**ADDIS ABABA UNIVERSITY COLLEDGE OF HEALTH SCINCE**

**DEPARTMENT OF EMERGENCY MEDICINE**




# ASSESSMENT OF FACTORS AFFECTING PATIENT CLINICAL HANDOVER PRACTICE OF NURSES AT EMERGENCY DEPARTMENT OF SELECTED GOVERNMENT HOSPITALS WITH TRAUMA CENTER IN ADDIS ABABA, ETHIOPIA, 2020

**BY: ABEL GIRMA**

**A RESEARCH THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE DEPARTMENT OF EMERGENECY MEDICINE FOR THE PARETIAL FULLFILLMENT IN REQUIREMENT OF MASTER OF SCINCE DEGREE IN EMERGENCY MEDICINE AND CRITICAL CARE NURSING**

**July, 2020**

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**BY: ABEL GIRMA**

**ADVISORS: HUSSEN MEKONIN** *(PhD. Asst. Professor of public health)*

**: ANDUALEM WUBETE** *(MSc. EMCCN)*

**A RESEARCH THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE DEPARTMENT OF EMERGENECY MEDICINE FOR THE PARTIAL FULLFILLMENT IN REQUIREMENT OF MASTER OF SCINCE DEGREE IN EMERGENCY MEDICINE AND CRITICAL CARE NURSING**

**July, 2020**

**ADDIS ABABA, ETHIOPIA**

**ADDS ABABA UNIVERSITY**
**COLLEGE OF HEALTH SCIENCES**
**DEPARTMENT OF EMERGENCY MEDICINE**

## APPROVAL SHEET

I, the undersigned MSc student, declare that I have submitted my original work on a title assessment of factors affecting patient clinical handover practice of nurses at emergency department of selected government hospitals with trauma center in Addis Ababa, Ethiopia 2020 for the examination.

**Submitted by:**

| _____ | _____ | _____ |
|---|---|---|
| Name of student | Signature | Date |

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

**Approved by:**

| 1. _____ | _____ | _____ |
|---|---|---|
| Name of Major Advisor | Signature | Date |
| 2. _____ | _____ | _____ |
| Name of Co-Advisor | Signature | Date |
| 3_____ | _____ | _____ |

## APPROVAL BY THE BOARD OF EXAMINATION

This thesis by Abel Girma is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of masters in Emergency medicine and critical care.

**INTERNAL EXAMINER:**

| _____ | _____ | _____ | _____ |
|---|---|---|---|
| NAME | RANK | SIGNITURE | DATE |

**EXTERNAL EXAMINER**:

| _____ | _____ | _____ | _____ |
|---|---|---|---|
| NAME | RANK | SIGNITURE | DATE |

**RESEARCHADVISORS:**

| _____ | _____ | _____ | _____ |
|---|---|---|---|
| NAME | RANK | SIGNITURE | DATE |
| _____ | _____ | _____ | _____ |
| NAME | RANK | SIGNITURE | DATE |

**DEPARTMENT HEAD**

| _____ | _____ | _____ | _____ |
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## Abstract

**Background:** The Emergency Department (ED) environment presents unique challenge for high quality communication. Poor handover practice is a threat to patient safety and associated with adverse outcomes. This study was aimed to assess factors affecting practice of patient clinical handover among nurses at emergency department of selected governmental hospitals with Trauma centers in Addis Ababa, Ethiopia.

**Methods and Materials:** Institution based cross-sectional study was conducted among 120 nurses working in emergency department of selected government hospitals with trauma centers in Addis Ababa from February to March,2020. Data were collected using a pretested self-administered structured questionnaire. Data were entered, cleaned using epi data v.4.7.2 and exported to IBM SPSS v.25 software for analysis. Logistic regression was used to check for association between variables and for adjust potential confounders. Results were presented using texts, tables and graphs.

**Result:** Of the total 120 respondents 70(58.3%) were male. The age of participants was ranged from 20 to 32 years with a mean(±SD) of 28.1±2.17. The overall level of practice was 59.6%. Factors such as, access to technology [P-value 0.009, AOR: 5.937, 95%CI (1.099,32.063)*]*, safety climate [P-value: 0.003, AOR: 2.942, 95%CI (1.020, 8.485)], patient/family involvement [P-value: 0.008, AOR: 11.878, 95%CI (1.370, 101.390)] and relationship level [P-value: 0.019, AOR: 2.419, 95%CI (1.0854, 6.452)] significantly associated with handover practice.

**Conclusion:** Overall, participants of study had good handover practice. Access to technology, use of technology facilitate handover, safety climate, patient involvement and relationship level among nurses were significantly associated with handover practice. This study suggests training, patient involvement, access to technology and presence of standardized structured handover tools are key to improve handover practice.



***Key-word: Clinical handover, emergency department, communication, nurses***

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Above all thanks are to God Almighty who has kept me well and provide the strength to cope in all challenges throughout my study period. The encouragement and unwavering support from my family, beloved friends and all classmates in providing me with different material during the course of research development. They deserve to receive admiration and credit.

My deepest gratitude also goes to study participants, data collectors and administrative of selected Hospitals for their cooperation and commitment during data collection and also all others who might took part directly or indirectly in this research.

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## LIST OF ABBREVIATIONS AND ACRONYMS

**AAU:** Addis Ababa University

**ALERT:** All African Leprosy and Tuberculosis Rehabilitation and Training Center

**CHS:** College of Health Science

**ED:** Emergency Department

**EMR:** Electronic Medical Records

**FMOH:** Federal Minister of Health

**LIC:** Low Income Countries

**PPS:** Probability Proportional Size

**SBAR:** Situation, Background, Assessment and Recommendation

**SSA:** Sub Saharan Africa

**TASH:** Tikur Anbesa Specialized Hospital

**UCTH:** University of Calabar Teaching Hospital

**USA:** United States of America

**WHO:** World Health Organization

# CHAPTER ONE: INRODUCTION

## 1.1 Background

The rapid civilization and enhanced length of life are currently increase burden to the healthcare systems globally. Hospitals should able to handle the quickly rising number of patients, who may come out with complicated chronic conditions and co-morbidities.(1) It is estimated that 421 million hospitalizations take place in the world annually, and approximately 42.7 million adverse events occur in patients during those hospitalizations, approximately two thirds of all adverse events happen in low- and middle-income countries.(2)

Clinical handover in health care has widely accepted a substantial international engrossment in the World Health Organization(WHO) patient safety programme. communication failures at the time of patient handoff is among the major difficulties innards this institution. Nurses should attempt and play a major role to hack this national and international problem to patient care.(3)

Governments, healthcare organizations and researchers are emphasizing the indispensable role that communication has a vital role to protect the patient from harm and delivery of quality health care specifically in the high pressure setting such as emergency departments. In the Emergency Department clinical handover is a crucial site for communication problems and it plays a significant part to keep patient safety as well as clinicians' satisfaction. (4)

Handover is regular form of nursing communication and conveying professional responsibility and accountability about some or all aspects of care for a single or group of patients in the temporary or permanent basis during change of shifts or nurses take breaks, following patient transfers across ward spaces, within or between hospitals, and during admission, referral or discharge(5–7)

It is guesstimated that nearly 1.6 million handovers take place per year in a typical teaching hospital worldwide. Thus, handover practice at various levels of institutions become a major contest for researchers and interventions directing at enhanced patient safety. (7)

There are multiple kinds of mode of clinical handover. The most commonly practiced types of handover include, Electronic handover, Tape recorded handover, written handover and verbal handover.(8) The electronic handover can be done, the nurses will register or put in the patient data into the computer system where it will keep for the next shift then getting back and read by the incoming nurse. The tape(audio)recorded handover is the method where the patient information which is obtained during assessment will be recorded on recording device and

playing back for the next shift nurse. A written handover involves a nurse document on the nursing sheet that describe the current status of the patient and course of treatment. A verbal handover is face to face oral conversation related to the patient condition between nurses.(8,9)

Effective clinical handover is complex but crucial element to make communication process easy, fruitful and safe transfer of pertinent patient data among nurses in the emergency department. In adequate and obscured exchange of information at the time of handover can increase the risk of acquiring adverse events to the patient which subsequently leads to treatment delays, repetition of assessments, medication errors, unnecessarily readmissions and increased costs as well as incomplete transfer of pertinent patient information.(10,11).

The major communicative challenges and risks in emergency department are mainly arise from the significant contextual complexity of the environment. Due to the high-stressed and time limited set-up of the emergency department, communication is complex, nuanced, interrupted, fragmented, rushed and consequently error prone.(4)

Because of the complicated nature of the ED environment, practice of clinical handover can be influenced by unclear structure of the handover conversation or communication, frequent distractions, inadequate documentation and overreliance on documentation and a lack of training in handover and non-technical skills.(11) In addition, challenged by time constraints, interruptions, noise, and interpersonal tensions.(12)

A recent study done in emergency department of teaching hospitals in Ethiopia reported that the Design of the Emergency Department's physical space was desperately cluttered and becomes a major challenge for creating conducive work environment interfaced with the work of staff in delivering safe care. Also the work of Emergency Department staff also appeared to be frequently interrupted from their tasks often multiple times within span of few minutes.(13)

In order to achieve improved performance and outcomes, factors that affect practice of clinical handover must be proactively addressed such as cultural aspects of our unit, patient issues, staff issues, human factors, time constraints and educational issues. Hence, hospitals must have precise plan focused on human interactions that promote teamwork, structured communication, and situational awareness.(8)

## 1.2 Statement of the problem

Emergency Department is an environment that is constantly changing with patients who are often unstable and require resuscitation. It serves 24 hours of care every day of the week and providers work in shift Thus; handover occur at a minimum of twice per day. Communication in handover is a vital skill in emergency, but providers have different levels of experience, backgrounds, skills, and training. (14) Communication failure during handover is contribute for 70% of hospital adverse events which represent a major source of medical errors or sentinel conditions.(5,15)

A survey of clinicians practice and perceptions on handover reported that up to 15% of critical incidents arose from poor handover.(10) Studies tracing the causes of adverse events to inadequate handover, it has been recognized globally as a high-risk process. Thus, handover has repeatedly been identified as a priority area for patient safety research and improvement. A recent study done in turkey response from nurses revealed that clinical handover has positive impact on patient as well as employee's safety (78.3% and 68.8% respectively)(5–7)

Internationally, government and healthcare initiatives have attempted to improve and standardize clinical handover through the use of structured mnemonic tools, checklists and Information Technology interventions. A computerized handover system was shown to reduce adverse events relating to inpatients, However, implementing and frequent use of such systems in the Emergency Department may be impractical, since it requires time and training. (10,16)

Despite implementation of handover support tools, uncertainty about the most effective handover practice to ensure continuity of information transfer for patient care, also the current handover tools which have largely been designed in the context of hospital wards may not be suitable for the Emergency Department environment(17)

Even though many organizations have given significant focus to standardize handover process, still a gap exists in actual practice due to lack of quality evidence based interventions which is applicable for the emergency unit.(18) These potentially serious and overlapping consequence speak to the urgency of better understanding factors relevant to clinical handovers to maximize their effectiveness.

Researchers has identified the period of shift changes as a source of communication gap in the emergency department. However, majorities of the literatures are focused on communication of intra-professional and nurse-to-nurse handover in the hospital inpatient unit. Interestingly

there are few studies focused exclusively on nurse clinical handover communication in the Emergency Department.(19)

The Ethiopian Ministry of Health on national health promotion and communication strategy plans to enhance the capacity of health service providers in interpersonal communication and counseling skills.(20) but to my knowledge there is no study that assess the Factors that affect handover practice in the ED particularly in Ethiopia.

Even if there are no published literatures regarding the current gap in clinical handover practice of patients in government hospitals in Ethiopia, there are some published research assessing inter-professional communication levels between professional and patients. According to these studies there is discrepancies in communication level that require further research in the area and improvement in practice.(21,22)

Since clinical handover is one of the communication tool with the patient as well as between professionals. So, these aroused the curiosity of the researchers to assess the current practice of handover by ED nurses and factors that influence it.

## 1.3 Rationale of the study

The study will provide basic information on the current practice of nurse's patient clinical handover and factors that affect it in selected government hospitals in Addis Ababa for Federal Minister of Health(FMOH), academic community, service providers, health care professionals and all hospital management bodies like medical directors and nursing directors(Matrons). Omitted or inaccurate patient information can result in negative effects on patient care, and also healthcare personnel, patient and family discontent. Effective communication between nurses and patients is minimize mortality, morbidity and long hospital stay, while contributing to country's economic development.

Moreover, this study will contribute to better understanding of the impact of the factors that affect nurse clinical handover of patients. Hence, examining handover processes and practice of communication will help for standardization of communication practices using standard patient handover tools, which reduce risk of harm to the patient.

Studies in health care communications have speculated that many omissions of relevant patient care and missing or incorrect communication of patient information problems are related to a lack of research-based standards in administrative protocols and policies.(23) Thus this study laid a base for hospital adiminstratives to develop a standardized protocol or policy regarding handovers practice which is suitable for ED. This will promote a complete and efficient handover which is significant in giving a good quality care and ensuring continuity of care, meeting the needs of a patient in a timely manner.

Moreover, finding from this study, will enable for the identification of factor that may influence the handover practice that is currently in place and appropriate recommendations will also be made.

Lastly, it can be used as source of reference for future research and educational purpose, this encourage researchers in the area of field to undertake future research project about handover of patient in the ED.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Global Data on Nursing Handover

It is estimated that approximately 1.6 million handovers occur per year in a typical teaching hospital worldwide and specifically over 300 million in the USA, more than 40 million in Australia and over 100 million in England, making handover arguably the most frequent and significant communicative process between clinicians in the delivery of patient care. (1,7)

Nevertheless, gaps in communication during hand-off processes continue to exist, thereby increasing patient safety risk. The problem is compounded by the high frequency of hand-offs in health care, especially in hospitals. It's estimated that a typical teaching hospital experience more than 4,000 hand-offs every day. (15) and a hospital with an average daily census of 400 patients, where registered nurses work 12-hour shifts. In this practice environment alone 2.9 million change-of-shift handoffs would occur each year (not to mention the numerous unit or interdepartmental handoffs)(8)

Research demonstrates that nurses play a vital role in patient clinical outcomes, particularly in relation to patient safety and continuity of care in hospitals. In any given year, each full-time nurse is responsible for several thousand clinical handovers.(24)

The Joint Commission Center for Transforming Healthcare's Hand-off Communications Project involved 10 hospitals that used a proven, systematic approach to identity the root causes of and solutions to the problem of inadequate handoffs. During the project, receivers assessed that 37% of the hand-offs were unsuccessful. (15)

Quality of care has been shown to be an important determinant of health outcomes for the acutely ill, yet measures to improve quality continue to receive less attention in many LMICs, especially SSA. A study by Atinga et al. in Ghana revealed that Quality of acute care in Ghana has generally described as sub-optimal which is linked to availability of supplies, interpersonal communication, comfort, privacy and confidentiality.(25)

Research has been suggesting that clinical handover is a critical site for communication problems which is a major contributing factor in 70% of hospital sentinel events leading to an increased risk for adverse events.(1,5) of which approximately two thirds of all adverse events happen in low- and middle-income countries.(2) However, there is no adequate information that exactly show the percentage of handover performed in the context of African countries.

## 2.2 Mode of Handovering practice

There are four major methods of patient handover that occur in practice namely, Traditional handover or verbal handover, recorded or taped handover, written patient handover and in recent years another methods of handover known as electronic handover has been added. (26)

Verbal handover is preferred and most used method of patient handovering the Emergency Department as it provide firsthand information. (26) There is a perception that with adequate documentation reliance on verbal handover can be reduced, and the number of verbal handovers can be minimized(27).

An explorative Study in USA evaluating nursing handover process in the Emergency department among Registered nurses revealed that the method used most frequently was verbal report by means of telephone at 81.48%. Use of the EMR (electronic medical record) was rated at 44.44% and the use of the organizational Standard tool(SBAR) was identified as only being used 3.7% of the time for Emergency Department admission handovers.(28)

A descriptive crossectional study in University of Pittsburgh Medical Center(UPMC), aimed to assess the handoff practice in Emergency Department analyses of the electronic chart audits showed that compliance with nursing documentation of the handoff report within the electronic health record was only 13%. This could be attributed to the low level of information transferred to the nurse during the handoff reports or the electronic documentation system.(23)

The results from study on impact of electronic handover system in Ireland support the use of electronic handover to improve efficiency of patient information transferred. Furthermore, it supports the continued use and development of this electronic format for handover.(29)

A quantitative prospective crossectional multi-site survey across health professionals aimed to assess perspective of clinical handover process done in Australian metropolitan public hospital revealed that 55% reported that their handover practices were very or highly effective. In all, 44% considered bedside handovers to be slightly more or much more effective, 46% stated that patient involvement either slightly or very much improved the effectiveness and Overwhelmingly, 99% recognized the importance of communication skills in providing effective clinical handovers and majority of respondents(41%) believed that adverse events were a possible consequence of poor handover.(18)

A research done in Australia that explore shift to shift handovering practice and improvement in handovering practice Royal Hobart university hospital finding from Observation sessions and informal chats with the participants have revealed that they had mixed reactions to the

electronic tool that means even the electronic tool handover had some benefits many participants still stressed the need to have verbal handover together with the use of the electronic tool and not replace(verbal) face-to-face handover.(30)

A descriptive crossectional survey in Turkey that investigate the approaches and attitudes of nurses on clinical handover showed that, Majority of the nurses (96.0%) stated that they made clinical handover in their departments, 95.6% stated that they carried out clinical handover with the clinic's head nurse and the nurse providing patient with care, 91.5% stated that clinical handover was carried out at the bedside, 53.1% stated that they did not use a form specific to clinical handover, 74.4% stated that they carried out the handover both verbally and written form.(6)

Another qualitative and descriptive pilot study in India at Indiana University Medical center done to assess barriers and facilitators to nursing handover practice among nurses revealed that, two types of end-of-shift reports were used Taped (Recorded audio) and written handover. Where the Acute Care unit (35% of respondents) used a written end-of-shift report and in the General Medicine and Surgical units (65% of respondents) used a taped report. In the same study Finding from observational study showed that 45% of participants mentioned the value of shift notes (written handover) during end of shift report, 30% preferred having a face-to-face conversation( verbal handover) and the rest of participants(25%) suggest to use checklist( structured handover tool).(31)

A study in South Africa at University of Pretoria on factors affecting quality of handover practice among emergency health professional in ED results from observation session of nurse's handover showed that all of the observed 20 patient handover used verbal handover and mentioned as the preferred method which is followed immediately by written handover(14 of patient handover).(26)

Another Quantitative Descriptive cross sectional survey conducted in Nigeria to assess Nurse handover and its implication on Nursing practice in the University of Calabar Teaching Hospital(UCTH) result revealed that 85 (100%) of respondents mentioned written handover and bed side verbal hand over, were the nurse handover methods practiced very often in the UCTH, handover using structured tool is practiced rarely while audio tape recording is never practiced in UCTH, with 85(100%) response rate in each item scale.(32)

## 2.3 Factors affecting clinical handover practice

A descriptive crossectional survey to assess factors influencing quality of emergency department nurse shift handover practice across province of Ontario, Canada results from analysis of univariate variables revealed that majority of respondents have did not use structured handover tool no access technology for handover practice, didn't include patient or family during handover and has no access to available technology (91.6%, 89.0% and 72.7% respectively) and participant response regarding factors influencing handover showed that intrusion(89.4%), distractions(96.0%), triage flow (74.0%), safety climate (73.6%) and inadequate nursing staff(63.0%) has negative effect on handover, while 71.8% has sufficient cognitive capacity and positive relationships with others(76.7%), low time pressure(79.7%) and time stress(75.8%). In addition, majority of respondents feels moderate to high fatigue (82.8%) and low anxiety level (76.2%).(19)

A quantitative Descriptive crossectional study investigating Nurses and Doctors perception on Barriers of conducting Handover in Czech Republic Hospitals identified 3 categories of barrier; individual or performance related barrier including messy reports (68.1%), illegible hand writing (71.2%), out-of-date reports (56.8%), communication between more senior/junior members of staff (89%) and poor communication skills (77.1%) , environment and system related barriers including lack of adequate time(81.4%); poor workforce planning(69.4%); busy periods in the department/hospital(79.7%); and interruptions(77.8%).(33)

An analyses of finding from study in India at Indiana University Medical center done to assess barriers and facilitators to nursing handover practice among nurses revealed 6 barriers to effective nursing end-of-shift reports, of which majority of respondents mentioned too little and too much information is the main barrier for effective handover which is 80% and 50% of respondents followed by Inconsistency in quality of handover, limited time, lack of resources and frequent interruption which accounts 50%, 35%, 35%, and 20% respectively.(31)

A descriptive and crossectional study done in turkey investigating on approaches and attitudes of nurses on clinical handover analyses of results revealed that Distraction or Delays in clinical handover due to staff, telephone, visitors etc., Communication problems, arguments with the patient and/or patient relatives( patient and family participation in handover) and arguments with team members(team awareness) are the major factors that affect practice of handover which accounts for 65.4%, 56.9%, 19.0%, 6.0% of participant response respectively.(6)

A Quantitative Descriptive cross sectional survey conducted in Nigeria to assess Nurse handover and its implication on Nursing practice in the University of Calabar Teaching Hospital(UCTH) revealed that 68 (80%) participants strongly agreed that communication is a vital element in the handover process. Also, of respondents 80 (94.1%) respondents mentioned that the attitude of the nurses influences the effectiveness of handover. Furthermore, 65 (76.5%) respondents mentioned that ethics of handover serve as fundamentals to meet patient safety challenges. In addition, 39 (45.9%) respondents said that the nurse experience is an important factor in the handover process. Other influences include workload and stress 85 (100%) and interpersonal conflicts between nurses 60 (70.5%).(32)

## 2.4 Implication of clinical handover

A descriptive and crossectional study done in Turkey the responses given by the nurses for the positive aspects of clinical handover showed that clinical handover "provides easy access about the patient", "simplifies the follow-up of patient information, "prevents medical errors (drugs etc.) and "increases communication between nurses" (80.2%, 74.2%, and 65.4% respectively) On the other hand, analysis from the negative aspects of clinical handover revealed that, the most frequent response were "clinical handover takes too much time" (24.4%) and "increases work load" (14.4%).(6)

A study in Nigeria to assess Nurse handover and its implication on Nursing practice in the University of Calabar Teaching Hospital(UCTH) regarding the implication of nurse handover on patient care, majority of respondents (88.3%) said that handover helps nurses to improve patient's safety, followed by it enable nurses' to improve their clinical outcomes (87%), improves nurses' performance in patient's care (75.3%), handover can be used as a tool for improving communication in nursing care (72.9%) and only 16.5% of respondents said that it enhance nurses' and patients' family relationship.(32)

To my knowledge of searching there is no readily available published or unpublished study in Ethiopia assessing factors affecting practice of nurse's patient clinical handover.

## 2.5 Conceptual frame work

Based on the above literature review, the following conceptual model is hypothesized to identify factors that affect practice of patient clinical handover of patients in Emergency Department. The model includes four hypothesized factors that have a direct impact on the practice of handover communication. For the purpose of this study factors are categorized into four groups, includes Organizational factors, Nurse related factors, Patient related factors and Environmental factors. Factor is synthesized by combining evidence from a variety of literature sources in order to develop a model that can be tested empirically.(4,19,30,31,34) The three steps involved in the process of theory synthesis: 1) specifying the concept of interest, 2) reviewing the literature and 3) organizing findings into a representation into a conceptual model.

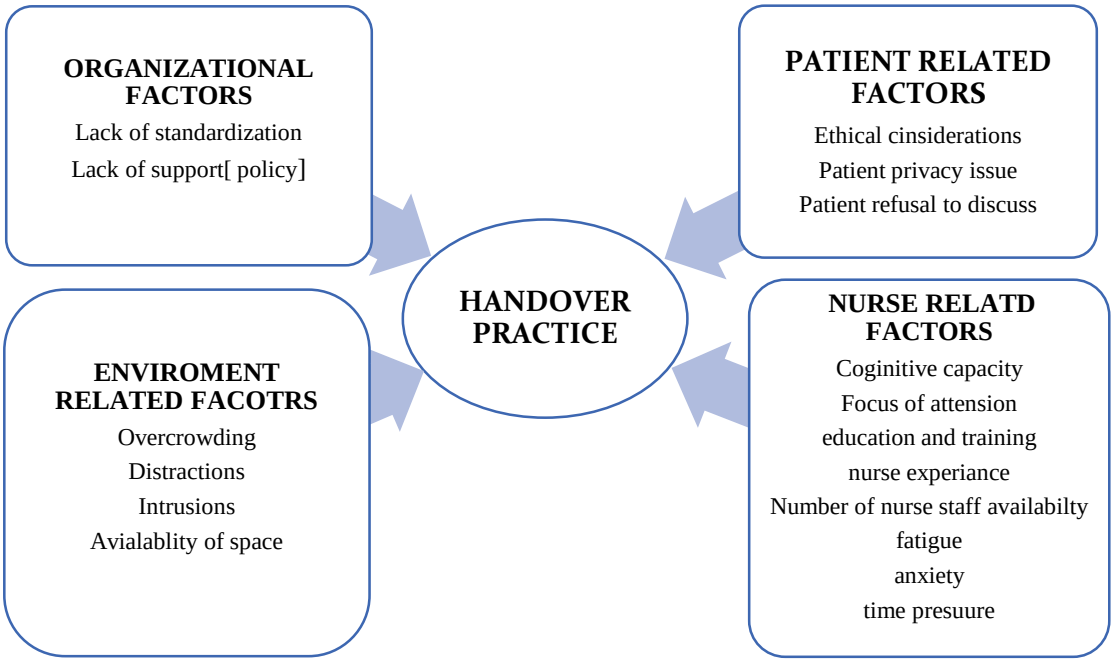



*Figure 1: Conceptual frame work to assess factors that affect Nurses' patient clinical handovering practice at selecting governmental hospitals with Trauma centers in Addis Ababa, Ethiopia, 2020.*

# CHAPTER THREE: OBJECTIVE OF THE STUDY

## 3.1 General Objective

- To assess factors affecting clinical handover practice of patients among nurses at emergency department of selected government Hospitals with Trauma center in Addis Ababa Ethiopia from February 1- March 30, 2020.

## 3.2 Specific Objectives

- To identify factors associated with Patient's clinical handover practice of nurse in the Emergency Department of selected governmental hospitals with Trauma center in Addis Ababa.
- To identify factors associated with Patient's clinical handover practice of nurse in the Emergency Department of selected governmental hospitals with Trauma center in Addis Ababa.

# CHAPTER FOUR: RESEARCH METHOD AND MATERIAL

## 4.1 Study Area

The study was conducted in three selected government hospitals with Trauma centers in Addis Ababa(AA). AA is the capital city of Ethiopia, holds about 527 square kilometers($km^2$) of area of the country. The population density is estimated to be near 5,165 individuals per $km^2$ and in the near future it is expected to grow to exceed 6.5 million residents. The annual growth rate of the city has been estimated in recent years to be 3.8%. Recent evidences show that there are 38 hospitals (two NGO, thirteen governmental, and twenty-three private hospital), 29 Health centers, 116 private not for profit and 357 private for profit clinics in AA, out of the 13government hospital, Tikur Anbesa Specialized Hospital(TASH), AaBET trauma center and ALERT generalized hospital will be the specific area of this study.(21,35)

TASH is a very large referral hospital established in 1972 become the only site for training medical Doctors at the time. Approximately 370,000- 400,000 patients attending a year but the exact number is not known. The hospital has 800 beds, with 169 specialists, 65 non-teaching doctors, and 986 nurses and 115 other health professionals dedicated to providing health care services. It is estimated that 80,000 patients are visited per year in Emergency Department. This study will be conducted in Adult Emergency Department which has more than 50 beds and staffed with 78 BSc and MSc nurses(36).

AaBET trauma center is a branch of St. Paulo's hospital which is organized a few years back around Gojam Brenda. It provides emergency service for 24 hours and staffed with senior surgeon medical doctors, BSC nurses. There are a total of 257 nurses among this 75 found at emergency department.(35)

ALERT is the continuation and expansion of the leprosy program hospital established by Dr. Thomas Lambie in 1922, which was later named the Princess Zänäbä-Wärq Hospital. A memorandum to found ALERT was signed at Dec. 11, 1965 by representatives of the Ministry of Health, Addis Ababa University. It was initially designed as, All Africa Leprosy Rehabilitation and Training Center (hence the acronym ALERT were used), later it expanded to include tuberculosis: All Africa Leprosy, Tuberculosis and Rehabilitation Training Centre. The Hospital currently has 240 beds, which includes dermatology, ophthalmology, and surgery departments with orthopedic workshop, and a rehabilitation unit. In addition, it also has a Trauma center which is one of the largest center in the city next to AaBET trauma center.(35)

## 4.2 Study Period

The present study was conducted from February 1 to March30, 2020

## 4.3 Study design

Institutional based descriptive cross sectional study design was used.

## 4.4 Population

### *4.4.1 Source Population*

- ❖ All nurses who were working in the ED of selected government hospitals with trauma center in Addis Ababa.

### *4.4.2 Study population*

- ❖ All nurses who fulfilled the inclusion criteria and working in emergency department of selected government hospitals with Trauma center in Addis Ababa.

## 4.5 Eligibility Criteria

### *4.5.1 Inclusion Criteria*

All nurses working in emergency department of the selected government hospitals with Trauma centers in Addis Ababa who were present at time of data collection and having service year > 6 months.

### *4.5.2 Exclusion Criteria*

- ➢ Nurses not working in emergency unit of selected hospitals in Addis Ababa.
- ➢ Nurses who had < 6 months of experience in the ED
- ➢ Nurses who were in practical attachment or Internship.

## 4.6 Sampling procedure and Sample Size Determination

### 4.6.1 Sampling Technique and procedure

Simple random sampling using Probability Proportional to Size (PPS) was employed. The specific study areas were selected from those government hospitals found in Addis Ababa with Trauma center. Accordingly, three hospitals were taken, namely TASH, AaBET and ALERT Hospitals. Samples were proportionally allocated based on the total number of population in each selected hospitals using probability proportional to size(PPS) sampling technique by using formula as shown below.

Finally study subjects from each proportionally allocated samples were selected using simple random sampling technique after obtaining a list of nurses who were present at the time of data collection periods (duty roster) from head nurses.

### 4.6.2 Sample size determination

Initial sample size was determined by using single population proportion formula based on the following assumptions: considering confidence interval(CI) 95% and margin of error(d) 0.05 and up to my searching ability, there is no previously done research in the area, this study was take **P** as 50%( 0.5) as representative samples of study.

$$\mathbf{n_i} = \frac{(Z\propto/2)^2\ (p)\times(1-p)}{d^2}$$

**Where: $\mathbf{n_i}$** is the initial sample size

- ***Zα/2*** = is standard score value for 95 % confidence level for two sides normal distribution = **1.96**
- **p =** is the proportion of respondents = **0.5**
- **d =** is margin of error = **0.05**

$$\mathbf{n_i} = \frac{(Z\propto/2)^2\ (p)\times(1-p)}{d^2}$$

$$\mathbf{n_i} = \frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2}$$

$$\mathbf{ni} = \underline{\mathbf{384}}$$

**Since** the total population from the three selected hospitals **(176) is < 10000**; I did adjustment using **correction formula** as follows:

$$n_f = \frac{ni}{1+\left\lceil\frac{ni}{N}\right\rceil}$$

$$n_f = \frac{384}{1+\left\lceil\frac{384}{176}\right\rceil}$$

$$n_f = \underline{120}$$

**Then,** We add **5% Non-response rate, The Final sample size($n_f$)will be <u>126</u>**

**Now** we have pre-determined total population of each hospital which is obtained from head nurses of the respective hospitals as shown in the Table 1.

**Then,** Samples were allocated proportionally by PPS techniques for each hospitals using the following formula:

- $nx = \frac{nf \times Nx}{N}$ **where:** $nx$ *is the sample size of selected* $x$ *hospital*
  - $Nx$ *is the total population of selected* $x$ *hospital*
  - $nf$ *is the final sample size*
  - $N$ *is the total study population*

**By applying this formula,** we can calculate the required sample size for each hospital, using the following assumptions:

- $na = \frac{nf \times Na}{N} = \frac{126 \times 43}{176} = 30.7 \sim 31$ ……Sample size of ALERT hospital
- $nab = \frac{nf \times Nab}{N} = \frac{126 \times 79}{176} = 56.4 \sim 56$ …..Sample size of AaBET hospital
- $nt = \frac{nf \times Nt}{N} = \frac{126 \times 54}{176} = 38.6 \sim 39$ ……Sample size of TASH

*Table 1: Allocation of samples for nurses working in selected government hospitals with Trauma centers in Addis Ababa, Ethiopia, 2020*

| **Hospitals** | **AaBET Hospital** | **ALERT Hospital** | **TASH** | **Total** |
|---|---|---|---|---|
| **No of Nurses** | 79 | 43 | 54 | 176 |
| **Samples** | 56 | 31 | 39 | 126 |

**Finally,** Study subjects were selected by simple random sampling technique using a list of name obtained from duty roster based on their proportional allocation for each hospital.

## 4.7 Study variable

### *4.7.1 Dependent variable*

Patients' clinical handover practice of ED nurses.

### *4.7.2. Independent variables*

**i. Socio demographic characteristics**

- ✓ Sex
- ✓ Age
- ✓ Educational status

**ii. Nurse related factor**

- ✓ Psychological precursors (Anxiety, time pressure/stress, fatigue)

- ✓ Cognitive capacity of nurses (communication skill, information understanding and processing ability)
- ✓ Focus of attention
- ✓ Level of interaction between nurses (Relationship)

**iii. Patient related factors**

- ✓ Patient or family participation during handover

**iv. Factors related to ED environment complexity**

- ✓ ED safety climate
- ✓ Overcrowding
- ✓ Triage flow
- ✓ Work load and staff number
- ✓ Distractions
- ✓ Intrusions

**v. Organizational factors**

- ✓ Availability of standard handovering tool
- ✓ Support policy or protocol for handover practice

## 4.8 Operational Definitions and Definition of Terms

### *4.8.1 Operational Definitions*

- ❖ ***Clinical Handover:*** The communication of patient care from one health care professional to another referred as "handover" "handoff" "shift report" "end-of-shift report" "change of shift report" "sign-out" "signoff" and "inter-shift report" For the purpose of this study, the term "handover will be used.
- ❖ **Good handover practice:** who scored above or equal to the mean score of practice questions.
- ❖ **Poor handover practice:** who scored below the mean score of practice questions.
- ❖ ***Nurse Related factors*:** includes Level of experience, Access to training related to handover, Psychological precursors (Anxiety, time pressure, fatigue), ccognitive capacity of nurses (communication skill, information understanding and processing ability ability) and level of interaction between nurses (Nurse behavior).
- ❖ ***Patient Related Factors:*** Includes due to ethical and moral considerations such as ethical dilemma, patient privacy, and Patient or family participation during handover.

- ***Organizational Factors*:** Includes availability of standard handovering tool, support policy or protocol for handover practice and infrastructures or resource availability for documentation of handover (electronic equipment).
- ***Emergency Department Environmental Factor*:** includes those due to the complexity nature of ED such as ED safety climate(overcrowding), work load, distractions and Intrusions.

### *4.8.2 Definition of Terms*

- **Time pressure/stress:** is a feeling that is transient in nature and occurs when an individual perceives that there is insufficient time to complete required tasks.(19)
- **Cognitive capacity:** defined as having sufficient mental space to be able to carry out cognitive work such as information processing and decision making.(19)
- **Interruptions:** defined as any noise or communication event during handover which is not initiated by handover participant shift their focus off handover communication. It includes both intrusions and distractions.
  - **Distractions:** Distractions are breaks in concentration triggered by competing activities or environmental stimuli that are not related to the task at hand including call bells, alarms from IV pumps and monitors, background noise or chatter and other.
  - **Intrusions:** defined as unexpected encounters initiated by another individual that disrupt the flow of activity and cause activity to halt temporarily including patient family colleagues and other.(19)
- **Anxiety:** an unpleasant emotional state that has adaptive or maladaptive consequences.
- **Structured handover:** That the minimum data set (information content) and conduct of handover be delivered in a structured format.

## 4.9 Data collection tools

A structured self-administered questionnaire was used to collect all relevant data from respondents which contextualized from different literatures. (4,19,30,31,34,37)

The data collection instrument was prepared in English because the participants were nurses. The questionnaires were pre-tested outside the study area to check whether the questions are simple, clear and easily understandable. Instruments consisted of the following items:

1. **The Demographic Data Sheet (DDS):** focused on personal characteristics, educational status, training access and work experience. Access to training are

assessed by previous participation on training related to emergency and critical care such as BLS, ATLS, ETAT and ICU care. Work experience was evaluated by simply using the number of months each nurses had worked in ED, where more months reflected greater experience.

2. **Practice and mode of clinical handover:** consisted 18 items characterized by multiple choice option and likert scale. Mode of handover is determined by their choice to the options given for the questions. Practice section was evaluated by asking subjects to respond for each items by rating on 1-5 likert scale,1implies strongly disagree to 5 indicates strongly agree. Those who scored above or equal to the mean score of practice questions and who scored below the mean score of practice questions were interpreted as Good and Poor patient clinical handover practice respectively.
3. **Implication of clinical handover on nursing care:** consists of 9 items which divided in to two (2) sub sections as positive and negative aspect. Subjects were asked to respond to each items using 1-5 rating scale. And finally to assess overall implications of nurses-patients' clinical handover practice median and above median value were collapsed into binomial variables of "Positive aspect" and median and below median were collapsed in to "Negative aspect".
4. **Factors affecting patient clinical handover practice:** 12 items that have multiple response set on liker rating scale from 1-5 were used to identify factors affecting clinical handover. Then numerical scores were converted into percentages. Mean score of above or equal to the mean value were collapsed into factor "High" and those responses scored below mean were labeled as "Low".

## 4.10 Data collection procedures

The principal investigator was responsible for the overall management of the study such as, preparation of final questionnaire, identification, training and assignment of data collectors and supervisors were undertaken. The Data were collected by three (3) trained BSC nurses who were working in the selected study areas and supervisors were head nurses of ED in the selected hospitals. The data collectors and supervisors were assigned by principal investigator. Training was given related to the purpose of the study, confidentiality and how to approach the study participants to ensure that all the data collectors had the same information about the study instrument and follow the same survey administration procedures.

## 4.11 Validity and Reliability (Data quality assurance)

This involves careful modification of questionnaires, sample selection and data collection. The tools used to ensure validity and reliability in this study were including scientifically selecting samples, constructing instruments (questionnaire) and pretesting. Instruments for this study was developed by contextualizing different questioner of literatures with great care and pre-testing were made on 10% of the actual samples one week prior to data collection at Zewditu Memorial hospital and St. Peter hospital. Reliability test was done determined by Cronbach alpha value of sections include in the instrument. Reliability statistics were analyzed by exporting different sections of the questionnaire into SPSS. Validity of the tool was assured by three experts in the area of field (1 expert from school of nursing and 2 experts from department of emergency). Thereby questionnaire was checked for clarity, comprehensiveness and validity before actual data collection was started.

*Table 2 Reliability statistics for items of questionnaire to assess nurses working ED of selected government hospitals in AA, Ethiopia, 2020.*

| | Cronbach's Alpha | No. of Items |
|---|---|---|
| *Organization factors questions Reliability Statistics* | .759 | 12 |
| *Practice questions Reliability Statistics* | .726 | 10 |
| *Implications of clinical handover questions reliability test* | .500 | 9 |
| *Nurse related factors questions reliability test* | .851 | 21 |
| *Environmental related factors reliability test* | 0.769 | 13 |

## 4.12 Data processing and Analysis

The collected data was entered into Epi-info version 7.2.2.1and checked for clarity, incompleteness and missing value. Then exported to IBM SPSS software program running version 25.0 for data analysis. Percentage and frequency of Socio-demographic profile, mode and implications of clinical handover are presented using descriptive statistics. Bivariate Logistic regression analysis was used to check for statistically significant association between primary outcome variable and covariates. Variables found to be significant at bivariate level, ($P < 0.05$), were selected and included in to multiple logistic regression models. Then multiple logistic regression analyses were used to calculate Odds ratio (crude and adjusted) with 95% confidence interval to estimate association and control possible confounding variables. Finally, the result was summarized and presented in text, tables and graphs. In addition, some of the results were compared with results of other studies available.

## 4.13 Ethical consideration

Ethical clearance and approval was obtained from Department of Emergency medicine and critical care, college of health science school of medicine AAU. Then ethical clearance and approval letter was given to TASH, AaBET and ALERT hospitals and permission letter was obtained delivered to Emergency unit of each hospitals in order to conduct the study. A letter of consent that outlining the main aim and details about the study was prepared in conjunction with the questionnaire. In addition to this, prior to administering the questionnaires, oral informed consent was obtained from the study participants.to assure anonymity and confidentiality the name of participants was replaced by codes.

The study was explained fully (i.e. aim of the study; significance of the study) to each participant before joining the study and if the participants agree to participate then informed consent was given to sign. For the purpose of confidentiality, code number are used instead of names of the respondents. The study participants were informed about their rights to refuse to join, answer any question or withdraw at any particular point during data collection process without being frustrated.

## 4.14 Dissemination of the result

The findings of the study will be submitted and presented to Addis Ababa University department of emergency medicine as partial fulfillment of master's degree in emergency medicine and critical care nursing and those hospitals that's included in the study. The results are expected to present in different seminars, meetings and workshops as well as further effort will make to publish the findings on national and international peer reviewed journal. Hard and soft copies will be available in the library of AAU, for graduate students as well as for other researchers and readers.

# CHAPTER FIVE: RESULT

## 5.1 Socio-demographic characteristics of respondents

The overall response rate of the study was 96%, i.e. of the 126 study subjects 120 respondents completed and returned questionnaire. Of the total 120 participants,70(58.3%)of respondents were male and the rest were females. Majority 86(71.6%) of respondents were in the age group of 25-29 years. The age of participants was ranged from 20 to 32 years with *a mean of 28.1 and SD of 2.17.*

Regarding educational status and service experience of participants in the ED, more than three forth 104(86.8%) of respondents were BSc. Degree and the rest of respondents each 8(6.7%) were Diploma and MSc. Degree. Concerning experience of participants in the emergency room nearly half 59(49.2%) of the respondents were between 6month-1year. Respecting participant's access to training related to any emergency care more than half 71(59.2%) of respondents did not take any training and majority of respondents were taking Basic life support(BLS) 23(18.3%) followed by Advanced Trauma Life Support(ATLS) and ETAT which is 14(11.7%) and 12(10%) respectively.

*Table 3 Socioeconomic status of nurses in selected government hospitals with trauma centers in AA, Ethiopia 2020(n=120)*

| | | Frequency | Percent |
|---|---|---|---|
| Sex | Male | 70 | 58.3 |
| | Female | 50 | 41.7 |
| | ***Total*** | ***120*** | ***100.0*** |
| Age | 20-24 | 5 | 4.2 |
| | 25-29 | 86 | 71.7 |
| | 30-34 | 29 | 24.2 |
| | ***Total*** | ***120*** | ***100.0*** |
| Educational status | Diploma | 8 | 6.7 |
| | BSc. Degree | 104 | 86.7 |
| | MSc. Degree | 8 | 6.7 |
| | ***Total*** | ***120*** | ***100.0*** |
| Experience in ED | 6month- 1year | 58 | 48.3 |
| | 1year- 2years | 40 | 33.3 |
| | >2years | 22 | 18.4 |
| | ***Total*** | ***120*** | ***100.0*** |
| Access to training | Yes | 49 | 40.8 |
| | No | 71 | 59.2 |
| | ***Total*** | ***120*** | ***100.0*** |

## 5.2 Practice and Mode of patient clinical handover

Of the total 120 participants more than half 71(59.2%) of nurses performed patient clinical handover properly in the ED unit *(figure 2).* Concerning the use of standard tool to guide handover, nearly three forth 71(59.2%) of them said their handover was not supported by standard tool, the rest of respondents were used standard guiding tool with most applicable tool was checklist 37(30.8%) followed by others 12(10%) who used guiding tool such as reporting log book. None of respondents were ever used mnemonic tool.

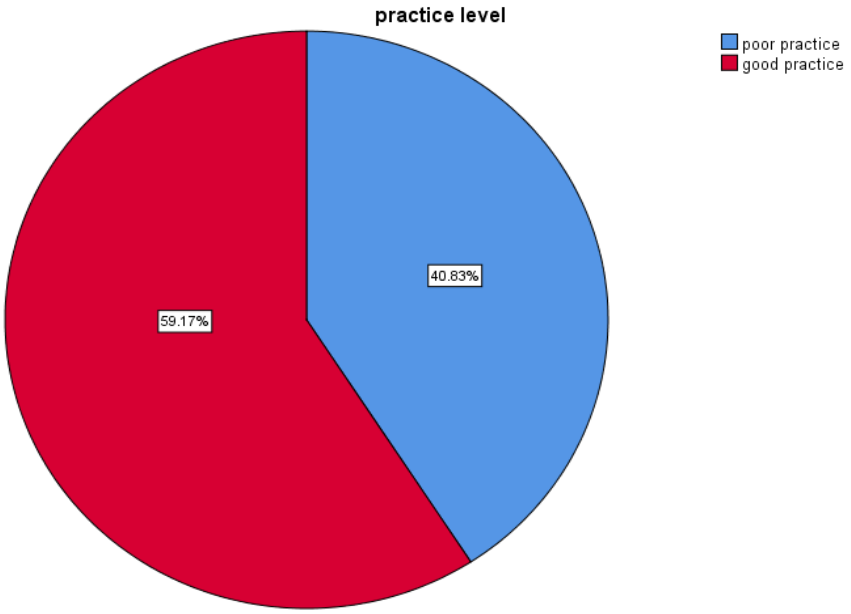



*Figure 2: Practice of clinical handover of patients among nurses in the selected government hospitals with trauma centers in AA, Ethiopia, 2020.*

Regarding the mode of clinical handover practice majority 51(42.5%) were used verbal handover through face to face. With regard to any material or technology during handover, half 61(50.8%) did not use any technology whereas the remaining 59(49.2%) were used technology during performing clinical handover. *(fig.3)*

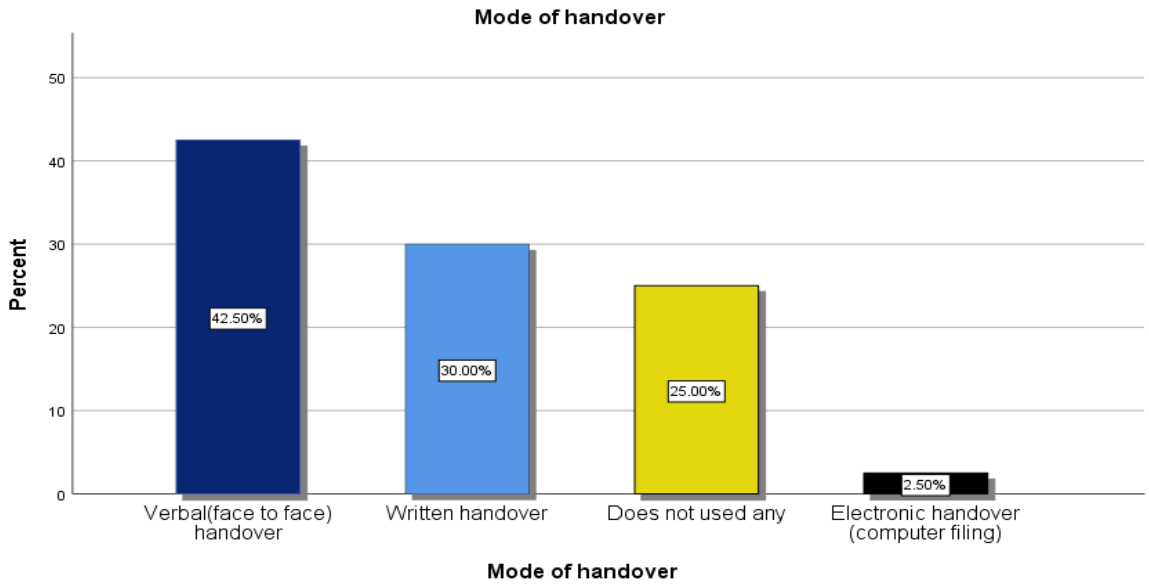



*Figure 3: Mode of clinical handover used during communication among nurses in selected government hospitals with trauma centers in AA, Ethiopia, 2020.*

Related to the type of technology or material used in handover, bed-side documentation was used most commonly 43(53.8%) whereas only few 3(2.5%) respondents were used electronic recording (computer filing). Among them 48(40%) were said application of technology facilitates communication during handover and the rest 31(31.7%) were omit the use.

With respect to implication of clinical handover practice on nursing interventions, finding showed that 106(88.3%) of respondents said performing clinical handover of patients has positive implication. The majority of clinical handover practice 52(43.3%) was performed at bedside. Thirty-six (30%), 28(23.3%) and 4(3.3%) of clinical handover practice were performed at the ED corridor, the nurse conference room or station and the head nurse office respectively.

## 5.3 Factors affecting practice of clinical handover

Finding from analysis of nurse and patient related factors showed that, majority of respondents had good focus of attention and cognitive capacity 79.2% and 76.7% respectively. Regarding psychological precursors, more than half of respondents had low level of anxiety (53.3%), fatigue (51.7%) and poor relationship level (78.3%), by contrast 61(50. 8%) had high time stress. In addition, most 98(81.7%) of the respondents were involve patient or their family in communication during clinical handover and the most common factor that have impact on patient involvement were Moral or ethical dilemma54(45%), followed by patient privacy and patient refusal to discuss 34(28.3%) and 26(21.7%) respectively. *(table 3)*

*Table 4: Nurse and patient related factors affecting clinical handover practice among nurses in selected government hospitals with trauma centers in AA, Ethiopia, 2020.(n=120)*

| Variables | Measurement | Frequency | Percent |
|---|---|---|---|
| Focus of attention | Inadequate focus of attention | 25 | 20.8% |
| | Adequate focus of attention | 95 | 79.2% |
| | Total | 120 | 100.0 |
| Cognitive capacity | Inadequate cognitive capacity | 28 | 23.3% |
| | Adequate capacity | 92 | 76.7% |
| | Total | 120 | 100.0 |
| Anxiety level | Low anxiety | 64 | 53.3% |
| | High anxiety | 56 | 46.7% |
| | Total | 120 | 100.0 |
| Time stress level | Low time stress | 59 | 49.2% |
| | High time stress | 61 | 50.8% |
| | Total | 120 | 100.0 |
| Fatigue level | Low fatigue | 62 | 51.7% |
| | High fatigue | 58 | 48.3% |
| | Total | 120 | 100.0 |
| Relationship / interaction level | Good | 26 | 21.7% |
| | Poor | 94 | 78.3% |
| | Total | 120 | 100.0 |
| Patient/ family involvement | No | 22 | 18.3 |
| | Yes | 98 | 81.7 |
| | Total | 120 | 100.0 |

Regarding organizational factors related to presence of policy/standard protocol and management support for practicing clinical handover of patients with in the hospitals, less than half 53(44.5%) of respondents were answered yes whereas the majority 67(55.5%) of respondents were said there is no any policy or standard protocol for clinical handover and almost all 96(80%) were reported the presence of support to improve handovering practice from higher management. Concerning factors related to the complexity of ED environment, results showed that more than half 66(55%) of respondents were said good safety climate for handover, and the rest were poor safety climate. Of the total study participants nearly three forth 94(78.3%) and 78(65%) were said high level of triage flow and overcrowding.

Participants of this study were also asked to rate the level of workload and number of nurse staff available, almost all 106(88.3%) were said high level of workload and inadequate number of staff available to manage the workload problems and the remaining were rate as low and adequate.

Moreover, Significant number of respondents were experience intrusion and distraction which is 90(75%) and 94(78.3%) respectively. Seventy-one (54%) were said intrusions had negative impact on handover, with the major source were patient and family 65(54.1%) followed by staff and other sources 19.2% and 2.5% respectively. By contrast alarm noises were the most common source of distraction which is 43(35.8%) and the least24(20%) were said other un specified sources next to call bells.

*Table 5:Organizational and environmental factors affecting clinical handover practice in selected governmental hospitals with trauma centers in AA, Ethiopia, 2020.(n=120)*

| | | Frequency | Percent |
|---|---|---|---|
| Safety climate | Poor | 54 | 45.0 |
| | Good | 66 | 55.0 |
| | Total | 100.0 | 120 |
| Triage flow | Low | 26 | 21.7 |
| | High | 94 | 78.3 |
| | Total | 120 | 100.0 |
| Work load and available number of staff | High & Inadequate | 106 | 88.3 |
| | Low & Adequate | 14 | 11.7 |
| | Total | 120 | 100.0 |
| Overall level of over crowding | Low | 42 | 35.0 |
| | High | 78 | 65.0 |
| | Total | 120 | 100.0 |
| Intrusion | Yes | 90 | 75.0 |
| | No | 30 | 25.0 |
| | Total | 120 | 100.0 |
| Distraction | Yes | 94 | 78.3 |
| | No | 26 | 21.7 |
| | Total | 120 | 100.0 |
| Impact of intrusion | Negative | 71 | 59.2 |
| | Positive | 20 | 16.7 |
| | Total | 91 | 75.8 |

## 5.4 Factors associated with nurses' patient clinical handover practice

Bivariate and multivariate logistic regression was performed to check for the presence of statistically significant association between those factors that had impact on practice of clinical handover such as, sociodemographic characteristics and other related factors (nurse related, patient related, organizational related and environmental or ED related). Factors that has p-value < 0.05 at bivariate logistic regression analysis and to control confounding factor those which was significant at bivariate level were entered together to multivariable logistic regression.

Factors such as availability of technology or material for handover, use of technology facilitate communication during handover, safety climate, patient or family involvement in handover and relationship level of nurses with others have statistically significant association with the patient clinical handover practice at bivariate logistic analysis.

It showed that the odds of study participants who have access to technology or material during handover were more likely to practice than those who have no access to technology (*AOR: 5.937, 95%CI (1.099,32.063))* i.e. participants who have access to technology were practiced handover 5.937 times than who have no access. However, participants reported use of technology facilitates communication during handover were not associated with good practice of handover *(AOR:0.409, 95%CI (0.080,2.106))*. This study showed that positive safety climate in the emergency working environment makes respondents to practice handover 2.942 times more than negative safety climate. This implies that as nurse's had more positive safety climate, clinical handover was better practiced (*AOR: 2.942, 95%CI (1.020, 8.485))*. In addition, there were also statistically significant association between nurses relationship level and practice where participants who had good relationship level or interaction with other nurses were 2.419times more practice handover than who have not good relationship with other nurses.*(AOR: 2.419, 95%CI (1.0854,6.251))* . This study also identified the level of practice was increased as study participants were involve patient or family during handover, i.e. respondents who involved patient or family during handover were practiced 11.878 times more than who did not participate*( AOR: 11.878, 95%CI (1.370, 101.390)).*

*Table 6: Regression analysis of variables associated with clinical handover practice among nurses in emergency unit of selected government hospitals with trauma center in AA, Ethiopia( n=120)*

| ***Variables*** | ***Practice Level*** | | ***P-value*** | ***AOR(95%CI)*** |
|---|---|---|---|---|
| | ***Yes N(%)*** | ***No N(%)*** | | |
| *Access to technology* | *59(49.2)* | *61(50.8)* | *0.009* | *5.937(1.099, 32.063)* |
| *Technology facilitate handover* | *48(40.0)* | *72(60.0)* | *0.027* | *0.409(0.080, 2.106)* |
| *Patient or family involvement* | *98(81.7)* | *22(18.3)* | *0.008* | *11.878(1.370, 101.390)* |
| *Relationship level* | *74(61.7)* | *46(38.3)* | *0.019* | *2.419(1.0854, 6.456)* |
| *Safety climate* | *54(45.0)* | *66(55.0)* | *0.003* | *2.942(1.020, 8.485)* |

# CHAPTER SIX: DISCUSSION

This study was aimed to analyze the level of practice and associated factors that may influence clinical handover of patients among nurses working in the ED of three governmental hospitals with trauma centers in Addis Ababa, Ethiopia, 2020.

## Sociodemographic characteristics of respondents

Finding of sociodemographic profile showed that more than half of respondents 70(58.3%) were male and the rest 50(41.7%)were female, where majority 86(71.6%) found in the age group of 25-29 years.

This finding is inconsistent with two other studies, one is done in USA to assess nursing handover process in the emergency department which shows that almost three quarters (74.80%) of the sample were females and males accounted for 25.20% The majority (57.7%) of respondents were aged between 21 and 40 years, with a minimal number (14%) greater than 50 years of age (37) and the other, with study done in the University of Calabar Teaching Hospital, Calabar, Nigeria where majority of respondents were female(94.1%) and most of them (43.2%) found in the age group of 25-31yearsand 30.58% within 32-38 years(32). This study showed that most of nurses were fall under younger population group (20-29 years). The reason for male gender were predominate is maybe the working environment is not conducive as well as high workload and reason for high proportion of younger population is that, mostly hospitals hire directly graduate nurses from university allocated from Federal Minister of Health.

Regarding educational status and service experience of participants in the ED at the three hospitals, most 104(86.8%) of respondents were BSc. Degree, which is slightly lower than that of study done in Nigeria where 94% of respondents were BSc. Degree holder and the remaining 6% were MSc. Degree and other(32). This variation is may be due to hospitals in our country don not provide an opportunity to update educational status of staff.

Concerning participants training status more than half 71(59.2%) of respondents did not take any training related to emergency care whereas the rest 49(40.8%) took. Majority of them took Basic life support(BLS) 23(19.2%) followed by Advanced Trauma Life Support(ATLS) and ACLS which is 14(11.7%) and 12(10%) respectively. This finding is inconsistent with the study done in ED of TASH, AaBET and ALERT hospitals which revealed, BLS training had given for 34 (25.8%), ACLS 24 (18.2%) and ATLS 30 (22.7%).(35) The reason for this difference is because of lack access to opportunity to involve staff in training.

## Practice and mode of clinical handover

This study showed that the overall level of clinical handover practice is 59.17%, which is almost similar to the study done in Australia that revealed 55% (18) but significantly lower than A descriptive crossectional survey in Turkey that investigate the approaches and attitudes of nurses on clinical handover showed that, majority of the nurses (96.0%) practiced handover in their department.(6) the variation is may be due to data accuracy given by study participants or may be difference in study participants. Concerning the mode of clinical handover, out of all study participant's majority (59.2%)of them did not guided by standard handovering tool and the remaining only 30.8% were used a standard tool, this is slightly different with study done in Canada. (19). Most respondents used checklist (30.8%) and 10% were used other unspecified tool such as handover recording book whereas None of the respondents were ever used mnemonic tool devices (SBAR, ISOBAR…). This finding is slightly higher than results of study done in India where 25% of respondents were used checklist. Standard mnemonic tools are used rarely and similar with that of study done in Canada(19,31). This may be associated with lack of training particularly related to clinical handover of patients and other factors related to organizational as well as nurses such as negligence and resistance.

Regarding participant's mode of clinical handover majority 51(42.5%) were used verbal handover followed by written handover 36(30%) and only few 3(2.5%) of respondents were used electronic handover by recording in computer and none of respondents used audio(taped)recorded handover which is equivalent with the result of study done in Nigeria where no participants were used audio recorded handover(32). But inconsistent with study done in India at Indiana University Medical center revealed that, two types of end-of-shift reports were used Taped (Recorded audio) and written handover in the Acute Care unit 35% of respondents used a written end-of-shift report and 65% of respondents used audio(taped) report. In the same study Finding from observational study showed that 45% of participants mentioned the value of shift notes (written handover) during end of shift report, 30% preferred having a face-to-face conversation (verbal handover) and another study in south Africa where most respondents (20/20)100% were preferred to use verbal handover. (31,38)

This study also shows that only 49.2% of respondents were used technology or any materials, of them bed side documentation on handover recording book is the most commonly used materials (53.8%), only 10.8% used computers and none (0) of them used handheld application. This finding is better than a study done in Canada Ontario where 72.7% did not use technology for handover(19).The main reason for few number of respondents used electronic medical

recording for handover is may be related to lack access or availability of functional computers in the unit and inadequate knowledge how to manipulate the data on the computer.

## Factors affecting clinical handover practice

For the purpose of this study factors that affect clinical handover practice of patients are categorized in to four, sociodemographic, nurse and patient related factors, organizational factors and environmental factors due to complexity of ED.

Factors related to nurse and patient, respondents were had adequate focus of attention (79.2%), 76.2% good cognitive capacity, low anxiety level (53.4%), high time stress level (50.8%), low fatigue (51.7%), poor relationship level (78.1%) and 81.8% were involve patient/family during clinical handover. This study is almost consistent with a study in Canada except for fatigue level, where 71.8% has sufficient cognitive capacity and positive relationships with others (76.7%), low time pressure (79.7%) and time stress (75.8%). In addition, majority of respondents feels moderate to high fatigue (82.8%) and low anxiety level (76.2%) and 89% didn't include patient or family during handover.(19) This variation is may be due to high workload and study area difference.

Results from analysis of variables related to the complexity of ED i.e. Environmental factors showed that 66(55%) of respondents had positive safety climate, high level of triage flow 94(78.3%) and high level of overcrowding 78(65%), 106(88.3%) were said high level of workload and low staff available, high intrusions 90(75%) and high distractions 94(78.3%). This finding is similar with a study in Canada where intrusion (89.4%), distractions (96.0%), triage flow (74.0%), safety climate (73.6%) and inadequate nursing staff (63.0%) has negative effect on handover.(19) This may be due to lack of routine monitoring and evaluation and lack of concern from hospital administrators as well as shortage of budget allocated for this specific task.

Results from binary logistic regression model, access to technology or material, use of any technology facilitates communication in handover, relationship level of nurses with others and patient or family involvement in handover had statistically significant association with the patient clinical handover practice. The model showed that the odds of study participants who have access to technology or material during handover were higher than those who have no access to technology (AOR: 5.937, 95%CI (1.099,32.063)) i.e. participants who have access to technology was practiced handover 5.937times than who have no access. This is inconsistent with study in Canada Ontario (AOR: 0.636, 95%CI (-.297, .182)). (19) This study showed that

positive safety climate in the emergency environment makes respondents to practice handover 2.942times more than negative safety climate(AOR: 2.942, 95%CI (1.020, 8.485)).This study also revealed statistically significant association between nurses relationship level and practice where respondents who have good level of relationship with others or interaction level between nurse were 2.74times more practiced handover than those who have poor interaction or relationship level with colleagues (AOR: 2.419, 95%CI (1.0854,6.251)). Moreover, this study also identified the level of practice was increased as study participants were involve patient or family during handover, i.e. respondents who involved patient or family during handover were practiced 11.878 times more than who did not participate (AOR: 11.878, 95%CI (1.370, 101.390)). This finding is inconsistent with study done Ontario, Canada(19)

## 6.1: Strength of study

As shown above and mentioned by different literatures understanding level and factors of patient clinical handover practices are important to fill gap of communication failure and strengthen effective nurse-patient communication. The result of current study reflects the usefulness of promoting nurse's patient handovering practice and factors to improve communication in the studied hospitals. As nurses become practice clinical handover of patients condition effectively we can gain good quality patient care and better patient outcome by preventing miscommunication mishaps in the hospital.

This study is the first study that attempted to assess level of practice and associated factors in emergency department of TASH, AaBET and ALERT hospitals which is the only known trauma centers under government hospitals in Addition Ababa, it can be used as base line information for future health plan in the three studied hospitals and as a source of reference data to perform further study in the future.

## 6.2: Limitations of study

The findings in this report were subjected to respondents' discussion with their colleagues to answer the question that might result in social desirability bias. This study is only involved nurse professionals other who have different health profession might under estimate the result.

In addition, lack of different literatures in the area of field to be used as reference, hinders for further discussion and comparison of the current research findings. Other limitation for this study is most hospital administrative were not simply willing to give the letter of approval to collect data. This makes the data collection period too short.

# CHAPTER EIGHT: CONCLUSION

Clinical handover is an essential and key component of routine management and care of patients. large proportion of hospital adverse events are due to communication failure, since handover is one of the main site of communication to the patient it is crucial to deliver quality health service and patient care.

The present study finding show that the overall level of clinical handover practice is 59.2%. From the three hospitals AaBET and ALERT hospitals has good practice level as compared to TASH. Participants of this study had poor access to training, inadequate access to technology, standard protocol or policy and management support as well as patient or family involved during handover have invaluable impact on the nurses practice of patient clinical handover.

This study also delights other influential factors like nurses focus of attention, anxiety level, positive safety climate, level of overcrowding and presence of distractions as the major issues. Hence, enhancing the capacity of nurses by giving opportunity to training and updating their educational status will help to improve clinical handover practice of patients effectively.

Furthermore, institutional policy or standard protocol and higher management support to patient handover has also a key role in maintaining practice of clinical handover. Importantly the nurses level of anxiety, relationship among others and patient or family participation in clinical handover has also plays remarkable value. The trend of practice among nurse's towards reporting adverse events and having adequate information about the proper way of addressing such issue i.e. creating positive safety climate has effect on handover of practice, besides these factors such as the level of overcrowding in the emergency unit and the presence of distractions during handover have the potential to influence the practice of clinical handover in the emergency department.

# CHAPTER NINE: RECOMMENDATIONS

**For hospital management and administrative**

- Hospitals should have to established a positive safety climate for handover practice concerning patient safety issues.
- The concerned hospital stakeholders should provide training related to emergency care, documentation system and information technology.
- Hospital administrative should provide access to technology and standard structured handover guiding tool that facilitates handover process for emergency department.
- They should have to develop policy or a standard protocol regarding patient clinical handover which is specifically designed to emergency unit
- The administrative also enforces the designing of emergency unit as suitable for delivering adequate patient care such as, adequate space that is free from overcrowding and reducing distractions.

**For Nurse professionals**

- Nurses Should have to create good relationship or interaction with other collogues.
- Nurses should improve their skill and awareness through available on hand methods (reading books, web browsing…)
- They should have to develop policy or a standard protocol regarding patient clinical handover which is specifically designed to emergency unit.

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# ANNEX: QUESTIONNAIRE

## INFORMATION SHEET

***Participant Code_____***

***Date: DD/MM/YY____/_____/_____.***

***Starting Time: _____LT***.

**Title:** Assessment of factors affecting Nurses' clinical handover practice of patients in selected government hospitals with Trauma Centers in Addis Ababa, Ethiopia 2020.

**Principal Investigator: Mr. Abel Girma**

**Sponsor:** Addis Ababa University College of Health Science Department of Emergency Medicine.

***Dear Colleague***

My name is Abel Girma and I am currently registered as postgraduate student at the university of Addis Ababa college of health science department of emergency medicine for the Masters of science in Emergency Medicine and Critical Care Nursing (MSc. EMCCN).

This research is being conducted as part of a MSc. Dissertation at University of Addis Ababa, which is being supervised by Mr. Abel Girma and You are invited to take part in a research study looking at factors affecting patients' clinical handover practice of nurses (also known as Shift Report) in Emergency Department. Please read the explanation below regarding the study, its risks and benefits before you decide if you would like to take part. You should take as much time as you need to make your decision. You should ask the data collectors to explain anything that you do not understand and make sure that all of your questions have been answered before signing this consent form. Before you make your decision, feel free to talk about this study with anyone you wish.

**Background and Purpose**

The overall Purpose of this study is to assess factors that affect patient handovering practice of nurses in the Emergency Department of selected government hospitals with trauma center in Addis Ababa. Recent evidence suggests that little is known about the factors that influence practice of nurse handover. By identifying factors that contribute to adequate patient handover

practice, we will be able to recommend appropriate information to develop evidence based interventions to improve clinical handover.

If you have worked in the Emergency Department for duration of > 6months and involved in direct patient care, you are invited to participate in this study. If you agree to participate in this study, you are asked to complete and return the survey questionnaire. I estimate that this will take approximately 30 minutes.

Participation in this study is voluntary, your decision to participate, or not to participate, or to later withdraw participation may be done without explanation and without any consequences to your employment. All survey information will be kept confidential and anonymous. Only a participant code number will be used to identify you. Your identity will not be known, as your name will not appear on the survey. The information you provide will maintain privacy by collecting all survey questionnaires in appropriate and safe place where only the research members can access.

There are no known risks involved in participating in this study. If you experience distress or discomfort while completing this survey, you can suspend or end your participation in the study without providing a reason. You may also choose to return an incomplete survey if there are questions that you do not wish to answer.

I appreciate you will not derive any benefit from participation in this study. The information that you provide, however, will assist in identifying factors that affect Nurses' clinical handover practice.

**Your right as participant**

This research has been reviewed and approved by the Ethical Clearance Committee (ECC) of the department of Emergency medicine and critical care college of health science of Addis Ababa University. ECC is a committee that reviews research studies in order to help protect participants. If you have any concerns or questions about your rights as a research participant in this study, please contact the Office of Research Ethics at university Addis Ababa College of Health science at: _____ or email address: _____

**Thank you for your time.** In case of queries or any other information regarding the study, please contact me at the Department of Emergency Medicine or via *my personal cell phone number**: +251926072201** and Email address**: abitasol36@gmail.com***

## *CONSENT SHEET*

***I understand that by returning a completed survey, I have consented to being included in the above mentioned study and any questions I have were addressed to my satisfaction. I understand that my participation is voluntary and that I may withdraw at any time without consequences. I understand that I will not benefit from my involvement in the I voluntarily consent to participate in this study. I have read the contents in this form. My questions have been answered. I agree to participate in this study.***

***Signature of participant _____***

***Signature of research assistant _____***

***Date of signed consent _____***

**SECTION A: SOCIO DEMOGRAPHIC AND INSTITUTIONAL CHARACTERISTIC**

1. Sex 1) Male 2**)** Female
2. Age: _____ Years.
3. Educational status
    1) Diploma Nurse
    2) BSc. Degree nurse
    3) MSc. Nurse.
4. Year of experience in the emergency department _____
5. Did you take any training related to any emergency nursing?
    1). Yes 2). No
6. **If yes, please specify the type of training _____**

**SECTION B: MODE OF HANDOVER EXPERIENCE**

- *NB: Handover can take place using a variety of modes of communication (e.g., tape recorded, read, written or verbally face-to-face).*

1. What type of communication mode did you use during your last handover?
    1) Verbal handover (face to face handover)
    2) Written handover
    3) Tape recorded(audio) handover
    4) Electronic handover (computer filing system)
2. Did you use any technology(Instrument) when you undertake handover?
    1). Yes 2). No
3. If yes, what type of technology were used in your last time received handover?
    1) Electronic medical records (computer system)
    2) Handheld applications
    3) Bed side documentation
    4) Other please specify_____
4. Did the Technology available in your Emergency Department made the communication during clinical handover easier?
    1.Yes 2. No
5. Was the last your clinical handover that performed guided by a handover tool?
    1) Yes 2) No
6. If handover was guided by a tool, what type of tool was used?
    1) Checklist
    2) Mnemonic device such as SBAR, ISHARED, IPASSTHEBATON
    3) Other. Please specify
7. Is there any policy or protocol that supports handovering practice in your ED?
    1) Yes
    2) No
8. Did the hospital management support you to improve clinical handover practice in your ED?
    1) Yes
    2) No
9. Where did you undertake last received handover?
    1) Bed side
    2) ED corridor
    3) Nurse conference room(station)
    4) Nurse head nurse office

5) Others, please specify

10. During the last clinical handover that you received, was the patient and / or family included in the communication process?

1)Yes 2) No

11. From the following patient related factors which situations hinders practice of shift handover in your working area?

1) Patient privacy
2) Moral considerations (ethical dilemma)
3) Patient refuse to discuss
4) Others please specify

**SECTION C: Practice of nurses' clinical handover of patients in the ED**

Table 7: Practice of clinical handover at the selected government hospitals in Addis Ababa, Ethiopia, 2020

| **Practice of Handover** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| a. The handover followed a logical structure | | | | | |
| b. The handover over continuously used available documentation. | | | | | |
| c. Not enough time was allowed for the handover | | | | | |
| d. All relevant information was selected and communicated. | | | | | |
| e. Priorities for further treatment were addressed. | | | | | |
| f. The person handing over the patient communicated assessment of the patient clearly. | | | | | |
| g. Possible risks and complications were discussed | | | | | |

**SECTION D: IMPLICATION OF CLINICAL HANDOVER ON NURSING CARE**

*Table 8: Nursing care implications of clinical handover at the selected government hospitals in Addis Ababa, Ethiopia, 2020*

**SECTION E: FACTORS INFLUENCING SHIFT HANDOVER PRACTICE**

| **Items** | **Score** | | | | |
|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** |
| **a.** Gives opportunity to get and discuss patient information in a simplified and timely manner | | | | | |
| **b.** Gives opportunity to discuss on workload problems | | | | | |
| **c.** Simplifies the follow-up of patient data and problems faced during patient care | | | | | |
| **d.** Prevents patient care delay and medication error | | | | | |
| **e.** Increases communication between nurses and other health care professionals | | | | | |
| **f.** Clinical handover takes too much time | | | | | |
| **g.** It increases workload | | | | | |
| **h.** Do not contribute to nursing intervention | | | | | |
| **i.** It disturbs the patients comfort | | | | | |

*Table 9*: Factors that affect Nurses' Patient clinical handover practice at the selected government hospitals in Addis Ababa, Ethiopia, 2020

| Items | Score | | | | |
|---|---|---|---|---|---|
| **Please consider the following information when responding to the next question: Please indicate your level of agreement with the following statement** | | | | | |
| The last time that I received handover I felt like I had enough cognitive capacity to receive and process information | **1** | **2** | **3** | **4** | **5** |
| The last time I received handover, I was able to focus my attention on the information that I was receiving | **1** | **2** | **3** | **4** | **5** |
| **When responding to the following questions, please think back to the last handover that you received.** | | | | | |
| **1)** I have felt fidgety or nervous as a result of my job. | **1** | **2** | **3** | **4** | **5** |
| **2)** My job gets to me more than it should. | | | | | |
| **3)** There are lots of times when my job drives me right up the wall. | | | | | |
| **4)** Sometimes when I think about my job I get a tight feeling in my chest. | | | | | |
| **5)** I feel not guilty when I take time off from my job. | | | | | |
| **When responding to the following questions, please think back to the last handover that you received.** | | | | | |
| **1)** Working here makes it hard to spend enough time with my family. | **1** | **2** | **3** | **4** | **5** |
| **2)** I spend so much time at work | | | | | |
| **3)** Working here leaves little time for other activities. | | | | | |
| **4)** I have too much work and too little time to do it in. | | | | | |
| **5)** I sometimes dread telephone ringing at home because it may be job related. | | | | | |
| **6)** I feel like I never have a day off. | | | | | |
| **8)** many people at my level in the company get burned out by job demands. | | | | | |
| **When responding to the following questions, please think back to the last time that you do handover.** | | | | | |
| **1)** After a typical work period I have little energy left. | **1** | **2** | **3** | **4** | **5** |
| **2)** I usually feel exhausted when I get home from work. | | | | | |
| **3)** My work drains my energy completely every day. | | | | | |
| **4)** I have lots of energy to give to my family | | | | | |
| **5)** I have plenty of energy left for my hobbies and other activities after work | | | | | |
| **When responding to the following questions, please think back to the last handover that you received.** | | | | | |
| **1)** I felt positive about this handover. | **1** | **2** | **3** | **4** | **5** |
| **2)** I felt comfortable to speak up if I perceived a problem during this handover. | | | | | |
| **3)** I felt a positive connection with the other nurse during this handover. | | | | | |
| **1)** I would feel safe being treated here as a patient. | **1** | **2** | **3** | **4** | **5** |
| **2)** I am encouraged by my colleagues to report any patient safety concerns | | | | | |
| **3)** The culture in this ED makes it easy to learn from errors of others. | | | | | |
| **4)** I receive appropriate feedback about my performance. | | | | | |
| **5)** Medical errors are handled appropriately here. | | | | | |
| **6)** I know the proper way to direct questions on patient safety in the ED. | | | | | |
| **7)** In this ED, it is difficult to discuss errors | | | | | |
| **1)**Overall, how would you rate the flow of patients through triage in your Emergency Department? | **1** | **2** | **3** | **4** | **5** |

| | | | | | |
|---|---|---|---|---|---|
| **Considering the workload at the beginning of your last shift when you received handover, how would you describe the level of nurse staffing?** | | | | | |
| **1)** Inadequate, unable to manage workload demands | **1** | **2** | **3** | **4** | **5** |
| | | | | | |
| **2)** Marginal, it was difficult but possible to manage workload demands | | | | | |
| **3)**Adequate, able to manage workload demands | | | | | |
| **1)**Overall, how would you rate the availability of adequate space(overcrowd) to do handover in the unit? | **1** | **2** | **3** | **4** | **5** |
| | | | | | |
| **Please consider the following information when responding to the next question** | | | | | |
| **1)**While receiving last handover, did you experience an intrusion? | **Yes** | | **No** | | |
| | | | | | |
| **2)**If you experienced an intrusion, how would you rate the impact on handover **(pleas thick√ in the space provided below NB: 1=very neg. impact, 2= neg. impact, 3= no impact 4= pos.impact 5 v.pos.impact)** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** |
| | | | | | |
| **3)**If intrusions were experienced, please identify the source(s). (Check all that apply) **(pleas thick√ in the space provided below)** ***1= patient, 2= family,3=staff 4= others*** | ***1*** | ***2*** | ***3*** | ***4*** | |
| | | | | | |
| **Please consider the following information when responding to the next question:** | | | | | |
| **1)**While receiving last shift handover, did you experience a distraction? **(pleas thick√ in the space provided below)** | ***Yes*** | | ***No*** | | |
| | | | | | |
| **2)**If distractions were experienced, please identify the source(s).(Check all that apply) **(pleas thick√ in the space provided below) 1= call bells, 2= Alarm noises, 3= others** | ***1*** | ***2*** | ***3*** | | |
| | | | | | |