Disclosure of errors and adverse events; knowledge, attitude and practice of surgical residents and surgeons. cross sectional study Ethiopia, Addis Ababa, December,2024.

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Full title of research	KAP of surgeons and surgical residents on disclosure of error and adverse event.
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APPROVAL SHEET

College of health science, school of medicine, department of surgery.

I,the undersigned general surgery resident,declare that I have submitted my original work on a title “KAP of surgical residents and surgeons on disclosure of error and adverse events”.

Submitted by:

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This thesis work has been submitted for examination with my approval as an advisor:

Dr Tesfaye Aga signature________ date___________

STATEMENT OF THE AUTHOR

I here by declare that this thesis is my original work and has not been presented in any other University and all sources of material used have been duly acknowledged

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Date:______________________

Acknowledgement

I would like to thanks my advisor DR Tesfaye Aga (general and endocrine surgeon) for his consistent support and constructive feedback on preparing the thesis.

Acronyms/abbreviations:

KAP -knowledge,attitude and practice

CMPA- Canadan medical protective association

List of figures:

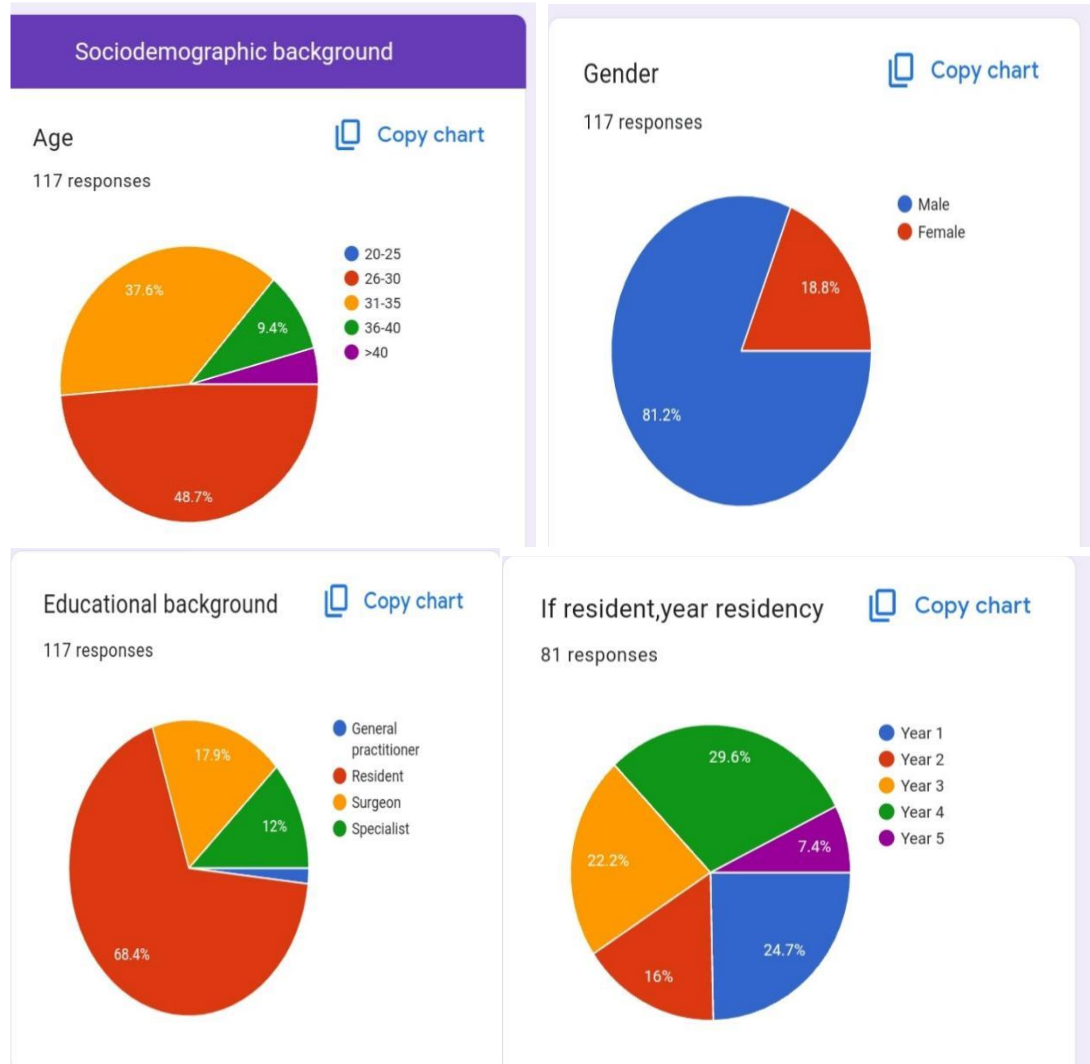


Fig 1 sociodemographic status of study participants

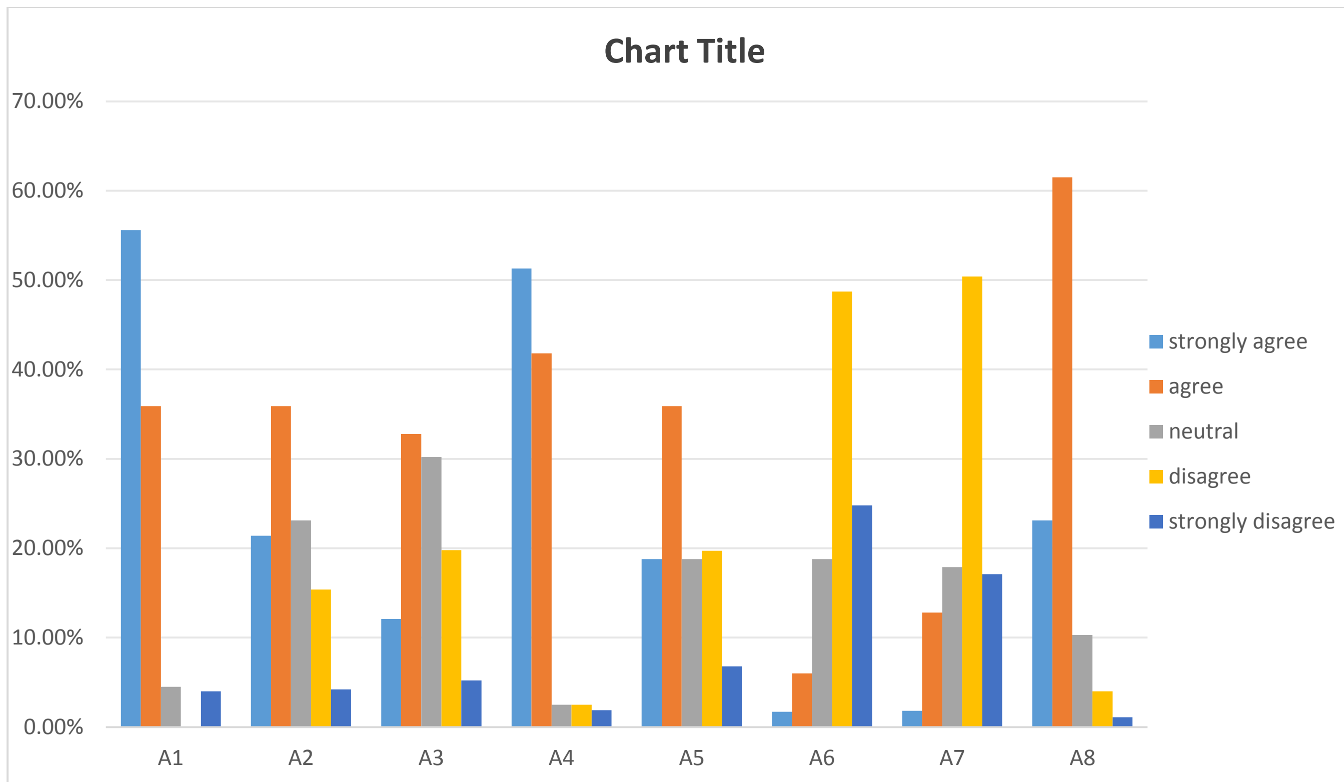


Fig 2 Graph shows distribution of attitude of surgeons and surgical residents on disclosure of error and adverse event

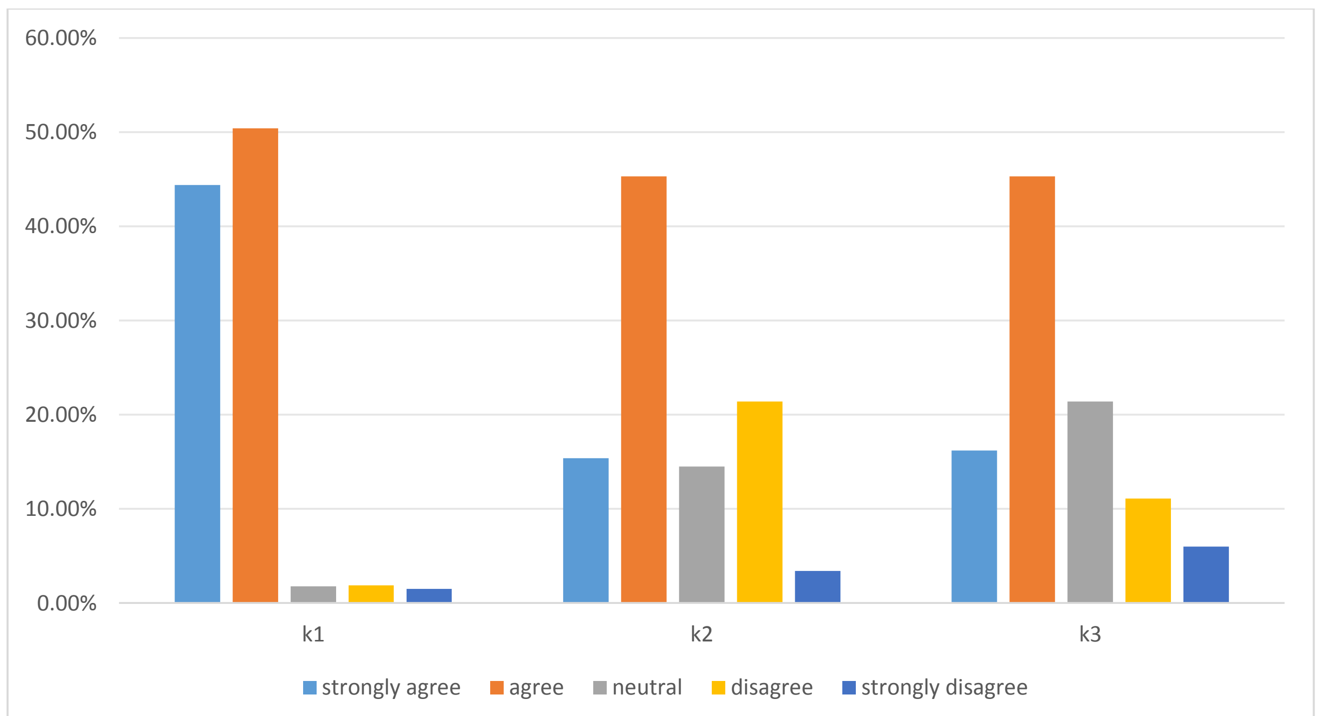
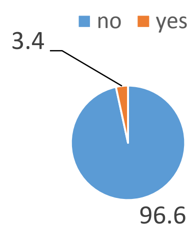


Fig 3 graph shows distribution of knowledge of surgeons and surgical residents on disclosure of error and adverse event

do you have formal training on disclosure of error



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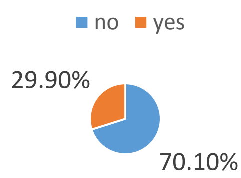

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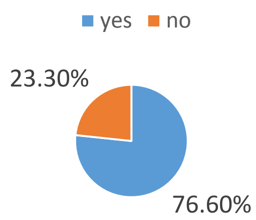


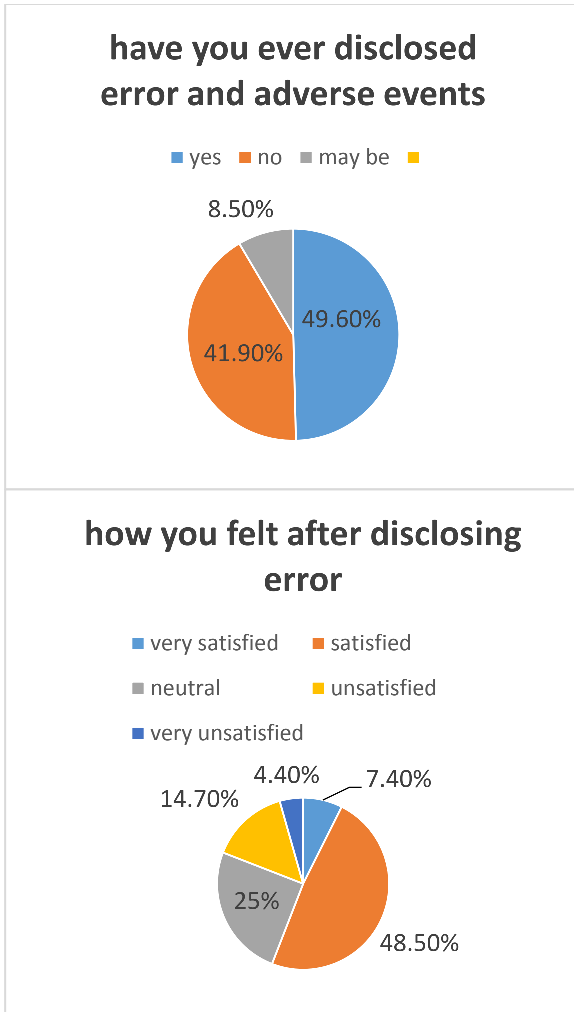


Fig 4 pie chart showing experience of surgeons and surgical residents on disclosure of error and adverse event.

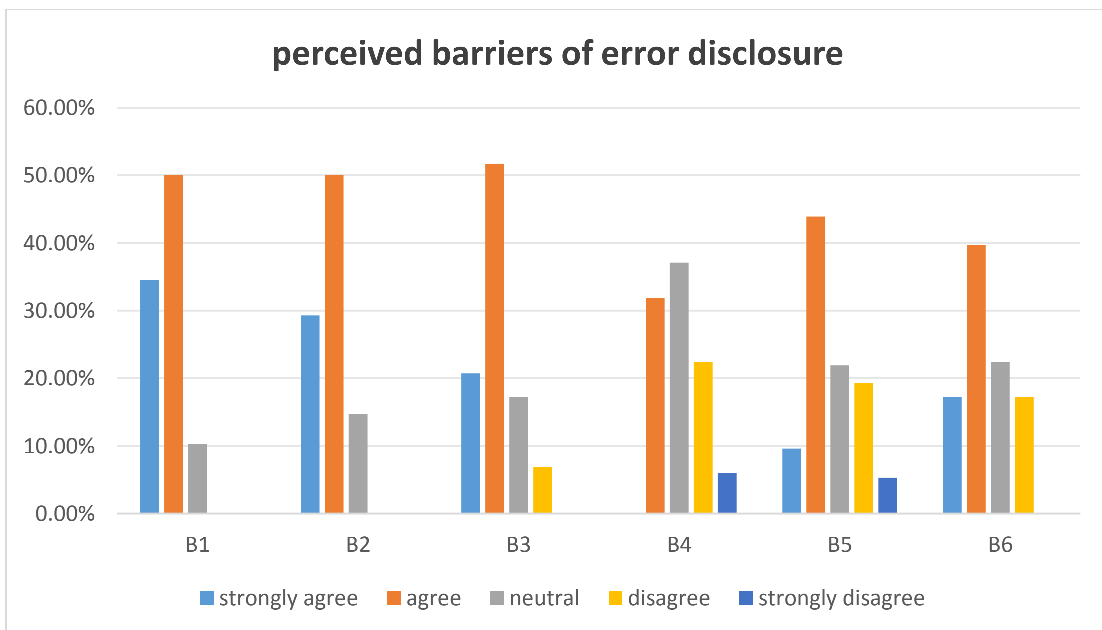


Fig 5 perceived barriers of error disclosure.

Abstract

Error in medical field is common practice worldwide and associated with significant

disability and death.Disclosure of errors and adverse events is generally recommended.this study was conducted to determine KAP of surgical residents and surgeons on disclosure of errors and adverse events. 117 participant was included in the study,including surgical residents and surgeons from Addis Ababa government medical institutions.The study result showed most study participant(90%) agreed on disclosure of error and adverse event.Most study participant(96.6%) had no formal training on disclosure of errors, and most(84.6%) agreed formal training will increase the rate of disclosure of errors. While 29.9% of participant involved with major error and 76.7% involved with minor error,only 49.9% disclose the error. This indicate the gap exist between attitude and actual practice of disclosure. The top ranked identified barriers of error disclosure in decreasing order are: fear of legal litigation(84%),fear of assault(physical,verbal)(79%),fear of loss of ones reputation(72.4%).

Table of Contents

APPROVAL SHEET ii

Acknowledgement iii

List of figures: iv

Abstract viii

1. Introduction 1

   1.1.Background information 1

   1.2.Statement of the problem 2

2.Literature review 2

3.Significance of study 5

4.objective 5

   4.1.General objective 5

   4.2.Specific objective 5

5. METHODS AND MATERIALS 6

6.Result 7

7.DISCUSSION 13

CONCLUSION 16

References 17

1. Introduction

1.1.Background information

Error and adverse event is universal in medical practice. Error and adverse event in surgical discipline is more common and is associated with serious outcome causing permanent disability and death. It is generally recommended to disclose error and adverse events. But the rate of disclosure varies in different part of the world and is affected by physicians' knowledge and attitude and community culture.

The art of surgery is complex adaptive system which require progressive physical skill and cognitive growth. The need for quick reaction time, long hour procedures, team coordination have high potential for error. Errors are made at high cost of patient disability and death.

Studies conducted in various developed countries have reported adverse patient events occurring in 3-30% of hospital admissions with permanent disability or death rates of about 0.4-0.8%.(1) In developing countries, a death rate of 5-10% for major surgery is reported.(1) This shows medical error occurred universally in both developed and developing countries and the rate is even higher in developing countries. The data from sub-Saharan countries is lacking.

Error disclosure is fundamental concept of delivering truly patient centered surgical care. It is desired by patients, endorsed by ethicists and professional organizations. The rate of disclosure of error is considered as marker of institutional quality of health care and better patient safety. Disclosure of errors and adverse events is difficult task and assess surgeons loyalty for his patient, convincing ability and effective communication.

Different factors affect perception of surgeon to disclose errors and adverse effects: legal implication, culture, loss of ones

reputation, fear of assault (patient and attendant), lack of experience.

Formal training on error disclosure is required and improves surgeons and residents' perception and preparedness on disclosure of error. For many surgical trainees experience with errors come before formal training on disclosure of errors imposing difficulty for trainees in handling stressful situations. Disclosure of errors and adverse effects increase patient trust and satisfaction, increase patient perception of quality of care. Important indicator of patient safety within a hospital is the documented rate of occurrence of adverse events and its disclosure during the course of treatment.

1.2.Statement of the problem

Little is known about knowledge, attitude and practice of surgical residents and surgeons on disclosure of errors and adverse events in Ethiopia.

2.Literature review

Medical error tend to occur universally in every part of the world and in all medical specialty. Error occurs more commonly in developing countries causing disability and death. Studies conducted in various developed countries have reported adverse patient events to occur in 3–30% of hospital admissions with permanent disability or death rates of about 0.4-0.8%.(1–3) In developing countries, a death rate of 5-10% for major surgery is reported.(1) Nearly half of the adverse events in these studies were identified as preventable.(3) Different factors attributed this to occur lack of human power, less-staffed health institutions, lack of modern medical equipment, long working hours.(4)

Surgery is complex discipline requiring exclusive focus, good clinical judgement, prolonged adaptive skill. So error is more common to occur in surgical discipline and is associated with more serious outcome causing permanent disability and death. A

study from Saudi Arabia showed that the most common errors occurred in the operating room (20.4%) and most of the deaths occurred in surgery and obstetrics (25% for each).(5)

It is universally agreed that errors and adverse effects should be disclosed to patients and affected family members.(1)(6,7)Studies show that majority of physicians belief and agree on disclosure(2) of errors and adverse events.(8–10) However, despite these principles a gap exist on practice/reality and in most of the cases it is neglected.(11) Furthermore, when the physicians report positive favorable attitude they do not tell patients the full detail of errors.(12,13) It was reported recently that disclosure of errors occurs only for 30% of patients who experience harmful errors.

The disclosure of errors varies between countries.(14,15) This is affected by culture, religious belief, and socioeconomic status of countries.(16) Studies show that the rate of error disclosure is better in developed countries as compared with less developed countries. Limited data exist regarding disclosure of errors and adverse events particularly in sub-Saharan countries.

Some barriers against disclosure of error and adverse events include:

Physician factors: Fear of confronting angry patient, fear of litigation, fear of loss of one’s reputation, lack of formal training on disclosure of error and adverse events.(17–21)

Patient factors: Culture and religious belief of the community. Lack of understandings on complexity of surgical discipline and treatment course and lack of awareness for possibility of errors and adverse events to occurs particularly in developing countries. Aggressive reaction of patient and families when noticed or informed error has occurred.(3,22,23)

Institutional factors: lack of institutional support for physicians when errors/adverse events occurred, lack of legal unit which disclose error, apology patient and facilitate compensation for the victim patient and family members.it is recommended institution's to have official patient safety outcome unit which document errors ,encourage physicians to disclose errors and adverse events provide technical assistance facilitate communication by creating suitable environment and facilitate compensation.

Another factor which affects disclosure is role modeling.(24) Only few medical schools provide formal training on disclosure of error.(24) Thus, trainees learn the skill of disclosure by direct observation of supervising physician. both positive and negative role modeling has effect, but negative role modeling has more long-lasting effect. Trainees learn those skills and attitudes by the so-called hidden curriculum.(24)

An important indicator of patient safety within a hospital is the documented rate of occurrence of adverse events and its disclosure during treatment.(3)

Physicians have an ethical and professional obligation to disclose information about adverse or harmful events to their patients. Physicians also have an obligation under common law to disclose errors to their patients, in keeping with a patient's right to information about their medical treatment, and the fiduciary nature of the patient-doctor relationship. Disclosure does not imply blame or fault but refers to open and timely communication with a patient or their substitute decision-maker concerning an adverse or harmful event.

The decision whether to disclose a no harm incident or near miss should only be made after careful consideration of the best interests of the patient.(25)

physician must disclose directly to the patient or, where the patient is incapable with respect to the treatment, to the patient's

substitute decision-maker.(25) In the death of a patient, the registrant must disclose to the patient's estate trustee or the person who has assumed responsibility for the patient.(25)

Disclosure must always be carefully documented in the patient's medical record.(25) Disclosure is usually the responsibility of the most responsible registrant, supported where appropriate by others (e.g. health-care providers directly involved with the care, colleagues with strong communication skills, other trusted health-care providers.(25) However, the involvement of multiple registrants, medical trainees or other health-care providers may require that a decision be made as to who is the most appropriate individual to speak to the patient. The CMPA encourages registrants to discuss adverse events with patients; however, if there is concern about a legal action, the College advises registrants to first consult the CMPA.(25) Registrants must disclose as soon as possible and in the best interest of the patient.(25)

3.Significance of study

The study aimed to assess surgical residents' and surgeons knowledge, attitude and practice of disclosing errors and barriers affecting disclosure of errors and to identify and fill gaps to improve disclosure of errors and improve overall patient safety outcome.

4.objective

4.1.General objective

To assess knowledge, attitude and practice of surgical residents and surgeons on disclosure of errors and adverse events and associated factors.

4.2.Specific objective

To assess knowledge of surgical residents and surgeons on disclosure of errors and adverse events.

To assess attitude of surgical residents and surgeons on disclosure of errors and adverse events.

To identify factors affecting perception of residents and surgeons on disclosure of errors and adverse events

5. METHODS AND MATERIALS

Study Participants: Surgical residents and surgeons in selected teaching and government hospitals in Addis Ababa (Black Lion hospital,Saint Paul Millennium Medical College,Zewditu Hospital,Menelik 2 hospital).

Type of study: Cross sectional study.

Sample size: Convenient sample size of 117 (95 male and 22 female), 80 residents and 37 surgeons were included.

Duration of study: Sept 2024 to December 2024.

Inclusion criteria: surgical residents and surgeons in selected teaching and government hospitals in Addis Ababa

Statistical analysis: Data was analyzed using standard software SPSS. Data was expressed in percentages and represented in pie and clustered bar charts.

Data Collection: The study was initiated after approval from the Institutional Ethics Committee. Informed written consent was taken from the study participants. Every resident and surgeon who participated in this study was given a questionnaire form, which was formulated on KAP of residents and surgeons on disclosure of errors and adverse events. The questionnaire was in the form of a modified Likert scale ranging from strongly agree to strongly disagree and the score ranges from 1 to 5 respectively.

Ethical issue: Ethical clearance granted by Institutional ethics committee. Anonymity, privacy and confidentiality of participants were maintained

6.Result

Fig 1 sociodemographic status of study participants

A total of 117 study participant,80 surgical residents,37 surgeons were included.95 were male and 22 female.majority of study participant aged between 25-30 years(48.7%) and 31-35 years(37.6%).

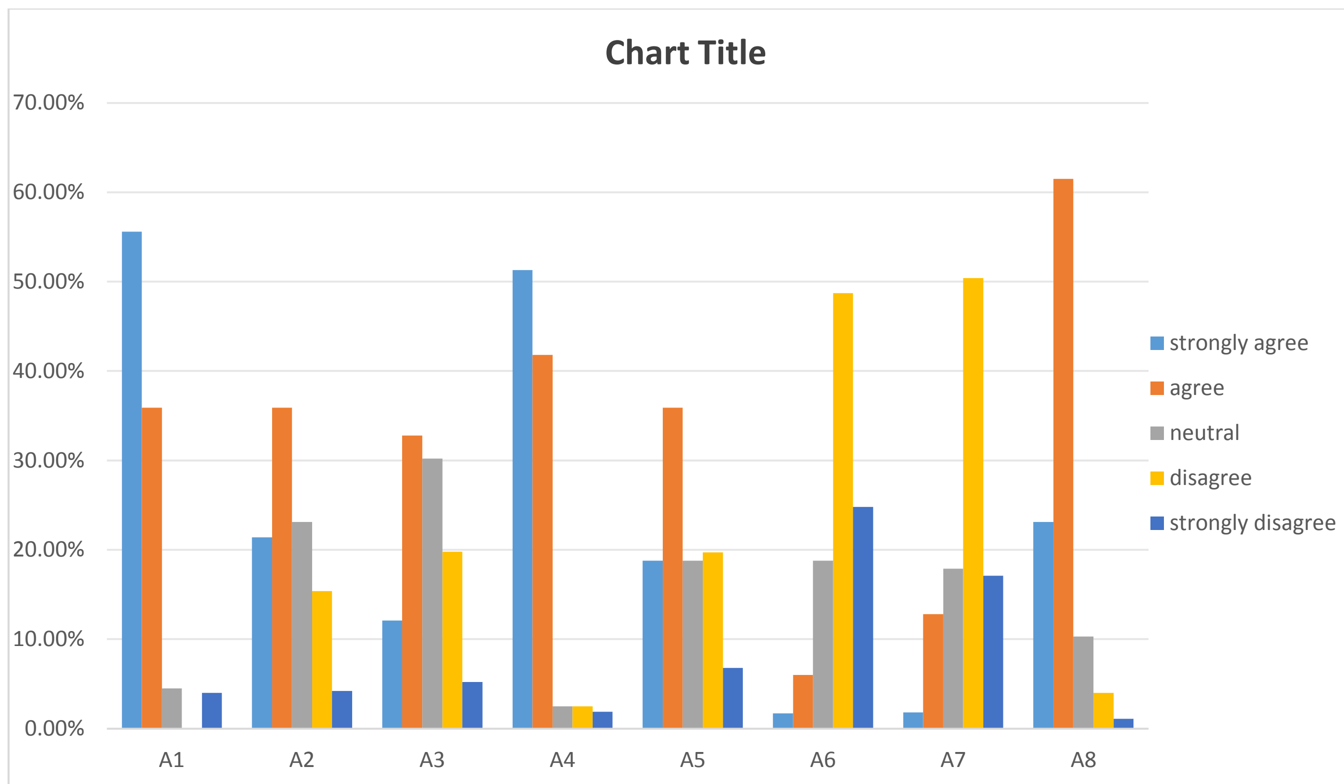


Fig 2 Graph shows distribution of attitude of surgeons and surgical residents on disclosure of error and adverse event

A1	Adverse event should be disclosed to the patient
A2	Near misses should be disclosed to the patient
A3	Minor errors should be disclosed to the patient
A4	Major errors should be disclosed to the patient
A5	Adverse events and errors in surgery is the most serious problem in health care system
A6	Adverse events and errors in surgery are caused by individual failure than health care system
A7	Adverse event and errors are more commonly caused in surgical department than others

A8	Formal training on adverse event and error disclosure will increase the rate of disclosure

Study result regarding attitude of surgical resident and surgeon showed majority of study participant(91.5%) agreed on disclosure of adverse event.most study participant (93.2%) agreed on disclosure of major errors.majority(57.3%) agreed on disclosure of near misses,44.9% of study participant agreed on disclosure of minor errors.most study participant(84.6%) agreed on formal training will increase the rate of error disclosure.

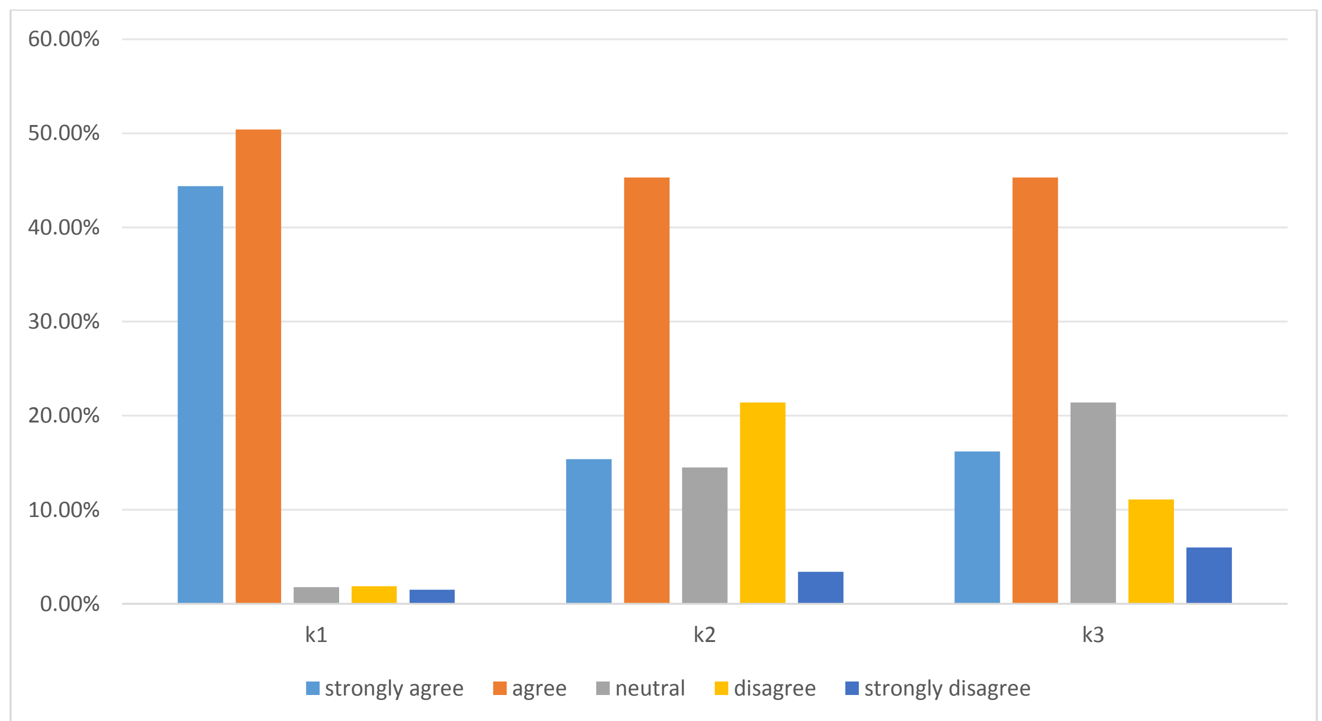


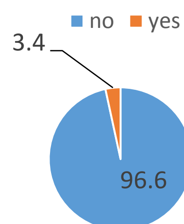
Fig 3 graph shows distribution of knowledge of surgeons and surgical residents on disclosure of error and adverse event.

K1	Patient has the right to know if the error has occurred during his/her treatment course
K2	All error and adverse event should be disclosed
K3	Disclosure of error will increase patient trust and satisfaction

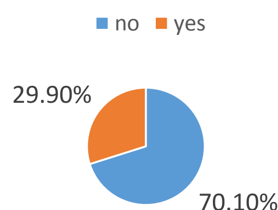
The study result regarding knowledge of surgical resident and surgeons on disclosure of errors and adverse events showed most study participant(94.8%) agreed the patient has the right to know if error has occurred during course of treatment. Majority of study participant(61.5%)agreed on disclosure of error will increase patient trust and satisfaction. Most study participant(89.7%) agreed the most responsible one in treating team should disclose the error followed by colleague with good communication skill(17.1%),patient safety outcome unit of the hospital (12%).

Regarding with experience of surgical residents and surgeons on disclosure of errors and adverse events most study participants (96.6%) have no formal training on disclosure of errors and adverse events. 29.9% of study participants are involved in major injury and most (76.7%) involved in minor injury. Among this only 49.6% disclosed the error and majority of error left unreported. After disclosure of error majority of physicians(55.9%) were satisfied.

do you have formal training on disclosure of error



have you been personally involved in major error



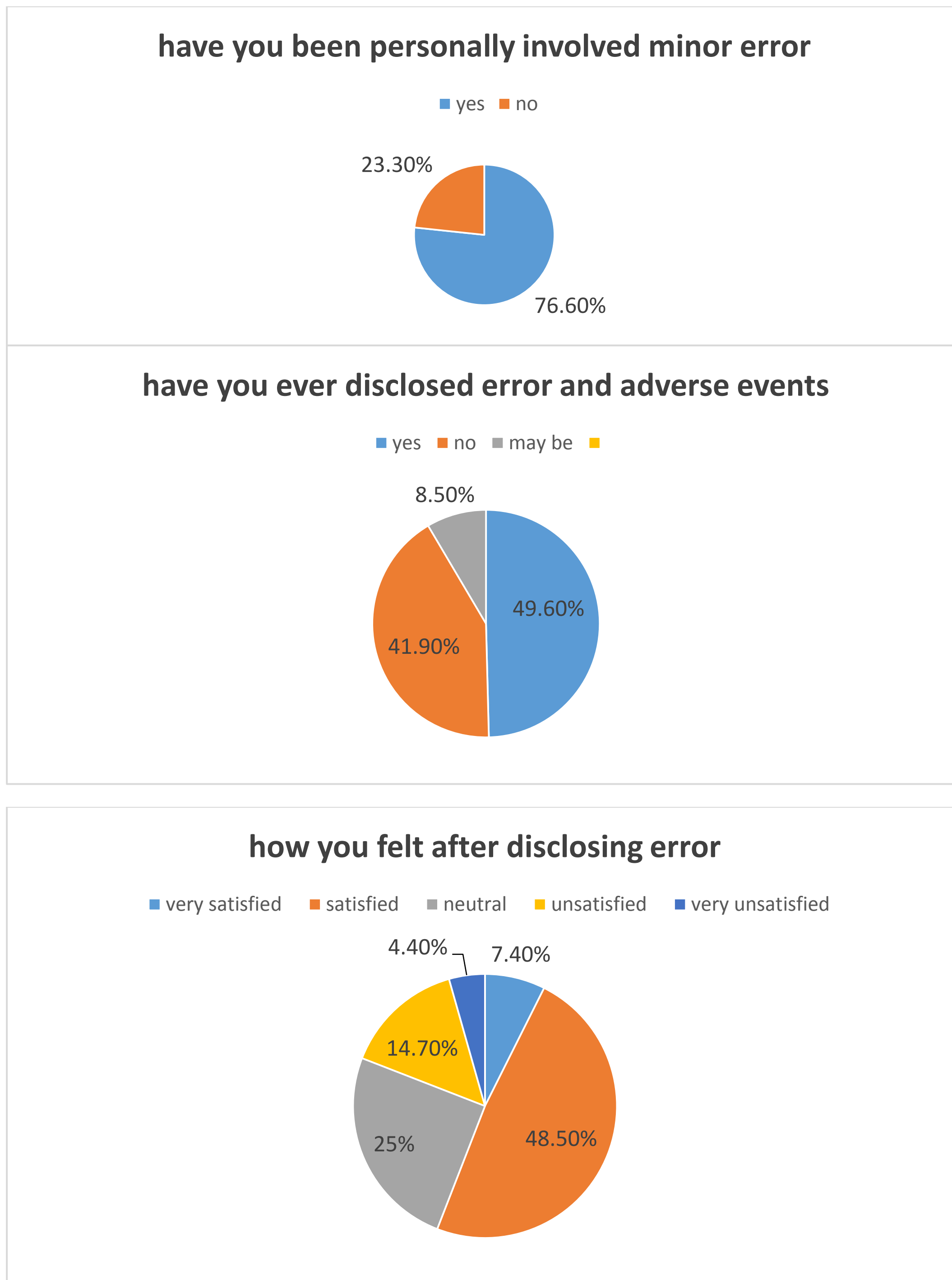


Fig 4 pie chart showing experience of surgeons and surgical residents on disclosure of error and adverse event.

The study showed the gap exist between attitude/knowledge of disclosure of error and actual practice, the rate of error disclosure in this study is 50%. Possible identified barriers of error disclosure are as following in order of decreasing: fear of legal litigation(84.5%), fear of assault(79.3%) physical,verbal

by patient and attendant,fear of loss of ones reputation(71.7%),if physician think the patient might not understand the detail description of the error(56.9%),if the patient is not aware that the error occurred (34%).

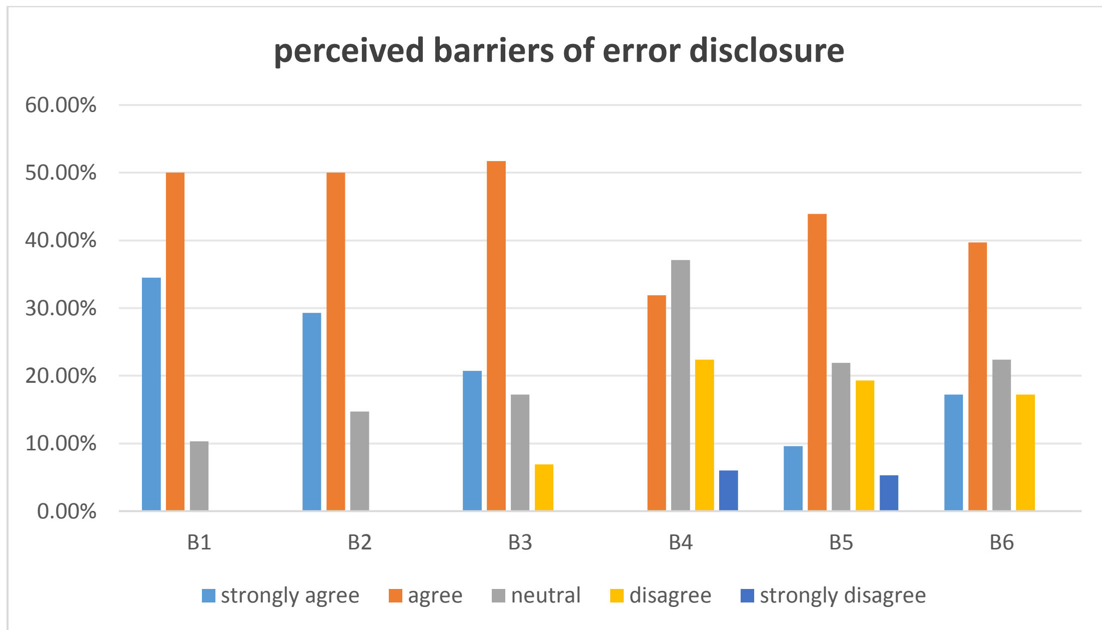


Fig 4 perceived barriers of error disclosure.

B1`	Fear of legal litigation
B2	Fear of assault
B3	Fear of loss of ones reputation
B4	If I think the patient is not aware that the error occurred
B5	If I think disclosing will damage patients trust in my competence
B6	If I think patient will not understand what I am saying

7.DISCUSSION

Medical error tend to occur universally in every part of the world and in all medical specialty. Error occurs more commonly in developing countries causing disability and death. Studies conducted in various developed countries have reported adverse patient events to occur in 3–30% of hospital admissions with permanent disability or death rates of about 0.4-0.8%.(1–3) In developing countries, a death rate of 5-10% for major surgery is reported.(1) Nearly half of the adverse events in these studies were identified as preventable.(3)

A total of 117 study participant,80 surgical residents,37 surgeons were included in this study.Most study participants(91.5%) agreed on disclosure of adverse events.most study participants(93.2%) agreed on disclosure of major errors while less number of study participants agreed on disclosure of minor errors(44.8%) and near misses or no harm incidents(57.3%). The study done in Nigeria and Saudi Arabia showed similar favourable positive result of attitude on disclosure of errors and adverse events. The disclosure of near misses should be made at best interest of patient. This shows most study participants have positive attitude,as most agreed, on disclosure of errors and adverse events.

The gap exist between attitude/knowledge of error disclosure and actual practice. Though most agreed on error disclosure and adverse events,the error disclosure rate in this study is only 50%. compared with other similar studies the error disclosure rate is slightly higher. Error disclosure requires advanced communication skill and experience. Different factors identified as barriers of error disclosure in this study and ranked as the following in descending order: fear of legal litigation(84.5%), fear of assault(79.3%) physical,verbal by patient and attendant,fear of loss of ones reputation(71.7%),if physician

think the patient might not understand the detail description of the error(56.9%),if the patient is not aware that the error occurred (34%).

Generally most physicians have good knowledge on requirement of error disclosure,type of error that need to be disclosed and acknowledged patient right to know when error occurred during course of his/her treatment.Most study participants(96.6%) have no formal training on error disclosure. The study done in Nigeria 2014 showed 92% have no formal training on error disclosure. This shows most physicians have no formal training and faced with actual error disclosure before having formal training and this pose difficulty in error disclosure and decrease the rate of disclosure.

Regarding with experience of study participants 29.9% have involved in major error and 76.7% involved in minor error and among this only 49.6% disclosed the error. This indicates more than half of error and adverse events in this study left unreported to the patient. Compared with other similar studies this result is higher,however there is a gap between attitude and actual practice. The existing gap in error disclosure can be filled by working on identified barriers of error disclosure. This requires a collaborate work from health institutions ,directly involved physicians, policy makers/ ministry of health.

Policy makers should allocate budget to establish a patient safety outcome unit which will facilitate error disclosure and pay compensation when indicated for affected patient or family. The teaching or health institutions should incorporate error disclosure methods in teaching curriculum and should also prepare training for front line physicians to encourage error disclosure and raise awareness and readiness of health workers. Patient safety outcome unit should be established in each department which record error and adverse events, which will be kept confidential, identify type of adverse events and why it occurred and how to prevent in the future. The unit can also

mediate disclosure of error and collect funds to compensate affected patient and family and will also support physicians morally,financially and provide technical assistance as well. This overall increase patient safety,reduce error occurrence and increase error disclosure.

CONCLUSION

This study demonstrates majority of surgeons and surgical residents agree on disclosure of error and adverse event and acknowledge the patients right to get information when error occurred during course of treatment. However,the rate of error disclosure is low(49.5%) indicates the gap exist between attitude/knowledge of error disclosure and actual practice. Most study participants have no formal training on error disclosure. The identified barriers to error disclosure in descending order are fear of legal litigation(84.5%), fear of assault(79.3%) physical,verbal by patient and attendant,fear of loss of ones reputation(71.7%),if physician think the patient might not understand the detail description of the error(56.9%),if the patient is not aware that the error occurred (34%).

Recommendation: Formal training on error disclosure should be incorporated in medical teaching curriculum, practicing physicians' should be trained as well.

Medical institutions should have patient safety outcome unit in each department which:

facilitate error disclosure,

document errors,

provide technical assistance to physician,

collect funds to compensate affected patient and family members.

policy maker(MOH) should communicate with organizations which offer medicolegal insurance for doctors.

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