



**ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH
SCIENCE, SCHOOL OF PUBLIC HEALTH**

**ASSESSMENT OF THE LEVEL OF PATIENT SATISFACTION AND ITS
DETERMINANTS AMONG ADMITTED PATIENTS IN SELECTED PUBLIC
HOSPITALS OF ADDIS ABABA ETHIOPIA, 2013**

INVESTIGATOR: YAKOB SEMAN (B.Sc.)

ADVISOR: PROFESSOR GETENET MITIKE (MD, MPH, PhD)

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**Assessment of the level of patient satisfaction and its determinants
among admitted patients in selected public hospitals of Addis Ababa
Ethiopia, 2013**

Investigator: Yakob Seman (B.Sc)

Approved by examining board

Chairman _____

Department Graduate committee _____

Advisor _____

Examiners _____

i. Acknowledgment

I am deeply indebted to my advisor, Dr. Getenet Mitike, for his unfailing support, wisdom and guidance throughout my research project. Likewise, I wish to thank my friend Habtamu Milkias and my sister Hindya Seman for their genuine help throughout my research period. I am also grateful for the suggestions and contributions of several other academic staffs of AAU, School of Public Health. My special thank also goes to the participants of this study, coordinators, data collectors, workers of hospitals involved in my study and administrative staff of the School of Public Health. I would also like to thank Federal Ministry of Health for allowing me to access several essential documents for my study. Finally, my gratitude goes to my family, colleagues and above all the almighty Allah.

ii. Abstract

Background: In Ethiopia, the Federal Ministry of Health uses a range of indicators to measure the quality of health service delivery and to track changes over time. Although quality of care is measured with a diverse set of ways, patients are in a unique position to report their health care experiences and inform health care providers about factors that may improve or hinder their satisfaction.

Objective: To assess the level of patient satisfaction and its associated factors among adult patients admitted in selected public hospitals of Addis Ababa Ethiopia, 2013.

Methods: A cross-sectional study design was conducted to estimate the level of patient satisfaction and associated factors in selected public hospitals of Addis Ababa. The study participants were selected using simple random sampling technique. Data were collected by face to face interview method using a structured and pre-tested questionnaire. Descriptive analysis and logistic regressions were fitted to identify the independent factors which determine patient satisfaction.

Results: A total of 397 discharged patients were involved in the study and 330 (83%) of the patients were satisfied by the services they had get at the health facilities. Only 67 (17%) of the patients had reported that they were not satisfied. Based on the result of multivariate analysis, the variables nurse communication (AOR=9.2, 95%CI=2.596 - 32.71), easy to find your way around the health facility (AOR=3.5, 95%CI=1.715 - 7.28), getting all drugs prescribed (AOR=3.1, 95%CI=1.39 - 6.747), getting all laboratory investigation requested (AOR=3.4, 95%CI=1.235 - 9.245), staying to get bed (AOR=0.026, 95%CI=0.001- 0.664) and informing symptoms to look for after you left the hospital (AOR=4.3, 95%CI=1.744 - 10.434) were the independent predictors of patient satisfaction.

Conclusion and recommendation: In summary, 83% of the patients were satisfied by the services they were offered while only 17% of the patients were dissatisfied. The variables nurse communication, easily finding ways around the health facility, getting all drugs prescribed, getting all laboratory investigation requested, length of staying to get bed and informing patients the symptoms to look for after they leave the hospital were the significant predictors of patient satisfaction. Establishing a clear verbal and written communication between health care providers and patients, availing essential pharmaceutical and laboratory service along with effective bed management are critical to improve patient satisfaction in the inpatient settings.

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iii. Lists of Abbreviations

AARHB	Addis Ababa Regional Health Bureau
AOR	Adjusted Odds Ratio
CI	Confidence Interval
COR	Crude Odds Ratio
EHAQ	Ethiopian Hospitals Alliance for Quality
EHRIG	Ethiopian Hospital reform Implementation Guideline
FMOH	Federal Minister of Health
FMOE	Federal Ministers of Education
I-PAHC	Inpatient Patient Assessment of Health Care
MSD	Medical Services Directorate
O-PAHC	Outpatient Patient Assessment of Health Care
PAHC	Patient Assessment of Health Care
QC	Quality of Care
QI	Quality Improvement
SPSS	Statistical package for Social Science
USA	United States of America
WHO	World Health Organization

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1. Introduction

1.1. Background

Patient/client satisfaction is a multidimensional concept, relating to both technical and interpersonal aspects of care, and the amenities of care such as an attractive physical environment, convenient location and parking. Client's assessment of quality, expressed as satisfaction or dissatisfaction, could be remarkably detailed. It could pertain to the settings and amenities of care, to aspects of technical management, to features of interpersonal care, and to the physiological, physical, psychological or social consequences of care [1].

Studies of the quality of medical care are increasing in importance as a component of health care research. The consumer's opinion of services is being taken into account in assessments of quality. Thus, evaluating the quality of medical care involves the measurement of its benefits to patients and the community at large [2].

The emerging health care literature suggests that patient satisfaction is a dominant concern that is intertwined with strategic decisions in the health services. Patient satisfaction should be as indispensable to assessments of quality as to the design and management of health care systems [3].

Care assessed to be high quality according to clinical, economic or other provider-defined criteria is far from ideal if as a result of that care the patient is unhappy or dissatisfied. There is, then, a sound rationale for making the organization and delivery of health care responsive to consumer opinion. Thus, interest in the patient's point of view is increasing and consumer satisfaction being adopted as a standard component of evaluative research [2].

The Donabedian models of quality improvement (1980) identified the importance of patient satisfaction and the relation of its determinants to the structure, process and outcomes of health service delivery [1].

The measurement of patient satisfaction varies depending on the assumptions that are made as to what satisfaction means and a number of approaches to measurement can be identified like patient experience; technical-functional split; patient satisfaction versus service quality; and attribute importance [4].

There are varieties of factors affecting patient satisfaction. Variations on actual determinates were identified and the relative importance of one determinants over another were prevalent [5].

In the context of Ethiopian health sector reform, health facilities are striving to improve the efficiency, effectiveness and quality of services provided. A range of indicators have been used to measure each of these domains and to track changes over time among those measure patient satisfaction is the one [6].

1.2. Statement of the problem

Quality of health service is measured using different indicators of safety, efficiency, timeliness, effectiveness, patient/client centeredness and equity. One of such indicators that need to be monitored for continuous improvement is client or patient satisfaction.

There are many studies conducted in different setting on identification and evaluation of patient satisfaction in patient getting inpatient care but in Ethiopia there are only few studies conducted on outpatient setting. Satisfaction with care is an important influence determining whether a person seeks medical advice, complies with treatment and maintains a continuing relationship with practitioners. There has been increasing interest in patients' satisfaction and its associated factor in the past few decades [7].

FMOH is committed to the goal of ensuring that all patients and their family members receive outstanding, compassionate care and excellent service from every member of hospital team [8]. In order to fulfill the above goal, the FMOH has made the issue of improving patient/customer satisfaction as one of its top priorities as dictated by the implementation of Ethiopian Hospital Reform Implementation Guideline. However, there is no centrally compiled information on levels of patient satisfaction on medical care and there is no proven and documented best practice to improve patient satisfaction in Ethiopia due to lack of well organized evidence on factors associated with patient satisfaction. Identification and evaluation of factors associated with patient satisfaction is also critical to design a change package to improve patient satisfaction in Ethiopia.

1.3. Justification of the study

Beginning from 2003 E.C, the Federal Ministry of Health of Ethiopia has included patient satisfaction survey as a one of the 36 performance indicators of health service delivery [6] to measure and evaluate quality of care both in inpatient and outpatient settings but there no centrally compiled information that shows the level of patient satisfaction and factors associated with it.

There are only few studies conducted to document patient satisfaction level and factor associated with outpatient service. Furthermore, there are few published studies conducted on patient satisfaction level and associated factor in inpatient service in Ethiopia.

2. Literature Review

The concept that is reviewed in this section describes determinant factors associated with patient satisfaction, the linkage between service quality and customer/patient satisfaction along with methods and tools used to measure patient satisfaction. Patient/client satisfaction is a multidimensional concept, relating to both technical and interpersonal aspects of care, and the amenities of care such as an attractive physical environment, and convenient location and parking. Client's assessment of quality, expressed as satisfaction or dissatisfaction, could be remarkably detailed [1].

2.1. Determinants/ factors associated with patient satisfaction

Determinants/ factors associated with patient satisfaction are different from place to place, time to time, society to society, facility to facility and public to private. Some of the studies conducted in different part of the world show similar factors that determine patient satisfaction; others identified different factor.

A telephone survey of 9% of first quarter discharges at The New York Hospital was undertaken to identify the determinants of patient satisfaction. The study showed that best determinants of overall satisfaction with hospital care appear to be patient expectations and satisfaction with nursing care [9].

In a study done on Europe to explore what determines patient satisfaction with the health-care delivery. In which data were obtained from 21 European Union countries in the World Health organization survey for 2003 showed that 10.4% of patient were satisfied by factors such as patient expectations, health status and type of care [10].

A Cross-sectional study on 650 randomly selected patients discharged from four acute care general hospitals done in Spain. Participants were taken from the medical and surgical wards of each with a total of 1,910 patients included in the study. The objectives were to evaluate possible predictors of patient satisfaction in relation to socio demographic variables and history of admission by using a questionnaire with six domains: information, human care, comfort, visiting, intimacy, and cleanliness.

The study showed age, level of education, cleanliness, previous admission to hospital and duration of stay in the hospital were associated with patient satisfaction[11].

A cross-sectional study of 446 mother–newborn pairs from five hospitals in Puttalam district, Sri Lanka, was carried out to describe mothers’ satisfaction with prenatal care received during hospitalization for delivery. The objectives were to identify socio demographic and health-care-related factors associated with satisfaction using a survey instrument. The study showed that factors like getting immediate care , providing information after examination , counseling and the physical environment of the hospital are associated with patient satisfaction [12].

In a study conducted on respondents in Bangladesh on the role of clinical and process quality in achieving patient satisfaction in hospital tries to link what the patient receive and how the health care are delivered with patient satisfaction. The authors identified both what and how the health service delivered are important to patient satisfaction but the how component were the winner in the health system and identifies major determinants of it as patient centered care, access, courtesy and emotional support, communication and information, technical quality, efficiency of care organization, structure and facilities [13].

In a study conducted by Sarah Rodgers et al exploring factors associated with patients’ satisfaction with medication change, questionnaire survey showed that the pharmacists issued a total of 314 questionnaires and patients first found out about their change in treatment by a variety of methods. It can be seen that 52% (108/206) of patients were told why the change was taking place, 32% (66/207) perceived that they had a choice with respect to the change and 55% (112/204) were given the opportunity to ask questions. Almost 65% (131/203) of patients were reasonably or very satisfied with the way in which they found out about their medication change, and 72% (144/199) were reasonably or very satisfied with the new treatment itself. Results of the logistic regression analysis showed that satisfaction with the way in which the patients found out about their change in medication was associated with, being told of the change by the practice pharmacist, the, GP, or by a letter from the practice; and the patient feeling that they had a choice about whether their medication was changed, they had been told why the change in treatment was [14].

In a study conducted by Roger T Anderson et al, the influence of patient waiting time on satisfaction with primary care showed that longer waiting times were associated with lower

patient satisfaction ($p < 0.05$); however, time spent with the physician was the strongest predictor of patient satisfaction. The decrement in satisfaction associated with long waiting times is substantially reduced with increased time spent with the physician (5 minutes or more). Importantly, the combination of long waiting time to see the doctor and having a short doctor visit is associated with very low overall patient satisfaction [15].

A study was conducted to find out the level of patient satisfaction at a zonal hospital, Mandi (HP). A sample of 50 out-doors patients and 50 indoor patients was taken on random basis. The patient satisfaction is judged in terms of services, amenities and different opinion surveys conducted by the researcher to analyze the working of Hospital and Hospital Administration. It was observed that indoor as well as outdoor patients were dissatisfied with most of amenities, cleanliness and behavior of the staff but they were satisfied with behavior and attention given by doctors to them. It is concluded that frequent patient satisfaction survey is very essential to know the shortcomings of services provided and to make improvements on the basis of the opinions and suggestions given by patients. Then only it is possible to have a healthy society, which will in turn work for development of the nation [16].

An article reports on a study of patients' satisfaction with services in rural health-care facilities at different locations in Papua New Guinea. The research addresses the problem of improving the quality of healthcare services to rural populations. Gaining views of patients was considered important as they are the recipients of the services and increasingly there is recognition that patient satisfaction is an important indicator of the quality of health care. The study was designed as a semi-structured qualitative interview study and 265 participants were involved across nine sites. On the one hand, the study found that about 70% ranked services positively, while on the other hand, the majority of participants were turned away at least once due to the absence of staff, lack of drugs or inadequate equipment. Most patients believed that they would get better after a visit to a health centre and appreciated the health education advice provided by staff. The authors argue for more in-depth research and further refinement of research tools to assess patients' satisfaction as a key indicator of quality health care and data needed by health policy makers [17].

In a study conducted in South Africa to identify and evaluate determinants of patient satisfaction in medical service delivery identified the following top ten determinants of patient satisfaction these were care received during my visit, cleanliness of the practice, cheerfulness of the

practice(4.5%), friendliness and courtesy of nurses and doctors, my confidence on the care provided, instruction from health provider for follow up care, explanation of my problem by health care provider on discharge , my involvement in the decision of my care , amount of time health provider spent with me, length of waiting time spent in hospital [6].

In a cross sectional survey was conducted to asses' patient satisfaction on outpatient service on the hospitals of Amhara Region. Long waiting time, visiting of doctors after registration, laboratory procedures, obtaining drugs from pharmacy were associated with patient dissatisfaction [18].

A national survey was conducted by FMOH/MSD in selected 15 lead hospitals based on patient satisfaction score. This assessment showed most Hospitals were not familiar with assessment of patient satisfaction but from those that assess their patient satisfaction inpatient and outpatient waiting time, provider/patient interaction, availability and accessibility of service, referral and other physical environment of the hospitals were identified as associated factors [19].

2.2. Methods and tools used to measure patient satisfaction

Various methods and tools can be used to measure client satisfaction. While a self-administered questionnaire is the most common and systematic method, other methods include focus groups, informal visits with clients by support staff or other clinical staff, client suggestion boxes, and client hotlines can be used to assess patient satisfaction in health care delivery[20].

A cross-sectional study done in Philippines to measure the level of patient satisfaction on nursing care for these reason survey questionnaire was developed as an attempt to create a valid and reliable tool that considers patients' views. It was made in two phases that included qualitative and quantitative methods accordingly the result shows frequent nurse visit, explanation of care before provision and pain management were identified as the determinants of patient satisfaction [21].

In Ethiopia, the Patient Assessment of Health Care (PAHC) surveys are short, validated instruments used to measure patients' satisfaction with health care services in Ethiopia. The surveys are designed to capture patient experiences, and should be used in combination with more objective measures of quality of care and services to evaluate health facility performance. There are two patient satisfaction surveys - one for inpatient settings (I-PAHC) and one for

outpatient settings (O-PAHC) since 2010. Based on those tools hospitals are expected to report their patient satisfaction level every quarter. The analysis of the report shows that patient to provider interaction, presence of information desk and sign board, cleanness of the hospital environment, availability of drugs in the hospital compound and cost of service were the common determinants of patient satisfaction [22].

2.3. The linkage between patient satisfaction and service quality

Health service quality is one of the best predictor for patient satisfaction along with patient expectation and perceived value. Patient and their satisfaction are considered the most crucial point in the planning, implementation and evaluation of service delivery that meets the need of the patient and creating health care standards to achieve high quality of care [1].

A study conducted in USA view patient satisfaction as a value-added component to health service delivery and it is related with quality of care. The study also illustrates how to measure patient satisfaction, create control charts, interpret the results, and develop administrative applications aimed at fulfilling a continuous quality improvement strategy [23].

Study done in Europe shows that consumer satisfaction is playing an increasingly important role in quality of care reforms and health-care delivery more generally [24].

A study done on Netherland considers patient satisfaction as an indicator of quality of care from the patient's perspective and it will be with the question of whether any reliable and valid instruments have been developed to measure quality of care from the patient's perspective [15].

A descriptive study in western Nigeria to evaluate of patients satisfaction with quality of care was conducted this study shows the presence of dissatisfied patients can be a proxy indicator for the need for quality improvement in service delivery [25].

A Cross-Sectional Survey was conducted at Public Hospitals in Addis Ababa on adult patient satisfaction on nursing care. A total of 660 adult patients from medical, surgical and gynecological wards were approached from the study hospitals and 631 of them participated in this study (Non-response rate was 4.4%). Participants who were females, age group 41 – 50 years of old, having low income, less educated, patients who were admitted in third classes, and have no history of previous admission were more satisfied. The overall rating of satisfaction was 67%.The top aspects that patients scored highest for their satisfaction with nursing care were the

amount of freedom given, nurses capability in their work and nurses treatment of patients as an individual. The aspects with which patients were least satisfied were the amount and type of information they received regarding their condition and treatment and also the amount nurses knew about patients' care. Age was the significant predictor of patient satisfaction with nursing care ($p < 0.05$). The need of improving interpersonal relationship of nurses with their patients was recommended [26].

According to Ethiopian Hospital Monitoring and Improvement Framework nationally there are 36 indicators monitored regularly by Federal Minister Of Health and Regional Health Bureau among which patient satisfaction is the one which has standardized survey tool with analysis software and it is one of the measure of quality of care [4].

Ethiopian Hospital Alliance for Quality also uses patient satisfaction as one of the measures of quality of care which used to select hospitals as best performer on quality of care [13].

In general, in Ethiopia there are no many published study to measure inpatient satisfaction level and factor associated with it.

3. Objective

3.1 General Objective

To assess the level of patient satisfaction and its associated factors among adult patients admitted in selected public hospitals of Addis Ababa Ethiopia, 2013.

3.2. Specific objective

1. To assess the level of patient satisfaction among admitted patients.
2. To identify factors associated with patient satisfaction.

4. Methods and materials

4.1. Study Area and period

The study was conducted in Addis Ababa, the capital city of Ethiopia which has population of 3,384,569 (27). Addis Ababa is situated in the foothills of the Entoto Mountains and standing 2,400 meters above sea level. The city is an important administrative center not only for Ethiopia but also for the continent. This study was conducted in selected public hospitals found in Addis Ababa. Addis Ababa has 11 public hospitals of which 6 are under Addis Ababa Regional Health Bureau, 4 under Federal Ministry of Health and 1 under Federal Ministry of Education. According to HMIS reports, these hospitals provide service on average for 400-900 outpatient visits, 11 - 35 inpatient admissions and 100 - 300 emergency patients daily. The data was collected from March 1 to March 27, 2013.

4.2. Study Design

Analytic cross sectional study design was employed.

4.3. Source population

Adult patients discharged from selected Addis Ababa public hospitals.

4.4. Study population

Adult patients who were discharged from selected hospitals during the study period fulfilling the inclusion and exclusion criteria.

4.5. Inclusion and exclusion criteria

4.5.1 Inclusion criteria

Patients who are discharged from inpatient service in the study period and above the age of 18 presenting at the discharge office/liaison office of the hospitals from March 1 to March 27, 2013.

4.5.2 Exclusion criteria

Patients who were unable to communicate for different reasons like illness and with language barrier were excluded.

4.6. Sample size determination

The sample size was determined using single population formula. By taking 50% satisfaction rate at 95% CI (1.96) and 5% (0.05) margin of error (d) and expected non response rate of 10%.

$$n = \frac{(Z \frac{\alpha}{2})^2 * P(1 - P)}{d^2}$$

Where: n = Sample size; Level of significance of 0.05; Z = 1.96; P = prevalence

$$n = \frac{(1.96)^2 * 0.5(1-0.5)}{0.05^2} = 384$$

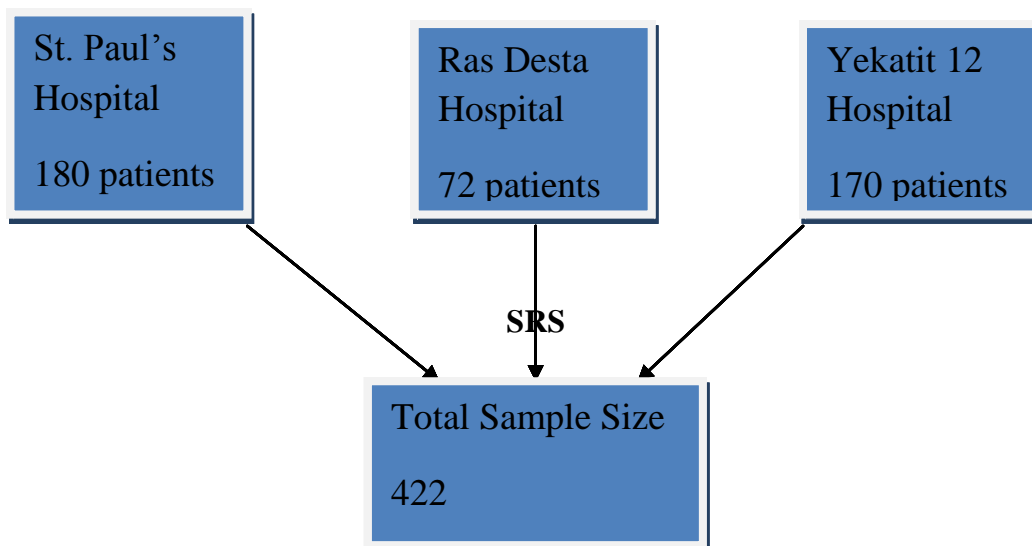
Total sample size = 384 +10% non response = 422

4.7. Sampling procedures

There are 11 public hospitals in Addis Ababa and all are providing inpatient service but this study was conducted in 3 selected hospitals namely: St. Pauls Hospital Millennium Medical College, Yekatit 12 Hospital and Ras Desta Hospital..

The total sample size allocated proportionally based on number of patient discharged from each hospital per month. Accordingly, from St. Pauls hospital 180 patients, from Ras desta hospital 72 patients and from Yekatit 12 hospital 170 patients were allocated. Patients were selected using simple random sampling for collecting representative information.

Figure 1:- Sampling procedure graphically



4.8. Data collection procedures

Nationally validated and standardized tool with minor modification were used to collect information. Firstly, the questioner was customized for this study in English language and then translated to Amharic language by translator. Patients were contacted at admission and discharge office. Informed consent was obtained from each study participant before the data collection. Data were collected in a separate room to avoid introduction of bias during interview.

4.9. Data quality control

The investigator were developed a training manual to provide a half days training before the data collection for the five data collectors who are degree Nurses/Health officers/ Laboratory technologist. The data collectors were from Federal Minster of Health and different hospitals. The data collectors for each hospital were not from the same hospital. Training was provided on sampling procedure, inclusion criteria, ethical consideration, and data collection procedure including how to approach study participants to get reliable results. And the supervisor who is MPH holder supervises the data collectors and collect filled questionnaire and checked for completeness on daily bases.

4.10. Operational definitions

Patient satisfaction: is a collective outcome of different kinds services provided in an institution including good provider/patient interaction, attractive physical environment, availability of drugs and investigations, cost of service and physiological, psychological or social consequences of care.

Satisfied patients: - According to this paper satisfied patients are those patients who rate the health facility greater than or equal to 5 out of 10 (moderately satisfied plus highly satisfied).

Unsatisfied patients: - According to this paper unsatisfied patients are those patients who rate the health facility less than or equal to 4 out of 10.

4.11. Study Variables

4.11.1 Dependent variable

- Patient Satisfaction (1=Satisfied, 0=Not satisfied)

4.11.2. Categories of independent variables

- Socio demographic variables
- Professional communication
- Availability of services
- General amenities of the hospital

4.12. Data processing and analysis

The data were entered and analyzed using SPSS version 20 statistical software. Descriptive statistics, frequencies and percentages were used to describe the study population in relation to relevant variables. To identify the predictors of patient satisfaction, only variables that were significantly associated on bivariate analyses were entered in the multiple logistic regression models. $P < 0.05$ was considered statistically significant. The results were reported as adjusted odd ratios (AOR) and 95% confidence intervals.

4.13. Ethical consideration

The study was conducted after acquiring the appropriate ethical approval. Ethical clearance was obtained from Addis Ababa University, Collage of Health Science, School of Public Health ethical clearance committee, St. Paul hospital MMC ethical review committee, Ras Desta Hospital senior management and Yekatit 12 hospital senior management. Support letter were obtained from regional health bureau and Federal Ministry of Health to conduct the study. Verbal consent was received from the study participant after explaining the study objectives and procedures and their right to refuse to participate in the study any time they want. Information is gathered in separated room to maintain their privacy and those information acquired from the patient were kept confidential. Names were kept anonymous by using study record number only. It is believed that there is no anticipated harm for the patients except for their time scarification at time of data collection.

4.14. Dissemination plan

The findings of the study were presented to Addis Ababa University, School of Public Health, Addis Ababa regional Health Bureau and Federal Ministry of Health. It will also be presented and disseminated to all stakeholders; public and concerned bodies through presentation in different professional association meetings, conferences and national review meetings. The final paper will be sent to an international peer reviewing journal for publication.

5. Results

5.1. Socio demographic characteristics and frequency distribution of response status

A total of 397 study subjects were participated in this study out of which 168 (42.3%) were male and 229 (57.7) were female. Their mean age was 36 years with a standard deviation of 11 years. Three hospitals were involved in the survey and 174 (43.8%), 161 (40.6%) and 62 (15.6%) study subjects participated in the study from St Paul's, Yekatit 12 and Ras Desta hospitals respectively. One hundred fifty (37.8%) of the study participants had no education while the rest had at least primary education. A total of 161 (40.6%) of the study subject had no work and 118 (29.7%) were private employees. Most patients were either single 115 (29%) or married 189 (47.6%) while the rest were separated, divorced or widowed. Religion wise, majority were Orthodox Christians 201 (50.6%) followed by Muslims 137 (34.5). The rest were protestant, catholic and few had some other kinds of beliefs. Table 1 below summarizes the above descriptions.

Table 1:- Distribution of the study participants by socio-demographic characteristics in Addis Ababa, Ethiopia, 2013. (N=397)

Variables	Categories	Frequency (%)
Sex	Male	168 (42.3)
	Female	229 (57.7)
Education status	No formal education	150 (37.8)
	Primary school	125 (31.5)
	Secondary school	91 (22.9)
	College or University	31 (7.8)
Occupational status	No business	161 (40.6)
	Private business	84 (21.2)
	Private employee	118 (29.7)
	Government employee	84 (8.6)
Marital status	Single	115 (29)
	Married	189 (47.6)
	Separated	43 (10.8)
	Divorced	27 (6.8)
	Widowed	23 (5.8)
Religion	Muslim	137 (34.5)
	Orthodox	201 (50.6)
	Protestant	42 (10.6)
	Catholic	13 (3.3)
	Others	4 (1)
Age	Mean (36 years)	SD (11 years)

5.2. Patient to Nurse and Patient to Physician communication

In this survey, most patients 247 (62.2%) had reported that nurses treated them with courtesy and respect sometimes, while 124 (31.2%) said that they were treated with courtesy and respect always. Majority of the patients 248 (62.5%) had also reported that nurses listened to them carefully sometimes. 126 (31.7%) patients said that nurses always listened to them carefully while very few patients complained that they were never listened by nurses carefully.

Similarly, 227 (57.2%) patients said that nurses sometimes explain things in a way they could understand while 134 (33.8%) reported always. On the other hand, regarding the doctors/ health officers courtesy and respect, most patients 235 (59.2%) again responded that sometimes they treated them with courtesy and respect. 234 (58.9%) patients reported that doctors or health officers sometimes listen to them carefully while the rest responded either always or never. Most patients also reported that they were able to distinguish between health professionals. See table 2 for the detailed description.

Table 2:- Description of the patient response with regard to patient-nurse and patient-physician communication. Addis Ababa, 2013 (N=397)

Variables	Categories	Frequency (%)
Nurses treat you with courtesy and respect	Never	26 (6.5)
	Sometimes	247 (62.2)
	Always	124 (31.2)
Nurses listen carefully to you	Never	23 (5.8)
	Sometimes	248 (62.5)
	Always	126 (31.7)
Nurses explain things in a way you could understand	Never	36 (9.1)
	Sometimes	227 (57.2)
	Always	134 (33.8)
Doctors/Health officers treat you with courtesy and respect	Never	32 (8.1)
	Sometimes	235 (59.2)
	Always	130 (32.7)
Doctors/Health officers listen carefully to you	Never	35 (8.8)
	Sometimes	239 (60.2)
	Always	123 (31)
Doctors/Health officers explain things in a way you could understand	Never	33 (8.3)
	Sometimes	234 (58.9)
	Always	130 (32.7)
Distinguish between professionals	Never	54 (13.6)
	Sometimes	239 (60.2)
	Always	104 (26.2)
	No	262 (66)

5.3. Service and facility related information

Regarding the cleanliness of sleeping room and toilet, most patients responded that they were clean sometimes and always: 246 (62%) and 256 (64.5%) respectively. Only few patients responded that the sleeping room and toilet were never clean. About 135 (34%) patients had responded that food was provided to them enough and balanced while the rest responded no, meaning that majority were dissatisfied by the food they were given. More than half, 207 (52%) of the patients had said that it was easy to find their way around the hospital. See table 3 for more detail

Table 3:- Frequency distribution of responses to status of hospital service and facilities. Addis Ababa, 2013 (N=397)

Variables	Categories	Frequency (%)
The room you were sleeping in kept clean	Never	33 (8.3)
	Sometimes	246 (62)
	Always	118 (29.7)
Toilet are clean	Never	35 (8.8)
	Sometimes	256 (64.5)
	Always	106 (26.7)
Food provided to you enough and balanced	Yes	135 (34)
	No	262(66)
Easy to find your way around the health facility	Yes	207 (52.1)
	No	190 (47.9)
The area around you quite at night	Never	11 (2.8)
	Sometimes	280 (70.5)
	Always	106 (26.7)
Have enough personal privacy	Never	7 (1.8)
	Sometimes	310 (78.1)
	Always	80 (20.2)
Experience any pain	Yes	345 (86.9)
	No	52 (13.1)
Your pain well controlled	Never	19 (4.8)
	Sometimes	266 (67)
	Always	65 (16.4)
	Missing	47 (11.8)
Staff do everything to help you with your pain	Never	14 (3.5)
	Sometimes	269 (67.8)
	Always	67 (16.9)
	Missing	47 (11.8)
Given any medication you had not taken before	Yes	354 (89.2)
	No	43 (10.8)
Staff tell you what the medicine was for	Never	24 (6)
	Sometimes	277 (69.8)

	Always	60 (15.1)
	Missing	36 (9.1)
Staff describe possible side effects	Never	39 (9.8)
	Sometimes	269 (67.8)
	Always	63 (13.4)
	Missing	36 (9.1)
Get all drugs prescribed	Yes	205 (51.6)
	No	192 (48.4)
Get all laboratory investigation requested	Yes	233 (56.2)
	No	174 (43.8)
Get all diagnostic service requested	Yes	185 (46.6)
	No	128 (32.2)
	Missing	84 (21.2)
Stay to get bed	1 – 30 days	231 (58.2)
	31 – 60 days	90 (22.7)
	>60 days	76 (19.1)
Problem to enter hospital	Yes	20 (5)
	No	377 (95)
Symptoms to look for after you left the hospital	Yes	173 (43.6)
	No	224 (56.4)
Pay for this health facility stay	Yes	263 (134)
	No	134 (33.8)
Health facility stay too expensive	Yes	55 (13.9)
	No	212 (53.4)
	Not applicable	130 (32.7)
Recommend this health facility to your friends and family	Definitely no	56 (11.1)
	Probably yes	151 (38)
	Definitely yes	1907.9)

5.4. Level of patient satisfaction

A total of 397 discharged patients were involved in the study majority 330 (83%) of the patients were satisfied by the services they had get at the health facilities. Only 67 (17%) of the patients reported that they were not satisfied by the services provided to them at the hospitals. According to the national I-PAHC survey manual those patient who rate the health facility 0-4 are considered to be unsatisfied, 5-7 were moderately satisfied and 8-10 were highly satisfied. Every participants of the study were expected to rate the health facility out of ten after all related factors were assessed. The data collectors were explained things clearly that zero is the worst and ten is the best. see table 4 for the detail analysis

Table 4:- Rating the health facilities service provision from 0 to 10 by study participants, Addis Ababa, 2013 (N=397)

Hospital rating	Frequency	Percent	Cumulative Percent
0 – 4 ratings	67	16.9	16.9
5 - 7 ratings	147	37.0	53.9
8 - 10 ratings	183	46.1	100.0
Total	397	100.0	

5.5. Chi square analysis of predictors of patient satisfaction

As dictated in table 4 below chi square tests were used to identify the association between the dependent variable (patient satisfaction) and the predictor variables. Those variables which were significant at a p-value of 0.05 were considered potential covariates and were used to compute the crude and adjusted odds ratios with 95% confidence interval.

Table 5:- Bivariate analysis of patient satisfaction by socio demographic variables, Addis Ababa, 2013 (N=397)

Variables	Categories	Satisfied N=330 n (%)	Unsatisfied N=67 n (%)	P-value
Sex	Male	134 (79.8)	34 (20.2)	<0.137
	Female	196 (85.6)	33 (14.4)	
Education status	No formal education	127 (84.7)	23 (15.3)	<0.74
	Primary school	105 (84)	20 (16)	
	Secondary school	74 (81.3)	17 (18.7)	
	College or University	24 (77.4)	7 (22.6)	
Occupational status	No business	138 (85.7)	23 (14.3)	<0.578
	Private business	69 (82.1)	15 (17.9)	
	Private employee	97 (82.2)	21 (7.8)	
	Government employee	26 (76.5)	8 (23.5)	
Marital status	Single	87 (75.7)	28 (24.3)	<0.059
	Married	164 (86.8)	25 (13.2)	
	Separated	34 (79.1)	9 (20.9)	
	Divorced	23 (85.2)	4 (14.8)	
	Widowed	22 (95.7)	1(4.3)	
Religion	Muslim	111 (81)	26 (19)	<0.548
	Orthodox	166 (82.6)	35 (17.4)	
	Protestant	38 (90.5)	4 (9.5)	
	Catholic	12 (92.3)	1 (7.7)	
	Others	3 (75)	1 (25)	

Variables with P-value less than 0.05 were used in the bivariate and multivariate analysis whereas variables which were insignificant at this level meant that they had no association with the outcome of interest (patient satisfaction) and hence they contribute a little in explaining the factors which are associated with patient satisfaction. None of the socio demographic variables had association with patient satisfaction.

Table 6:- Results of bivariate analysis of patient satisfaction with patient to nurse and patient to physician communication variables, Addis Ababa, 2013 (N=397)

Variable	Categories	Satisfied	Unsatisfied	P-value
		N=330 n (%)	N=67 n (%)	
Nurses treat you with courtesy and respect	Never	13 (50)	13 (50)	<0.0001
	Sometimes	197 (79.8)	50 (20.2)	
	Always	120 (96.8)	4 (3.2)	
Nurses listen carefully to you	Never	12 (52.2)	11 (47.8)	<0.0001
	Sometimes	196 (79)	52 (21)	
	Always	122 (96.8)	4 (3.2)	
Nurses explain things in a way you could understand	Never	18 (50)	18 (50)	<0.0001
	Sometimes	183 (80.6)	44 (19.4)	
	Always	129 (96.3)	5 (3.7)	
Doctors/Health officers treat you with courtesy and respect	Never	16 (50)	16 (50)	<0.0001
	Sometimes	188 (80)	47 (20)	
	Always	126 (96.9)	4 (3.1)	
Doctors/Health officers listen carefully to you	Never	17 (48.6)	18 (51.4)	<0.0001
	Sometimes	195 (81.6)	44 (18.4)	
	Always	118 (95.9)	5 (4.1)	
Doctors/Health officers explain things in a way you could understand	Never	16 (48.5)	17 (51.5)	<0.0001
	Sometimes	189 (80.8)	45 (19.2)	
	Always	125 (96.2)	5 (3.8)	
Distinguish between professionals	Never	34 (63)	20 (37)	<0.0001
	Sometimes	194 (81.2)	45 (18.8)	
	Always	102 (98.1)	2 (1.9)	
	No	202 (77.1)	60 (22.9)	

Variables with P-value less than 0.05 were used in the bivariate and multivariate analysis whereas variables which were insignificant at this level meant that they had no association with the outcome of interest (patient satisfaction) and hence they contribute little in explaining the factors which are associated with patient satisfaction. All variables related to patient to nurse and patient to physician communication had strong association with outcome of interest which is patient satisfaction.

Table 7:- Results of bivariate analysis of patient satisfaction with service and facility related variables, Addis Ababa, 2013 (N=397)

Variables	Categories	Satisfied	Unsatisfied	P-value
		N=330 n (%)	N=67 n (%)	
The room you were sleeping in kept clean	Never	18 (54.5)	15 (45.5)	<0.0001
	Sometimes	196 (79.7)	50 (20.3)	
	Always	116 (98.3)	2 (1.7)	
Toilet are clean	Never	18 (51.4)	17 (48.6)	<0.0001
	Sometimes	209 (81.6)	47 (18.4)	
	Always	103 (97.2)	3 (2.8)	
Food provided to you enough and balanced	Yes	128 (94.8)	7 (5.2)	<0.0001
Easy to find your way around the health facility	Yes	191 (92.3)	16 (7.7)	<0.0001
	No	139 (73.2)	51 (26.8)	
The area around you quite at night	Never	7 (63.6)	4 (36.4)	<0.001
	Sometimes	223 (79.6)	57 (20.4)	
	Always	100 (94.3)	6 (5.7)	
Have enough personal privacy	Never	4 (57.1)	3 (42.9)	<0.001
	Sometimes	249 (80.3)	61 (19.7)	
	Always	77 (96.2)	3 (3.8)	
Experience any pain	Yes	287 (83.2)	58 (16.8)	<0.531
	No	43 (82.7)	9 (17.3)	
Your pain well controlled	Never	9 (47.4)	10 (52.6)	<0.0001
	Sometimes	217 (81.6)	49 (18.4)	
	Always	64 (98.5)	1 (1.5)	
Staff do everything to help you with your pain	Never	7 (50)	7 (50)	<0.0001
	Sometimes	217 (80.7)	52 (19.3)	
	Always	66 (98.5)	1(1.5)	
Given any medication you had not taken before	Yes	294 (83.1)	60 (16.9)	<0.556
	No	36 (83.7)	7 (16.3)	
Staff tell you what the medicine was for	Never	15 (62.5)	9 (37.5)	<0.0001
	Sometimes	225 (81.2)	52 (18.8)	
	Always	58 (96.7)	2 (3.3)	
Staff describe possible side effects	Never	28(71.8)	11 (28.2)	<0.002
	Sometimes	218 (81)	51 (19)	
	Always	52 (98.1)	1 (1.9)	
Get all drugs prescribed	Yes	192 (93.7)	13 (6.3)	<0.0001
	No	138 (71.9)	54 (28.1)	
Get all laboratory investigation requested	Yes	206 (92.4)	17 (7.6)	<0.0001
	No	124 (71.3)	50 (28.7)	
Get all diagnostic service requested	Yes	165 (89.2)	20 (10.8)	<0.0001
	No	92 (71.9)	36 (28.1)	
Stay to get bed	1 – 30 days	208 (90)	23 (10)	<0.0001
	31 – 60 days	74 (82.2)	16 (17.8)	
	>60 days	48 (63.2)	28 (36.8)	

Problem to enter hospital	Yes	19 (95)	1 (5)	<0.119
	No	311 (82.5)	66 (17.5)	
Symptoms to look for after you left the hospital	Yes	166 (96)	7 (4)	<0.000
	No	164 (73.2)	60 (26.8)	
Pay for this health facility stay	Yes	209 (79.5)	54(20.5)	<0.004
	No	121 (90.3)	13 (9.7)	
Health facility stay too expensive	Yes	30 (54.5)	25 (45.5)	<0.0001
	No	183 (86.3)	29 (13.7)	
Recommend this health facility to your friends and family	Definitely no	7 (12.5)	49 (87.5)	<0.0001
	Probably yes	134 (88.7)	17 (11.3)	
	Definitely yes	189 (99.5)	1(0.5)	

N: P-values of variables which became statistically insignificant are marked in bold.

As noted earlier, variables with P-value less than 0.05 were used in the bivariate and multivariate analysis. Variables which were insignificant at this level meant that they had no association with the outcome of interest (patient satisfaction) and hence they contribute little in explaining the factors which are associated with patient satisfaction. According to the study all service and facility related variables were strongly associated with the outcome of interest patient satisfaction except variables related to whether or not facing a problem to enter the hospital compound, whether or not you given any new medication not taken before and experience of any pain in the hospital stay.

5.6. Bivariate and multivariate analysis of patient satisfaction

5.6.1. Patient to Nurse and Patient to Physician communication

Study subjects who reported nurses treated them with courtesy and respect sometimes had almost 4 times greater chance of getting satisfied than patients who reported they were never treated with courtesy and respect by nurses (COR=3.94, 95% CI=1.720 - 9.027).

In the same way at crude analysis level, study subjects who reported that they were always treated with courtesy and respect by nurses had 30 times more probability of getting satisfaction at the health facilities than patients who reported that they were never treated with courtesy and respect (COR=30, 95% = 8.524 - 105.585).

Study subjects who said nurses sometimes listened to them carefully had 3.5 more chance of getting satisfied by the service at the facilities than study subjects who reported that they were never listened to carefully by the nurses (COR=3.5, 95% CI = 1.443 - 8.275). Subjects who reported that they were always listened to carefully by nurses had 28 times more odds of getting satisfaction as compared to patients who said that they were never listened to carefully by the nurses (COR=28, 95% CI = 7.705 - 191.452).

Patients who said that sometimes nurses explain things in a way they can understand were 4 times more likely to get satisfied than patients who said nurses never explain things in a way they can understand (COR=4.12, 95% CI = 2.001-8.644). Similarly, patients who said that nurses always explain things in a way they can understand had 26 times more chance of getting satisfaction by the service they are getting than patients who said nurses never explain things in a way they can understand (COR=26, 95% CI = 8.530 - 78.033).

At the multivariate analysis level, after controlling for the other variables, patients who said that sometimes nurses explain things in a way they can understand had 3.4 times more likely to get satisfied than patients who said nurses never explain things in a way they can understand (AOR=3.4, 95% CI = 1.143 - 8.524) and patients who said that nurses always explain things in a way they can understand had 9.2 times more chance of getting satisfaction by the service they are getting than patients who said nurses never explain things in a way they can understand (AOR=9.2, 95% CI = 2.596 - 32.71).

Patients who reported that they were sometimes treated with courtesy and respect by Doctors or Health Officers were 4 times more likely to be satisfied by the service they get at the health

facilities than those patients who said that they were never treated by courtesy and respect by doctors or health officers (COR=4, 95% CI - 1.865-8.580). Furthermore, patients who said that they were always treated with courtesy and respect by doctors or health officers had 32 times more chance of satisfaction than patients who reported that they were never treated with courtesy and respect by the health professionals (COR=32, 95% CI = 9.366 - 10.938).

Patients who reported that sometimes doctors or health officer listen to them carefully were 4.7 times more likely to get satisfied by the service than patient who said that Doctors or Health officers never listened to them carefully (COR=4.69, 95% CI = 2.241 - 9.827). Those patients who reported that they were always listened carefully by doctors or health officers were 25 times more likely to get satisfied than patient who said that doctors or health officers never listened to them carefully (COR=25, 95% CI = 8.205 - 76.101).

Patients who reported that sometimes doctors or health officers explain things in a way they can understand were 4.5 times more likely to get satisfaction by the service they are provided with as compared to patients who reported that doctors or health officers never explain things in a way they can understand (COR=4.5, 95% CI = 2.095 - 9.505). The chance of satisfaction was much higher for patients who reported that doctors or health officers always explained things in a way they can understand (COR=27, 95% CI= 8.626 - 81.799).

Patients who distinguished professionals sometimes had 2.5 higher chance of getting satisfied than patients who never distinguished between health professionals (COR=2.5, 95% CI = 1.337 - 4.812). Patients who were always able to distinguish between health professional had 30 times more of getting satisfaction by the service they were provided with (COR=30, 95% CI = 6.664 - 135.054). Table 7 summarizes the above results.

Table 8:- Multivariate analysis of patient satisfaction by patient to nurse and patient to physician communication, Addis Ababa, 2013 (N=397)

Variables	Categories	Crude OR [95%CI]	P-value	Adjusted OR [95%CI]	P-value
Age of patients		1.06 [1.029 - 1.097]	<0.000	--	--
Nurses treat you with courtesy and respect	Never	1.00	--	--	--
	Sometimes	3.94 [1.720 - 9.027]	<0.001	--	--
	Always	30 [8.524 - 105.585]	<0.000	--	--
Nurses listen carefully to you	Never	1.00	--	--	--
	Sometimes	3.46 [1.443 - 8.275]	<0.005	--	--
	Always	28 [7.705 - 191.452]	<0.000	--	--
Nurses explain things in a way you could understand	Never	1.00	--	Ref	--
	Sometimes	4.12 [2.001 - 8.644]	<0.000	3.4 [1.143 - 8.524]	<0.006
	Always	26 [8.530 - 78.033]	<0.000	9.2 [2.596 - 32.71]	<0.001
Doctors/Health officers treat you with courtesy and respect	Never	1.00	--	--	--
	Sometimes	4 [1.865 - 8.580]	<0.000	--	--
	Always	32 [9.366 - 105.938]	<0.000	--	--
Doctors/Health officers listen carefully to you	Never	1.00	--	--	--
	Sometimes	4.69 [2.241 - 9.827]	<0.000	--	--
	Always	25 [8.205 - 76.101]	<0.000	--	--
Doctors/Health officers explain things in a way you could understand	Never	1.00	--	--	--
	Sometimes	4.5 [2.095 - 9.505]	<0.000	--	--
	Always	27 [8.626 - 81.799]	<0.000	--	--
Distinguish between professionals	Never	1.00	--	--	--
	Sometimes	2.5 [1.337 - 4.812]	<0.005	--	--
	Always	30 [6.664 - 135.054]	<0.000	--	--

5.6.2. Facility and service related predictors of patient satisfaction

Patients who reported that the room they were sleeping in was kept clean sometimes were 3.3 times more likely to get satisfied than patients who reported that the room they were sleeping in was never kept clean (COR=3.3, 95% CI = 1.540 - 6.931) and those patients who said that their room was always clean were 32 times more likely to get satisfied as compared to those whose room was never kept clean (COR=32, 95% CI = 10.190 - 229.255).

Patients who reported that toilets were sometimes kept clean had 4.2 more chance of satisfaction than patients who reported that toilets were never kept clean (COR=4.2, 95% CI = 2.015 - 8.754). Patients who said that the toilets were always kept clean had much higher chance of getting satisfied (COR=32, 95% CI = 8.614 - 122.063).

Patient who were provided with enough and balanced food were 5.4 time more likely to get satisfaction than patients who were not provided with not enough food (COR=5.4, 95% CI = 0.082 - 0.415).

Patients who had reported that it was easy to find their way around the hospital had 4.3 higher odds of getting satisfied at the hospitals than patients who reported that it was not easy to find their way around the hospital (COR=4.3, 95% CI = 0.125 - 0.417). After controlling for the rest of the variables in the multivariate analysis, the chance of getting satisfaction remained significant among those who said it was easy to find their way around the hospital (AOR=3.5, 95% CI = 1.715 - 7.280).

Patients who had always found around them quite at night were 9.5 times more likely to get satisfied at the hospitals than patients who never found quietness around them at night (COR=9.5, 95% CI = 2.170 - 41.801). Similarly, patients who always had enough privacy at the facilities were 19 times more likely to get satisfaction at the hospitals than patients who never had personal privacy (COR=19.2, 95% CI = 2.909 - 41.801]). Patients who sometimes had enough personal privacy had 3 times more chance of getting satisfaction than the reference group but it was not a significant association at multivariate level (COR=3.1, 95% CI = 0.668 - 14.039).

Patients who had always their pain well controlled in the facility were 71 times more likely to get satisfied than patients whose pain was never controlled (COR=71, 95% CI = 8.113 - 623.322). Patients whose pain was sometimes controlled were only 5 times likely to get satisfied than patients whose pain was never controlled (COR=5, 95% CI = 1.898 - 12.754). Patients who said that staffs were always doing everything to help them with their pain had 66 times more odds of getting satisfaction than patients who said never (COR=66, 95% CI = 7.058 - 617.143). In the same manner, patients who said that staffs were sometimes doing their best to help them with their pain were 4 times more likely to get satisfied than patients who reported that staffs were never doing helping them with their pain (COR=4, 95% CI = 1.402 - 12.418).

Patients who were always informed by the staff what was the drug for were 17 times higher in getting satisfaction than patients who were never informed what was the drug for (COR=17, 95% CI = 3.396 - 89.161).

Regarding drug side effects, patients who were always told about the side effect of the drugs had 20 times higher chance of getting satisfaction in the hospital than patients who were never told about the side effects of the drugs (COR=20, 95% CI = 2.507-166.496).

Patients who had got all the drugs which were prescribed had 5.8 higher odds of getting satisfaction than patients who didn't get all the drugs where were prescribed (COR=5.8, 95% CI = 0.091-0.329). This variable was also statistically significant at the multivariate level where patients who had got all the drugs prescribed had 3.1times higher chance of getting satisfaction in these hospitals than patients who didn't get all the prescribed drugs (AOR=3.1, 95% CI = 1.39 - 6.747).

Patients who had got all the requested laboratory tests were 4.9 times more likely to get satisfied than those patients who didn't (COR=4.9, 95% CI = 0.113 - 0.371). This variable was also statistically significant at multivariate level where patient who had got all requested laboratory investigation had 3.4 times higher chance of getting satisfied than from those who did not get all the requested laboratory investigation(AOR=3.4, 95% CI = 1.235-9.245).

While patients who had got all the diagnostic services at the facilities were 1.2 times more likely to get satisfied as compared to patients who didn't get all the requested diagnostic services but was not significantly associated at crude level (COR=1.2, P = 0.587).

Regarding the amount of days stayed to get bed, those patients who had stayed from 31 to 60 days were 90.2% less likely to get satisfied than patients who stayed less than 30 days to get bed but was not a statistically significant association (COR=0.041, P = 0.098). Patients who stayed more than 60 days to get bed were 80.5% less likely to get satisfied than patients who stayed less than 30 days (COR=0.195, P = 0.025) which is statistically significant. At the multivariate analysis, after adjusting for the other variables in the model, patients who stayed from 31 to 60 days were 95.9% less likely to get satisfied and those patients who stayed more than 60 days were 97.4% less likely to get satisfied than patients who stayed less than 30 days at the hospitals to get bed (AOR=0.041, 95% CI = 0.002 - 0.728 and AOR=0.026, 95% CI = 0.001- 0.664]).

Patients who had no problem to enter hospital were 4.9 more likely to get satisfied by service they get than patients who had problem at the entrance (COR=4.9, 95% CI = 0.033-1.885) but this was not significant association at the multivariate analysis.

Patients who told about symptoms to look for after they leave the hospital had 8.7 higher odds of getting satisfaction than patients who never told about symptom to look for after they leave the hospital (COR=8.7, 95% CI = 0.051 - 0.260). After adjusting for the rest of the variable in the multivariate level of analysis, patients who told about symptoms to look for after they leave hospital had 4.3 higher chance of getting satisfaction than patients who never told about symptoms to look for after they leave the hospital (AOR=4.395% CI = 1.744 - 10.434).

In health facilities where there was payment and the payment was expensive, patients were 58.4% and 86.7% less likely to get satisfied as compared to health facilities where there was no payment and payment was not too expensive respectively (COR=0.416, 95% CI = 1.261 - 4.586 and COR=0.133, 95% CI = 0.021 - 2.356 respectively). But these associations were not statistically significant at the multivariate analysis. Table 8 summarizes the above results.

Table 9:- Multivariate analysis of patient satisfaction by hospital service, Addis Ababa, 2013 (N=397)

Variables	Categories	Crude OR [95%CI]	P-value	Adjusted OR [95%CI]	P-value
The room you were sleeping in kept clean	Never	Ref	--	--	--
	Sometimes	3.3 [1.54 - 6.931]	<0.002	--	--
	Always	48 [10.190 - 229.255]	<0.000	--	--
Toilet are clean	Never	Ref	--	--	--
	Sometimes	4.2 [2.015 - 8.754]	<0.000	--	--
	Always	32 [8.614 - 122.063]	<0.000	--	--
Food provided to you enough and balanced	No	Ref	--	--	--
	Yes	5.4 [0.082 - 0.415]	<0.000	--	--
Easy to find your way around the health facility	No	Ref	--	Ref	--
	Yes	4.3 [0.125 - 0.417]	<0.000	3.5 [1.715 - 7.28]	<0.001
The area around you quite at night	Never	Ref	--	--	--
	Sometimes	2.2 [0.633 - 7.901]	<0.212	--	--
	Always	9.5 [2.170 - 41.801]	<0.003	--	--
Have enough personal privacy	Never	Ref	--	--	--
	Sometimes	3.1 [0.668 - 14.039]	<0.150	--	--
	Always	19.2 [2.909 - 127.39]	<0.002	--	--
Your pain well controlled	Never	Ref	--	--	--
	Sometimes	5 [1.898 - 12.754]	<0.001	--	--
	Always	71 [8.113 - 623.322]	<0.001	--	--
Staff do everything to help you with your pain	Never	Ref	--	--	--
	Sometimes	4 [1.402 - 12.418]	<0.010	--	--

	Always	66 [7.058 - 617.143]	<0.000	--	--
Staff tell you what the medicine was for	Never	Ref	--	--	--
	Sometimes	2.6 [1.077 - 6.257]	<0.034	--	--
	Always	17 [3.396 - 89.161]	<0.001	--	--
Staff describe possible side effects	Never	Ref	--	--	--
	Sometimes	1.7 [0.784 - 3.595]	<0.182	--	--
	Always	20 [2.507 - 166.496]	<0.005	--	--
Get all drugs prescribed	No	Ref	--	Ref	--
	Yes	5.8 [0.091 - 0.329]	<0.000	3.1 [1.39 - 6.747]	<0.005
Get all laboratory investigation requested	No	Ref	--	Ref	--
	Yes	4.9 [0.113 - 0.371]	<0.000	3.4 [1.235 - 9.245]	<0.004
Get all diagnostic service requested	No	Ref	--	--	--
	Yes	1.2 [[0.367 - 1.765]	<0.587	--	--
Stay to get bed	1 - 30 days	Ref	--	Ref	--
	31 - 60 days	0.098 [0.009 - 1.092]	<0.059	0.041 [0.002 - 0.728]	<0.030
	>60 days	0.195 [0.012 - 3.160]	<0.025	0.026 [0.001- 0.664]	<0.027
Problem to enter hospital	No	Ref	--	--	--
	Yes	4.9 [0.033 - 1.885]	<0.000	--	--
Symptoms to look for after you left the hospital	No	Ref	--	Ref	--
	Yes	8.7 [0.051 - 0.260]	<0.000	4.3 [1.744 - 10.434]	<0.001
Pay for this health facility stay	No	Ref	--	--	--
	Yes	0.416 [1.261 - 4.586]	<0.008	--	--
Health facility stay too expensive	No	Ref	--	--	--
	Yes	0.133 [0.021 - 2.356]	0.000	--	--

In summary, the variables nurse communication, easy to find your way around the health facility, getting all drugs prescribed, getting all laboratory investigation requested, staying to get bed and informing symptoms to look for after you left the hospital were the independent predictors of patient satisfaction at the multivariate analysis. None of the socio demographic variables were explaining about patient satisfaction except age.

6. Discussion

Bases on the results of analysis, 46.1% of patient were highly satisfied, 37.0% were moderately satisfied and the rest were not satisfied by inpatient service. According to the national hospital performance monitoring framework and I-PAHC manual patient who are highly satisfied and moderately satisfied are considered as satisfied. In general 83% of admitted patient were more or less satisfied by inpatient service in Addis Ababa public hospitals. A thesis conducted by Bekele Chaka on adult patient satisfaction on nursing care on public hospitals of Addis Ababa shows 67% of patient were satisfied [25]. This discrepancy may be due to the sample size difference or the area of interest for the principal investigator. Similarly in a study done at Papua New Guinea on perspectives of rural patient towards health service showed that 70% of the patients were positive towards health service this show slight difference may be due to a difference in methodology because the study was qualitative [17].

This study shows the way nurses explain things to make the patients understand predicted patient satisfaction significantly at both crude and adjusted levels of analysis. At the multivariate analysis, after controlling effect of the other variables, patients who said that “sometimes “nurses explain things in a way they can understand were 3.4 times more likely to get satisfied than patients who said nurses never explain things in a way they can understand and patients who reported that nurses always explain things in a way they can understand had 9.2 times more odds of getting satisfaction by the service they were getting than patients who said nurses never explain things in a way they can understand(AOR=9.2, 95% CI = 2.596 - 32.71). This association could be considered valid due to the fact that good communication is a key for better diagnosis and management of the patient’s condition there by satisfying both the patient and the health care professional. Nursing communication is also considered as one of the most important components of Ethiopian Hospital Reform Implementation Guideline to improve nursing care and patient satisfaction in inpatient service. Similar result obtained from a thesis done by Bekele chaka on public hospitals Addis Ababa explanation of things by nurse on the way the patient can understand were important predictor of patient satisfaction on nursing care [25]. This is also mentioned in several literatures which were done in different countries. For instance, the study done by Wnazer M.B and his colleagues on communication and patient satisfaction, it is noted that good patient-health care provider communication reduces the anxiety of the patient on the first place. Additionally, it helps the patient explain his problems comfortably and understand what the health care provider tells him to do in a better way [31]. In another study conducted by

Berger C et al, it is noted that patient-nurse communication is the most important step in patient care and case management which ultimately lead to both health care provider and patient satisfaction [29]. Similarly in a research conducted by Abramowitz et al in American hospitals shows that nursing service especially communication of nurses with patient were important predictor of patient satisfaction.

Another factor which explained patient satisfaction was the convenience of the ways in the hospital accessing service area easily. At crude analysis patients who had reported that it was easy to find their way around the hospital had 4.3 higher odds of getting satisfaction at the hospitals than patients who reported that it was not easy to find their way around the hospital. After controlling for the rest of the variables in the multivariate analysis, the chance of getting satisfaction became significant for those who said it was easy to find their way around that hospital (AOR=3.5, 95% CI = 1.715 - 7.28). In a survey conducted by FMOH shows posting sign boards, labeling service unit clearly and making service unit closer were the predictor for patient satisfaction and it was included as one of change package for patient satisfaction for Ethiopian Hospitals Alliance for Quality. Logically it seems that this relationship is also valid where convenience of ways in the hospital makes the patient feel comfortable and reduces their time it takes and handoffs to get to somewhere within the hospital.

Patients who got all prescribed drugs within the hospital were also more satisfied than patients who didn't get all the prescribed drugs. This variable was a significant predictor of patient satisfaction at both levels of analysis. At crude analysis patients who had got all the drugs which were prescribed had 5.8 higher odds of getting satisfaction than patients who didn't get all the drugs where were prescribed. At the multivariate analysis, patients who had got all the drugs prescribed had 3.1 higher chance of getting satisfaction in these hospitals than patients who didn't get all the prescribed drugs (AOR=3.1, 95% CI = 1.39 - 6.747).

In a similar manner, getting all the requested laboratory tests were a significant predictor of patient satisfaction. Patient who got all requested laboratory test were 3.4 times more likely to get satisfied than those patients who didn't (AOR= 3.4, 95% CI = 1.235 - 9.245).

The possible explanation of those results may be getting all prescribed drugs and all requested laboratory test became very difficult in public hospitals of Addis Ababa and the cost of drugs and laboratory test in private clinics also costly for patients and relatives, so it should be the possible

predictor of patient satisfaction when accessible at the hospital. Several literatures also confirm this association; in a study conducted in Papua New Guinea by Kuzma et al, it is described that lack of drugs and laboratory tests in a health facility as a number one factor leading to patient dissatisfaction[17]. In another study done by R.K. Sharma in India to assess the factors and level of patient satisfaction at a zonal hospital, it was mentioned that patient who had got all the prescribed drugs and diagnostic services including laboratory tests were more satisfied than patients who didn't get the drugs they were prescribed [23].

Another significant predictor of patient satisfaction was, the duration of time waited to get bed at the hospitals. At the multivariate level of analysis, after adjusting all the other variables in the model, patients who stayed from 31 to 60 days were 95.9% less likely to get satisfied and those patients who stayed more than 60 days were 97.4% less likely to get satisfied than patients who stayed less than 30 days at the hospitals to get bed (AOR=0.041, 95% CI = 0.002 -0.728), and (AOR=0.026, 95% CI = 0.001- 0.664) respectively. Now a day's getting bed in Addis Ababa public hospitals became difficult. On average delay for elective admission for Addis Ababa public hospital is around 97 days, so getting admitted on less than 30 days were a very good predictor of patient satisfaction. This result is also described in different literatures that waiting time to get any type of service is an important indicator of patient satisfaction. The longer the waiting time, the more the chance of getting dissatisfied with the service provided at the hospitals. A study conducted by Eilers GM on improving patient satisfaction with waiting time and delay for admission, it is explained that shorter waiting times and delay for admission are associated with higher odds of patient satisfaction [29]. Another study done by Roger T Anderson and his colleagues on the influence of waiting time on patient satisfaction, it is elaborated that longer waiting time for any type of service was a statistically significant predictor of patient dissatisfaction [15].

Patients who told symptoms to look for after they leave the hospital were a significant predictor of patient satisfaction both at crude at multivariate analysis. After adjusting for the rest of the variable in the multivariate analysis, patients who told symptoms to look for after they leave hospital had 4.3 higher chance of getting satisfaction than patients who had no symptoms to look for after they leave the hospital (AOR=4.3, 95% CI = 1.744 - 10.434). The possible explanation may be patient who admitted for long time may have more than one health problem and need to be monitored their health regularly, so if the health professional assure them the continuity of the

service and told them what symptom they have to look for after they leave the hospital would make them satisfied. There are similar results from different literature like in a study conducted by M.Y Coonvadia in South Africa showed explanation of their health problem after they leave the hospital and linking the patient with follow up clinic were one of the ten top predictor of patient satisfaction.

This study also showed that provision of enough and balanced food, cleanses of sleeping room, cleanness of toilet and quietness of sleeping area were associated with patient satisfaction at crude level of analysis but not significant after adjusting the other variable at multivariate analysis. There are articles which showed the above mentioned variable were important predictor of patient satisfaction like a study conducted in acute care hospital in Spain identified general amenities of the hospitals(cleanness of ward, quietness of sleeping rooms, provision of other non medical services) were a significant predictors of patient satisfaction [8]. The possible reason for this may be if patients get enough food timely, toilet and sleeping room are clean and the sleeping room are quite they will get psychological satisfaction and they may not develop health care acquired infection, they can get a good rest and improved soon.

At crude level of analysis this study showed that experience of pain in the hospital stay were not associated with patient satisfaction but the extent of pain control and the commitment of treating professional to control pain were associated with patient satisfaction. The explanation is every patient expects some type of pain when admitted to hospital but what matters is the extent of the pain management and the patience and understanding the feeling of the patient by the professional. if the pain is well controlled and the patient pass pain free day and night it will reduce the tension and patient may take their food, medication and any other order properly and may improve soon.

7. Strength and Limitation of the study

7.1. Strengths

1. The study utilized a nationally valid and standardized instrument with little improvement
2. It dealt with important dimensions of health care delivery that is patient satisfaction
3. The interviews were exit, so there is a minimum information bias.

7.2. Limitations

1. The study use 3 point likert scale which is very subjective and can affect precision
2. Being Cross sectional study it tells us a snap shoot of the perspectives of patient satisfaction.

8. Conclusion and Recommendation

8.1. Conclusions

In conclusion, when we grossly look at the level of satisfaction, majority 330 (83%) of the patients were satisfied by the services they had get at the hospitals. Only 67 (17%) of the patients reported that they were not satisfied by the services provided to them at the hospitals.

Patient's view regarding health care professions, availability of different services and the overall performance of the hospitals was good even though all of the above mentioned were not always present in the health care facilities.

Based on the results of this study, the variables nurse communication, easy to find your way around the health facility, getting all drugs prescribed, getting all laboratory investigation requested, staying to get bed and informing symptoms to look for after you left the hospital were the significant predictors of patient satisfaction at the multivariate analysis.

None of the socio demographic characteristic of patients was associated with patient satisfaction at multivariate analysis. It could be said that the results of this study are valid internally and could be cautiously inferred to the source population.

8.2. Recommendation

Improving patient satisfaction is one of the key indicators of quality of care and indicator of quality health service. According to this study result I recommend the following strategies to improve patient satisfaction in public hospitals of Addis Ababa.

1. Federal Minister of Health and Addis Ababa regional health bureau

- 1) Develop professional and patient communication strategies for public hospitals and train nurses and physician
- 2) Strengthen pharmaceutical supply system in all hospitals
- 3) Develop national admission and discharge protocol with clear bed management
- 4) Strengthen overall hospital management system in the nation

2. Selected Hospitals

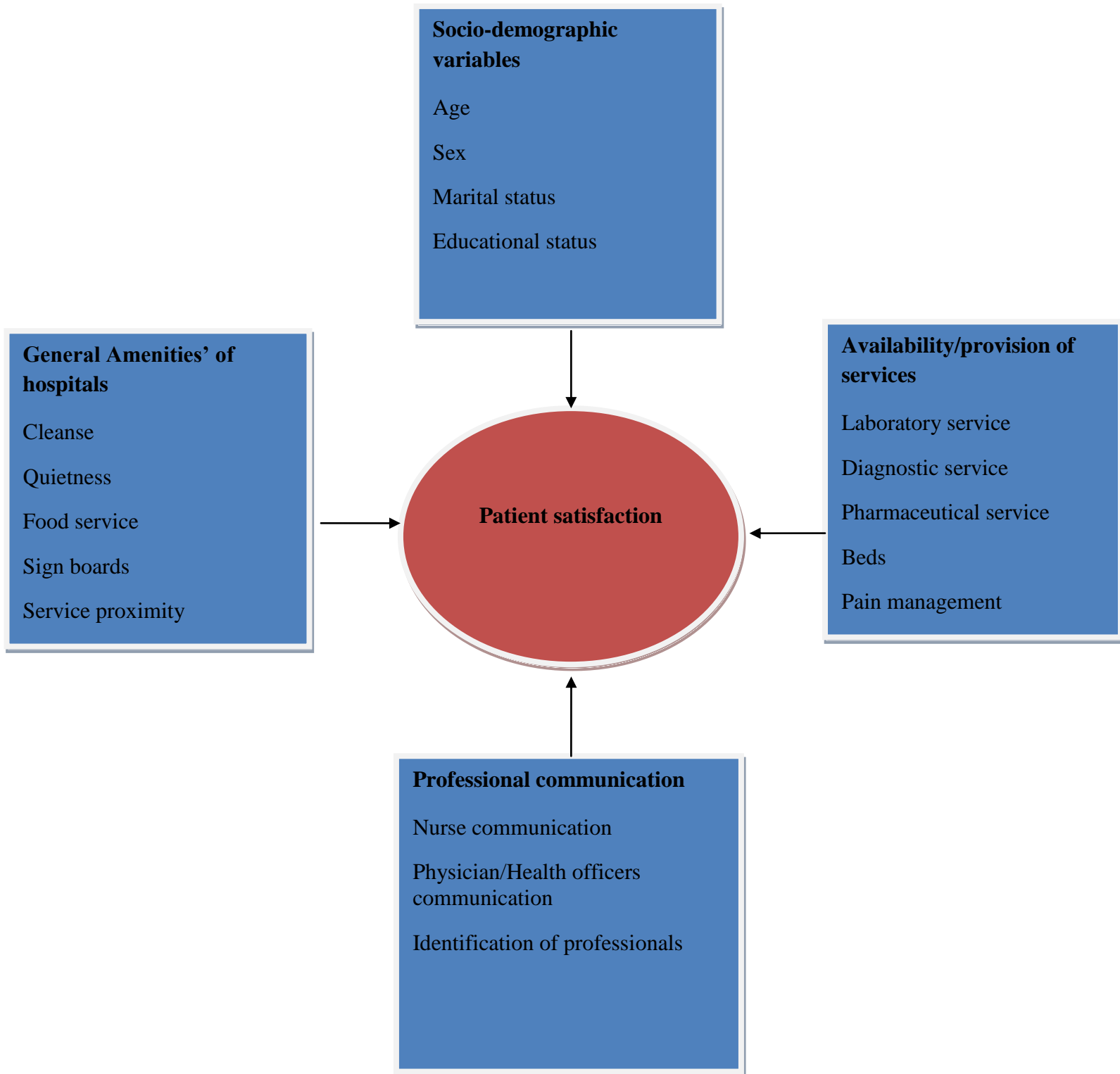
- 1) All hospital should assess the meal need of every patient and should develop hospital specific meal menu and establish a monitoring mechanism for its implementation
- 2) There should be a system to ensure the availability of hospital specific tracer drugs in the hospital on daily basis and there should be drug information service in every hospitals as recommended by Ethiopian Hospital Reform Implementation Guideline
- 3) There should be a clear and transparent bed management system and elective admission appointment system in each hospital
- 4) The hospital should have a clear procedure for flow of patients, signs boards to indicate service area and runners to shows ways for patient in the hospital compound
- 5) The hospital should ensure the availability of health education program for patients to increase awareness on what symptoms they have to look for after discharged from the hospital.

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Figure 2:- The conceptual framework of the study



3. List of Annexes

Annex 1:- English In patient satisfaction Survey questionné Socio demography

Survey no

Hospital

Department

Ward

Date (DD/MM/YYYY):

Age:

Sex

1. Male ₁
2. Female ₂

Educational status

1. No formal education
2. Primary school
3. Secondary school
4. Collage/ university

Occupational status

1. No work
2. Private business
3. Private employee
4. Gov't employee

Marital status

1. Single
2. Married
3. Separated
4. Divorced

5. Widowed

Religious status

1. Muslim
2. Orthodox Christian
3. Protestant
4. Catholic
5. Other

- a. Questions to assess the patients communication with professional, the availability of services and related issues.

	Never	Sometimes	Always
1. During this health facility stay, how often did <u>Nurses</u> treat you with courtesy and respect?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
2. During this health facility stay, how often did <u>nurses</u> listen carefully to you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
3. During this health facility stay, how often did <u>nurses</u> explain things in a way you could understand?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
4. During this health facility stay, how often did <u>doctors/health officers</u> treat you with courtesy and respect?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
5. During this health facility stay, how often did <u>doctors/health officers</u> listen carefully to you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

6. During this health facility stay, how often did <u>doctors/health officers</u> explain things in a way you could understand?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
7. I could distinguish between doctors/health officers and nurses.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
8. During this health facility stay, how often was the room you were sleeping in kept clean?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
9. During this health facility stay did the toilette are clean?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
10. Does the food provided to you enough and balanced	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	
11. Was it easy to find your way around the health facility?	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No	
12. During this health facility stay, how often was the area around you quiet at night?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
13. During this health facility stay, how often did you have enough personal privacy?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
14. During this health facility stay, did you experience any pain?	1 <input type="checkbox"/> Yes	2 <input type="checkbox"/> No, Skip 15& 16	
15. During this health facility stay, how often was your pain well controlled?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
16. During this health facility stay, how often did staff do	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

everything they could to help you with your pain?			
17. During this health facility stay, were you given any medication that you had not taken before?	₁ <input type="checkbox"/> Yes	₂ <input type="checkbox"/> No, Skip 18& 19	
18. Before giving you any new medication, how often did staff tell you what the medicine was for?	₁ <input type="checkbox"/>	₂ <input type="checkbox"/>	₃ <input type="checkbox"/>
19. Before giving you any new medication, how often did staff describe possible side effects in a way you could understand?	₁ <input type="checkbox"/>	₂ <input type="checkbox"/>	₃ <input type="checkbox"/>
20. Did you get all drugs prescribed for you in pharmacy room	Yes ₁ <input type="checkbox"/>	No ₂ <input type="checkbox"/>	
21 Did you get all laboratory investigation requested for you	Yes ₁ <input type="checkbox"/>	No ₂ <input type="checkbox"/>	
22. Did you get all diagnostic service requested for you	Yes ₁ <input type="checkbox"/>	No ₂ <input type="checkbox"/>	
23.How long did you stay to getbed			
24. Did you face problem to enter the hospital	Yes ₁ <input type="checkbox"/>	Yes ₁ <input type="checkbox"/>	
25. Did anyone discuss with you what symptoms to look out for after you left the health facility?	₁ <input type="checkbox"/> Yes	₂ <input type="checkbox"/> No	
26. Did you have to pay for this health facility stay?	₁ <input type="checkbox"/> Yes	No ₂ <input type="checkbox"/> Skip Q27	

27. Do you consider this health facility stay too expensive?	Yes ₁ <input type="checkbox"/>	No ₂ <input type="checkbox"/>	
28. Would you recommend this health facility to your friends and family?	1 <input type="checkbox"/> Definitely no	2 <input type="checkbox"/> Probably no	3 <input type="checkbox"/> Definitely yes
29. On a scale of 0-10 (0 being the worst facility, 10 being the best facility), how would you rate this health facility?	0 1 2 3 4 5 6 7 8 9 10 Worst facility.....Best facility		
30. How would you like this hospital to be? areas that need improvement			

Annex 2:- Amharic In patient satisfaction Survey questionné

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የሀገሪቱ

ዓይነት

ቀን (ቀ/ወ/የ)

ጾታ

1. ወ/የ 1

2. ሰ/የ 2

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የገቢዎች

1. ያለው

2. የሚገኝ

3. ሁለቱም

4. ከገቢዎቹ

የሰውነት

1. ስለሰውነት

2. የሰውነት

3. የሰውነት

4. የሰውነት

የገቢዎች

1. ያለው

2. ያለው

3. የሰውነት

4. የሰውነት

5. የግብር/ብት

ሁኔታ

1. ጠገን
2. አገልግሎት
3. ግብር/ብት
4. ክፍያ

Annex 3:- Declaration

I the undersigned, declare that this thesis is my original work, has never been presented in this or any other University, and that all the resources and materials used for the thesis, have been duly acknowledged.

Name Yakob Seman

Signature _____

Place Addis Ababa, Ethiopia

Date of submission _____

This thesis has been submitted for examination with my approval as a University advisor.

Name Dr. Getenet Mitike

Signature _____

Date _____