Ethiopia but was comparable in regards of Nurses being the ones who made the highest number of event reports (Wami et al., 2016), (Mekonnen et al., 2017)

Limitations of the study

One of the limitations of this study is that the study only measured patient safety culture without considering underling factors which leads to this culture like infrastructure issues, equipment availability or malfunction, supplies shortage, etc.

Conclusion

Magnitude of patient safety culture for public hospitals in Addis Ababa, Ethiopia was 44 % which is below the acceptable average value (50%) and only 35% of health workers graded their hospitals patient safety as Excellent or very good. and only 44% of respondents reported at least one event in the past 12 months. Only Five of the 12 dimensions scored above 50%. As stated in literature one of the best ways to improve patient safety is working on patient safety culture of health workers. The findings of this study showed that it requires the responsible parties prompt attention to start working on the situation.

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