Evaluation of Nursing Service Quality in Public Hospitals of Dawro Zone, Southern Ethiopia.

An Evaluation Thesis Submitted to Jimma University Institute of Health, Public Health Faculty, Department of Health Economics, Management and Policy, Health Monitoring and Evaluation Unit; for Partial Fulfillment of the Requirements for the Degree of Master of Science in Health Monitoring and Evaluation

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Abstract

Background: Nursing services is the diagnosis and treatment of human responses to actual or potential health problems. In Ethiopia quality of nursing services becomes deteriorating over time. In Dawro zone hospitals, 26.1% of nurses didn't practice nursing process per the guideline.

Objective: To assess the quality of nursing services in public hospitals of Dawro Zone, southern Ethiopia, 2018.

Methods: Multiple case study design with mixed methods of data collection was employed from March 15-April 15/2018. Donabedian's Structure-Process-Outcome model was used to assess the quality of the services. Its approach was formative. A total of 369 admitted clients were included by consecutive sampling technique. Moreover, 81 client-provider interactions, 81 clients' charts, one year selected documents and 14 key informants were included. Simple and mult-variable linear regression analysis techniques were used. Qualitative data was analyzed manually and presented as triangulation with the quantitative results. The overall quality of the service was determined based on judgmental criteria.

Results: Availability of program resource scored 70.4% and 53.05% in Tercha and Gessa hospital, respectively. In Gessa hospital, medication preparation room was available only in one ward, nursing standard guideline and sterilizer machine were not available on the time of evaluation, Paracentesis set and lumbar puncture set were not available for the last 3 months. Nurse to patient ratio in Tercha hospital was 1to 10. Compliance of nurses with national guideline scored 57.95% and 52.1% in Tercha and Gessa hospitals, respectively. Daily evaluation of patients condition were not practiced based on guideline for 48.3% patients in Tercha hospital, and 57.1% of patients in Gessa hospital. Twelve percent of nurses trained about nursing care practices in Gessa hospital. Only one session supervision was conducted by zonal health department for Tercha hospital. The overall patient satisfaction with nursing service was 58.85% and 63.06% in Tercha and Gessa hospital, respectively. Patient expectation on nurse's responsiveness score, patient experience on institutional aspect score, and absence of assigned nurses for the patient have significant association with patient satisfaction.

Conclusion and Recommendation: The overall level of quality of nursing service was fair in Tercha hospital and critical in Gessa hospital. Nurses should be trained, medical equipment's need to be supplied. Moreover, regular supervision should be conducted.

Key words: Nursing Service Quality, Dawuro Zone Hospitals

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List of Abbreviations

CRC	Compassion, Respect and Care
EHAQ	Ethiopian Hospital Alliance for Quality
EHSTG	Ethiopian Hospital Service Transformation Guideline
FMOH	Federal Ministry of Health
GPH	Gessa Primary Hospital
HSTP	Health Sector Transformation Plan
EHAQ	Ethiopian Hospital Alliance for Quality
HSTQ	Hospital Service Transformation in Quality
NSQ	Nursing Service Quality
PES	Problem, Etiology, Sign/Symptom
NANDA	North American Nursing Diagnosis Association
NSNS	Newcastle Satisfaction with Nursing Scale
TGH	Tercha General Hospital

Operational Definitions

Nursing Care: for this evaluation nursing care includes provision of medications, dressing of patients, giving bed bath, bed making, following vital Signs, positioning, moving and transferring Clients, Nasogastric tube (Insertion and Feeding), Feeding (Gastrostomy and Jejunostomy), Ostomy Care (Urinary and Bowel Diversions), urinary catheter care, post mortem care, mouth care.

Nursing Service: It includes all nursing care and nursing administration such as human resource planning and staffing, nursing practice auditing and communication.

Quality nursing service; is the availability of resources based on the standard, the compliance of nurses with the national standard when providing nursing care, and satisfaction of patients with nursing care received.

Comprehensive Nursing assessment: If nurse assess all the following 1) Demographic details (Name, age, sex), 2) health Perceptions (Chief compliance), 3) Roles and Relationships (Role of family and ability to payment), 4) Cognitive history (Level of consciousness and reflexes), 5) activity-Exercise (Respiration, Circulation), 6) nutritional and Metabolic (Pattern of food intake, fluid intake, Gastro Intestinal pain and oedema), 7) Self-Perception and Self-Concept (feel different from others), 8) Elimination (urine and faces), 9) Coping and Stress Tolerance(History of stress), 10) Values and Belief Pattern (Cultural practice) 11) Sexuality-Reproductive [**Male:** prostate problem, history of STI, **Female:** Menstrual pattern, use of FP, monthly breast examination, STI]

Correct nursing diagnosis: if patients nursing diagnosis develop based on North American Nursing Diagnosis Association(NANDA) list, Problem, Etiology, and Sign/ Symptom (PES) format and if the diagnosis were prioritized.

Correct nursing planning: if patients expected health outcome planned, expected outcomes were Specific Measurable, Achievable, Reliable, Time bounded (SMART), and if expected intervention for the patient were identified.

Patient Satisfaction score: patient's perceived opinion about the care received from nursing staff. It was measured with 5 point Likert score.

Availability of medical equipment's for nursing care: are at least one functional BP apparatus, functional stethoscopes, thermometer, stretcher, wheel chair, weight and height scale, measuring tape, steam or dry sterilizer, oral and NG tub, ambu bag set, suction machine, light source, tourniquet, miner set, Pulse oximeter, lumbar puncture set (lumbar puncture set), abdominal paraceantesis set in each ward since last three month of data collection.

Content completeness of inpatient medical records: if nursing records patient card (nursing process formats (5), vital sign sheet, discharge summary and medication administration sheet) were fully documented.

Privacy maintained: if a nursing cares were provided at private room or screened-off space without the client being seen.

All three medication administration safety cheeks; Checking medications name and doses; 1) when reaching the container. 2) When pouring the medication. 3) When returning the medication to the cabinet

All six rights of medication administration: 1) right patient, 2) right dose, 3) right drug, 4) right rout, 5) right time, 6) right documentation.

- ✧ **Right patient:** right if name, sex and age of the patient match with his/her chart.
- ✧ **Right drug/medication:** right if medication label match the order in patient chart
- ✧ **Right time:** right if the administration time match the order in the chart.
- ✧ **Right Dose:** right if the dosage match the order in patient chart.
- ✧ **Right rout:** right if route of administration match with the order in the patient chart.
- ✧ **Right documentation:** right if the nurse document the medication immediately after he/she administered it

Chapter One Introduction

1.1 Background

Nursing is a profession that entails the humanistic blend of scientific knowledge and the art of holistic practice to address the basic human need of achieving health and wellness. Nursing services is the diagnosis and treatment of human responses to actual or potential health problems**.** It is an essential part of the hospital system in improving the health outcomes of individuals, families and communities. Nursing services covers assessment, diagnosis, planning, implementation and evaluation of patients for the promotion and maintenance of health, the management of illness, injury or infirmity, and the restoration of optimal function, or palliative care. It also includes education and research in relation to the above activities (1,2).

Nurses comprise the vast majority of hospital staff among the health care professionals in hospital environment that they are legal trustful and professionally responsible for the quality of care they provide to patients. They are the front line people that patients most likely meet up with, spend the highest amount of time with and rely upon for recovery during their hospitalization. By shifts nurses are stay in the hospital twenty four hours, seven days per week and three hundred sixty five days in a year that it implies nurses and patients are inseparable (3,4).

Nursing Service Quality (NSQ) defined as the degree of excellence observed in nursing care delivery to patients, and it comprises of five categories, which are: staff characteristics, care-related activities, preconditions for care, environment, and progress of the nursing process as perceived by patients (5).

Globally, health systems face constraints and challenges around patient safety and quality, lack of human resources, and rising moral distress among nurses. These concerns about the quality gap in patient safety and the need for improvement. It has been reported over the last decade that the quality of nursing service provided to patients has decreased extremely. This was reflected by the number of clients who have reported being overlooked by nurses during the provision of nursing service during their hospitalization. Similarly, the incidence of medical events was soaring to such an extent that 3% to 4% of the patients were seriously ill due to those events (7,8).

In developing country (Southeast Asia), there were full range of safety and quality problems like the risk of patient infection in healthcare delivery, medications administration errors, and the quality of healthcare provision overall (9).

In nursing care, standards of practice provide a guide to the knowledge, skills, judgment and attitudes that are needed to practice safely. They reflect desired and achievable level of performance against which actual performance can be compared. Ethiopia Hospitals Service Transformation Guidelines (EHSTG) nursing care standard is a professional standard in Ethiopian that helps to guide for quality nursing service. The guideline has sub standards and mainly focuses nursing management and leadership, nursing process, nursing medication administration, and nursing communication (2,3,6).

1.2 Statement of the Problem

In Ethiopia most patients complain about hospital nursing services. There is a gap in provision of adequate information to patients, respecting of patients and their families, pressure area care, patient observation, infection prevention and nurse staffing levels. This tend to have higher rates of poor patient outcomes such as pneumonia, shock, cardiac arrest, and urinary tract infections (10–13)

Medication administration errors are another prevalent nursing care near miss in hospital environment. It has impact on admitted patients in terms of morbidity, mortality, adverse drug event, and increased length of hospital stay. In addition, it increases costs to clinicians and healthcare systems. According to one study in Ethiopia (2015), the incidence of medication administration errors among nurses was 29.1%. Shortage of resources, and environmental interruptions, overcrowding, poor communication between nurses and patients, and technical competences of nurses were the major reasons for poor quality of nursing service (14,15).

There is also inappropriate workforce staffing that led increased staff dissatisfaction, nurse turnover, increase patient mortality, increase hospital-acquired infections, increase the risk of needle-stick injuries and patient dissatisfaction. Ten percent (10%) increase in the number of patients assigned to a nurse leads to a 28% increase in adverse events such as infections, medication errors, and other injuries (11).

In order to address this issue, the Federal Ministry of Health has been engaged in improving quality of nursing care across the country in the last 10 years. Among these nursing leadership manual was developed, national nursing mobilization activities were conducted, national dressing code guideline was launched, national nursing service quality improvement standards and audit tools were developed (16).

Although, In South Nations Nationalities Peoples Representative (SNNPR), 67.3% nurses were not implemented nursing process in Arbaminch general hospital (in 2015), 53% of admitted patients were not satisfied with nursing services in Hawassa referral hospital (in 2016), 59.1% of patients were not satisfied with nursing service Aarbaminch general hospital (in 2017) (10,17,18).

Specifically in the study hospitals, 26.1% of nurses responded that we didn't follow all steps of nursing process (19). However, the study conducted in the study area didn't explore why poor implementation of nursing process happen, didn't use national recommended tools and it is also conducted before implementation transformation agendas. In addition, up to researcher knowledge there is no study done availability of resources in public hospitals, and patient satisfaction. Therefore, this study tried to identify nursing service quality in public hospitals of Dawro zone with dimensions of resource availability, compliance of nurses with national guideline as well as patient satisfaction.

1.3 Significance of the Study

The study helps to generate relevant information about nursing service quality in terms of availability of resources, compliance of nurses towards national guidelines and patients satisfaction towards the services they receive.

The findings of this study will help for hospital managers to improve nursing service quality at hospital level by identifying gaps on resource allocation, training and skills. The findings will also helpful for nurses to know gaps on patient caring practice and improve it according to national guideline as well as contribute to improve patients care. For population it will contribute for receiving quality nursing service. Furthermore, this study help as baseline for further researches which will be conducted on this issue by scholars

Chapter Two: Description of the Program

2.1. Stage of Program Development

Nursing service was started in Ethiopia in the late 19th century by Swedish missionaries. Before formal nurses training started in Ethiopia, foreign nurses were practicing in the health care delivery system. According to the Ethiopian Nursing Association, the first formal nursing training was started at the Halile Sillasse Hospital (presently known as the Yekatit 12 Hospital) in 1949. The first eight nurses were graduated in 1953. In 1954, Gonder Health Science College and training center was opened and gave training in community nursing. In 1958, fifteen community nurses were graduated from this center. In 1994, 30 nurses were graduated by degree level from Jimma University (20,21).

Evaluation of the hospital services in Ethiopia (2006) indicated that hospital services are characterized by; lack of comprehensive care, poor quality of care, inefficient &inaccessible services, inadequate attention to delivery and emergency, management not customer oriented. For the response of this problem earliest efforts began in 2006 with the Ethiopia Hospital Management Initiative (EHMI). The EHMI resulted in the creation of Ethiopian Hospital Reform Implementation Guidelines (EHRIG) which contains EHRIG nursing care standards as initiative. The content of this standard were pre-tested and piloted in Amhara, Oromia and Tigray with specific emphasis on the basic principles of evidence based nursing services' provision using the nursing process (3).

The nursing guideline was update (2011) in to Nursing Care Practice Standards' and has been used by nurses, managers, as well as nursing educational institutions to ensure students will be equipped with the required level of knowledge and competency to implement the nursing process when caring for patients during clinical placements (1).

Furthermore, the EHRIG was revised in EHSTG in 2016; accompanying operational standards to support the efforts of hospitals in fulfilling a minimum standards for client satisfaction. Currently, in the study area Nursing Care Practice Standards' has been implemented in all hospitals since 2012 (2,22).

2.2. Stakeholders of the program

Stakeholders of nursing program were identified during Evaluablity Assessment (EA). During identification utility, feasibility, propriety and accuracy standards of evaluation were considered and priority was given for those stakeholders who can provide credible data for the evaluation and responsible for day-to-day implementation of the activities.

During Evaluablity assessment they were provide the general information about the program services, decided on the readiness of program for evaluation, identifies the areas of the program to be evaluated and participated in evaluation question development. They were take part in providing the necessary information throughout the evaluation process. Their role in the service and role, perspectives and level of importance on the evaluation were identified and present (Table 1).

Table 1: Stakeholder Analysis for Evaluation of Quality Nursing Services in Public Hospitals of Dawro Zone, Southern Ethiopia, 2018

Stakeholder	Role in the program	Interest in the evaluation	Role in the evaluation	Communication strategies	Level of importance
SNNPR Regional Health Bureau (Nursing service Director)	• Planning • Resources allocation • Supportive supervision • M&E	• Use results for planning, • Use findings to support the service	• Describing the program • Involving in developing evaluation question and Indicators	Tele phone Email	High
Dawro Zonal health Department (department head and quality unit head)	• Planning • Resource allocation • Supportive Supervision • M&E	• For planning • To support the program • To learn from experience	• Involving in developing evaluation Question, Indicators, judgment • Sources of data • Facilitation	Face to face interviewee Formal letter	High
Hospitals (Tercha (and Gessa Hospital)	• Planning • Availing equipment's for nursing care • Mentoring • M&E	• Use results for planning, • To know and fill skill gaps of nurses • To develop new strategy • To learn from experience	• Source of data • Involving in developing evaluation Question and Indicators • setting Judgment parameter • Facilitation	Face to face interviewee Formal letter	High
Service providers (Head Nurses, Nurses)	• Providing the services	• Knowing their patient caring behavior • To update their knowledge	• Involving in developing evaluation Question • setting Judgment parameter • As sources of data	Face to face interviewee	Medium
Beneficiary (patients and families)	• Utilization of the service	• Receiving quality services • Receiving information	• Sources of data	Face to face interviewee	High

2.3. Program Goal and Objectives

Program Goal:

- To contribute for the reduction of morbidity, mortality and improving the health status of the population through provision of quality nursing services

General objective the program

- To provide quality nursing service for all patients attending public hospitals of Dawro zone, 2018.

Specific Objectives

- To increase implementation of nursing process from 68% to 87% by the end of 2018.
- To increase medication administration with five rights from 71.9% to 92% by the end of 2018.
- To increase patient satisfaction towards nursing care from 7.2 to 9 by the end of 2018.
- To increase content completeness of inpatient nursing records to more than 90% by the end of 2018.
- To increases availability of functional medical equipment's to more than 88% by the end of 2018.

2.4. Major Strategies:

- **Improving community participation**: public forum, availing suggestion boxes in service delivery areas, establishing compliant handler committee, involving community representative in staff meeting
- **Utilizing national quality standards**: regular monitoring and supervision by using national standards tools.
- **Improve patient involvement on their care**: involve patients and families during nursing care plan
- **Improving human resource development and leadership skills**: provide long term and short term training, availing reference materials and guidelines.
- **Strong monitoring and evaluation system**: regular nursing audit and utilize the finding for service quality improvement.

2.5. Program Components

2.5.1. Program Resources

According to national guideline, the resources needed for giving nursing services are:

- **Infrastructure**: well-equipped nursing station (contains; shelf, telephone, computer, personal lockable locker, Water, electricity), rooms (medication preparation room, instrument processing room)
- **Medical equipment's for nursing care and procedures:** Functional BP apparatus, stethoscopes, Thermometer, Stretcher, Wheel chair, Weight and height scale, Measuring tape, Steam or dry sterilizer, Oral and NG tub, Ambu bag, Suction machine and tub, Light source, Tourniquet, Miner Set, Pulse Oximeter, LP set (lumbar puncture set). Abdominal paraceantesis set.
- **Nursing care guidelines, recording and reporting** tools (Nursing process format, vital sign sheet, medication administration sheet, discharge summary sheet monthly HMIS disease reporting format), national nursing standard guidelines**.**
- **Human resource (Nurses)**

2.5.2. Program Activities

According to the national guideline program activities are:

- Provide training, conducting supportive supervision, conducting nursing practice auditing
- Conducting nursing process (assessment, diagnosis, planning, implementation, and evaluation) on nursing cares.
- Medication administration, nursing documentation.
- CRC (Taking informed consent, Keeping patients privacy of the patient, provide information for the patient, respecting the patient).

2.5.3. Program outputs

- ✧ Number of nurses received in service training
- ✧ Number of nursing auditing conducted
- ✧ Number of nursing practice auditing conducted
- ✧ Number of clients received comprehensive assessment
- ✧ Number of patients who had correct nursing diagnosis
- ✧ Number of patients who had correct nursing care plan
- ✧ Number of patients received nursing care based on nursing care plan
- ✧ Number of patients for whom nursing evaluation was done
- ✧ Number of patients received medications
- ✧ Number of patient charts with complete inpatient nursing records.
- ✧ Number of procedures with privacy of the patient maintained.
- ✧ Number of procedures with informed consent taken.

2.5.4. Program outcome

- ✧ Improved knowledge and skill of Nurses
- ✧ Improved nurses patient caring behavior
- ✧ Improved patients health outcome
- ✧ Increased patient satisfaction.
- ✧ Improved health service utilization

2.5.5. Program Impact

- ✧ Decrease morbidity in relation to poor quality service
- ✧ Decrease mortality in relation to poor quality service

2.6. Logic Model of Nursing Service Program

Program logic model is a principal tool that helps to displays the key elements of a program, and their relationship to each other, in a way that facilitates analysis, decision making, and measurable impact (23). The logic model of nursing service program in Dawro zone shows about the problem, resources, activities, outputs, outcome and impact of the program and its relationships; which is adapted from 2009/10 hospitals base plan (Figure-1 (Left to Right)) (22).

Statement of the problem: In Ethiopia quality of nursing services becomes deteriorating over time. There is poor implementation of nursing process, shortage of human resource, medication administration errors; that leads to poor patient heath outcome and patient dissatisfaction (11,38,49).

Goal: To contribute to the reduction of mortality, morbidity, and improving the health status of the people by providing quality nursing service.

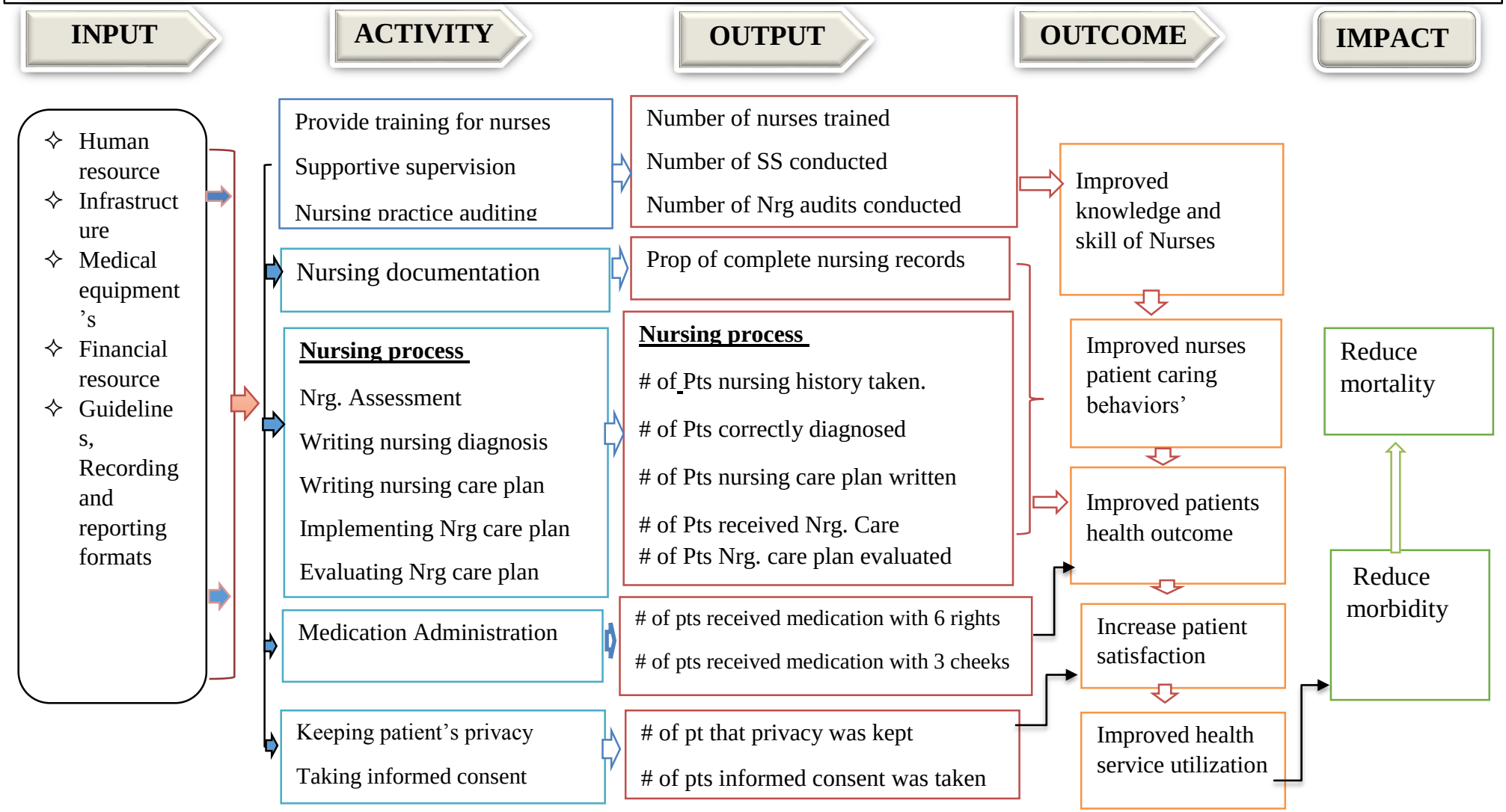

Figure 1. Logic Model of Nursing Service Program in public Hospitals of Dawro Zone, 2018: adopted from Dawro Zone Hospitals Plan 2017/18

Chapter Three: Literature Review

3.1. Nursing service quality

Study in South Africa showed that the average scores on the different aspects of nursing care varied from 11% (for nursing records) to 73% (for management of chronic diseases). Average nursing care quality in terms of patient satisfaction was 72% across the study areas(24)

A Study in Axum University Referral Hospital showed that the overall rating patient satisfaction among in-Patient of Medical-Surgical Ward was 65% which was fair quality based on their level of quality score. Among aspect of nursing care, medication administration practiced based on the guideline for 96.5% of patients (25).

A Study conducted in Bale Zone Hospitals showed that among nurses two third of them reported the nursing service quality was good and 25.6% of the nurses rated nursing care quality was very good. In similar study among admitted patients 90.2% of respondents, rate the overall quality of nursing care during their stay as attractive (15)

3.3 Availability Dimension

3.3.1 Infrastructure and medical equipment's

Health systems throughout the world whether in developed or developing countries are struggling with the challenge of how to manage health-care delivery in conditions of resource constraint. Lack of working equipment has a devastating effect on health care in resource-poor settings. It is often said that most of the medical equipment in the developing world is broken with estimates ranging up to 96% out of service. More than 50% of the medical equipment's in resource-poor settings are not in service (26,27).

In Ethiopia, lack of proper management of medical equipment leads to limited capacity of health institutions to deliver adequate health care. One study estimated that only about 61% of medical equipment's found in Ethiopian public hospitals and other health facilities are functional at any one time (28).

A Study conducted in Jimma zone showed that among available medical devices in Jimma University specialized hospital, 64.8 % were functional. Similarly, 39.1% of available medical devices in Shenen Gibe hospital and, 47.4% Limmu Genet Hospital were not functional (29).

Federal Ministry of Health recommend that hospitals should have nursing station that is equipped with computers, telephone, shelf, table, comfortable chair, access to clean drinking water and electricity. In each ward medical equipment's for nursing diagnosis or intervention use should be available(6).

Nursing, guidelines Recording and Reporting tools

A Study in inpatient patient chart completeness in Menelik II Referral Hospital showed that; standardized nursing process and medication administration format were available in the hospital and among inpatient medical records; nursing care plan was attached for 98.2% and completed for 76.6%, medication administration format was attached for 92.8% and completed for 70.3%, and a discharge summary was attached for 96.4% and completed for 83.8%. Study in Asella Referral Hospital showed that nursing care standard guideline was available on the time of study (30,31).

3.3.2 Nursing work force

A Study done in South Africa showed that there was a very low nurse to patient ratio on the day of assessment the unit had 51 patients which gives one nurse provide nursing care for ten patients per day (24).

Federal ministry of health recommend that each hospital should have a nursing workforce plan that addresses nurse staffing requirements and sets minimum nurse to patient ratios in each service area. There should be 24 hours/day with 8 hours shift nursing service for all inpatient wards, also the maximum nurse to patient ratio in Ethiopian standard should not exceeds from 1:6. The expected number of nurses in Ethiopian hospitals are to be 31 and 117 in primary and general hospital, respectively (3,32,33**).**

Study in Ethiopia stated that three dimensional nursing workforce imbalances; undersupply compared to country needs and resources, mismatch between educational preparation and requirements in the workplace and unequal distribution of nurses between urban areas and hospitals compared to rural areas and community health care settings (13)

Institutional based cross sectional study done in Addis Ababa stated that among nurses who work in four government hospitals, 40.6% of nurses have cared for more than 15 patients per day, 22.5% were cared for 10-15 patients per day, 26.6% have cared for 5-10 patients per day and only 5.7% were cared for less than 8 patients per day (34).

As study conducted in Arbaminch General Hospital, Among nurses working in inpatient department 37.75% of them provide nursing care for more than 16 patients per day, 28.57% were cared for 10-15 patients, 36.73% were cared for 5-10 patients and 1.02% were cared for less than five patients. In this study 42.85% of respondents were anxious in working time from high patient flow (17).

Regarding to providing training, FMOH recommend all nurses should receive in service training on nursing standards at least one times per year. A study conducted in Mekele university hospital, which is 21% of nurses were received training on nursing standards (2,35)

3.4 Compliance Dimension

3.4.1 Nursing medication administration

Medication administration errors is one of the risk areas of nursing practice and occurs when a discrepancy occurs between the drug received by the patient and the drug therapy intended by the prescriber. Each hospital nursing staffs should have standardized procedures for the safe and proper administration of medications by nurses or designated clinical staff (3,36)

A cross-sectional study in University of Gondar referral hospital showed that medication errors at the administration phase were highly prevalent. The incidence of medication administration error was 29.1%. The rates of medication administration error reported wrong time was 33.3%, wrong patient was 20.6%, wrong dose and wrong drug was 30.6% and 28.1% respectively. The prevalence of medication administration error in Jimma within the intensive care unit showed 51.8%, among those common administration errors were attributed to wrong timing (30.3%), omission due to unavailability (29.0%) and missed doses (18.3%). In Sent Marry Axum hospital, almost all (96.5%) nurses administer medicine using the 5 rights which is implication of good nursing care quality (25,37,38)

3.4.3 **Nursing process**

The application of the nursing process is essential to the core of professional nursing practice. Effective implementation of the nursing process leads to improved quality of care and stimulates the construction of theoretical and scientific knowledge based on the best clinical practice. Nursing process means providing nurse practitioners with a scientific method for the application of care, nurses mostly positively perceived the relation between the nursing process and their practical work, whose implementation would grant meaning and relevance to their professional knowledge and raise their nursing to the same level as the other profession in health care setting (39,40)

Study conducted in Brazil, which was assessment was performed in 98.7% of cases; diagnosis was made in 90% of cases; and planning was made in 74.8% of cases. These may be due to a difference in socio-economic status of those countries.(41)

A study conducted in Public Hospitals of Harari showed that assessment was not performed for 17.8% of admitted patients, diagnosis was not performed for 21.8% of admitted patients, planning was not performed for 25.3% of admitted patients, implementation was not performed for 38.5% of admitted patients, and evaluation was not performed for 51.1% of admitted patients (42).

A Study done in Arbaminch General Hospital states that 32.7% were implemented nursing process. In Addis Ababa hospitals 52.1% of the respondents had implemented nursing process and in Mekele zone hospitals no one of respondents had implemented any of the nursing process steps. In selected hospitals of central and Northwest zones showed that 65% had not implemented nursing process.(6,18,34,43)

3.5 Acceptablity/Patient Satisfaction Dimmension

Patient satisfaction is an accepted crucial indicator of the quality and effectiveness of care as well as an important part of value-based health care. Theoretically, patient satisfaction is connected with nursing care, nurses, and the organizational environment. Patient satisfaction due to care is a critical outcome because it influences adherence to treatment, health services utilization and general attitudes towards the health care system. Apart from being an important indicator of quality nursing care, patient satisfaction has a reciprocal effect meaning it can be used to improve nursing care that will in turn increase satisfaction.(44).

Nursing care is the only hospital service having a direct and strong relationship with overall patient satisfaction. Studies identified that patient-perceived nurse care is a major predictor of patient satisfaction. Examining the quality of nursing care from the patients' perspective is important elements in quality evaluation, since patients admitted to hospital, have high expectations of the health care system (45,46).

The overall satisfaction of patients with nursing care in Arbaminch General Hospital, Felegehiwot hospital, and Tikur-Anbesa referral hospital was 40.9%, 44.9% and 90.1%, respectively (47–49)

A study conducted at Hawassa University specialized and teaching hospital that the satisfaction level of patients with the inpatient nursing care they received was low (47%). In Another study in Guji zone, the overall level of patient‘s satisfaction mean score and level of patient experience were 55.9% and 56.125 respectively (50).

A Study done in Minilik hospital showed that more than half of patients were satisfied on the amount of time that nurses were spending with them, 64.5% of patients were satisfied on nurses coming to patients up on call, majority of respondents were satisfied on nurse explanation on the continuity of care. half of patients were dissatisfied of on the capability of nurses around them (47,51).

Study in Felegehiwot referral hospital showed that the overall level of satisfaction was 44.9%.Among satisfaction items, the amount nurses know your care (78%), the nurse’s helpfulness (55%), and nurses’ treatment of patients as an individual (54%) were the three top scores. Whereas nurses response to patients request (42.6%), the amount and type of information nurses gave to patients about their condition and treatment (43.2%), and the way nurses explain things to patients (43.4%) had the least scores(49)

3.6 Factors Affecting Patient Satisfaction

3.6.1 Patient Related Factors

Institution based quantitative cross-sectional study in referral hospitals of northern Ethiopian study stated that the overall patient satisfaction was 52.5%. Respondents' sex, age, admission ward, self-reported health status, and class of admission were the variables significantly associated with patient satisfaction with nursing care.(52)

Study in Dessie referral hospital showed that patients admitted in the first class were also more likely to be satisfied as compared to patients admitted in the second class. In addition, patients who perceive their current health is in good condition were about 2 times more likely to be satisfied as compared to those who perceive their current health status is in poor condition(53).

Study in Felegehiwot referral hospital showed that patient level of satisfaction was significantly associated with sex and occupation. Males were 1.9 times more satisfied than female patients. Employees were 0.42 times less likely to satisfy than farmers(49)

Another study in Arbaminch general hospitals, the overall patient satisfaction about inpatient nursing service in the hospital was 40.9%. Age category 35-44 years, respondents attended in college and University, rural residents, patients admitted to medical ward, patients admitted several times and patients admitted second time, patients with history of surgical operation and duration of hospitalization more than 15 days were factors associated patient satisfaction(18).

According to the study conducted in selected public hospitals in Ethiopia indicated that the level of patient satisfaction in nursing care was 52.7%. It was highly associated with monthly income. Patients who had no history of previous admission were 3.8 times more likely to be satisfied than those who have had history of previous admission(54).

As study conducted in Jimma university referral hospital showed that level of patients educational status and address were found to have significant association with the level of patients' satisfaction. It was observed that patients with no formal education were more satisfied (76.9%) than their counterparts and also patients from urban areas were less (52.5%) satisfied than those from the rural area(55).

There were significant inverse correlations between the perceived shortage of nurses and the perceived quality of nursing care in the various locales. The greater the shortage, the poorer the nursing care (56)

3.6.2 Service (Nurse to patient interaction) related factors

A study conducted in Hawassa referral hospital showed that a unit increase in perceived need score will lead to 0.562 increments in patient satisfaction, a unit increase in expectation score will lead to 0.345 unit increments in patient satisfaction and a day increase in duration of hospital stay will lead to 0.193 unit decrease in patient satisfaction. Another study in Kenyatta National Hospital revealed that there was a strong positive linear correlation between patient expectation towards nursing care and patient satisfaction (10,57).

A study conducted in public hospitals of Gujji zone showed that a unit score increase in patient experience with nursing care in general score will lead to 0.423 unit increments in patient satisfaction with nursing care (47).

3.6.3 Organization Related Factors

Study in Dessie referral hospital showed that patients who were admitted in ophthalmology ward were about 10 times more likely to be satisfied as compared to patients admitted in medical ward. A study in Bale zone Hospitals, patient's response about the reasons that influencing nursing care practice stated that, shortage of nurse was complained among 18.9% of the patients. Similarly, 52.4% patients agreed that there was shortage of equipment and drugs. Those patients who had one nurse in charged/assigned were 1.2 times more satisfied than those patients not assigned (15,49,58)

A study conducted in public hospitals of Gujji zone showed that a unit score increase in perceived institutional aspect score will lead to; 0.514 unit increments in patient satisfaction with nursing care. (47).

3.7 Theoretical Framework of the Evaluation

A comprehensive approach to measuring the quality of care requires attention to three different kinds of quality problems: too much care (overuse), too little care (underuse), and misuse (flaws and errors in technical and interpersonal aspects of care) (15).

There are different approaches for measurement of quality of care like Judith Bruice Frame work, which has six components for quality measurement such as; appropriate constellation of the service, choice, information, provider competence, client-provider interaction and continuity. However, this approach emphasizes more on process and gives less emphasis to structure & outcome. HEALTHQUAL quality measurement framework is another model which consists of five components: empathy, tangibles, safety, efficiency, and degree of improvements of care service. This model more focuses on processes and outcome and less emphasis on structure. Therefore, this study was use the Donabedian quality frame work. Avedis Donabedian described quality as including: structure, process, and outcomes (59).

This evaluation was used Donabedian structure, process, and outcomes quality frame work. It was adapted from Ethiopian Hospitals Service Transformation Guideline (2016) and different literatures((53). It shows the structure-process-outcome measurements of nursing care quality and its relationship. It also shows that the independent predictors associated with patient satisfaction.

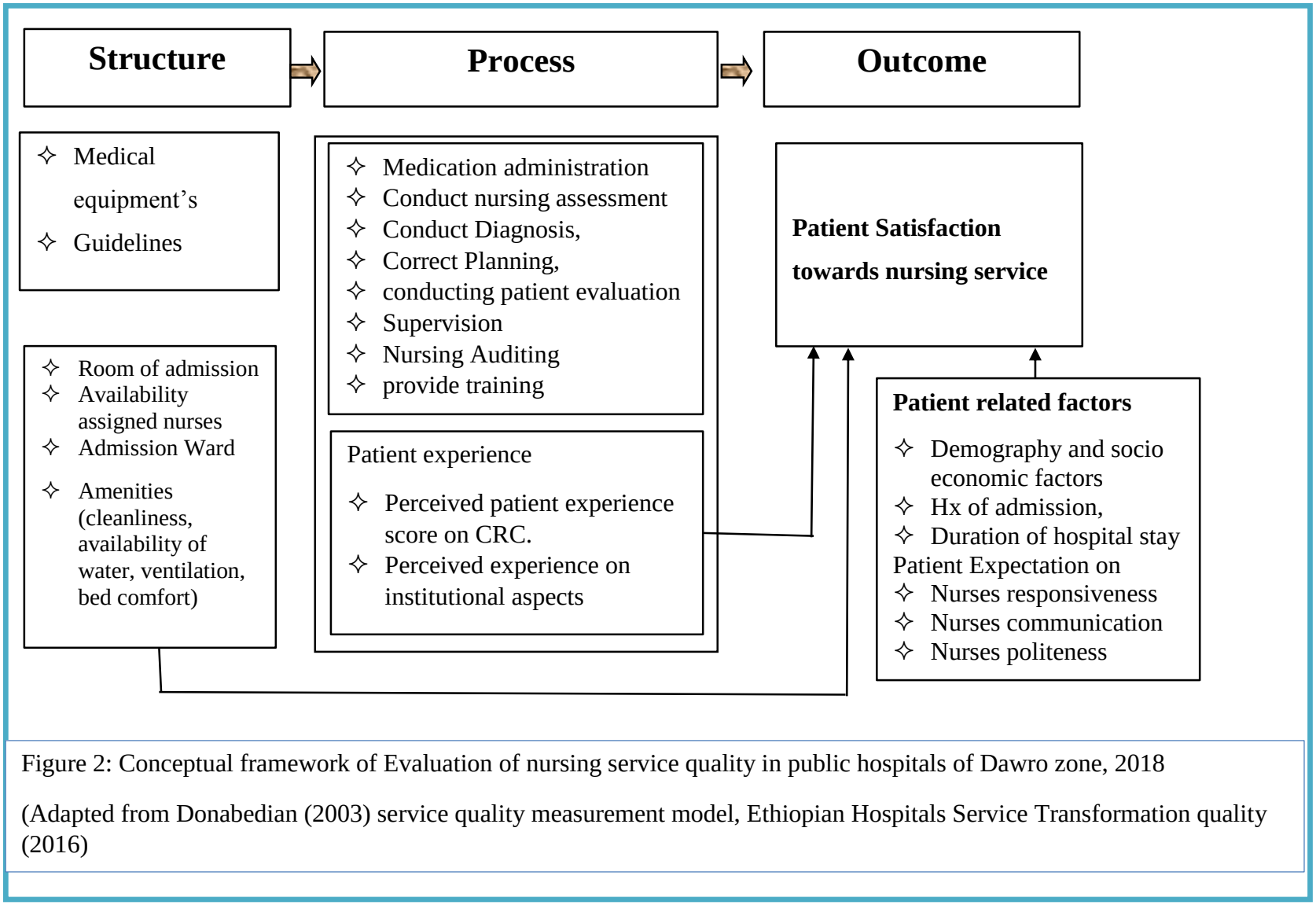

Figure 2: Conceptual framework of Evaluation of nursing service quality in public hospitals of Dawro zone, 2018

(Adapted from Donabedian (2003) service quality measurement model, Ethiopian Hospitals Service Transformation quality (2016)

Chapter Four: Evaluation Questions and Objectives

4.1 Evaluation Questions

1. Are the resources needed to provide nursing service available? If not why?
2. Do the nurses deliver services in line with the FMOH HSTQ guidelines? If not, why?
3. What is the satisfaction status of patients with nursing services?
4. What are the factors associated with patients' satisfaction towards nursing services?

4.2 Evaluation objectives

General Evaluation objective

- ✧ To assess the quality of nursing services in public hospitals of Dawro zone, southern Ethiopia, 2018.

Specific Evaluation objectives

1. To assess the available of resources needed to provide nursing service in public hospitals of Dawro zone.
2. To assess the compliance of nurse's to the national guideline while delivering nursing services in public hospitals of Dawro zone.
3. To determine level of client satisfaction with nursing services in public hospitals of Dawro zone.
4. To identify factors associated with patient satisfaction towards nursing services in public hospitals of Dawro zone.

Chapter Five: Evaluation Methods and Materials

5.1. Study Area

The study was conducted in public hospitals of Dawro zone, southwest of Ethiopia. It is one of 14 zones in the SNNPR (Southern Nation, Nationality and Peoples Region). The administrative center of Dawuro zone is Tarcha town which is located at 517Kms away from Addis Ababa and 285Kms away from Hawassa (the capital city of SNNPR).

There are 174 health posts, 22 health centers and two public hospitals (Tercha general hospital [TGH] and Gessa primary hospital [GPH]). They serves about 601,904 catchment populations. Functional health post to population ratio was 1:3,440, functional health center to population ratio was 1: 27,360 and functional hospital to population ratio was 1 to 300,952. There are a total of 145 beds (120 beds in TGH and 25 beds in GPH).

In relation to health service quality indicators, percentage of bed occupancy rate was 74.7%, average length of stay (in days) of patients in an inpatient facility was 6.6 days, percentage of skill delivery was 65.1%, institutional maternal mortality was 0.2% and average inpatient mortality was 2.6% in 2017(60).

Moreover, there are a total 198 nurses (all type) in Dawro zone which gives nurse to population ratio of 1:3,040. In the two hospital there are a total of 88 nurses (61).

5.2. Evaluation Period

Evaluablity assessment was conducted from October 10 to 24, 2017. This evaluation was conducted from March 15-April 15, 2018.

5.3. Evaluation Approach

The primary purpose of this evaluation is for program improvement. So, formative evaluation approach was used. A formative approach looks into the ways in which a how the program is implemented. It also give clues to examines whether or not the assumed operational logic corresponds to actual operations and identifies the immediate consequences with primary purpose of improving the day-to-day operations of the programs(62).

5.4. Evaluation Design

Multiple Case Study design was used. Case study design is the preferred study design for answering “why” study questions and when the study need to focus the contemporary phenomena. Hence, a "why" question is being asked about a contemporary set of events over which the investigator has little or no control (63).

The cases of this evaluation were nursing services in public hospitals of Dawro zone (Tercha general hospital and Gessa primary Hospital). To get more complete understanding of about the nursing service quality and to be more confidence on the findings, the evaluation had different evaluation questions (four) that requires different data collection methods, and also each evaluation question requires more than one method to measure its indicators. Because of this mixed method of data collection (quantitative and qualitative data collection methods) were used. Qualitative and quantitative data were collected and analyzed differently. Concurrent triangulation strategy was used to present the findings.

5.5. Focus of Evaluation and Dimensions

Evaluation Focus

This evaluation focus on process of nursing service, in which it provide an in-depth understanding about input of the program and the immediate outputs of the activities. Moreover; it also considers some outcome of nursing services (patient satisfaction towards nursing service).

Evaluation Dimensions

Quality of service is multidimensional concept and can be assessed in different ways. In this evaluation nursing care quality was measured by using Donabedian’s structure-process-outcome framework by using the following dimensions (59).

Availability Dimension (Structure): the resources that must be supplied for the activities to be carried out e.g., the physical structure, people, equipment and materials (6). In this evaluation this dimension measured the availability of human resource, infrastructure, medical equipment’s, guidelines, recording and reporting formats

Compliance Dimension (Process): this refers does the program have been delivered to clients or program users according to standards or national guideline. It measures how program have been going to achieve toward the objective of the program(64). In this evaluation this dimension measured the level of nursing activities in line with Ethiopian Hospital Service Transformation Nursing Care process Standards.

Acceptability/Satisfaction Dimension (Outcome): Patient satisfaction is the perception of care received compared with the care expected and patients there by evaluate the health-care services as well as the providers from their own subjective point of view(18). In this evaluation this dimension measured the overall satisfaction of patients towards nursing services received.

5.6. Indicators and Variables

5.6.1. Indicators

Indicator Development Process

Seven purposively selected stakeholders; Zonal hospitals quality focal person, one hospital Chief Executive Officer (CEO), one nurse director, one hospital quality unit head, and three ward head nurses were involved in the selection and development process.

The national Ethiopian Hospitals Service Transformation in Quality (HSTQ), revised HMIS (2017) and hospital KPI indicators were used as a reference. Majority of indicators were adopted from these sources, and some of them were develop based on the local situation by considering the implementation status of the program. However, due to limited resource for collection and analysis of data; multi-voting technique was used to prioritize the selected priority indicators. A total of 33 indicators were selected. Seven for availability, 13 for compliance and 13 for satisfaction dimensions. The characteristics of the selected indicators were presented (Annex1).

Availability Dimension indicators (7 indicators)

1. Nurses to patient ratio from February 20-March 20, 2018.
2. Proportion of availability of medical equipment in hospitals from December 20/2017-March 20/2018.
3. Number of wards with well-equipped nursing station from December 20/2017-March 20/2018
4. Number of wards with instrument processing room with three separate dust bin on the day of assessment.
5. Number of wards with medication preparation room with both fridge and hand washing sink on the day of assessment.
6. Number of hospitals having nursing standard guideline on the day of assessment
7. Number of hospitals having all standardized nursing documentation formats from December 20/2017-March 20/2018.

Compliance dimension Indicators (13 indicators)

1. Proportion of nurses received in service training at least one times from January 1/2017-December 30/2017. .
2. Number of nursing auditing conducted with written feedback January 1/2017-December 30/2017.
3. Number of SS conducted with written feedback from ZHD January 1/2017- December 30/2017.
4. Proportion of clients received comprehensive assessment based on the guideline.
5. Proportion of patients who had at least one correct nursing diagnosis
6. Proportion of patients who had correct nursing care plan
7. Proportion of patients received nursing care based on nursing care plan.
8. Proportion of patients for whom nursing evaluation was done based on the guideline
9. Proportion of patient charts with complete inpatient nursing records.
10. Proportion of medication administration observation sessions with three cheeks.
11. Proportion of medication administration observation sessions with five rights
12. Proportion of observation sessions with privacy of the patient was maintained.
13. Proportion of observation sessions with informed consent was taken.

Client Satisfaction Dimension indicators (13 indicators)

1. Percentage satisfaction mean scale of patient with the way nurses responded to their request
2. Percentage satisfaction mean scale of patient with nurses' visit when they call
3. Percentage satisfaction mean scale of patient with the way nurses treat them to feel as if they were at home
4. Percentage satisfaction mean scale of patient with the availability of nurses around them
5. Percentage satisfaction mean scale of patient with frequency of nurse's check their conditions
6. Percentage satisfaction mean scale of patient with the amount of time nurses spent with them
7. Percentage satisfaction mean scale of patient with the information they got
8. Percentage satisfaction mean scale of patient with nurses listened their worries & concerns
9. Percentage satisfaction mean scale of patient with nurses' willingness to respond their requests
10. Percentage satisfaction mean scale of patient with the manner nurses doing their work
11. Percentage satisfaction mean scale of patient with nurses' helpfulness
12. Percentage satisfaction mean scale of patient with nurse's treatment for relatives.
13. Percentage satisfaction mean scale of patient with nurses' treatment of them as an individual

5.6.2. Variables

Dependent variable: Patient Satisfaction towards nursing service

Independent variables

Patient related factors

- ✧ Demographic and socio economic factors(Age, Sex, Education, marital status, occupation, average monthly income)
- ✧ History of admission, duration of hospital stay, patient expectation.
- ✧ Patient expectation towards nursing service

Hospital related factors

- ✧ Class of admission, presence of assigned nurse, admission ward, payment for the service

Nurse-patient interaction related factor

- ✧ Perceived patient experience on nurses CRC
- ✧ Perceived patient experience on institutional aspects.

5.7. Population and Sampling

5.7.1. Source population

For quantitative study

All admitted patients, all nurses to patient interaction sessions, all nursing service related documents (January 01 2017-December 30/2017), all service provision infrastructures and equipment's in public hospitals of Dawro zone.

For Qualitative study: All program managers in public hospitals of Dawro zone

5.7.2. Study population

For quantitative study

Sampled admitted patients, sampled nurses to patient interaction sessions, one year (January 01/2017-December 30/2017) nursing service related documents, and selected service provision infrastructures and equipment's in public hospitals of Dawro zone

For qualitative study: Selected program managers in public hospitals of Dawro zone.

5.7.3. Study unit and unit of analysis

Study Unit:

For Quantitative study: sampled admitted patients, sampled nurses to patient interaction sessions, sampled patient charts, SS feedback reports, nursing practice audit reports, nursing work force plan document) and selected wards which **fulfil the inclusion criteria.**

For Qualitative study: Dawro zonal health department head, zonal health department quality focal person, hospital CEOs, hospital quality unite heads, sampled head nurses who **fulfil the inclusion criteria.**

Unit of Analysis

Primary Unite of analysis: Admitted patients, nursing documents, medical equipment's, Wards and observation sessions.

Secondary unit analysis: Hospitals

5.7.4. Inclusion and Exclusion Criteria

Inclusion Criteria

- ✧ Admitted patients whose age is greater than 18 years.
- ✧ Admitted patients who spend more than two night in the hospital.
- ✧ Assigned key informants working at least for six month.

Exclusion Criteria.

- ✧ Those patients' who were discharged by emergency referral.
- ✧ Those patients' who were critically sick

5.7.5. Sample size determination and sampling procedure

Hospitals: There are two public hospitals in Dawro zone. Both of them were included in the study. There are 8 inpatient wards in the two hospitals. All of them were included in the study.

For quantitative study

Patient exit-interview:

The sample size was calculated by using single population proportion formula considering the following assumptions. The overall rating of nursing service quality based on patient satisfaction (P) (from previous study at Axum St. Marry Hospital which was (p=0.65)(25). These parameters were substituted in single population proportion formula.

Where, $n = \frac{\left(Z\frac{\alpha}{2}\right)^2 (p)(1-p)}{d^2}$ $n = \frac{(1.96)^2(0.65)(0.35)}{0.05^2} = \mathbf{350}$

Assumptions

- ✧ n= Sample size estimation of single population proportion
- ✧ α= critical value at 95% CI (1.96)
- ✧ P= Percentage of patients satisfied with nursing care by using NSNS (65%)
- ✧ d = Marginal error/Degree of precision= 5%(0.05)

The calculated sample size is 350. Finally by adding, expected 10% non-response rate, the final sample size was =385. Study participants were proportionally allocated to each hospital based on last one month (February 2017) HMIS report. Consecutive sampling technique was used to select study participants from each hospital (figure4). The index participant was the patient that was discharged in the first day of data collection.

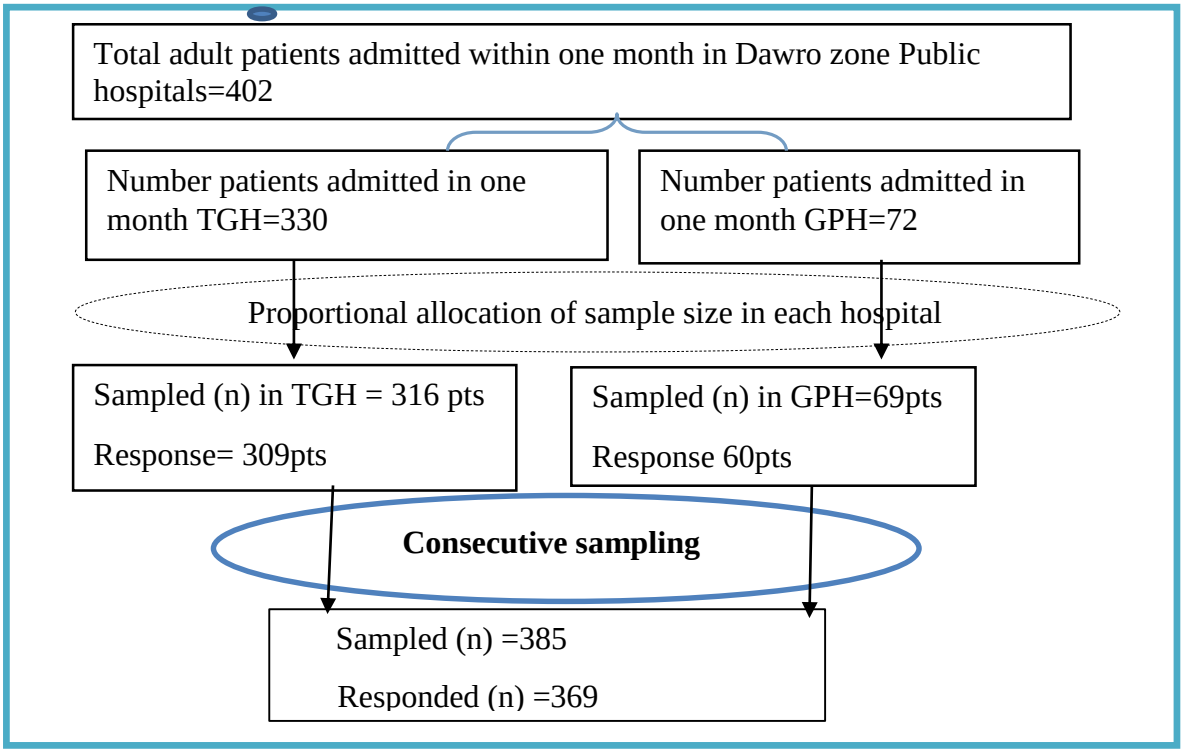

Figure 3: Summary of schematic presentation of sampling procedure patient exit interviewee for evaluation of nursing service quality in public hospitals of Dawro zone, 2018.

Direct observation (Nurse to patient interaction)

The number of sessions (sample size) to be observed was determined based on the number of nurses in each hospital. Agency for Health care Research and Quality (AHRQ) for assessing patient safety and quality of clinical practices recommends the sample sizes of clinical care providers to be included in the study are 30% to 50% (65). In the study hospital, there are 41 nurses who are assigned in inpatient case team, randomly selected 21(50%) nurses were included. According to the standardized USAID observation guideline (it recommends 3-5 observation sessions per health care provider) five nurses to patient interaction sessions from each nurse were observed consecutively from each nurse (66). One hundred five observation sessions (35 in GPH and 70 in TGH) were conducted. In order to minimize hawthorn effect the first one observation were conducted. Finally a total of 81 observations were included for analysis.

Document Review:

Patients Chart: all patients chart who included in observation were reviewed. In addition, One year (January 01/2017-December 30/2017) nursing service related documents.

Resource Inventory: A total of two hospitals (8 wards) resources (nurses, medical equipment's, nursing standard guidelines, and rooms in nursing station, nursing recording and reporting tools) were counted.

For qualitative study

Key Informant Interviewee (KII): In order to gain reach information regarding nursing service management, barriers to service quality and possible solution, key informant interviewee was conducted. It was determined based on the level of stake in nursing service. There were 16 key informants on the defined level of stake. Among this, 14 key informants were included. Purposive sampling technique was used. The purpose was KIIs level of stake (being quality head, head nurse, hospital CEO, and Zonal health department head).

5.8. Data Collection

5.8.1. Development of Data Collection Tools

Structured questionnaire for patient exit interviewee, structured checklist for observation, for document review, for resource inventory and unstructured in-depth interview guide for key informant interviewee were used. The components of the tool are described as follows.

Resource Inventory checklist: This tool was help to assess the availability of program resources for the delivery of nursing services. Moreover, the checklist includes questions that assess nursing service medical equipment's, human resource, logistics (guideline, recording and reporting tools). The tool was adapted from **EHSTG-2016 operational Standards** a**ssessment tool** and HSTQ-2016 **health service quality standards** assessment tool (6,67)

Observation checklist: a tool was helps to assess the compliance of nurses with the national standard while delivering nursing services. The checklist includes questions about compliance of nurses nursing assessment, nursing process implementation (medication administration patient rights and safety cheeks and CRC standards like keeping privacy and informed consent) (6,67).

Document review checklist: the tool was help to assess availability of reports, action plan reports, feedback recording and reporting formats and compliance of nurses with nursing diagnosis, nursing care planning, nursing care plan evaluation (6,67)

Patient exit interviewee questionnaire: the questionnaire was adapted from Newcastle Satisfaction with Nursing Scale (NSNS) and different literatures from Ethiopia (10,68). The questionnaire includes four sections

Section One: Contains **Patients' socio-demographic status**;- age, sex, marital status, occupational status, place of residence, and average monthly income, patient health conditions such as admission history and average hospital length of stay and hospital conditions such as admission ward, room of admission, and payment for patients.

Section Two: Perceived patient expectation towards hospital nursing services. 12 item five point Likert scale items (from strongly agree to strongly disagree) (57).

Section Three: perceived patient experience towards CRC and hospital aspects of care. It contains 16 five point Likert scale items (from strongly agree to strongly disagree). To avoid affirmation bias, a combination of 18 positively and 8 negatively worded statements (denoted by ®) were included and reversely coded during analysis.

Section Four: Patient opinion (satisfaction) towards nursing service they received during their hospital stay: It contains 14 five point Likert scale items.
The questionnaire was adapted from EHSTG and HSTQ assessment tools different literatures based on evaluation questions (3,34,66)

After data collection, for the purpose reducing a large number of variables into a smaller number of components and for computing factor score for further linear regression, the perceived patient expectation on nursing service, perceived patient experience on nursing service and patient satisfaction data was subjected to exploratory factor analysis (principal component analysis method (PCA))

Before conducting factor analysis all assumptions and appropriateness of factor analysis tests were made. All PCA analysis result showed that the overall measure of sampling adequacy tests Kaiser-Meyer-Olkin (KMO and Bartlett‘s test of sphericity were greater than 0.50 and statistically significant ($p<0.0001$), respectively. Presence of substantial correlations was cheeked, (correlation matrix between variables >0.3 were included for further analysis)

Three components were extracted by factor analysis of patient expectation data and after PCA three items were removed due to creating cross loading (complex structure). The total variance explained by the three components were 73.57%. The components were named as; p**erceived expectation on nurses responsiveness** (which contain 4 items; nurses are responsive, nurses are cheerful, nurses are responsive, nurses are friendly), **perceived expectation on nurses communication** (which contain 3 items; nurses communicate to me, nurses respect my beliefs, nurses meet all my needs) and p**erceived expectation on nurse's politeness** (which contain 2 items). For each component factor score was computed for further regression analysis.

One component was extracted from patient experience on nurses companionate, respectful and care (CRC) data based eigenvalue (>1). Three items were reduced because of cross loading (complex structure) by factor analysis. The total variance explained by the extracted single components were 63.9%. The extracted component was named as **perceived experience on nurses CRC** (which contains six items). **Perceived experience on nurses CRC factor score** was created for further regression analysis.

One component was extracted from patient experience on institutional aspect of the service data based eigenvalue (>1). One item was reduced because of low communality. The total variance explained by the extracted component was 64.87%.the extracted component was named as **perceived patient experience on institutional aspect** (which contains 6 items; the room was clean, the drug was available in the hospital, and the bed is comfortable, the nursing station was visible, the admission procedures were good). Perceived patient experience on institutional aspect factor score was created for further analysis.

One component was extracted from patient satisfaction data based eigenvalue (>1). One items was reduced because of low communality (<0.5). The total variance explained by the extracted component was 71.06 %. The extracted component was named as patient satisfaction on nursing service (which contain 13 items). Patient satisfaction factor score was created for further regression analysis.

Reliability Analysis

Reliability of each scale was determined individually. Cronbach's alpha coefficients were calculated to assess the reliability of factors. The values of Cronbach's alpha coefficients shows that it was within the range of recommended alpha value (> 0.7) (Annex3)

KII guide: It includes general questions about how nursing service have been going on, questions related with availability of resources, compliance of nurses and questions related to opinion about barrier to service and possible solutions. The guide was prepared in to three parts based on the key informant's level of stake.

5.8.2. Data collectors and Field work

Data collectors: Total of seven data collectors and two supervisors (one for each hospital) were recruited from Wara and Waka health center which is out of the study hospitals. The selection criteria for data collectors were having BSc holder in nursing field and took basic training on nursing care practice standards. For management issue three of them were conduct exit interviewee, two of them were conduct document review, two of them were conduct direct observation.

Data collection fieldwork:

Quantitative Data

Interviewee with patients: It was conducted after each participant discharge from the hospital while they exit from service. Separate place was set for interview to protect the privacy of the client. Patients were interviewed about their socio demographic history, their previous expectation for nursing service, their experience on nursing service during hospital stay and their satisfaction status through face-to-face interview.

Observation of nurse to patient interaction: Direct observations was conducted while nurses assess the patient and providing nursing care. The time of observation was at day time (both morning and afternoon) when the patient admitted to the ward. It was conducted by two BSc holder trained nurses.

Document review: Patient charts were reviewed from those chart of clients who were participate in observation session after 24 hours of admission. One year nursing quality management minute books, supportive supervision action plan registration books, nursing workforce plan documents, One month key performance Indicator data base from each hospital were reviewed.

Resource inventory: Resource inventory was conducted by both observation of resources and interview with responsible bodies (head nurses/nurses in the ward). Availability and functionality of medical equipment's, presence of guidelines, and rooms in nursing station were counted. It was conducted by the principal evaluator himself

Qualitative Data

KII: key informants were interviewed after conducting resource inventory, observation and document reviewed. Field note for each questions and responses was taken in Amharic language, and tape record was used. Interviewee guide with probes was used to clarify and expand on the key informant's response. The place of interview was at the office of respective key informant. It was conducted by the principal evaluator himself.

5.8.3. Data quality management

For quantitative data

The questionnaire was prepared in English and translated in to Dawrotsuwa (local language of Dawro zone) by one Dawrotsuwa language expert and back to English by another expert to check consistency. Dawrotsuwa version questionnaire was used for data collection from patients The data collection tools were pretested two day before data collection in neighboring hospital (i.e. Ameya primary Hospital) on (5% equivalent of the sample size=20). The tools were also commented by two M&E expertise. After pretest and comment necessary modification were made for patient exit interviewee questionnaire. Two days training was given for data collectors and supervisor on the evaluation objectives, data collection tools, data collection techniques, and ethical issues. During data collection the whole procedure was supervised and cheeked frequently.

For qualitative data (ensuring trustworthiness)

For ensuring prolonged contact between investigator and study key informants, appointment time was set. Detail information of the circumstances was taken (both not taking and audio record were used with probes).The preliminary findings were presented for the peers to receive input and comments (Peer debrief). Triangulation via use of different types of key informants at different sites was made.

5.9. Data management and analysis

5.9.1. Data Cleaning and Entry

Quantitative data was reviewed and checked for omissions, legibility of handwriting, and completeness by principal investigator and supervisor on daily bases. After checking the data was coded and entered into Epidata version 3.1. Qualitative data from field note and audio records was transcribed with the same language, and then it was translated to English for further analysis.

5.9.2. Data analysis

Quantitative data analysis

The quantitative data were exported into SPSS version 23 software for analysis. Missing value and outlier were cheeked. Recoding, categorizing, computing, counting and other statistical analysis were done. Descriptive statistics (including means, standard deviations, frequencies and percentages) were calculated for demographic variables other variables and presented in texts, and chart.

Patient satisfaction data was scored by transforming in to percentages of scale mean score. This formula was give individual percentage mean score each indicators and to know the overall level of satisfaction of the study population, the average of this score was taken (10). The level of patient satisfaction was determine based on the judgment parameter

$$\textbf{(\%SM)} = \frac{(\textbf{Actual score} - \textit{potential minimum score})}{\textbf{potential maximum score} - \textbf{potential minimum score}} \textbf{X100}\%$$

Factor score was calculated for each scale. By using this continuous scale linear regression was conducted to determine the independent predictor's of patient satisfaction score. All assumptions of linear regression were checked. Normality of distribution was checked by observing using histogram/p-p plot. Linearity was checked by scatter plot, homoscedasticity was checked by of observing distributions residual versus fitted scatter plots. The result showed all were fitted.

First, simple linear regression was conducted to identify candidate variables for multiple linear regressions; significance level of p-value <0.25 was taken as a cut of point for identifying candidates. Multi variable linear regression analysis was conducted to identify independent factors associated with patient satisfaction; significance level of p-value less than 0.05 at 95%CI was taken as a cut of point and unstandardized β was used for interpretation. The final fitted model was constructed using backward elimination method.

Qualitative data analysis

Qualitative date was analyzed manually, thematic analysis technique was used. First, the translated data was coded in to different codes. Each code were categorized in to different categories and then thematized in to two themes. The themes were reasons for unavailability of program resources and response for poor compliance of nurses. The results was narrated and triangulated with the respective dimensions.

Judgment parameter and Matrix of Analysis

Judgment Criteria: the criteria was agreed up with the interest of stakeholders. The cut of point was set by considering one study studies in Axum St. Marry Hospital and the situations in program operation (25). The cutoff point for level of nursing service quality decided to be ≥85%=Very

Good, 75% -84.9%=Good, 55%-74.9% =Fair, <55% = Critical. The overall level of quality of nursing service was judged based on this criteria.

Weighting of dimensions and Indicators: weight was given for each dimension in terms of their relative importance in the evaluation. It was decided as 30% for Availability, 40% for compliance, 30% for patient satisfaction by stakeholder agreement. The national HSTQ nursing standards score were used as a reference to determine the weight of availability and compliance dimension indicators. Whereas weight for satisfaction indicators were determined by the result of factor analysis (6).

5.10. Ethical consideration

Ethical clearance was obtained from Institutional Review Board (IRB) of Jimma University, College of Public Health. Formal letter was write from Dawro zone health department to respective hospitals and permission was obtained from managers of the facilities. Informed consent for interviewee and audio records was obtained from each key informants and each patients. To keep physical privacy of respondents separate place was prepared for interview purpose. Participants were assured for their right of withdrawal from the interview at any time. Names and other personal information which can violate the confidentiality of the respondents were not taken or recorded.

5.11. Dissemination plan

The findings will be presented for Jimma university scientific community and will submitted to Jimma University Institute of health science, department of health economics, management and policy. The final document (both hard copy and soft copies) will be disseminated to stakeholders. For ensuring use of findings, one day face to face meeting and discussion with zonal health department and hospital managers will be held within 30 days of final defense. Final, efforts will be made to publish this evaluation findings on the national or international journals.

Chapter Five: Results

Description of the study participants

Three hundred sixty nine (369) admitted patients were included in the study. Resource inventory was conducted in 2 hospitals (medical, surgical, pediatrics, and gynecology and obstetrics ward in both hospital). Nursing service documents (two nursing quality management minute books/reports, two supportive supervision agreed action plan registration books/reports, two nursing workforce plan documents) were reviewed.

Twenty one nurses (7 from GPH and 14 from TGH) were included in observation, among those nurse 13(61.9%) of them were females. The total of 81 observation sessions were conducted. Among observations 3 observation checklists were incomplete and were not analyzed. Moreover, 81 patient charts, fourteen key informants (11 of them were male) were included in the study.

5.1. Availability of Resources

Human Resource

In public hospitals of Dawro zone, totally 88 (25 in GPH and 63 in TGH) nurses were available on the time of evaluation. Totally 41(12 nurses in GPH and 29 nurses in TGH) nurses were assigned in inpatient department on the time of evaluation, which gives patient to nurse ratio of 10:1 per day in TGH and 6:1 per day in GPH.

Table 2: Nurse to patient ratio in inpatient department of public Hospitals of Dawro zone, 2018.

Sno	Variables	Public Hospitals in Dawro zone	
		TGH[1]	GPH[2]
1	Total patients admitted 1 month (February 20-March 20)	316	66
2	Sum total of length of stay in one month (STLOS)	2276	416
3	Average number of full time equivalent (FTE) nurses in inpatient department	29	12
5	Patient to nurse ratio[3]	10:1	6:1

[1] TGH=Tercha General Hospital
[2] GPH=Gessa Primary Hospital
[3] It was calculated by this formula, Sum total length of stay in one month divided by (number of full time nurses assigned specific hospital in one month *8) (71).

Majority of key informants also agree on shortage of nurses and they said that, the number of nurses in hospitals are low as compare to the patient number. All head nurse key informants responded that there is high turnover of nurses from each hospital.

"…..shortage of nurses (especially BSC nurses) is the major barriers to provide nursing service based on standard. For example in this day we had 19 patients that were admitted in the ward but we have only two nurses assigned in one phase, one nurse provide care for 10 patients."

[29 years old BSC nurse, Head Nurse 04]

One key informant also responded,

"…high turnover of nurses (especially BSc nurses) and shortage of nurse in health care market were the major reason for shortage of nurse in each hospital"

Materials and Infrastructures in nursing station

In TGH, three nursing stations were equipped with all (four) required materials (shelf, table, chair, and personal lockable lockers). But in GPH, only two nursing station was equipped with all required materials, Telephone and Computer were available in only one nursing station.

Table 3: Availability of materials in nursing stations in public hospitals of Dawro zone, SNNPR, 2018

SNo.	Materials in nursing station	TGH (#of nursing station n=4)	GPH (#of nursing station n=4)
1	Chair	4	4
2	Table	4	4
3	Shelf	4	3
4	Personal locker	3	2
5	Telephone	3	1
6	Computer	3	1
All materials available		3	1

All wards (four), three wards in TGH and two ward in GPH had instrument processing room with three separate dust bine on the day of assessment. Regarding to availability of medication preparation room with both functional fridge and hand washing sink; it was available in three wards in TGH and only in one ward in GPH on the day of assessment.

Majority of key informants responded as shortage of allocated budget is a major problem for maintaining and opening additional rooms for nursing services

A 35 year male key informant responded,

"…..we had no enough rooms for providing different services. That was due to shortage of budget for maintaining and construction of new buildings."

Medical Equipment's in Wards.

Among all expected number (72) of functional medical equipment's, 53(73.6%) were available and functional since January 2018 in TGH. Sphygmomanometer, statoscope, thermometer, weight scale, light source, pulse oximetry, and screen were available in all wards in the last three month. However, Sterilizer machine was available only in one ward on the day of assessment. Paracentesis set and lumbar puncture set were not available in all wards in the last three months. During the time of observation there is one sterilizer machine which was supplied from NGO, but the machine was not installed and start its function.

Among all expected number (72) of functional medical equipment's, only 32(43.8%) number of medical equipment's were available and functional in the last three months at GPH. enema set, suction machine, stretcher, and screen were available only in one ward. Similarly, Paracentesis set and lumbar puncture set were not available in all wards in the last three months. Likewise sterilizer machine was not available on the time of observation. Furthermore, Standard operation procedure manuals (SOP) for each medical equipment's were not available and attached on it on the time of evaluation in both hospitals.

Table 4: Availability of medical equipment's for nursing service provision in public hospitals of Dawro zone, SNNPR, May, 2018

SNO	Medical Equipment's	Available since the last three month in wards	
		TGH(n=4)	GPH (n=4)
1	Sphygmomanometer	4	4
2	Statoscope	4	4
3	Thermometer	4	4
4	Stretcher	3	1
5	Wheel chair	3	2
6	Wight scale	4	2
7	Height scale	3	2
8	Sterilizer(any type)	1	1
9	Ambubage Set	3	2
10	Suction machine	3	1
11	Light source	4	3
12	Minor set	2	1
13	Pulse oximetry	4	2
14	Enema Set	3	0
15	Folding Screens	4	1
16	O_2 concentrator	4	2
17	Paracentesis set	0	0
18	LP set	0	0
Total		53	32

Majority of key informants were agree on shortage of medical equipment's in each ward and they responded as this is the major bottlenecks for providing services based on patients need. Shortage of supply from regional health Bureau, poor management of equipment's in work place were the major reason for its shortage.

"Previously, different NGOs were supplied different medical equipment's. But, most of NGOs were phase out. There is also shortage of budget allocated for hospitals. Furthermore, the cost of medical equipment's becomes high. So, it is challengeable in order to fulfill medical equipment's for each wards."

[A 32 year female KII]

"I don't have much knowledge and skill about preventive maintenance of equipment's. In our ward these procedure were not done for all equipment's. For example there are 15 oxygen concentrator in store which are nonfunctional because of absence of preventive and curative maintenance system in these hospital ...this may be due to absence of training and orientation about maintenance issues and commitment of staffs to practice it."

[27 years old KII, Head Nurse 06]

A 32 year male Key informant responded,

"…….lack of skill and knowledge to install medical equipment's, for example we were supplied sterilizer machine from one NGO, but, we cannot use these machine b/c of problem in the installation. Especial training for professionals should be given by regional health Bureau"

Guidelines, recording and reporting tools

Regarding to availability of nursing service recording and reporting formats; all formats were available in both hospitals for the last three months. It is also estimated based on current patient flow and enough recording tools were available for the next for the three months. All recording and reporting formats were in line with EHSTG recommended national standard. However, National nursing care practice guideline was available only in TGH.

All key informants agree on the availability of recording and reporting formats.

A 32 year male Key informant responded,

"Different HMIS formats and guidelines were supplied from zonal health department annually, the other like nursing process formats, vital sign sheet, medication administration sheets were printed by hospitals as needed

Judgment Matrix of availability dimension

The level of quality of nursing service with respect to program resource availability was fair in TGH which was 70.47%. Whereas, the level of quality of nursing service with respect to program resource availability in GPH was critical which was 53.05% based on the judgment parameter.

Table 5: Judgment matrix of availability dimension in the evaluation of nursing service quality in public hospitals of Dawro zone, SNNPR, May, 2018

Table 6: Judgment Matrix of availability Dimension in the evaluation of nursing service quality in public hospitals of Dawro zone, SNNPR, May, 2018

SNO	Indicator (7)	Weight(a)	expected(b)	TGH			GPH			Judgment parameter*
				observed(c)	Ach't (e) (c/b)	Score (e*a/100)	Observed(x)	Archiv(y) (x/b)	Score(y*a/100)	
1	Nurses to patient ratio from February 20-March 20, 2018.	20	1to6	1to10	60	12	1to6	100	20	**GPH** Critical
2	Proportion of availability of medical equipment in hospitals from December 20/2017-March 20/2018.	30	72	53	73	21.9	32	44	13.3	
3	Number of wards with well-equipped nursing station since December 20/2017-March 20/2018.	8	4	3	75	6	2	50	4	
4	Number of wards with instrument processing room with three separate dust bin on the day of assessment.	13	4	2	50	6.5	1	35	3.2	
5	Number of wards with medication preparation room with both fridge and hand washing sink on the day of assessment.	12	4	3	75	9	2	50	6	**TGH** **Fair**
6	Number of hospitals having nursing standard guideline on the day of assessment	8.5	1	1	100	8.5	0	0	0	
7	Number of hospitals having all standardized nursing documentation formats from December 20/2017-March 20/2018.	6.5	1	1	100	6.5	1	100	6.5	
	Overall quality	100				70.4			53.03	

*≥85%=Very Good, 75% - 84% = Good, 55% - 74% = Fair, <55% = Critical

5.2. Compliance of nurses with national guidline

Patient Assessment

Among assessed patients in TGH, 18 (30%) of them were not received comprehensive nursing assessment based on national guideline. One third (28.4%) of patients were not assessed their role and relationship status and 12(20%) patients were not assessed their sleeping history. Among assessed patients in GPH, 9(42.8%) of admitted patients were not assessed based on the guideline; 38.1% of patients were not assessed their history of strees coping mechanism and 39% of them were not assessed their cognitive status (Table 7)

Majority of key informants said that assessment of patients at admission is time consuming

"I think some nursing standards, especially nursing assessment by itself is time consuming task. It takes at least 30 minute/patient to implement all components of nursing assessment, due to this nurses may not implement it for all patients." [28 years old KII, head Nurses 01]

Table 7: Compliance of nurses with assessment criteria in public hospitals of Dawro zone. 2018

Sno.	Activities during patient assessment	TGH(n=60)		GPH(n=21)	
		Yes(%)	No(%)	Yes(%)	No(%)
1	Sleepping history	48(80)	12(20)	12(57.1)	9(42.8)
2	Sexual history	47(78.3)	13(21.3)	13(61.9)	8(38.1)
3	Elimination status	48(80)	12(80)	14(66.6)	7(33.3)
4	Health perception	52(86.7)	8(13.3)	14(66.6)	7(33.3)
5	Role and relationships	43(71.6)	17(28.4)	12(57.1)	9(42.8)
6	Activity and Exercise	48(80)	12(20)	14(66.6)	7(33.3)
7	Coping mechanism	46(76)	14(24)	13(61.9)	8(38.1)
8	Value and belief	46(76.6)	14(23.4)	14(66.6)	7(33.3)
9	Demographic details	60(100)	0(0)	21(100)	0
10	Nutritional status	44(73)	16(27)	19(90)	2(10)
11	Cognitive history	48(80)	12(20)	13(61)	8(39)
Nurses take all assessments		42(70)	18(30)	12(57.7)	9(42.8)

Nursing Diagnosis.

Among all assessed patients in TGH, nursing diagnosis didn't carried out based on all standards (diagnosed based on NANDA list, diagnosis based on PES format and prioritization of problem) for 39(65%) patients. Nurses did not write nursing diagnosis based on NANDA list for 15(25%) patients and prioritization of patients' problem were not made for (26.7%) patients.

Among all assessed patients in GPH, half (52%) of assessed patients were diagnosed based on all nursing diagnosis standards. Diagnosing patients based on PES format were not made for 9(42.9%) patients' and prioritization of problem were not made for 10 (47.6%) (Table 8)

Nursing Care Planning

Among all diagnosed patients in TGH, nurses carried out correct nursing care plan for 37(61.7%) of patients. Expected patient health outcomes were not planned for one third (30%) of patients, expected nursing intervention were not planned for 19(31.7%) patients. Whereas in GPH, half (52.4%) of patients nursing care plan were not developed based national standard. Expected patient health outcomes were not planned for 10(47.6%) of patients, expected nursing intervention were not planned for 8(38.1%) patients (Table 8)

Implementation and Evaluation

Among all patients assessed in TGH, nursing interventions were given based on pre-set nursing care plan for 33(55%). Regarding to conducting nursing evaluation/daily progress note, 31(51.7%) of patients nursing care plan was not evaluated by ward nurses on daily base. In GPH, nursing interventions were not conducted based on pre-set planned nursing intervention for 11(52.4%) and evaluation of patients health outcome on daily base for 12(57.1%) (Table 8)

Table 8: Nursing diagnosis, planning, implementation and evaluation result in public hospitals of Dawro zone, May, 2018.

#.	Intervention		TGH(n=60)		GPH(n=21)	
			Yes (%)	No (%)	Yes (%)	Yes (%)
1	Correct nursing diagnosis	Diagnosis was based on NANADA list	45(75)	15(25)	12(57)	9(42)
		The diagnosis was based on PES format	43(71.7)	17(28.3)	12(57.1)	9(42.9)
		The diagnosis were prioritized	44(73.3)	16(26.7)	11(52.4)	10(47.6)
	All nursing diagnosis standards practiced		39(65)	21 (35)	11(52.4)	10(47.6)
2	Correct nursing planning	Expected patient health outcome planned	41(70)	18(30)	11(52.4)	10(47.6)
		The expected outcome were SMART	36(60)	24(40)	8(38.1)	13(61.9)
		Expected nursing intervention was planned	41(68.3)	19(31.7)	13(61.9)	8(38.1)
	All nursing planning standards practiced		37(61.7)	23 (38.3)	10(47.6)	11(52.4)
3	Nurses implement nursing intervention based on nursing care plan		33(55)	27(45)	10(47.6)	11(52.4)
4	Nursing care plan was evaluated based on the plan		29(48.3)	31(51.7)	9(42.9)	12(57.1)

Majority key informants were said that shortage of resources, absence reference books and limited capacity building activities like in service training sessions were the major reason for poor implementation of nursing standards.

"….Shortage of resources (human and material resource), negative staff attitude, and limited support from higher offices were the big challenge for providing quality nursing service. Beside this, there is no budget code specifically assigned for nursing department"

[28 years old male KII]

"Poor implementation of nursing standard was due to shortage of time, inadequate knowledge on nursing diagnosis terminologies, lack of experience on using the NP, shortage of reference materials, lack of incentives, inadequate supplies and inadequate staffing"

[27 years old KII, Head Nurse7 added]

"Majority of nurses were not refer nursing guideline, simply the provide care based on their previous experience, this leads poor service quality. I think these is due to shortage of capacity building activities like nursing round, nursing morning section, in service training, different seminars, and presentations" [28 years old KII, Head Nurses 01]

Medication Administration.

Among medication administration procedures observed in TGH, all the three medication administration safety cheeks were not performed in 37(61.6%) proceduers. Checking medication name and does when reaching the container was missed in 24(40%) observation sessions. Similarly in GPH, nurses were not cheek medications name and does before administer to the patient in 10(47.6%) of medication administration sessions.

Regarding to keeping patients right of medication administration, all the six rights were performed in 48(80%) proceduers. However,12(20%) proceduers were practiced with wrong time and 10(16.7%) proceduers were practiced with wrong documentation. Likewise in GPH, the incidence of medication adminstration with at least one wrong right was 5(23.8), 19% of observed procedures were carried out with wrong time and wrong documentation. (Table 9)

Table 9 Practice of medication adminstration patient safety cheeks and rights by nurses in public hospitals of Dawro zone, 2018.

SNo	Intervention		TGH(n=60)		GPH(n=21)	
			Yes (%)	No (%)	Yes (%)	No (%)
1	Medication administration safety cheeks	Reaching the container	36(60)	24(40)	16(76.2)	5(23.8)
		Pouring the medication	45(75)	15(25)	13(61.9)	8938.1)
		Returning the medication to the cabinet	44(73.3)	16(26.7)	18(85.7)	3(14.3)
	All 3 cheek carried out		23(38.3)	37(61.60	11 (52.4)	10(47.6)
2	Medication administration safety rights	Right Patient	60(100)	0	21(100)	0
		Right dose	60(100)	0	21(100)	0
		Right drug	55(91.7)	5(8.3)	21(100)	0
		Right rout	58(96.7)	2(3.3)	20(95.8)	1(4.8)
		Right time	48(80)	12(20)	17(81)	4(19)
		Right documentation	50(83.3)	10(16.7)	17(81.0)	4(19.)
	All six rights practiced		48 (80)	12(20)	16(76.2)	5(23.8)

Recording and reporting

The completeness of nursing records was assessed in terms of assessment form, diagnosis form, nursing care plan form, nursing implementation form, nursing evaluation form, nursing medication administration form, patient discharge form and vital sign sheet. Accordingly, the result showed that, 28(46.7%) and 9 (42.9%) patients chart content were not completed for all the listed nursing service records in TGH and GPH, respectively. Among all patients chart that were reviewed in TGH, nurses were not record patients vital sign every four hour, nursing intervention form and nursing evaluation form for 16(26.7%), 13(21.7%), 18(30%) of patients, respectively.

"In our ward nurses give priority for patient care, significant number of them give less emphasis for recording patient's information. In my opinion staff negligence, poor monitoring and supervision and low awareness about medico legal issues were the reason for poor recording habit"

[30 years old KII, Head Nurse 05]

Training, supervision and monitoring of nursing services.

In the last one year (January 1-December 30/2017), four supportive supervision sessions were conducted (one in TGH, 3 in GPH) by zonal health department. In all sessions agreed action plan were set for those identified problems and signed in supportive supervision agreed action plan registration book. TGH received one session supportive supervision from Federal Ministry of Health (FMOH) in 2017. But, GPH was not supervised by FMOH.

Concerning to provision of in service training for nurses, one shift onsite training was given for nurses at TGH, 27 nurses from TGH were trained about nursing care standards by this training. But there was no training given for nurses in GPH. But, three nurses were trained by training given by regional health Bureau.

Regarding to nursing practice auditing, three nursing practice audits were conducted with written action plan in the last one year at TGH. One nursing process audit, one nursing infection prevention practice audit, one safe medication administration audit results were available in nursing quality management Minuit books. However, there was no nursing audit conducted in GPH in 2017.

Majority of key informants were responded that budget shortage is the reason for irregular practice of nursing audit and supervision,

"We adapt nursing service standard assessment tools which have 60 items from EHSTG standard. We have been identify nursing service gapes based on the tool, we were discussed about those gapes in nursing management team, and we were developed action plan and feedback on it. However, it is not regular because of shortage of budget and low staff commitment"

[32 years male old KII]

Compassionate, Respectful and Caring (CRC)

Among 60 nurse to patient interaction sessions in TGH, patient folding screen/separate place for keeping privacy was not used in 25 (41.7%) procedures, informed consent was not taken for 17 (28.3%) procedures. Whereas in GPH; among 21 observation sessions, patient folding screen/separate place for keeping privacy was not used in 11(52.4%) procedures, informed consent was not taken for 5(23.8%) procedures.

All respondents said that in order to implement the CRC national transformation agenda, different focal persons were assigned and future strategies were set.

"...in each hospital CRC focal person were assigned, staff orientation were given, ambassadors were assigned, and CRC strategic plan was developed."

[35 Years old Male KII added]

Judgment Matrix of compliance dimension.

Based on judgment matrix analysis the level of quality in terms of compliance of nurses with national guideline was fair in TGH, which was scored 57.95% and critical in GPH, which was scored 52.1%.

Table 10: Judgment Matrix for compliance dimension on evaluation of nursing service quality in public hospitals of Dawro zone, 2018

SNo.	Compliance Indicators	Weighted(a)	TGH				GPH				Judgment parameter
			Expected(b)	Observed(c)	Achiv(e)(b/c*100)	Scored(e*a/100)	Expected(x)	Observed(y)	Achiv(z)(x/y*100)	Scored(z*a/100)	
1	Proportion of nurses received in service training at least one times in the last 1 year.	7.2	63	27	42.8	3.086	25	3	12	0.86	**TGH**
2	Number of nursing auditing conducted with written feedback in the last 1 year	6.5	4	3	75	4.88	4	0	0	0	≥85%=Very Good 75% - 84% = Good
3	Number of SS conducted with written feedback from ZHD in the last one year	6.5	4	1	25	1.62	4	3	75	4.88	**55% - 74% = Fair**
4	Proportion of clients received comprehensive assessment based on the guideline.	7.7	60	42	70	5.39	21	12	57.7	4.49	<55% = Critical
5	Proportion of patients who had at least one correct nursing diagnosis	7.7	60	39	64	4.93	21	11	52.4	4.9	**GPH**
6	Proportion of patients who had correct nursing care plan	7.7	60	37	61.7	4.75	21	10	47.6	3.67	≥85%=Very Good 75% - 84.9% = Good
7	Proportion of patients received nursing care based on nursing care plan.	7.7	60	33	55	4.26	21	10	47.6	3.67	55% - 74.9% = Fair
8	Proportion of patients for whom nursing evaluation was done based on the guideline	7.7	60	29	48.3	3.71	21	9	42.9	3.31	**<55% = Critical**

Table 11**(Cont'd):** Judgment Matrix for compliance dimension on evaluation of nursing service quality in public hospitals of Dawro zone, 2018

SNo.	Compliance Indicators	Weighted(W)	TGH				GPH				Judgment parameter
			Expected(b)	Observed (c)	Achiv(e) (b/c*100)	Scored (e*a/100)	Expected(x)	Observed (y)	Achiv(z) (x/y*100)	Scored (z*a/100)	
9	Proportion of patient charts with complete inpatient nursing records.	7.7	60	32	53.3	4.9	21	12	57.1	4.40	
10	Proportion of medication administration observation sessions with three cheeks.	10	60	32	38.3	3.83	21	11	52.4	5.24	
11	Proportion of medication administration observation sessions with six rights	10	60	48	80	8	21	16	76.2	7.62	
12	Proportion of observation sessions with privacy of the patient maintained.	8	60	26	43.5	3.48	21	10	47.6	3.81	
13	Proportion of observation sessions with informed consent taken.	6	60	43	71.7	4.3	21	16	76.2	4.57	
	Overall quality	100				57.9				52.1	

5.3. Acceptablity/Patient Satisfaction of patients with nursing care

Socio demographic characteristics of Admitted patients

From 385 sampled admitted patients, 369 participated in the study which provided the response rate of 95.8%. From the total admitted patients, 309 patients were selected from TGH and 60 patients were selected from GPH. Among all patients (369), 189 (51.2%) were female. The mean age of respondents was 32.94(SD=10.94). A larger proportion of the respondents 135(41%) were in the age group 25-34 years followed by 35-44 age group 98(26.6%). One hundred two (54.7%) of the participants were protestant followed by orthodox 116(31.4%). Majority of the respondents 340(92.1%) were Dawro. Two hundred four (55.3%) of respondents were from rural area while the remaining 165(44.7%) were from urban area. Two hundred forty two (65.6%) of study subjects were married. Concerning educational status, 74(20.1%) of the respondents could not read and write, only 89(24.1%) of them had attended Diploma and above. One handed sixteen (31.4%) of the respondents were farmers, 56 (15.2%) of them were unemployed. The median monthly family income of respondents was 1000ETB (Table 12).

Patient satisfaction towards nursing service

The overall patient satisfaction mean score with nursing services among patients who were admitted in TGH and GPH was 58.9% and 63.34%, respectively.

In GPH, 65.3% of patients were satisfied with the amount of time spent with them, 65.08% of patients were satisfied with nurses helped their relatives mind rest, 65% of them were satisfied with the amount of information nurses give to them, and 64.53% on patients were satisfied with nurse's treatment of them as an individual. Whereas in TGH, 57.52% of patients were satisfied with the amount of time spent with them, 57.77% of patients were satisfied with nurses helped their relatives mind rest, 57.52% of them were satisfied with the amount of information nurses give to them, and 59.14% on patients were satisfied with nurse's treatment of them as an individual (Table 12).

Based on judgment parameter the level of nursing service quality in terms of patient satisfaction was fair in both hospitals.

Table 12: Judgment Matrix for Acceptability/satisfaction dimension on evaluation of nursing service quality in public hospitals of Dawro zone 2018

SNo.	Satisfaction dimension Indicators	Weight(a)	TGH		GPH		Level of quality.
			Observed(b)	Score (a*b/100)	Observed (c)	Scored(a*c/100)	
1	Percentage satisfaction mean scale of patient with the way nurses responded to their request	7.84	60.33	4.73	60.33	4.87	
2	Percentage satisfaction mean scale of patient with nurses' visit when they call	8.03	57.90	4.65	57.90	4.91	
3	Percentage satisfaction mean scale of patient with the way nurses treat them to feel as if they were at home	8.5	57.53	4.89	57.52	5.27	≥85%= Very Good
4	Percentage satisfaction mean scale of patient with the availability of nurses around them	8.48	58.96	5	58.96	5.26	
5	Percentage satisfaction mean scale of patient with frequency of nurse's check their conditions	7.75	59.53	4.59	59.53	4.93	75% - 84.9% = Good
6	Percentage satisfaction mean scale of patient with the amount of time nurses spent with them	7.79	60.46	4.71	60.46	5.09	55%-74.9% = Fair
7	Percentage satisfaction mean scale of patient with the information they got	7.14	57.50	4.1	57.50	4.63	
8	Percentage satisfaction mean scale of patient with nurses listened their worries & concerns	8.63	61.55	5.3	61.55	5.55	<55% = Critical
9	Percentage satisfaction mean scale of patient with nurses' willingness to respond their requests	7.03	58.89	4.14	58.89	4.35	
10	Percentage satisfaction mean scale of patient with the manner nurses doing their work	7.42	57.41	4.26	57.41	4.48	
11	Percentage satisfaction mean scale of patient with nurses' helpfulness	6.25	59.13	3.66	59.12	3.94	
12	Percentage satisfaction mean scale of patient with nurse's treatment for relatives.	7.59	57.71	4.38	57.70	4.93	
13	Percentage satisfaction mean scale of patient with nurses' treatment of them as an individual	7.55	59.04	4.44	59.04	4.85	
	Total	100		58.85		63.06	

5.4. Factors associated with patient satisfaction

5.4.1 Bi-Variable linear Regression Analysis

Patient related factors of patient satisfaction:

From patient related factors; socio demographic factors (sex, occupation status, educational status), and history of admission were become a candidate variable factors associated with patient satisfaction (P<0.25). Age, residence and income were not a candidate predictor for patient satisfaction

Table 13: Patient related factors of patient satisfaction in public hospitals of Dawro zone, 2018 (n=369)

Category	Characteristics	Frequency n (%)	Unstandardized Coefficients	95.0% (B)	P-value
Sex	Male	180 (48.8)	0.177	-0.028, 0.381	**0.090**
	Female*	189 (51.2)	1		
Residence	Urban	165	0.080	-2.96, 0.116	0.392
	Rural	204 (55.3)	1		
Marital status	Never married	89(24.1)	0.176	-0.067, 0.420	**0.155**
	Divorced	21(5.7)	0.176	-0.067, 0.420	0.155
	Married*	242(65.6)	1		
	Widowed	17(4.6)	-0.111	-0.558, 0.336	0.626
Educational status	Cannot read and write	74(20.1)	0.010	-0.274, 0.293	0.947
	Primary school*	135(36.6)	1		
	Secondary school	71(19.2)	-0.048	0-.335, 0.239	0.742
	Diploma and above	89(24.1)	-0.303	-0.570, -0.036	**0.026**
Occupational	Gov”t employee	107(29)	-0.041	-0.301, 0.219	0.758
	Farmer*	116(31.4)	1		
	Student	42(11.4)	0.065	-0.268, 0.397	0.703
	Merchant	56(15.2)	0.600	0.250, 0.949	**0.001**
	Unemployed	48(13)	0.150	-0.165, 0.466	0.350
Admission history	Yes	114(30.4)	0.230	0.009, 0.450	0.**041**
	No*	255(69.1)	1		
Age			-.007	-0.017, 0.004	0.202

*Reference category (the highest frequency taken as reference categories).

Hospital Related factors of patient satisfaction

From hospital related factors, presence of particular nurse assigned to the patient, admission ward, duration of hospital stay, and class of admission were become a candidate variable for patient satisfaction ($p < 0.25$). Among hospital related variables that we were seen patient's length of hospital stay is not candidate variable for patient satisfaction factor score.

Table 14: Hospital related factors of patient satisfaction in public hospitals of Dawro zone, 2018 (n=369)

Category	Characteristics	Frequency n (%)	Unstandardized Coefficients	95.0% (β)	P-value
Admission ward	Medical	144(39)	1		
	Surgical	129(35)	-0.033	-0.264, 0.199	0.781
	Gyne/oby*	96(26%)	-0.583	-0.835, -0.332	**<0.001**
Payment for the service	Free	118(68)	0.516	0.303, 0.729	**<0.001**
	Payment*	251(32)	1		
Presence of assigned nurse to you	Yes*	176(47.7)	1		
	No	74(20.1)	-1.407	-1.629, -1.185	**<0.001**
	I am not sure	119(32.2)	-0.925	-1.116,-0.735	**<0.001**
Class of admission	First class	101(27.4)	1.468	1.273,1.663	**<0.001**
	Second class	96(26)	0.386	0.188,0.585	**<0.001**
	Third class*	172(46.6)	1		
Length of hospital stay	2-10day*	337(91.3	1		
	11-22days	18(4.9)	0.435	-.039,.910	0.721
	>22days	14(3.8)	-0.144	-.679,.391	0.597

*Reference category (the highest frequency taken as reference categories).

Nurse to patient interaction related factors of patient satisfaction

Perceived expectation on nurse's responsiveness factor score, perceived expectation on nurse's communication factor score, perceived expectation on nurse's politeness factor score, perceived nurses experience on CRC factor score and perceived experience on institutional aspect factor score were become a candidate variable for ($p < 0.25$) patient satisfaction factor score.

Table 15 Patient expectation and experience factors of patient satisfaction in public hospitals of dawro zone, 2018(n=369)

Variable	Unstandardized Coefficients	95.0% (β)		P-value
Perceived expectation on nurses responsiveness factor score	0.651	0.573	0.729	**<0.001**
Perceived expectation on nurses communication factor score	0.419	0.326	0.512	**<0.001**
Perceived expectation on nurses politeness factor score	0.330	0.233	0.427	**<0.001**
Perceived nurses experience on CRC factor score	0.628	0.548	0.708	**<0.001**
Perceived experience institutional aspect factor score	0.646	0.568	0.725	**<0.001**

5.4.2 Multi-variable linear regression analysis.

Sixteen variables were candidate for Muli-variable linear regression and run in multi-variable linear regression model by using backward regression method. From which 9 variables were statistically significant association with patient satisfaction factor score ($p < 0.05$). The variables in this model explained 76.2% (R=0.873, R Square =0.762, Adjusted R Square=0.753) of the variability in the patient satisfaction factor score.

In this study, occupation status, educational status, presence of particular nurse assigned, class of admission, perceived expectation on nurses responsiveness factor score, perceived expectation on nurses communication factor score, perceived expectation on nurses politeness factor score, perceived nurses experience on CRC factor score, perceived experience institutional aspect nursing service factor score were statistical association with patient satisfaction factor score.

As compared to participants who were primary school in educational status, having diploma and above leads to decrement of patient satisfaction score by 0.267 (95%CI= -0.418,-0.115, P<0.001). As compare to participants who were farmers in occupation, being merchant leads to increment of patient satisfaction score by 0.314 (95%CI=0.140, 0.488, P<0.001).

The result showed that, absence of nurses assigned to the patient leads to decrement of patient satisfaction score by 0.482 (95%CI= -0.648, -0.315, P<0.001). As compared to patients admitted third room far from the nursing station, admitting in the second room leads to an increment of patient satisfaction score by 0.192(95%CI= 0.065,0.32, P=0.003). Also, Being admitted in the first room leads to an increment of patient satisfaction score by 0.341 (95%CI= 0.273, 0.409, P<0.001).

The result showed that there is positive linear association between patient expectation towards nursing service score and patient satisfaction. ten unit increment in perceived expectation on nurses responsiveness factor score resulted in 3.41 unit increments in patient satisfaction factor score of patients (95%CI=2.73,4.09, P<0.001). Similarly, 10 unit increment in perceived expectation on nurses communication factor score resulted in 2.1 unit increments in patient satisfaction score of patients (95%CI=1.39,2.82, P<0.001).

The other factor that affect patient satisfaction was perceived experience on CRC factor score. It was found that 10 unit increment in the perceived experience on CRC factor score leads to an increment of patient satisfaction score by 1.71(95%CI=0.81,2.62, P<0.001). Likewise, 10 unit increment in the perceived experience on institutional aspect factor score leads to an increment of patient satisfaction score by 1.12 (95%CI= 0.37, 1.88, P<0.001).

Table 16: Independent factors associated with patient satisfaction in public hospitals of Dawro zone, 2018 (n=369)

Category	Characteristics	Unstandardized Coefficients	P-value	95.0% CI for B
Educational status	Primary school	1		
	Diploma and above	-0.267	<0.001*	(-0.418,-0.115
Occupational status	Farmer	1		
	Government	0.153	0.042*	0.006- 0.301
	Merchant	0.314	0.001**	0.140, 0.488
Presence of assigned nurse	Yes	1		
	No	-0.482	0.001**	-0.648-0.315
	I am not sure	-0.279	0.001**	-0.422,-0.136
Class of admission	First class	0.396	0.001**	0.230, 0.563
	Second class	0.192	0.003*	0.065, 0.32
	Third class	1		
Perceived expectation on nurses responsiveness factor score		0.341	0.001**	0.273,0.409
Perceived expectation on nurses communication factor score		0.210	0.001**	0.139,0.282
Perceived expectation on nurses politeness factor score		0.107	0.001**	0.050, 0.164
Perceived experience on CRC factor score		0.171	0.001**	0.081 0.262
Perceived experience institutional aspect factor score		0.112	0.004*	0.037,0.188

Constant=0.024, R = 0.873, R Square =0.762., Adjusted R Square=0.753 * Significant at p value <0.05, **significant at p value <0.001, Dependent variable:-patient satisfaction factor score.

Max VIF=3.6 (no Multicolinearity: at VIF<5)

Overall Judgment Matrix

Based on the weight given for each dimension of quality; the overall quality of nursing service in TGH was 62.21%, which was Fair quality. Similarly, the overall quality of nursing service in GPH was 54.67%, which was Critical quality.

Table 17: Overall Judgment Matrixes for evaluation nursing service quality in public hospitals of, Dawro zone, 2018

#	Dimensions	weight	Tercha General Hospital			Gessa primary Hospital		
			Observed	Achi't (%)	Level of quality	Observed	Achi't (%)	Level of quality
1	Availability	30	21.1	70.47	Fair	15.92	53.05	Critical
2	Compliance	40	23.2	57.95	Fair	20.84	52.1	Critical
3	Acceptability / Satisfaction	30	17.91	58.85	Fair	17.91	63.06	Fair
Total service quality		**100**	**62.21**	**62.21**	**Fair**	**54.67**	**54.67**	**Critical**

Judgment parameter: ≥85%=Very Good, 75% - 84% = Good, 55% - 74% = Fair, <55% = critical

Chapter Six: Discussion

The evaluation finding show that the overall quality of nursing service in TGH was Fair (62.21%), and that of GPH was critical (54.67%) based on judgment parameter. The availability of resource was 70.4% and 53.05% in Tercha and Gessa hospital, respectively. Compliance of nurses with national guideline scored 57.95% and 52.1% in Tercha and Gessa hospitals, respectively. Moreover, the overall patient satisfaction mean score with nursing services among patients who were admitted in TGH and GPH was 58.9% and 63.34%, respectively.

6.1. Availability Dimension

As per general hospital national standard, 117 (all types) of nurses were required in TGH, but only 53.8% of them were available at the time of this study. Similarly, as primary hospital standard 31(all type) of nurses were required in GPH, 80.7% of them were available at the time of this study. The average number of patients assign to one nurse per day in TGH was ten. This finding is high as compared to the national standard, which recommends as to be six. This implies that nurses in the TGH were overloaded by extra four patients per day as compared to the national standard(32,33). This study is comparable with a study conducted in South Africa which was one nurse provide care for 10 patient (24). It also supported by study conducted in Ethiopia, which showed there were under-supply of nurses as compared to country needs (11).

However, this finding is lower than the study conducted in four public hospitals of Addis Ababa, which stated as, 40.6% of nurses were given nursing care for more than 15 patients per day. This higher result might be due to difference catchment population. Those hospitals in Addis Ababa were (four) serves for 3 million population unlike the study hospitals which was 604,901. In addition to that, they are found in relatively more urban area, residents live in urban area statistically significant for high utilization of health services as compare to residents' live in rural (17,34,69) So, residents more utilize nursing services as compared to the study hospitals.

As per national standard, 72 medical equipment were required in each hospital. Among these, 73.6% medical equipment' were available in TGH and only 43.8% were available in GPH since the last three months. The difference in availability of equipment's among the two hospitals might be difference in level of hospitals. The finding in both hospitals is low as compared to zonal health department target, which was stated as each hospital should have 88% of functional medical equipment (60). The finding in GPH was lower than the study in Ethiopian public hospitals and other health facilities, 61% of medical equipment's were functional and in service.

Also, the finding in GPH was lower than the study conducted in Jimma University specialized hospital, 65.13% medical equipment's were functional(27,29). This might be due to presence biomedical unit and presence regular monitoring of medical devices by Oromia regional heath office (OHB) and Ethiopian Ray Authority (ERA) in Jimma University specialized hospital unlike the study hospitals.

All nationally recommended number and item of nursing recording and reporting formats were available in the last three months at both hospitals and the formats were updated with EHSTG recommended national standard. This finding is comparable with study conducted in Menelik II Referral Hospital, which was stated as all medical records were available in hospital and attached in patients chart(30). Possible explanation for the availability of all (100%) nursing records in both hospitals might be, Ethiopian health system is found on the period of health information revolution, the administrative bodies may gave more emphasis for health service records and may availed it.

The national guideline recommend each hospital should have nursing standard guideline in nursing station. But, Nursing care standard guideline document was not available in GPH. These may be due to guidelines were developed by national/regional health Bureau and it was distributed to each hospital during supportive supervision or when nurses received training, but according to this study the study hospitals was not supervised by FMOH in the last one year. So, this may be the reason for its absence. This study also is not consistent with study conducted in Asella Referral and Teaching Hospital which showed that nursing care standard guideline was available on the time of observation (31). This might be due to since it was teaching hospital, especial emphasis might be given for availability of guidelines for provide training in addition to utilizing it in wards.

6.2 Compliance Dimension

The result of the present study indicated that assessment was not practiced for 30% of patients, diagnosis was not practiced for 35% of patients, planning was not practiced for 37.1% of patients, implementation was not practiced for 45% of patients and evaluation was not practiced based on the national guideline for 48.3% patients in TGH. Similarly in GPH, assessment was not practiced for 42.3% of patients, diagnosis was not practiced for 47.6% of patients, planning was not practiced for 52.4% of patients, implementation was not practiced for 52.4% of patients and daily evaluation patient's condition was not practiced based on the national guideline for 57.1% patients. The lower performance in GPH as compared to TGH might be due to shortage of medical equipment's, shortage of trained nurses, absence of reference books and nursing guidelines in GPH. This finding is low as compared to the national standard, which stated that each components of nursing process should be practiced for all admitted patients and nursing evaluation should be conducted every day(1). The findings in both study hospitals also lower than Dawro zonal heath department baseline assessment, which was stated as each components of nursing process was practiced based on the guideline for 68% of admitted patients(60).

Furthermore, the present finding in both hospitals is lower than the study conducted in Public Hospitals of Harari, which showed assessment was not practiced for 17.8% of patients, diagnosis was not practiced for 21.8% of patients, planning was not practiced for 25.3% of patients, implementation was not practiced for 38.5% of patients, and evaluation was not practiced for 51.1% of admitted patients. This lower finding in the study hospitals might be due to low patient to nurse ratio in Hariri hospitals as compared to the study hospital, it stated that one third of nurses were provide nursing care for less than 5 patients per day(42).

According to the present study, the incidence of medication administration with wrong patient rights was 20% in TGH and 23.8% in GPH. The result is lower than that of zonal health department baseline, which was 29.1%(60). This finding is lower than the national standard, which states all medication administration rights should be kept for all patients in all interventions. This finding is higher than the study conducted in Sent. Marry Hospital, the incidence of administering medication with at least one wrong rights were 3.5%(25). But, it was better than study conducted in Jimma university specialized hospital, which was 51.8% and Gonder university hospital, which was

29.1% and Felegehiwot referral hospital, which was 56.4% (14,37,38). This might be due to the above hospitals are referral hospitals, they provide service for large number of patients, this leads to high nurse to patient ratio and high work load due to this fact, nurses may made wrong patient rights.

One third of nurses were trained on nursing care standard. The national guideline recommends all (100%) nurses in hospitals should receive in service training at least one times per year. Our finding is higher than study conducted in Mekele university hospital, which is 21% of nurses were received training on nursing standard (2,35). This might be due to difference in study period.

The present study showed that, 46.7% and 42.9% patients chart content were not completed for all the listed nursing service records in TGH and GPH, respectively. This finding is much lower than zonal health department target at the end of 2017, which was above 90% (60). This finding also much lower than study conducted at Menelik II Referral Hospital, Addis Ababa, which was only 16% of patient charts was complete for each entry of nursing recording formats (30). The variation may be justified as training availability about nursing documentation from university hospitals in which many of nurses are believed to have better knowledge to practice nursing documentation.

6.3 Acceptablity/Satisfaction Dimmension

The overall patient satisfaction mean score with nursing services among patients who were admitted in TGH and GPH was 58.9% and 63.34%, respectively. This result was almost comparable with the study conducted in St. Marry Hospital and public hospitals of Guji zone which was 65% and 55.9%, respectively(25,47). The present finding is higher than the study conducted in Arbaminch general hospital and Felegehiwot hospital which was 40.9% and 44.9%, respectively(18,49). This difference might be due to high patient load in Arbaminch and Felegehiwot hospital as compared to the study hospitals. This finding is low when compared to studies conducted in Tikur-Anbassa specialized Hospital which was 90.1%(4). The difference might be related to the level of Hospital that it is referral hospital that most of nurses were professional expertise and have adequate technology for the implementation of better nursing care practices.

6.4 Factors affecting patient satisfaction with nursing service

The findings of this study showed that there was statistical significant association between educational status, occupational status, class of admission, presence of assigned nurse, patient expectation, and patient experience with patient satisfaction towards nursing service.

Concerning patients' socio demographic characteristics, having diploma and above in educational status leads to decrement of patient satisfaction score by 0.267 as compared to participant with primary school. This may be the result of patients with higher education being able to access information about the duties of the nurse. They may also have read about the patients' charter and know about the responsibilities of the nurse. If these responsibilities are not carried out well, they become not satisfied. Those with limited education have no access to this information and tend to be satisfied with the nursing care given since they have nothing to compare with. Study in Jimma University observed that patients with no formal education were more satisfied by 76.9% than their counterparts. Also, study in Bahir Dar showed that employees were 0.42 times less likely to satisfy than farmers (55).

The result showed that, unavailability of specific nurse assigned to the patient leads to decrement of patient satisfaction score by 0.482. It is similar in one study in Felegehiwot referral hospital, which identified as those patients who had one nurse in charged/assigned were 1.2 times more satisfied than those patients not assigned (49). This might be due to if there is a nurse assigned for specific number of patients, the nurse feels more responsible and conduct every aspects of care based on the guideline. In addition, if patents know the specific nurse which assigned to them, they may feel freedom to communicate about their conditions, to call nurse when they need, even to judge about frequency of visit.

Class of admission was also one of the factors significantly associated with satisfaction with nursing care. Being admitted in the first class (near the nursing station) leads to increment of patient satisfaction score by 0.341unit as compared to those patients admitted in the third class. This might be because the number of patients that were admitted in the first class in this study were small in number(27.4%) as compared to 3rd class(46.6%), this may leads to different opportunities to the patient, like to have frequent visiting, for communicating with nurses and that first class wards may not be overcrowded by visitors. This may have positive influence on their

satisfaction. This finding is in agreement with study done on Dessie referral hospital which revealed that first class were more likely to be satisfied as compared to patients admitted in the second and third class(53).

According to this study, there is positive linear association between patient expectation towards nursing service and patient satisfaction. Ten unit increment in perceived expectation on nurses' responsiveness factor score resulted in 3.41 unit increments in patient satisfaction score of patients. Other studies also support this finding, study in Kenyatta National Hospital, it was revealed that there was a strong positive linear correlation between patient expectation towards nursing care and patient satisfaction. Another study in Hawasa Referral Hospital showed a positive linear significant association, 10 unit increase in expectation score will lead to 3.45 increments in patient satisfaction (10,57). This might be due to if patients got what they expected from nursing service they may become more communicative with the patient about their worries and concerns, they involved themselves in caring process, they feel hospitals as home and this leads high satisfaction score

The present study also showed a significant positive association between perceived institutional aspect factor score with patient satisfaction score. Ten unit score increase in perceived institutional aspects will lead to 1.12 unit increments in patient satisfaction factor score. This finding also supported by study conducted in Hawasaa University specialized and Nagele Borena and Adola General Hospital pointed out that satisfaction was also positive association with perceived institutional aspect, if the perceived needs of the patient fulfilled they would have been more satisfied with nursing care they receive(10,47).

Limitation of the study

There was direct observation of nurse to patient interaction sessions this procedure might have led to reactivity or behavioral distortions (the Hawthorne Effect). To minimize this one observations was dropped from each session from analysis but still the effect may happen.

Since nursing service was provided for 24 hour, due to resource constraint, observation were not conducted at night this may leads to selection bias and overestimate the observation finding. Because nurses may tired and sleep at night and may not implement nursing process at night.

Chapter Seven: Conclusion and Recommendation

7.1 Conclusion

Based on judgment parameter the availability of resources for providing nursing service was Critical in GPH and Fair in TGH. There was no shortage of recording and reporting in both hospitals. However, there is shortage of nurses in TGH. Only one nursing station in GPH was equipped with all required materials, there were shortage of medical equipment's particularly, sterilizer machine, enema set, minor set, oxygen concentrator, pulse oximetry, lumbar puncture set and Ambubage set in both hospital. Number of rooms also were limited in GPH. In addition unavailability of nursing standard guideline in GPH, and SOP manuals for medical equipment in both hospitals also happened.

Based on judgment parameter the compliance of nurses with national guideline during provision of nursing service was Critical in GPH and Fair in TGH. In both hospitals compliance of nurses with national guideline was critical based on judgment parameter during writing nursing care plan, implementing planed interventions, patient evaluation, practicing medication administration safety cheeks, keeping patient physical privacy and nursing documentation. Also, the required number of nursing practice audit, supportive supervision and provision of training for nurses were not practiced per the standard.

Moreover, according to the finding of our evaluation the level patient satisfaction towards nursing service in both hospitals was fair based on the judgment parameter. Educational status, occupational status, class of admission, presence of assigned nurse, patient expectation and patient experience were independent redactors of patient satisfaction.

7.2 Recommendations

For ministry of Health and SNNPR regional health Bureau:

- ✧ Medical equipment's like sterilizer, suction machine, lumbar puncture set, parasentesis set, oxygen concentrators should be supplied to the public hospitals.
- ✧ Nursing standard guidelines should be supplied for GPH and medical equipment's standard preventive maintenance manual should be supplied for each hospitals.

Zonal Health Department

- ✧ In collaboration with SNNPR, additional nurses should be recruited for TGH
- ✧ Continuous supervision should be provided to the hospitals that focus on program improvement.

For Hospitals

- ✧ Additional nurses should receive in-services training on the practical implementation nursing care standards in both hospitals.
- ✧ Materials in nurse station should be fulfilled especially shelf for putting and ordering of reference books and recording and reporting formants in GPH.
- ✧ Hospitals should conduct regular monitoring activities like auditing, and utilize the finding for decision making

For nurses (both Hospitals)

- ✧ Nurses should refer and use national nursing care standard guideline during assessment, diagnosis, planning, implementation/medication administration, and evaluation of patients
- ✧ Head nurses should assign specific number of patients for each nurse.
- ✧ Nurses should conduct regular preventive maintenance and follow up for equipment in working area so as to maximize the life span of medical equipment's
- ✧ Nurses should improve their communication skill with the patient, particularly if they should respectful, compassionate and caring since this increases patient satisfaction.
- ✧ It is better if nurses include patients' perceived expectations during nursing assessment at admission so as to incorporate in the nursing care plan

For researchers: It will good if researchers conduct research on nursing cares delivered to the patient at night.

Chapter Eight: Meta Evaluation

Summative Meta-Evaluation was conducted. The evaluation was conducted by using four program evaluation standards. (Utility, feasibility, propriety and accuracy). The tool was adapted from Daniel L. Stufflebeam (70). The tool contains 30 sub standards 85 items (checkpoints) in four standards. The Judgment parameter was decided to be Excellent, if >85% V. Good, if 75-85%, Good, if 60-74% Fair, if 45-60% Poor, <45%. The overall status of the evaluation was measured 85.8 percent which was excellent according to the standards criteria (Annex 3).

Utility: This standard was measured by 21 cheek pointes among this 17 of them were scored yes/met, which was scored 85.7% based on judgment parameter**.** Among activities, stakeholder analysis was made, a clear value judgments was set, report was prepared based on evaluation question, and conclusion and recommendation was set.

Feasibility: This standard was measured by 10 cheek pointes among this 7 of them were scored yes/met, which was scored 70% based on judgment parameter**.** Among activities, term of reference was developed, PCA was conducted to minimize data burden, trained staffs appointed.

Propriety: This standard was measured by 24 cheek pointes among this 21 of them were scored yes/met, which was scored 87.5 % based on judgment parameter. Among activities, the study was approved by Institutional Review Board (IRB) of Jimma University, informed consent was taken for participation, and activities for insuring confidentiality of collected data was practiced.

Accuracy: This standard was measured by 30 cheek pointes among this 27 of them were scored yes/met, which was scored 90% based on judgment parameter. The tool was pre-tested, translated and commented, data collectors trained and reliability measures was inacceptable range. Mixed method data collection was employed.

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Annexes

Annex 1: Information Matrix.

Table 18: Information Matrix of availability indicators were used in evaluation of nursing service quality in public hospitals of Dawro zone, may 2018

SNO	Availability dimension Indicators (7)	Nominator	Denominator	Data source	Method
1	Nurses to patient ratio in the in one month.	Total number of nurse *8	Total average length of stay	Hospital KPI Data base Nursing attendance	Human resource inventory
2	Proportion of availability of medical equipment in wards on the day of assessment	Sum total of nursing equipment assessment checklist scores scored YES	Number of wards x 17 (i.e. the number of medical equipment in checklist)	Medical equipment handover registration book & wards	Resource inventory
3	Number of wards with well-equipped nursing station on the day of assessment			Nursing stations	Resource inventory
4	Number of wards with instrument processing room with three separate dust bin.			Wards	Resource inventory
5	Number of wards with medication preparation room with both fridge and hand washing sink.			Wards	Resource inventory
6	Number of hospitals of having nursing standard guideline on the day of assessment			Hospitals	Resource inventory
7	Number of Hospitals recommended inpatient nursing records			Hospitals	Document review

Information Matrix of Compliance Indicators were used in evaluation of nursing service quality in public hospitals of Dawro zone, May 2018

Sno.	Compliance Indicators	Nominator	Denominator	Data source	Method
1	Proportion of nurses received in service training at least one times in the last one year.	#Of nurses received in service training at least one times in the last one year.	Total number of nurses	Nursing work force register	Document review
2	Number of nursing practice auditing conducted with written feedback in the last one year			Nursing Quality mgt. minute book/reports	Document review

3	Number of SS conducted with written feedback from ZHD in the last one year			SS agreed action plan Reg .book	Document review
4	Proportion of clients that comprehensive assessment was taken based on the national guideline.	# Of clients that comprehensive assessment was taken based on the national guideline.	Total number of clients	Nurse-to-patient interaction	Observation, Document R.
5	Proportion of patients who had at least one correct nursing diagnosis based on the guideline.	# Of patients who had at least one correct nursing diagnosis based on the guideline	Total number of clients	Patient chart	Document review
6	Proportion of patients that their expected outcomes were plan for each nursing diagnosis.	# Of patients that their expected outcomes were plan for each nursing diagnosis.	Total number of clients	Patient chart	Document review
7	Proportion of nursing interventions were based on nursing care plane.	# Of nursing interventions were based on nursing care plane	Total number of patients	Nurse-to-patient interaction	Document R.
8	Proportion of patients that their nursing evaluations were conducted based on the guideline	# Of patients that their nursing evaluations were conducted based on the guideline	Total number of patients	Patient chart	Document review
9	Proportion of patient charts with complete inpatient nursing records.	#Of patient charts with complete inpatient nursing records.	Total number of patients charts	Patient chart	Document review
10	Proportion of medication administration procedures that three cheeks were done.	# Of medication administration procedures that three cheeks were done	Total # of observation sessions	Nurse-to-patient interaction	Observation
11	Proportion of patients who received medications using the five rights	#Of patients who received medications using the five rights	Total # of observation sessions	Nurse-to-patient interaction	Observation
12	Proportion of patients that their privacy was maintained during treatment sessions.	# Of patients that their privacy was maintained during treatment sessions.	Total # of observation sessions	Nurse-to-patient interaction	Observation
13	Proportion of patients requested informed consent during the procedure	# Of patients requested informed consent during the procedure	Total # of observation sessions	Nurse-to-patient interaction	Observation

Information Matrix of acceptability/satisfaction dimension Indicators were used in evaluation of nursing service quality in public hospitals of Dawro zone, May 2018

Sno	Satisfaction dimension Indicators	Formula
1	Percentage patient satisfaction mean score on the way nurses explained things to them	$\frac{\text{(Nurses explained things to them score -potential minimum score)}}{\text{Potential maximum score(5)-potential minimum score(1)}} * 100$
2	Percentage patient satisfaction mean score on nurses' quickness to come when they call	$\frac{\text{(Nurses quickness to come when they call score -potential minimum score)}}{\text{Potential maximum score(5)-potential minimum score(1)}} * 100$

3	Percentage patient satisfaction mean score on the way nurses made them feel at home	(the way nurses made them feel at home score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
4	Percentage patient satisfaction mean score on the availability of nurses around them	(the availability of nurses around them score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
5	Percentage patient satisfaction mean score on frequency of nurses cheek their conditions	(frequency of nurses cheek their conditions score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
6	Percentage patient satisfaction mean score on the amount of time nurses spent with them	(the amount of time nurses spent with them score-potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
7	Percentage patient satisfaction mean score on the amount of information nurses give to them	(the amount of information nurses give to them score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
8	Percentage patient satisfaction mean score on nurses listened their worries & concerns	(nurses listened their worries & concerns score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
9	Percentage patient satisfaction mean score on nurses' willingness to respond requests	(nurses' willingness to respond requests score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
10	Percentage patient satisfaction mean score on the manner nurses doing their work	(the manner nurses doing their work score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
11	Percentage patient satisfaction mean score on nurses' helpfulness	(nurses' helpfulness score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
12	Percentage patient satisfaction mean score on nurse's treatment for relatives.	(on nurse's treatment for relatives score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)
13	Percentage patient satisfaction mean score on nurses' treatment of them as an individual	(nurses' treatment of them as an individual score -potential minimum score)*100 Potential maximum score(5)-potential minimum score(1)

***NB**: level of satisfaction scored as; 1=Not at all satisfied, 2=Barely satisfied, 3=Quite satisfied, 4=Very satisfied, 5=completely satisfied.
Potential maximum score is 5(i.e, completely satisfied), potential minimum score is 1(i.e. Not at all Satisfied).

Annex 2: Relevance Matrix

Table: Relevance matrix of indicators used for evaluation of nursing service quality in public hospitals of Dawro zone, 2018

	Indicators	**Availability**	**Compliance**	**Acceptability**
	Availability Indicators			
1	Nurses to patient ratio in the in one month.	RRR	RRR	RRR
2	Proportion of availability of medical equipment in hospitals in the last 1 year	RRR	RR	RR
3	# of wards with well-equipped nursing station in the last three month.	RR	R	R
4	# of wards with instrument processing room with three separate dust bin	RRR	RR	R
5	# of wards with medication preparation room with both fridge and hand washing sink	RRR	RR	R
6	# of hospitals having nursing standard guideline on the day of assessment	RRR	RR	R
7	# of hospitals having all standardized nursing documentation formats in the last 3 month.	RRR	RRR	R
	Compliance indicators			
1	Proportion of nurses received in service training at least one times in the last 1 year.	RR	RRR	R
2	# of nursing auditing conducted with written feedback in the last 1 year	RR	RRR	R
3	#of SS conducted with written feedback from ZHD in the last one year	RR	RRR	R
4	Proportion of clients received comprehensive assessment based on the guideline.	RR	RRR	RR
5	Proportion of patients who had at least one correct nursing diagnosis	RR	RRR	RR
6	Proportion of patients who had correct nursing care plan	RR	RRR	RR
7	Proportion of patients received nursing care based on nursing care plan.	RR	RRR	RR
8	Proportion of patients for whom nursing evaluation was done based on the guideline	RR	RRR	RR
9	Proportion of patient charts with complete inpatient nursing records.	RR	RRR	RR
10	Proportion of medication administration procedures with three cheeks.	RR	RRR	RR
11	Proportion of medication administration procedures with six rights	RR	RRR	RR
12	Proportion of procedures with privacy of the patient maintained.	RR	RRR	RR
13	Proportion of procedures with informed consent taken.	RR	RRR	RR

	Indicators	Availability	Compliance	Acceptability
	Acceptability/satisfaction indicators			
1	Percentage of patient satisfaction on the way nurses explained things to them	R	RRR	RRR
2	Percentage of patient satisfaction on nurses' quickness to come when they call	RR	RRR	RRR
3	Percentage of patient satisfaction on the way nurses made them feel at home	RR	RRR	RRR
4	Percentage of patient satisfaction on the availability of nurses around them	RR	RR	RRR
5	Percentage of patient satisfaction on frequency of nurses cheek their conditions	RR	RR	RRR
6	Percentage of patient satisfaction on the amount of time nurses spent with them	R	RR	RRR
7	Percentage of patient satisfaction on the amount of information nurses give to them	RR	RRR	RRR
8	Percentage of patient satisfaction on nurses listened their worries & concerns	RR	RRR	RRR
9	Percentage of patient satisfaction on nurses' willingness to respond requests	R	RR	RRR
10	Percentage of patient satisfaction on the manner nurses doing their work	RR	RR	RRR
11	Percentage of patient satisfaction on nurses' helpfulness	RR	RRR	RRR
12	Percentage of patient satisfaction on nurse's treatment for relatives.	RR	RRR	RRR
13	Percentage of patient satisfaction on nurses' treatment of them as an individual	R	RR	RRR

Key: RRR =Very Relevant RR = Relevant R = Poorly Relevant.

Annex 3: Data collection tools

Jimma University Institute of Health Science

Department of Health Economics, policy and Management Health Monitoring and Evaluation Unit

English version Data collection tool for evaluation of nursing service quality in public hospitals of Dawro Zone, 2018

Part one: Resource Inventory Checklist

This checklist will be used to conduct an inventory availability of infrastructure and program resources in each hospitals/wards. And it will be answering by interviewing the each ward heads nurses/ representatives and observing the functionality of medical equipment's.

Date of Assessment _____

Region_____ Zone/Sub city_____District/woreda_____

Name of Hospital _____ Name of ward_____

Resource Inventory Checklist (medical equipment's, infrastructure)

Quality measure(Structure)			Available in the last 3 month		Available on the day of assessment	
			Yes	No	Yes	No
nursing station are equipped with minimum materials	Shelf	Personal lockable locker	1	2	1	2
	Telephone	Water source	1	2	1	2
	Computers	Electricity	1	2	1	2
Does required functional medical equipment's available in each ward (confirm functionality of each equipment's)	Is there BP Apparatus in the nursing station?		1	2	1	2
	Is there Stethoscopes in the nursing station?		1	2	1	2
	Is there Thermometer in the nursing station?		1	2	1	2
	Is there Stretcher in the nursing station?		1	2	1	2
	Is there Wheel Chair in the nursing station?		1	2	1	2
	Is there Weight in the nursing station?		1	2	1	2
	Is there Height Scale, in the nursing station?		1	2	1	2
	Is there Sterilizer in the nursing station?		1	2	1	2

	Is there Ambu Bags in the nursing station?	1	2	1	2
	Is there Suction Machine in the nursing station?	1	2	1	2
	Is there Light Source in the nursing station?	1	2	1	2
	Is there Miner Set in the nursing station?	1	2	1	2
	Is there Pulse Oximeter in the nursing station?	1	2	1	2
	Is there Lumbar Puncture Set in the nursing station?	1	2	1	2
	Is there Abdominal Paraceantesis Set	1	2	1	2
	Is oxygen concentrator available	1	2	1	2
For How many medical equipment's SOP was prepared and availed.				#of Equ------	
Availability of medication preparation area.	4.1. Small under counter refrigerator.	1(yes) if all available and functional 2(no) if one miss			
	4.2 Hand washing sink with disinfectant				
Does central cabinet for medication store based on the patient bed number available				1 yes 2 no	
Does patient screen for keeping patients privacy is available in each class of admission.				1 yes 2 no	
Did the ward have instrument processing room with three separate dust bin				1 yes 2 no	
Guidelines reporting and recording formats					
006	Does nursing standard guidelines are available			1 If all available	
	Does inpatient nursing record and reporting tools are available?			1 Yes	1. No
007		7.1. Nursing Process Format(5forms)		1	2
		7.2. Vital Sign Sheet		1	2
		7.4 Discharge Summary			
		7.5 Medication administration sheet.		1	2
	Human Resource inventory Hospital…….				
1	9.1. Total number of nurses at the beginning of budget year (observe staffing plan)			--------	

2	9.2. Number of nurses at the time of evaluation	--------
3	9.3. Average patient's length of hospital stay in the last one month (cheek from HMIS report).	--------
4	9.4. Number of nurses trained on nursing care standard/nursing process at least one times (observe staffing plan)	--------
5	Is there a plan identifies mechanisms to reassign nursing staff or call in extra staff to ensure that minimum nurse to patient ratios are maintained at all times (confirm staffin	

	Nurse(type)	Number expected	Number available	#of nurses trained on nursing care standard	Comment

Data collector name: _____date ___/___/____ signature_____

Checked by _____ date ___/____/_____ signature

Part 2 Documents Review checklist

Information sheet for hospital CEO/Case team leaders

My name is Animut Addis from Jimma University and as part of an overall evaluation we will review patient chart, nursing quality management minuet books and Plan Do Study and Act (PDSA) action plans, nursing round registration book, supportive supervision documents and feedbacks in order to capture information related to the process of Quality of nursing care services. This will help to improve the quality of in the future.

During the review, the confidentiality of the information will be kept in which the reviewed information will not specify names and other personal information's and the information will be utilized for evaluation purpose.

May I continue to review the documents? 1. Yes 2. No (IF NO, END)

If yes continue

Section one (patient chart): This checklist will be used to conduct document review (patient chart) in order to assess the quality of nursing service for those admitted in inpatient wards

Guideline: Tick the answer on space provided.

Documents Review checklist (patient chart)

Hospitale……..

Sno.	Quality measure	Score and verification criteria	
1	Did nurses assess about demographic details?(if Name, age, residence, bed #)	1, Yes 2 No	1. If the nurse asks about all component? 2. If the nurse misses at least one (verify in nursing process nursing history taking format)
	Did nurses assess about health Perceptions (Chief compliance)	1, Yes 2 No	
	Did nurses assess about Roles and Relationships Pattern? (Role of family and ability to payment)	1, Yes 2 No	
	Did nurses assess about cognitive-Perceptual Pattern? (Level of consciousness and reflexes)	1, Yes 2 No	
	Did nurses assess about activity-Exercise Pattern? (Respiration, Circulation)	1, Yes 2 No	
	Did nurses assess about nutritional and Metabolic Pattern? (Pattern of food intake, fluid intake GI pain, oedema)	1, Yes 2 No	
	Did nurses assess about elimination Pattern (urine and faces)? (Abdominal movement, Bowel sound, stoma, use of laxatives, urinary pattern)	1, Yes 2 No	
	Did nurses assess about coping and Stress Tolerance Pattern? (History of stress)	1, Yes 2 No	
	Did nurses assess about Self-Perception and Self-Concept (Did you feel different from others….)	1, Yes 2 No	
	Did nurses assess about values and Belief Pattern (About Cultural practice……)	1, Yes 2 No	
	Did nurses assess about Sleep-Rest Pattern? (Adequacy of sleep….difficulty of sleep…..)	1, Yes 2 No	
	Did nurses assess about Sexuality-Reproductive Pattern? • **(Male:** prostate problem...history of STI	1, Yes 2 No	

	• **(Female:** Menstrual pattern….use of FP….monthly breast examination…..STI…..)				
12	Does the nurse developed nursing diagnosis from the assessment (cheek from nursing diagnosis recording form)		1 Yes 2) No		If 2 skip to 016
013	If yes for Q 012 Does the nursing diagnosis is based on NANDA List		(from nursing diagnosis recording form)		
014	If Yes for Q 012 What types of nursing diagnosis	1. actual 2. risk nursing diagnosis 3. Potential 4. Wellness nursing diagnosis 5. Collaborative nursing diagnosis			
	Does the diagnosis is based on PES/PS format?				
015	If yes for Q 013 Does the nurse prioritized the nursing diagnosis?				
016	Does nurses plan the expected outcomes the patient after care?		Yes 2) No (Verify in Nursing care plan form)		If 2 skip to Q 019
017	If yes for Q 016 Does nursing Specifying expected outcomes?				
018	If yes for Q 016 Does the nurse Identifying specific nursing interventions for attaining each outcomes.				
	Did nurses implement the care plan/expected interventions of nursing process (nursing intervention/implementation)		1 Yes 2 No		
019	Does the nurse evaluate the outcome of the patient after each intervention		1 Yes 2 No		
	Nursing service recording				Formats not available
020	Did the nursing recording formats complete recorded	20.1. V/S sheet (four times per day)	1	2	3
		20.3 Nursing Assessment form (each space)	1	2	3
		20.3 Nursing diagnosis form (each space)	1	2	3
		20.4 Nursing care plan form (each space)	1	2	3
		20.5. Nursing intervention form (each space)	1	2	3
		20.6. Medication administration form(each space)	1	2	3
		20.7 Nursing progress/evaluation form (each space)	1	2	3
		20.8 Discharge form (each space)	1	2	3

Section two (Nursing service related reports and feedbacks): this checklist will be used to conduct document review (nursing management related) in order to assess the quality of nursing service for those admitted in inpatient wards

Name of hospital……..

	Quality statement	Quality measure	Score and verification criteria (quantitative)	Skip
021	Did the hospital had nursing quality management team (confirm TOR)	1 Yes 2 No	1 if yes	If No skip to Q 024
022	If yes for Q 021 How many nursing service quality management team meeting conducted from January 01/2017-December 30/2017?	Number of meeting……	Verify from nursing quality management minute book /PDSA action plan	
023	If yes for Q…..How many PDSA reports available January01/2017-December 30/2017?	-------		
026	Did the hospital practice nursing practice auditing	1 Yes 2. No	1 if yes Verify from Nursing quality management minute book/Hospital Quality Unite PDSA reports	If No skip to Q. 029
027	If yes for Q 026 How many nursing practice auditing conducted in the hospital from January 01/2017-December 30/2017?	------		
028	If yes for Q 026 how many nursing practice audit PDSA reports available January 01/2017-December 30/2017?	--------		
029	Did the hospital receives supportive supervision system from higher level management	1 yes 2 No	1 if yes Verify on SS agreed action plan log book	If No skip to Q.032
030	If yes for Q029 supportive supervision were conducted from higher level management (January 01/2017-December 30/2017)?	------		
031	How many SS PDSA reports/projects available January 01/2017-December 30/2017?	----------		

Data collector name: _____date ___/___/____ signature_____

Checked by _____ date ___/____/_____ signature

Questionnaire IV: Direct observation checklist (Nurse to patient interaction)

This checklist will be used to conduct direct observation of nurses at ward while providing nursing care.

Consent form for Nurses:

I want to thank you for taking time to meet with me today. My name is _____from Jimma University and I am here to observe the clinical sessions in the ward. This is part of the overall evaluation and it will help to improve quality of nursing service in this hospital. The observation will be conducted while the nurse provide nursing care and all findings of the observation will be kept confidential. Furthermore; we will ensure that any information we include in our report does not identify you as the respondent.

Are you willing to participate in this observation?

1. Yes 2. No (if yes continue. If no END)

if yes continue if no skip

Name of hospital _____ Name of ward

Date of observation_____ Time of observation _____

Questionnaire IV: Direct observation checklist (Nurse to patient interaction)

MRN of the patient _____Sex of the patient ____Age of the patient _____ hospital _____ward_____ time of Obs (phase).___

Sno	Quality Measure	**Score**		Remark
Variables		Yes	No	
102	Do the nurse wear uniform and identification badge?	1	2	
Did nurses take nursing history at admission?		1	2	
104	Do the nurse tries keep privacy during treatment sessions?	1	2	
106	Do the nurses talk informed consent for during the procedure?	1	2	
126	Do the nurses cheek medications when reaching for the container of medication?	1	2	
127	Do the nurses cheek medications Immediately prior to the pouring the medication	1	2	
128	Do the nurses cheek medications When returning the container to its location	1	2	
Direction: please record the following Questions when the nurse administer medication to the patient and crosscheck it with the order sheet.		Yes	No	
130	Do the following Patient ID were the same (MRN, Age, Sex, Bed Number)	1	2	
131	Do the name on medication was the same	1	2	
132	Do of the Dose of the drug was the same	1	2	
133	Do the rout of administration was the same	1	2	
135	Do the Time of administration was the same	1	2	
136	Do the nurse document the medication after administering the medication?	1	2	

Data collector name: _____date ___/___/____ signature_____

Checked by _____ date ___/____/_____ signature

Jimma University Institute of Health Science

Department of Health Economics, policy and Management

Hello, how are you? My name is ----------I am working as data collector for the study Conducted by Jimma university health Monitoring and Evaluation post graduate student Animut Addis on ***"Evaluation of Nursing Service Quality in Public Hospitals of Dawro zone"***

I would like to interview you few questions about the nursing service of this hospital. The objective of the study is to assess the level of patient' satisfaction with the nursing care services of the hospital and to identify the factors affecting adult in patient satisfaction with nursing care in Public Hospitals of Dawro zone, which will be important to improve the health service delivery of the hospitals. Your cooperation and willingness for the interview is very helpful in identifying the problems related to the issue. Your name will not be written in the form and I assure you that all information that you give will be kept strictly confidential. Your participation is voluntary and you are not obliged to answer any question you do not wish to answer. If you are not still comfortable with the interview, please feel free to stop it any time you like. Do I have your permission to continue?

1. If yes, continue to the next page 2 If no, skip to the other participant

I interviewer's name and signature-------- code----------Facility ----------

Date if interview---------- Time started _____, Time finished ---------- Supervisor's name ----------, Signature ----------

Section one: Demographic, socio economic related variables and personal conditions

SNO.	Variable	Answer
001	What is your age?	----------
002	Gender	1) Male 2. Female
003	What is your religion?	1) Orthodox 2. Muslim 3. Protestant 4 Adventist (seventh day) 5 Catholic 6. Others
004	What is your Ethnicity	1 Dawro 2 Amhara 3 Wolyta 4 others, specify
005	What is your residence?	1) Urban 2. Rural
006	What is your marital status?	1) Never married 2. Married 3. Divorced 4. Widowed
007	What is your educational status?	1) Unable to read and write 2) Primary school 91-8) 3) Secondary school (9-12) 4) Certificate 5 Diploma and above
008	What is your occupation?	1. Government employee 2 Farmer 3) Merchant 4) Student 5) No job 6 others specify…
009	Income (in birr)	…….
010	History of previous admission	1) Yes 2. No
011	Length of stay (in days)	----------
012	Payment for the service	1) Payment 2 Free
013	Presence of assigned nurse to care you	1) Yes 2 No
014	Admission ward	1) Medical 2)Surgical 3) Gynecology
015	Class of admission(from the nurse station)	1) 1st class 2) 2nd class 3) 3rd class

Section two: level of Patient expectation towards nursing care services

What were your expectations about nurses? Tell me one choose against each phrase/statement according to the scale below. Key: Scale; 1=strongly disagree, 2= disagree, 3=neutral, 4=agree, 5 strongly agree

No.	Measuring characteristics I expect that nurses …..	St. Disagree	Disagree	Neutral	Agree	St. Agree
016	Are kind	1	2	3	4	5
017	Are cheerful	1	2	3	4	5
018	Are responsive	1	2	3	4	5
019	Are harsh ®	1	2	3	4	5
020	Are honesty	1	2	3	4	5
021	Are empathetic	1	2	3	4	5
022	Are friendly	1	2	3	4	5
023	Are rude ®	1	2	3	4	5
024	Are respectful	1	2	3	4	5
025	Meet all my needs	1	2	3	4	5
026	Communicate to me what type of nursing care I was going to receive	1	2	3	4	5
27	Disrespects my beliefs and values ®	1	2	3	4	5

®= negatively worded and reversely coded.

Section three: Level of patient experience on the over all aspects of nursing services in this Hospitals.

SNO	Variables	St. Disagree	Disagree	Neutral	Agree	St. Agree
	CRC standards					
028	Nurses involve you when changes to nursing services.	1	2	3	4	5
029	Nurses provide adequate information about services provided during admission.	1	2	3	4	5
030	Nurses address you with your name during treatment sessions	1	2	3	4	5
031	Nurses are polite and considerate	1	2	3	4	5
032	Nurses keep your privacy during treatment sessions	1	2	3	4	5
033	Nurses give the chance to you to ask questions	1	2	3	4	5
034	Nurses took informed consent for every treatment sessions	1	2	3	4	5
035	Nurses explain the results of each procedures to you	1	2	3	4	5
036	Nurses disregard you during the discharge plan and give instruction	1	2	3	4	5
	Experience on institutional aspect of the service					
037	The room that you was admitted was well clean	1	2	3	4	5
038	You are satisfied with availability of medical supplies	1	2	3	4	5
039	The room that you was admitted was over crowed ®	1	2	3	4	5
040	Nurses prepare/make your bed comfortable.	1	2	3	4	5
041	The nursing station was visible and convenient your class	1	2	3	4	5
042	The ward management and admission Procedure were poor ®	1	2	3	4	5
043	The discipline in the room was poor ®	1	2	3	4	5
044	There was shortage of water supply of the room ®	1	2	3	4	5

®=negatively worded and reversely coded.

Section one 4: you opinions of nursing care

In this section, we ask your opinions of the nursing service you received during your stay on the ward. For each question, please tell me one number which best describes your view. (Thinking about your stay on the ward, how you are satisfied with……?)

SN	items	Not at all satisfied	Barely satisfied	Quite satisfied	very satisfied	Completely satisfied
45	The amount of time nurses spent with you	1	2	3	4	5
46	There always being a nurse around if you needed one	1	2	3	4	5
47	How quickly nurses came when you called for them	1	2	3	4	5
48	The way the nurses made you feel at home	1	2	3	4	5
59	The amount of information nurses gave to you about your condition and treatment	1	2	3	4	5
50	How often nurses checked to see if you were okay	1	2	3	4	5
51	Nurses' helpfulness	1	2	3	4	5
52	The way nurses explained things to you	1	2	3	4	5
53	How nurses helped put your relatives' or friends' minds at rest	1	2	3	4	5
54	Nurses' manner in going about their work	1	2	3	4	5
55	Nurses' treatment of you as an individual	1	2	3	4	5
56	How nurses listened to your worries and concerns	1	2	3	4	5
57	The amount of freedom you were given on the ward	1	2	3	4	5
58	How willing nurses were to respond to your requests	1	2	3	4	5

Thank you for your cooperation!!

Dawrotsuwa Ooshatuwa

Pilgetsa oosha zaranaw eeno giyawa doonan erisiya qonchetsa

Saro lo'e aymale!! Ta suntsay _____ geetetay. Taani Jimma Universtiya Payyatetsa Institutiyan 2tsa digiriya tamariyaw pilgetsa oosuwaw koshshiya itti itti oosha hintena oochanaw yaadi. Ha pilgetsay oosetiya gaasu Dawro zoniyan de'iya payyatetsa keellatuwan aakimetteda ichcheshu laytsappe garssa naana akimiya murutanne ha murutanna gaketiya gaasotuwa shaakkanassa.

Ha ooshaw mayetite? 1. Eee 2. Mayetikke

Ocha sunthi-------- paydua----------, Gala ---------- domeda seatiay _____, wurada seatiay ---------- Halaka suntha---------- parama ----------

Kestsa1: Likke zaru waoykeda payduwa bolla odda

Deretetsanne asannagaketiya ooshatuwa

SNO.	Ooshatuwa	Dooratuwa
1	Laytsa	----------
2	Matumatetha	2. Attumawa 2 Maccanno
3	Hinte ammanu aye?	3. Ortodoksiya 2. Muslimiya 3. Protestantiya 4 adventistia 5, Katolikiya 6. Haraa (s'aafa)_____
4	Hinte kochchay aye?	1. Dawro 2. Amaara 3. Wolaytsa 4. Hara (s'aafa)_____
5	Gollide'iyasa	1) Bagga-katama 2. Gas'ariya
6	Hinte soyzuwa hanotay aye?	1) Gellabeyke 2). Geladi 3). Biletadi 4). Asinayhayk'eda
7	Hinte timirtiya detsay woyse?	1) Tamarabeyke, 2) Koyrodetsa 3) La'etsodetsa 4) certeficatia 5, La'etsodetsappebolla
8	Hinte oosua aye?	1) Mengistyia oosua2) goshancha 3) zalliancha 4) tamarya 5) oosua baawa 6 Hara (s'aafa)_____
9	Agina gebeya apunee?	…….
10	Hawape kasena gisada?	2. Gissaddi 2) Gissabeykka
11	Hawape kassena paxxatetha ketha woysa galasa gisadi	----------
12	Chiga hanotany	1. Chigadi 2 chigabeyke
13	Narsi eranchay new madabetede?	2. Eee 2) Baawa 3 dihshesabek
14	Ne giseda kifili haqawe?	2. Medicalia gole 2) shuka gole 3) machasa gole

15	Ne gisedda bottay Nersatu shempiya theethappe haquawanne?	1) Koiro ketha 2) laetho ketha 3) hezetho ketha

Kestsa 2: Harganchatu nursatuapee neguia by aye

Ha Payyatetsa ketsa yanna wappa Harganchatu nursatuapee neguia by aye. Kalya doratu garsappa zarua oykeda wa dora.

No.	Ooshatuwa	Loytha mayetike	Mayetike	Gache beyke	Mayetay	Loytha mayetay
16	Qaretha	1	2	3	4	5
17	Nashechiyawa	1	2	3	4	5
18	Ele zarwa emyawa	1	2	3	4	5
19	Itaaasha®	1	2	3	4	5
20	Asa methuwu	1	2	3	4	5
21	Assa metua barewa xeleyawa	1	2	3	4	5
22	Asa dosiyawa	1	2	3	4	5
23	Makkala ®	1	2	3	4	5
24	Asa bonchiwa	1	2	3	4	5
25	Assa bonchiyawa	1	2	3	4	5
26	Aya dhali immintto hintoenna ersisi	1	2	3	4	5
27	Hargancha amanuanne woga bonchino ®	1	2	3	4	5

Kestsa 3: Ubba gamuan nursatua osuan beadawe ayee

Sno	Ooshatuwa	Loytha mayetike	Mayetike	Gache beyke	Mayetay	Loytha mayetay
28	Nersatu new madetia madu lameto de nena magisino	1	2	3	4	5
43	Narsatu aysuwa maray daresii loa ®	1	2	3	4	5
29	Giso goliya wogane mare qoncesusa	1	2	3	4	5
30	Nesatu nena sunan tsesino	1	2	3	4	5
31	Nersatu garenn as bonchino	1	2	3	4	5
32	Nursatu kita kitetide kamedino	1	2	3	4	5
33	Nursatu oshasiochanadani qadda imedino	1	2	3	4	5
42	Keta ayisuwu loa ®	1	2	3	4	5
34	Nursetu osuwa othanasi ne enothesta ochedino	1	2	3	4	5
35	Nursatu ne mirineray maramareti ade odino	1	2	3	4	5
36	Nursatu gisokethape moygide iti kitiba odino	1	2	3	4	5
37	Na giso kethay geshaihaa	1	2	3	4	5
38	Nusrato neto madia mishatu ufayetada	1	2	3	4	5
39	Na giso ketsa loythi unie ®	1	2	3	4	5
40	Na gisu machayi	1	2	3	4	5
41	Nersatu shempo kifili new beti	1	2	3	4	5
44	Usha hata shishuwan metu dee®	1	2	3	4	5

Kestsa4**:** Nursya balmuyatuape demiya goato hinte ufayse ochino ha kestani deya nursatu goatuwapee ufaysa.

SN	Items	Ubay ufaysebena	ufaysebena	ufayseda	Loyte ufayseda	Ubay ufayseda
45	Nersatu hintes maduw imida wodia.	1	2	3	4	5
46	Maduwa koyede wode nersatu aubawehin tematan betino	1	2	3	4	5
47	Hinte nerata kyida wode demida hanote	1	2	3	4	5
48	Narsatu koyida golen dieawada udusa	1	2	3	4	5
49	Hinte pathatetha hanota na akametusa woga demade era	1	2	3	4	5
50	Nersatu hintena ubato tselusa woga	1	2	3	4	5
51	Nersatu madanaw diea kosha	1	2	3	4	5
52	Nersatu yewata hinto erisa ogia	1	2	3	4	5
53	Nersatu hagisiawata menthethusa hanotu	1	2	3	4	5
54	Hinto othia osuwa wode hintesi behia esha.	1	2	3	4	5
55	Nersatu asagidusan imeda maduwa	1	2	3	4	5
56	Nersatu hinte metuwan hayzi sisusan diea kofa	1	2	3	4	5
57	Nersatu hinte giseda kifilian diea laɲatetha	1	2	3	4	5
58	Nersatu hinte osha zaranaw deia amuwa	1	2	3	4	5

Galattay!!!

Key informant Interviewee Guide

Instruction: this guide will be used to assess nursing services management, barriers to its service provision and measures taken to alleviate the problems.

Greeting; Thank you for taking time to meet with me today. My name is _____ from Jimma University and I would like to talk to you about your experiences participating in the nursing service program. Specifically, as one component of our overall program evaluation we are assessing the quality of nursing service in order to capture lessons that can be used in future to improve the Quality of the service. All responses will be kept confidential. Remember, you don't have talk about anything you don't want to and you may end the interview at any time.

Are there any questions about what I have explained?

Are you willing to participate in this interview?

--- --- ---

Interviewee Interviewer Date

Part I: Key informant interview guide with ZHD Head and Quality Unit head.

- Position of respondent _____ Sex of respondent _____ Age of respondent _____ Profession of respondent _____ How long you have been in this position (in years) _____ date of interviewee_____ time(start)_____time(end)____place of discussion _____

1. How do you see the service quality of health facilities in this zone/ of this hospital?
2. How do you explain the nursing services quality in governmental hospitals?
3. Is there a system of monitoring, supervision and evaluation hospitals nursing service quality? If yes, how? (*Prob: Could you please describe how frequently conducted, the feedback system, who conducted ISS?)* _____If No, why? _____
4. Is there continuous Quality improvement system in the hospitals? If yes, please describe how it is conducted (*prob: capacity building programs, review meeting ….*)_____If No, why? _____
5. What are the challenges (constraints) to the provision of quality nursing service in hospitals of Dawro zone/this hospital? (*Probe: Related to work load, number of trained human power, resources to providing the service…).* Why it happen? In your opinion what are possible solutions?
6. What efforts being made to solve this problems and improve quality of nursing care services in hospitals

Thank you!!!

Part II: Key informant interview guide with Hospital CEO Quality unit and hospital quality unit heads

Position of respondent _____ Sex of respondent _____ Age of respondent _____ Profession of respondent _____ How long you have been in this position (in years) _____ date of interviewee_____ time (start) _____time (end)____place of discussion _____

1. How do you see the service quality of health this hospital?
2. Could you please briefly describe me what and how nursing care service provided for those patients admitted in this hospital?
3. Did you ever receive supportive supervision and evaluation related to nursing service provision from higher level officials? If yes, how do you see the frequently? _____Who provide the support? _____what things supported from higher SS? _____how feedbacks provided? _____if no Why? _____
4. Are there program resources in place to deliver quality nursing service? If yes does this list resources the available? (*Probe: read medical equipment's, guidelines, staffing*). If there is shortage, why?
5. How do you see nurse's involvement in hospital management system? *(Probe: nursing organizational structure, Nursing work force management, and about frequency meetings?*)----------.If not, why? ----------
6. How this hospital conducted nursing service quality assessment and improvement? Is there continuous quality improvement system in the hospitals? If yes, please describe how it is conducted *(probe: capacity building, nursing practice auditing, nursing round, PRT meeting PDAS projects/action plan….)* _____ If No, why? _____
7. What look like monitoring and evaluation system of nursing service provision? *(Probe: about reporting relationship, implementation of evaluation findings)*
8. What are the barriers to the provision of quality nursing service in this hospitals? Why it happen? In your opinion what are possible solutions?
9. What efforts being made to solve this problems and improve quality of nursing care services in hospitals

Thank you!!!

Part II: Key informant interview guide with Hospital Nurse Directors and ward head nurses

Position of respondent _____ Sex of respondent _____ Age of respondent _____ Profession of respondent _____ How long you have been in this position (in years) _____ date of interviewee_____ time (start) _____time (end) _____place of discussion _____

1. How nursing services are provided in this hospital/ward*?(prob medication administration, history taking; counseling, physical)*
2. How do you see the nursing service quality in this hospital/ward?
3. How do you see the working environment where you are working in provision of quality nursing care service? *(Prob: Does medical equipment's available (the list), nursing staffing, (Why? If missing of the listed resources)*
4. How do you think about implementation of national nursing quality standards on improving quality nursing care to patients? (prod; *application of the nursing process, nursing medication and nursing communication in your work area?)*
5. In your experience what gapes on implementation of nursing standards did occur?
6. Nurses of what educational level do you think should apply the nursing process? Why?
7. What, in your opinion, are the drawbacks of applying the nursing process?
8. What are some of the common complaints forwarded by your clients on quality of nursing service provision?
9. What other obstacles has for the application of nursing standards?
10. What efforts being made to improve quality of nursing care services in hospitals/ward.

Thank you!!!

Annex 4: Meta-Evaluation Judgement checklist

Checklist for Judging Evaluation Designs and Reports

Title of Evaluation document: Evaluation of nursing service quality in public hospitals of Dawro zone

Name of reviewer: program stakeholders

This judgement checklist contains the four Meta evaluation standards (Utility, feasibility, propriety and accuracy) with their total 30 sub-standards. Each sub-standards also have checkpoints and a total points of 85 cheek pointes.

A. The Requirements for Utility Standard

Sub-Standards and checkpoints	Met criteria			Elaboration
	Yes (1)	No (0)	NA	
U1: Stakeholder Identification				
Does clearly identified the evaluation client	1			
Does consult potential stakeholders to identify their information needs	1			
Do arrange to involve stakeholders throughout the evaluation	1			
Are address stakeholders' evaluation needs	1			
Does the information to be provided allow necessary decisions about the program to be made?	1			
U2: Evaluator credibility				
Does the evaluator can address stakeholders' concerns?	1			
Does the evaluation plan responds to key stakeholders' concerns?	1			
Do the given stakeholders information technical quality and practicality?	1			
Do appropriately attend stakeholders' criticisms and suggestions?	1			
U3: Information scope and selection				
Are the client's evaluation requirements understood?		0		
Assign priority to the most important stakeholders?	1			
Does the stakeholders' questions addressed?	1			
U4: Values identification				
Do alternative sources of values consider for interpreting findings	1			
Are a clear, defensible basis for value judgments provide	1			
Do identify pertinent customer needs	1			
Does the stakeholders' values take into account?	1			
U5: Report clarity				
Do reports focus on contracted questions?	1			
Are conclusions and recommendations have support?	1			
U6: Report timeliness and Dissemination				
Are make timely interim reports to intended users?	1			
Does the presentations appropriately briefed?		0		
U7: Evaluation Impact				
Do stakeholders' use of findings encourage and support?		0		

Does make sure that reports are open, frank, and concrete?	1			
Does supplement written reports with ongoing oral communication?	1			

B. The Requirements for Feasibility Standards

Sub-Standards and checkpoints	Met criteria			Elaboration
	Yes(1)	No(0)	NA	
F1: Practical Procedures				
Do data burden minimized?		0		
Does competent staff appoint?	1			
Does TOR developed?	1			
F2: Political Viability				
Do bias or misapply the findings counteract attempts?	1			
Do agree on editorial and dissemination authority	1			
Does any corrupted evaluation terminate	1			
F3: Cost Effectiveness				
Does program improvement foster?	1			
Does accountability information provide?	1			
Do new insights generate?	1			
Does effective practices spread?		0		

C. The Requirements for Propriety Standards

Sub-Standards and checkpoints	Met criteria			Elaboration
	Yes(1)	No(0)	NA	
P1: Service Orientation				
Does excellent service promote?	1			
Do the evaluation's service orientation clear to stakeholders?	1			
Are program strengths to build on Identify?	1			
Are harmful practices expose?	1			
P2: Formal Agreement				
Did the evaluation received ethical approval letter.	1			
Do confidentiality/anonymity of data formal was assured?	1			
P3: Rights of Human				
Do make clear to stakeholders that the evaluation will respect and protect the rights of human subjects?	1			
Do stakeholders informed?	1			
Are participant values understand?	1			
P4: Human Interactions				
Are relate to stakeholders in a professional manner?	1			
Do effective communication with stakeholders maintain?	1			
Does the institution's protocol follow?				
Are sensitive to participants' diversity values and cultures?	1			
P5: Complete and Fair Assessment				
Do give account of the evaluation's process?	1			
Do have the draft report reviewed?	1			
Is acknowledge the final report's limitations?	1			

P6: Disclosure of Findings				
Do define audiences right-to-know the finding?	1			
Are report all findings in writing?	1			
Do disclose the evaluation's limitations?	1			
Do assure that reports reach their audiences?		0		
P7: Conflict of Interest				
Are potential conflicts of interest identify		0		
Do engage independent parties to assess the evaluation		0		
Do engage uniquely qualified persons, even if they have a potential conflict of interest	1			
P8: Fiscal Responsibility				
Are specify the budget for items expense?				
Do assign responsibility for managing the evaluation finances?				
Does expenditure summary as part of evaluation report?				

D. The Requirements for Accuracy Standards:

Sub-Standards and checkpoints	Met criteria			Elaboration
	Yes(1)	No(0)	NA	
A1:ProgramDocumentation				
Do collect the intended program descriptions	1			
Does describe how the program was intended to function	1			
Are discrepancies between the various descriptions analyses	1			
A2:ContextAnalysis				
Does multiple sources of information use to describe the program's context?	1			
Do estimate context of program outcomes effects?	1			
A3:Described Purposes and Procedures				
Do identify points of agreement among stakeholders regarding the evaluation's purposes		0		
Does the actual evaluation procedures record	1			
A4:Defensible Information Sources				
Are variety sources of information obtain?				
Do employ a variety of data collection methods?				
Do define the population for each source?				
A5:Valid Information				
Do the evaluation focus on key questions	1			
Do the data collectors train and calibrate	1			
A6:Reliable Information				
Do the unit of analysis specify?	1			
Do levels of reliability of measuring devices acceptable?	1			
Are the consistency of scoring, categorization, and coding check and report?	1			
A7:SystematicInformation				
Do establish protocols for quality control of information?	1			

Are check the accuracy of scoring and coding?	1			
Do data tables generated from computer output proofread and verify?	1			
A8:AnalysisofQuantitative Information				
Are choose appropriate procedures for evaluation questions and nature of the data	1			
Do examine variability as well as central tendencies	1			
Do identify and examine outliers and verify their correctness	1			
Do identify and analyses statistical interactions	1			
A9:AnalysisofQualitative Information				
Do define the boundaries of information to be used	1			
Do choose appropriate analytic procedures and methods of summarization	1			
Do test the derived categories for reliability and validity		0		
A10:JustifiedConclusions				
Do conclusions focus directly on the evaluation questions?	1			
Do reflect the evaluation findings?	1			
A11:ImpartialReporting				
Do establish and follow appropriate plans for releasing findings to all audiences?	1			
Do report perspectives of all stakeholder groups?	1			
A12:Meta-evaluation				
Do define the standards to be used judging the evaluation?	1			
Do assign responsible body for documenting and assessing the evaluation process and products?		0		
Do evaluate the instrumentation, data collection, data handling, coding, and analysis against the relevant standards?	1			
Do maintain a record of all Meta evaluation steps, information, and analyses?	1			

Annex5: Reliability Analysis of Extracted components

SNo.	Extracted components	No of items load	Crhombach Alpha	Crhombach Alpha
1	Perceived expectation on nurses responsiveness	4	0.845	0.85
2	Perceived expectation on nurses communication	3	0.832	
3	perceived participants experience on CRC	6	0.883	
4	perceived participants experience on institutional aspects	6	0.894	
5	Patient satisfaction	13	0.966	