QUALITY OF PHARMACEUTICAL CARE IN GOVERNMENT HOSPITALS OF ADDIS ABABA, ETHIOPIA

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To my friends who in one way or another positively influenced my life; especially to Mesfin Hailu and Dejen Bisrat

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List of Abbreviations

APhA:	American Pharmacists Association
ART:	Anti Retroviral Therapy
ASHP:	American Society of Health-System Pharmacists
CQI:	Continuous Quality Improvement
DACA:	Drug Administration and Control Authority of Ethiopia
DRP:	Drug Related Problems
DTC:	Drug and Therapeutics Committee
EDL:	Essential Drug List
FIP:	International Pharmaceutical Federation
FMOH:	Federal Ministry of Health of Ethiopia
NPS:	Narcotic and Psychotropic Substances
PPAC:	Pharmacy Practice Activity Classification
QA:	Quality Assurance
QI:	Quality Improvement
USA:	United States of America
WHO:	World Health Organization

Abstract

Background: As the quality of medication use is the central aspect of quality health care, measuring and thus improving the quality of pharmaceutical care plays a pivotal role in improving medical care in hospitals. Quality of pharmaceutical care can be measured at the levels of the structure, process and outcome. And it is recommended that measurement of the quality of pharmaceutical care should give emphasis on the feelings of the customers of the service. The job satisfaction of pharmacy professionals is also expected to influence and be influenced by the quality of pharmaceutical care.

Objective: to assess the quality of pharmaceutical care in some selected government hospitals of Addis Ababa, Ethiopia.

Methodology: A descriptive cross sectional survey of the pharmacy units of selected hospitals in Addis Ababa was conducted between August and December, 2009. Six government hospitals were involved in the study (two university hospitals and the rest under the Addis Ababa city administration health bureau). The structural quality of pharmaceutical care, pharmacists' level of involvement in pharmaceutical care provision, clients' level of satisfaction, pharmacy professional's job satisfaction and their perceived quality of pharmaceutical care were studied. The study used both quantitative and qualitative methods. Structured observation checklist, structured interview guides and self administered questionnaires were used to collect quantitative data. And qualitative data was collected by an in-depth interview with the heads of the pharmacy departments.

Results: a total of nineteen pharmacy units in the six hospitals were studied for structural quality. Deficiencies were observed with most of the structural aspects. Simple dispensing aids like tablet counting tray were absent in 8 (42.1%) of the pharmacy units. And all had inadequate space for different purposes especially for storage of pharmaceuticals. Some of the hospitals also suffer from shortage of pharmacy professionals. Fifty one pharmacy professionals responded to questions regarding their level of involvement in the provision of pharmaceutical care. And the documentation and implementation of therapeutic objectives and monitoring plans aspects of pharmaceutical care were the most underperformed domains by the pharmacy professionals. The majority of pharmacy professionals (68.6%) never participated in ward rounds and the major reason for this was reported to be absence of system in the hospital for the involvement of pharmacists in ward rounds.

A total of 2641 clients visiting the outpatient pharmacies of the studied hospitals were interviewed on exit from the pharmacies. The interviews were made in Amharic and factor

analysis of the Amharic questionnaire resulted in the factors: interpersonal relationship, general satisfaction and pharmaceutical care. Chronbach's alpha for the whole questionnaire was found to be 0.90 and 0.82, 0.83 and 0.78 for the three factors, respectively. The least satisfaction scores were obtained in the pharmaceutical care domain. And many significant differences in satisfaction with some aspects of pharmaceutical services were observed with clients' gender, frequency of visit, type of hospital and payment status.

The mean job satisfaction score for pharmacy professionals in the studied hospitals was found to be 2.9 $\pm$ 0.52 in a scale of 1-5. Statistically significant differences were observed among pharmacists and pharmacy technicians (pharmacists less satisfied than technicians) with respect to the full utilization of talents on the job ($t = -2.21$; $p = 0.032$) and knowledgeableness of the lay person about the level of education of pharmacists ($t = -2.19$; $p = 0.033$). Majority of the pharmacy professionals ($\geq$ 50%) rated the availability of medicines and important dispensing aids as poor or fair. The qualitative aspect of this study complemented the quantitative part in many aspects (i.e. structural deficiencies, level of involvement in pharmaceutical care and job satisfaction).

Conclusion and Recommendation: this study showed that there is a low level of pharmaceutical care quality in the studied hospitals with respect to the availability of important materials and space; the involvement of pharmacy professionals in pharmaceutical care and clients' satisfaction. Accordingly improved government attention to the pharmaceutical sector, increased involvement of pharmacists in the provision of pharmaceutical care and further quality assessments of hospital pharmacy services are recommended.

Key words: quality, pharmaceutical care, Addis Ababa, hospitals, job satisfaction, clients' satisfaction

1. Introduction

Contemporary health systems in many parts of the world are faced with the concept of value driven health care. This current concept requires health systems to address the issues of quality of care and cost control. With this regard, measurement of the quality of health care and the use of this data for quality improvement and cost containment is a central issue. As far as quality of health care is concerned, there is no single universally accepted definition for the concept. However one can see health care quality as the degree to which health care services increase the likelihood of desired health outcomes and are consistent with current professional knowledge. Based on this definition, quality of health care is required to be measured at three levels and these are: the structure, process and outcome (Donabedian, 1988, Fiscella, 2003, Nau, 2009, Wehling, 1990).

Ensuring the quality of health care can only be possible when we give equal emphasis to the different aspects of health care. Among these different aspects of health care is the quality of pharmaceutical services. Ensuring the quality of pharmaceutical services requires us to apply the concept of pharmaceutical care. This concept is most popularly defined as: *"the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve or maintain a patient's quality of life".* In fact pharmacists applying continuous quality improvement procedures will actually discover the concept of pharmaceutical care in their practice. Just like the other aspect of health care, the quality of pharmaceutical care is studied at three levels: the structure (personnel and infrastructure); the process (technical and interpersonal aspects of care) and outcome (encompass the economic, clinical, and humanistic consequences of the pharmaceutical care processes) (Al-Shaqha and Zairi, 2001, Nau, 2009, Wiedenmayer et al., 2005).

Although health care quality measurement and improvement is very common in developed countries, it is not widely done in many developing countries. This is so, despite the fact that the quality of health care (pharmaceutical care included) in such countries is very poor. The already available data regarding the quality of health care in developing countries lacks emphasis on the quality of pharmaceutical care. The case of Ethiopia is no exception with this regard.

As the capital of the country, Addis Ababa has 33 hospitals of which 5 are managed under the health bureau of the city administration. And there are 153 community pharmacies, and 83 drug shops (FMOH, 2008). Assessment of the pharmaceutical sector in 2002 showed a very high degree of irrational drug use (FMOH/WHO, 2003). Many of the pharmacy units in the health institutions in Addis Ababa experience a heavy burden of clients to be served and they also suffer from a crippling and chronic shortage of properly trained and motivated staff. Most of the hospitals in Addis Ababa are involved in the training of health care professionals including pharmacists and they are widely seen as models for hospitals in the rest of the country. So any problem in the quality of pharmaceutical services in hospitals (especially in the teaching hospitals) of Addis Ababa has the probability of being duplicated throughout the country.

Some attempts were made to assess the quality of medical services in some parts of Ethiopia including Addis Ababa. However, there is little done on the quality of pharmaceutical services provided in health facilities of Addis Ababa. The level of provision of pharmaceutical care is not documented, despite the presence of anecdotal evidence that the practice of hospital pharmacy in the city is largely traditional. Not much is done on the job satisfaction of pharmacists working in the different hospitals. There is also very little knowledge about the level of clients satisfaction by the pharmaceutical service provided. So this study is aimed to fill the gap in information regarding the quality of pharmaceutical services provided by some selected government hospitals of Addis Ababa, Ethiopia. The level of job satisfaction of pharmacy staff working in these hospitals will also be documented. The information generated will be used by policy makers and hospital administrators in their efforts to improve the quality of pharmaceutical care in the hospitals of the city in particular and the country in general.

2. Literature Review

2.1 Quality of health care and its measurement

The Merriam Webster online dictionary defines the word quality as the "degree of excellence" or "superiority in kind" (Merriam-Webster, 2009). Different definitions exist for quality in industries and many service giving organizations other than health care. Although quality assessment of health care systems had so long been influenced by developments in industries, it had been difficult to define quality in health care (quality of care). This is further complicated by the fact that there are different perspectives of looking at quality in health care. Among the different perspectives of looking at quality of care are: health care professionals' perspective (emphasize on technical excellence and the characteristics of provider-patient interactions); patients' perspective (degree of responsiveness to the preferences and values of the consumers); and health care organizations (Blumenthal, 1996, Fiscella, 2003, Harteloh and Verheggen, 1994, Harvey, 1996). However one simple definition proposed by the United States Institute of Medicine puts health care quality as "the degree to which health care services increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (Wehling, 1990).

The health care system in many countries is moving towards value-driven health care. Although the term could have different definitions, value in health care is often described as the balance between quality and costs. So the concern for many health systems is: how can we enhance value by improving quality while controlling costs? Health care systems have for long been using cost measurement as a means towards improved value and measurement of quality in health care gained much attention only recently (Nau, 2009). The basic functions of quality measures in health care are: insuring accountability (also termed as "Quality Assurance (QA)")-especially in the process of accreditation of health institutions; and insuring Quality Improvement (QI)-as in house methods of ensuring quality. With this regard there are many reports indicating that the adoption of QI in health care institutions has produced measurable improvements. Generally, the purpose of measuring quality is to identify problems in a system (also known as opportunities for improvement) and to monitor improvements in quality as systems are modified (Fiscella, 2003, Nau, 2009). Then the question remains: how can we effectively measure quality of care?

Different approaches can be used to measure quality of health care. However the most widely accepted approach is the one which was proposed by Avedis Donabedian (also known by many in the field as the father of health care quality assurance) (Best and Neuhauser, 2004). According to Donabedian assessing and thus improving the quality of medical care requires that attention be given to the structural, process and outcome components of medical care. Structural measures assess whether facilities, equipment, staff (number and qualification), material, budget and organizational structure meet established standards. Process measures check if the right things have been done in the right sequence for service recipients. It includes the practitioner's activities in making a diagnosis and recommending or implementing treatment as well as the patient's activities in seeking care and carrying it out. The term outcomes encompass the economic (e.g., costs of care), clinical (e.g., pain, adverse effects, mortality), and humanistic (patient satisfaction or health-related quality of life) consequences of health care processes (Donabedian, 1988, Fiscella, 2003, Nau, 2009).

As discussed earlier the process of care is the vital element which determines the outcomes of medical interventions including patient satisfaction. A study on colon and rectal resection surgical procedures for example revealed that: collaboration between anesthesiologists and colorectal surgeons led to a reduction in the time to induction of anesthesia and time the patient spends in the post-anesthesia care unit. In the same study, an anesthesia quality surgical solutions reporting form heightened cost awareness and lessened the use of expensive postoperative antiemetics. This study also showed that the development of explicit postoperative order sets for an entire admission was associated with a reduction in reported medication errors (Galandiuk et al., 2004).

Patient satisfaction can be defined as "positive evaluations of distinct dimensions of health care". That is to say a satisfied patient is more likely to positively evaluate the care he/she received than the unsatisfied one. With this regard patients' (clients' of health care) satisfaction with the delivery of health care services has been recognized as an increasingly important outcome of care and an indicator of the quality of those services (Lewis, 1994, Woodside et al., 1989). Thus identifying the factors affecting patient satisfaction is important in improving health care quality. There are different factors that affect the satisfaction of patients with the medical care they received. Some factors identified by Bahrampour and Zolala, (2005) among patients hospitalized in different hospitals in

Kerman, Iran include: type of hospital (private hospitals having higher satisfaction than public), patients' education level (lesser level of education associated with higher satisfaction), and duration of hospitalization (increased duration associated with increased satisfaction). A Swedish study also revealed an increasing satisfaction with age of the patient; decreased satisfaction with level of anxiety at admission, pain and health status of patients admitted to hospitals (Rahmqvist, 2001).

Patients' attitude towards the type of medical care they received also determines their choice of health care facilities and physicians. For instance, a study from the United States of America showed that patients involved in the study cited the doctor's "Approach to patient care" and "Interpersonal skills/communication" as the most important factors affecting their choice of physician (Bernard et al., 2006). The fact that professionals' interpersonal skills is the most commonly mentioned factor to influence patients' satisfaction is also reported in many other studies (Lewis, 1994).

Another important thing to focus on, as far as quality of health care is concerned is the level of job satisfaction of health care providers. The job satisfaction of health professionals is in one way or another connected to their performance (Utsugi-Ozaki et al., 2008, Wallace et al., 2009). According to Donabedian (1988), professionals' performance has two basic elements which are: technical and interpersonal. The quality of technical aspects is measured by their conformance to the best in practice with regard to the knowledge and judgment used in arriving at the appropriate strategies of care and the skill in implementing those strategies. The interpersonal aspect is related to the information exchange between the patient and the provider and is considered to be the vehicle by which technical care is implemented and on which its success depends (Donabedian, 1988). Although much needs to be done in establishing the relationship between job satisfaction and quality of technical performance, the effect of job satisfaction on the interpersonal aspects of providers' performance and patient outcomes has long been established. This necessitates that researchers and managers of health care give emphasis on the job satisfaction of health care providers. This is also inline with the modern approach of assessing quality which gives much weight for the perceptions of both internal (professionals) and external (patients) customers of the health care system (DiMatteo et al., 1993, Harteloh and Verheggen, 1994, Utsugi-Ozaki et al., 2008).

Although the assessment and improvement of health care quality is well advanced in the developed countries, there has been very low attention given to the issue in many developing countries. This is so, in spite of the presence of published and anecdotal evidence of low quality of care in such countries (Reerink and Sauerborn, 1996). The main reasons mentioned for the poor quality of health care in developing countries are: overemphasis on quantity and access (evidence suggests that the perceived low quality of health care could hinder people from attending health care services even if they are available), inappropriate focus on inputs (like drugs, staff, availability of electricity and running water) rather than giving equal emphasis to the process of health care (Reerink and Sauerborn, 1996). Moreover, contrary to what many people would assume, quality of health services is not luxury for the health systems of developing countries. This is because, improving quality often does not cost, it pays, a fact that health managers of developing countries with restricted budgets cannot afford to ignore (Brown et al., 2008).

Some studies identified management and organizational factors, implementation of evidence-based practice, professional development, use of referrals to secondary care, and organizational culture as important determinants of quality of health care in developing countries settings (Al-Ahmadi and Roland, 2005). The factors that contribute to patient satisfaction in developing countries settings are documented by different studies. One study from Bangladesh documented discipline (the appearance of physical facilities, equipment, personnel and communication material) as having the greatest impact on customer satisfaction. Based on this study, assurance (providers' knowledge and courtesy, and the ability to inspire trust and confidence) was found to have the second greatest impact on patient satisfaction. And the impact of responsiveness and communication on patient satisfaction was of lesser importance though still significant (Andaleeb, 2001).

Aspects of quality that were identified by other studies to affect client satisfaction in some developing countries include: efficiency (organized procedures, short waits), technical competence (provider compliance with clinical standards, thoroughness in caring for patients), interpersonal relations (friendliness of staff), access and cost (clinic location; open hours; availability of drugs; price to client), safety (physical security, trust in system), continuity (consistent care, same provider), and physical aspects (adequacy of rooms and equipment, cleanliness and good ambiance) (Baltussen et al, 2002, Baltussen and Ye, 2006, Hansen et al., 2008, Quality Assurance Project, 2001).

2.2 Quality in pharmaceutical care

In response to the concept of value driven health care, quality measurement has achieved a powerful momentum across the spectrum of healthcare. And improvement in the overall quality of care can only be ensured if and when we ensure quality in every aspect/sector of health care (Nau, 2009). Assuring quality in using medicines is one of the cornerstones of medical care quality assurance. And this is important for the achievement of maximum therapeutic benefit and avoiding untoward side effects which reduce quality of medical care. This calls for, together with the other aspects of medical care, quality pharmaceutical services in different health institutions (Fiscella, 2003). Just like the case of other aspects of health care, measuring quality of pharmaceutical care is believed to improve its processes and outcomes (Roper et al., 2002).

Over the past four decades there has been an emerging trend for pharmacy practice where the primary focus is the patient and outcomes of care, rather than the distribution of drug products. In response to this, the role of the pharmacist has evolved from that of a compounder and supplier of pharmaceutical products towards that of a provider of patient care. The new approach has been given the name pharmaceutical care and its generally accepted definition is: *"the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve or maintain a patient's quality of life".* This concept is considered by many in the field of pharmacy practice as a standard of quality care for hospital pharmacy practice. The International Pharmaceutical Federation (FIP) promotes the application of this concept in countries of the world based on their individual needs. And many countries adopted the pharmaceutical care concept as the minimum requirement of practice especially in the areas of hospital and community pharmacy practice (Al-Shaqha and Zairi, 2001, Rossing et al., 2005, Wiedenmayer et al., 2005).

As pharmacists increasingly focus their practices on the provision of pharmaceutical care, the American Pharmacists Association (APhA) initiated the Pharmacist Practice Activity Classification (PPAC) which could serve as a common language that, if used consistently, will yield comparable data among studies. This classification captures a range of activities from traditional dispensing to direct patient care services. And the activities are broadly classified in to four major areas as: Ensuring appropriate therapy and outcomes; Dispensing medications and devices; Health promotion and disease prevention; and Health systems

management. Each of these pharmacy practice activities are further divided in to specific sub classes of activities which are detailed in the APhA document for Pharmacist Practice Activity Classification (APhA, 2009, Wiedenmayer et al., 2005).

Inherent in the concept of pharmaceutical care is Continuous Quality Improvement (CQI). Experts in the area even believe that, pharmaceutical care is the application of CQI principles at the patient level. Furthermore these experts argue that, ensuring CQI is a way to put the word "care" into action and pharmacists practicing CQI for the outcomes of drug therapy will discover pharmaceutical care (Al-Shaqha and Zairi, 2001). So ensuring or improving the quality of pharmaceutical care (outcomes) requires addressing both the resources (structures) and activities carried out (processes) in the provision of care. As far as the process of care is concerned, pharmaceutical care is the recommended concept of practice. Moreover, improving the process of pharmacy practice not only creates better outcomes but also reduces cost (Wiedenmayer et al., 2005). Many of the studies done in the area of pharmaceutical service quality are based on the Donabedian's model of assessing health care quality (Nau, 2009). As it might affect or be affected by the quality of pharmaceutical service, pharmacists' job satisfaction has also been an area of research so far (Cox and Fitzpatrick, 1999, Olson and Lawson, 1996, Seston et al., 2009).

In the context of pharmaceutical care, structure refers to the professional licensure or certification, computer systems for tracking patient information, patient counseling areas, human resource policies, etc. It is important to note here that, these structural elements may be necessary to provide optimal care, but their presence does not ensure optimal care. Similar to the other aspects of health care, pharmaceutical care process is divided into two domains as: technical and interpersonal. The technical domain of pharmaceutical care may include gathering patient information, entering prescription information into computers or other appropriate records, reviewing patient profiles, checking prescription labels, evaluating a patient's laboratory results, identifying and resolving potential drug-related problems, and answering patient questions. The interpersonal domain of pharmaceutical care includes the ability of the pharmacist to express empathy, listen attentively, and develop a caring relationship with the patient. Outcomes in the context of pharmacy practice, encompass the economic, clinical, and humanistic consequences of the pharmaceutical care processes (Nau, 2009).

Most of the studies done in the area of pharmaceutical care quality focus on the relationship between process and outcomes of care and give less emphasis to the structural aspects. However there are some studies which in one way or another show the importance of structural aspects for quality of pharmaceutical care. For example, a study done in the United States of America showed that hospitals employing a full-time pharmacist had a higher quality of care than those who did not (Mikeal et al., 1975). Increased automation of pharmaceutical services and using more pharmacy technicians in hospitals was found to improve the quality of pharmaceutical care as pharmacists are more involved in clinical activities rather than the routine distributive services (Troiano, 2001, Witkowski, 2007). A report again from the USA showed increased staffing levels of clinical pharmacists and pharmacy administrators, to have significant association with reduced total cost of care in hospitals (Bond et al., 2000).

With respect to the process of pharmaceutical care, pharmacist initiated interventions in patients with Drug Related Problems (DRP) has been found to have numerous clinical and economic benefits. In general the involvement of pharmacists in the provision of clinical pharmacy services has been found to reduce DRPs in different groups of patients (Hanlon et al., 2004). For example, a study from Sweden reported that the involvement of pharmacists in management of patients with drug related problems had the benefit of giving the patient improved therapeutic effect, preventing Adverse Drug Reactions (ADR) and hospitalizations. This study also estimated the potential cost savings at national level to be 358 million Euros which is again 37 times the expected pharmacy personnel costs for identifying and responding to drug related problems (Westerlund and Marklund, 2009). A study of some 1060 hospitals of the USA reported six clinical pharmacy services to be associated with lower total cost of care. The clinical pharmacy services were reported with decreasing level of significance to be: drug use evaluation, drug information, ADR monitoring, drug protocol management, medical rounds participation, and admission drug histories (Bond et al., 2000).

Pharmacists' interaction with the health care team on patient rounds, interviewing patients, reconciling medications, and providing patient discharge counseling and follow-up all consistently result in improved outcomes of care in terms of reductions in mortality, ADR, medication error, quality of life, patient satisfaction, etc. (Kaboli et al., 2006). Pharmacist interventions also have their places in pediatric care in that they are very important in

identifying medication errors (Sanghera et al., 2006). Patients will gain control of their therapy and feel increasingly safe when new and advanced medication record systems are put in place (Renberg et al., 2006). Although most of the studies regarding pharmaceutical care quality come from north America and some European countries, a study from Iran showed that pharmacists participation in health care team rounds improved the overall quality of medication therapy, enhanced patient care and outcome and reduced drug costs to patients and society (Dashti et al., 2009).

As an important out come and indicator of the quality of pharmaceutical care, patients' satisfaction with the service provided by hospital pharmacies must be appropriately measured. The relevance of patient satisfaction with pharmaceutical care is immense because of the fact that it strongly influences patients' behavior about their therapy. Studies show that there is significant association between patients' satisfaction and the level of adherence to treatment. More over many of the studies done on patient satisfaction with hospital services show that different aspects of pharmaceutical services are critical in determining overall satisfaction with hospital services (Prasanna et al., 2009, Gu et al., 2008). Patients find different aspects of hospital pharmacy services to be satisfying and dissatisfying. For example a study from Thailand showed that hospital pharmacy services provided by private hospitals were found to be better in-terms of patient satisfaction with physical attributes of the pharmacy and waiting time. In the same study patients rated the technical competence of pharmacists working in a public hospital to be higher than a private one (Piyawan et al., 2005). At this point it is also important to note that hospital pharmacies have users other than patients including pharmacists, physicians and nurses. And the satisfaction of these users is an important indicator to the quality of services of the hospital pharmacy (Dussart et al., 2009).

Although pharmaceutical care is a widely accepted concept, many countries face different barriers for its implementation. Among the barriers of pharmaceutical care implementation are: shortage of pharmacists, lack of computer support and other relevant infrastructure, absence of a reimbursement system, lack of time, lack of specific training and lack of communication skills (Rossing et al., 2005, Uema et al., 2008, Dunlop and Shaw, 2002).

It is a common practice to measure the job satisfaction of pharmacists practicing in hospitals and other health care organizations. Hospital pharmacists' job satisfaction is affected by

different factors and is known to influence the quality of services they provide. Among the factors that influence pharmacists' satisfaction with their jobs are: perceived utilization of skills, level of staffing, level of education and level of clinical involvement (Cox and Fitzpatrick, 1999, Kerschen et al., 2006, Olson and Lawson, 1996, Rauch, 1981). Generally pharmacists' job satisfaction is affected by their age, level of income, practice site and other factors (Hardigan and Carvajal, 2007). And studying the level of job satisfaction and the factors that positively influence the level of job satisfaction of hospital pharmacists is important both in assessing the quality of hospital pharmaceutical services and in improving them.

2.3 Quality of health care in Ethiopia

Ethiopia has the poorest health status in the world and the health service coverage is generally low. The country not only suffers from low level of health service coverage but also from low quality of health care services (Dejene, 2003). Furthermore the level of utilization of the health care services by the people is very low. A study on health service utilization in Amhara region of Ethiopia showed that only 59% of the reported deaths visited health institutions for the killer disease. And of those who claimed to be sick over the two weeks period preceding the survey, 38.7% visited health institutions. The most important reasons for not visiting health institutions were: belief that the disease did not need treatment in health institutions, buying drugs from drug vendors and visiting traditional healers (Fantahun and Degu, 2003).

The health care system in Ethiopia greatly suffers from structural deficiencies and poor outcomes. Different studies show that there is a chronic shortage of professionals, lack of access to appropriate laboratory tests, high level of customer dissatisfaction with some aspects of services in government facilities, lack of appropriate medicines and equipments, deficiencies in the privacy of service provision, and adequacy and cleanliness of service giving facilities. There is also poor patient outcome in different aspects of the health service in the country (Abula and Ashagrie, 2003, Fantahun, 2005, Feleke and Enquselassie, 2005, Loha et al., 2003). In a study of the structural quality of reproductive health services in South-Central Ethiopia, Wako and Berhane (2000) identified multiple structural deficiencies as shown by: absence of the absolute minimum equipment required for maternity and

neonatal care, severe shortage or unavailability of essential drugs, lack of important laboratory tests and important reference materials.

Apart from the structural deficiencies discussed so far, different reports show that there is a very high level of non adherence to different national guidelines in the diagnosis of diseases like Tuberculosis, and infection prevention and other universal guidelines (Kumbi et al., 2008, Mesfin et al., 2005). Considering the outcome segment of health care quality, different studies on clients' satisfaction show very low level of satisfaction with the quality of health care. Generally a large proportion of clients visiting the health facilities in different parts of Ethiopia were not satisfied by the services they received. Among the factors identified by different studies to affect satisfaction were: length of waiting and consultation time, type of investigations performed, and availability of medicines in the hospital pharmacy (Abdosh, 2006, Olijira and Geber-Selassie, 2001). Different studies consistently identified that availability of medicines in the hospital pharmacy is a major factor affecting satisfaction with care. This signifies the importance of ensuring the quality of pharmaceutical services in order to improve the quality of overall hospital services.

Although there is a large amount of data on the quality of pharmaceutical services in the developed world, there is little done on this area in developing countries like Ethiopia. Most of the studies done in Ethiopia, regarding quality of health care fundamentally focus on health care in general or some aspects of health care like family planning and disease specific programs. So this study aims at filling this gap in information regarding the quality of pharmaceutical care in hospitals of the country and the level of job satisfaction of pharmacy professionals.

3. Objectives

3.1. General objective

To assess the quality of pharmaceutical care in government hospitals in Addis Ababa, Ethiopia

3.2. Specific objectives:

- Assess the availability of relevant infrastructure and materials used for effective provision of pharmaceutical care
- Assess the extent of involvement of pharmacy personnel in pharmaceutical care
- Measure the level of client satisfaction with the quality of pharmaceutical service provided in the outpatient pharmacy units and evaluate the validity and reliability of the Amharic version of clients' satisfaction questionnaire adapted from instruments which were developed and validated by Traverso et al. (2007) and Larson et al. (2002)
- Measure the level of job satisfaction of pharmacy staff and their perceived quality of hospital pharmaceutical services

4. Materials and Methods

4.1 Study design

A descriptive cross sectional survey of the pharmacy units of selected government hospitals in Addis Ababa was conducted between August and December, 2009. This study used Donabedian's model of assessing quality of care. Accordingly, the structural aspects of the pharmacy departments in the study hospitals were assessed. The process of pharmaceutical care was assessed by measuring the level of involvement of pharmacy professionals in pharmaceutical care. And the job satisfaction of pharmacy professionals was assessed as the main factor influencing professional's performance. The outcome of care was assessed by the level of clients' satisfaction and professionals' perceived quality of pharmaceutical services. The study used both quantitative and qualitative methods.

4.2 Description of study Area

Addis Ababa is the capital and largest city of Ethiopia. It is located at the geographic center of the nation and covers about 540 Km^2; of which 18.2 Km^2 is rural. According to the 2007 census Addis Ababa has a total population of 2.7 million (CSA, 2008). It has 33 hospitals, of which 5 are managed under the health bureau of the city administration. Four are managed by the federal ministry of health (one of the hospitals, St Paul General Specialized Hospital is affiliated with a medical school), one university hospital (Tikur Anbesa Specialized Hospital which is under Addis Ababa University) and the rest are either privately owned or owned by non governmental and other governmental organizations. According to a recent report by the ministry of health, there are 153 community pharmacies, and 83 drug shops in Addis Ababa (FMOH, 2008).

4.3 Source and study population

The source population constituted of all the hospitals in Addis Ababa, all the clients of the outpatient pharmacies of the selected hospitals, and all the pharmacy professionals working in the pharmacy departments of the selected hospitals. The study population consisted of all (except one) of the hospitals under the health bureau of the Addis Ababa City Administration, Tikur Anbesa Specialized Hospital and St Paul General Specialized Hospital; all the clients of the outpatient pharmacies other than Anti Retroviral Therapy

(ART) pharmacies aged 18 and above and who were willing to participate in the study; all the pharmacy professionals willing to participate in the study and all the heads of the pharmacy departments of the study hospitals. The clients could visit the pharmacy to buy drugs either for themselves or for a friend or relative.

4.4 Sampling

Of the 33 hospitals in Addis Ababa, six were involved in the study. Two were selected purposively to be university hospitals or those affiliated to medical school (the two specialized hospitals in Addis Ababa: Tikur Anbesa and St. Paul Specialized Hospitals). And four of the five hospitals under the city administration's health bureau (Zewditu, Yekatitl 12, Minillik II, and Ras Desta Hospitals) were involved in the study. All the pharmacy personnel working in the pharmacy units of the selected hospitals, who were at work at the time of the study and willing to participate were involved in the assessment of level of involvement in pharmaceutical care provision, job satisfaction and perceived quality of services. For the qualitative part of this study, the heads of the pharmacy departments of all the hospitals were selected purposively as key informants.

The number of clients to be involved in the client satisfaction survey was determined using the single proportion formula (Lwanga and Lemeshow, 1991).

$$N = \frac{(Z_5)^2 \text{ X } P(100 - P)}{d^2}$$

Where: N= Sample size

P= Level of satisfaction

Z_5= Z-score at five level of significance

d= absolute sampling error that can be tolerated

The sample size was calculated assuming the expected client satisfaction level to be 50%, sampling error to be 2 and with 95% confidence interval. Hence the sample size was calculated to be 2401. With the assumption of 10% non-response rate, the number of clients to be involved in the client satisfaction survey was determined to be 2641. This number was distributed throughout the participating hospitals proportionate to the average number of prescriptions filled each day. Once the number of clients to be interviewed for each hospital was known the number was again divided among the free and special pharmacies (for Tikur

Anbesa and St Paul Specialized Hospitals) proportionate to the average number of prescriptions filled in the respective pharmacies each day.

4.5 Data collection and management

4.5.1 Data collectors

Fourteen year three and above students of pharmacy were recruited as data collectors for the client satisfaction survey. All the other data was collected by the principal investigator. All the data collectors were given a one day training prior to data collection about how to approach clients, secure their consent and administer the interview. Since the interview was done in Amharic the training was made in the Amharic language.

4.5.2 Data collection

Data collectors were involved in the clients' satisfaction survey and all the other data was collected by the principal investigator. Data was collected between August and December, 2009. Supervision and spot checking was made by the principal investigator during the data collection process for clients' satisfaction and any inconsistencies amended on time.

4.5.3 Data collection instruments

Structured observations were made using check lists prepared based on the recommended standards by the Drug Administration and Control Authority (DACA) of Ethiopia and American Society of Health-System Pharmacists (ASHP) minimum standards for pharmacies in hospitals (ASHP, 1995, DACA, 2002) (Annex-1). This was made to assess the structural quality of the pharmaceutical services.

In order to assess the pharmacy professionals level of involvement in pharmaceutical care, job satisfaction and perceived quality of care; a structured self administered questionnaire was used. The questionnaire included questions on the general socio-demographic characteristics of respondents, their work load and primary job responsibility as well as specific questions on the areas of level of involvement in pharmaceutical care, job satisfaction and perceived quality of services (Annex-2). The questionnaire was pre-tested on pharmacy professionals working in one federal hospital in Addis Ababa which was not included in this study and all the necessary amendments were made in the structure and

language of the instrument before the actual data collection began. The following were some of the amendments made before the actual data collection: item number 4 from the level of pharmacy professionals' involvement in pharmaceutical care section was modified to "documented all medications currently being taken by the patient (including over the counter drugs) on written records or by other formal mechanisms" from the original "documented all medications currently being taken by the patient on written records or computerized notes or by other formal mechanisms", item number 10 (the same section) was modified to "asked the patient questions to assess actual patterns of use of the medication he/she took in his/her last visit" from the original "asked the patient questions to assess actual patterns of use of the medication"; one of the items in the job satisfaction section was changed to "my talents are fully utilized on my job" from the original "my talents are not fully utilized on my job".

The questions related to the level of involvement in pharmaceutical care were adapted from the behavioral pharmaceutical care scale developed and validated by Odedina and Segal (1996). This part consisted of questions that measured the direct patient care activities as well as the referral and consultation activities of pharmacy professionals. The part which dealt with pharmacy professionals' job satisfaction was adapted from that used by Kerschen et al., (2006). Questions from this instrument which were not practical in the Ethiopian context were excluded and some modifications were made in the language used in some of the questions in a way that facilitates easier understanding for the Ethiopian audience. Each item was scored on a 5 point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The part of the self administered questionnaire which dealt with professionals' perceived quality of care included questions on the structure, process and outcomes of pharmaceutical care. And each item was scored on a 5 point Likert scale ranging from 1 (poor) to 5 (excellent) (Annex-2).

Structured interview guide was used for exit interview to assess the level of clients' satisfaction with the quality of pharmaceutical services. The questionnaire was adapted mainly from the instruments which were developed and validated by Traverso et al. (2007) and Larson et al. (2002). Questions that were not relevant to hospital pharmacy practice and the Ethiopian context were excluded from the questionnaire. The interview guide was then first prepared in the English language, and translated into Amharic and then to English to maintain consistency (Cha et al., 2007). And the Amharic version was used for the interview with clients. The interview guide consisted of clients' socio-demographic information;

providers' and facility characteristics. Each item was scored on a 5 point Likert scale ranging from 1 (poor) to 5 (excellent) (Annexes 3 & 5). The excellent-poor type scale was used because it was reported to be superior in terms of response variability, and correlations with behavioral intentions to other types of scales (Ware and Hays, 1988).

The interview guide was pre-tested on patients who were not involved in the final survey in two of the selected hospitals and modifications were made before the actual data collection. For example, the Amharic version of items 6, 9 and 19 were modified to better reflect the English version; and questions on clients' socio-demographic characteristics were rearranged to come next to the questions on clients' satisfaction.

Qualitative data was collected by an in-depth interview with the heads of the pharmacy departments. Semi-structured interview guide was used for this purpose and it included questions on the overall quality of pharmaceutical care in the respective hospitals, documentation systems, ward round, inpatient pharmacy services, job satisfaction and structural issues. Interview guide was open-ended, and made use of probes (Annex-4). Socio-demographic data were collected prior to the interview, and included gender, training and qualifications, and years of experience as a pharmacist. All the interviews were conducted by the principal investigator in Amharic to facilitate conversation. Interviews were approximately forty minutes in duration and were held in a private setting. All the interviews were tape recorded and transcribed verbatim.

4.5.4 Data entry and analysis

Data for the client satisfaction survey was entered in Epi Info version 3.5.1 and it was analyzed using SPSS version 15. For this part of the study, descriptive statistics on sample characteristics was computed including percentage frequencies, mean scores, and factor loadings of the questionnaire items. Cronbach's alpha was calculated to estimate the internal consistency of the responses. Principal component analysis used Varimax rotation with Kaiser normalization and list-wise deletion of missing data. Items selected for rotation had eigenvalues greater than 1.00 and factor loading greater than 0.3. This process of factor analysis was done to assess the dimensions of clients' satisfaction with the hospital pharmacy services. Rated scores were treated as interval data suited for quantitative analysis. Because all the questionnaire items were positively worded, higher scores indicated higher

levels of satisfaction. Associations between the demographic variables and the responses were explored using student's t-test and one-way ANOVA.

For the study of pharmacy professionals' level of involvement in pharmaceutical care, job satisfaction and perceived quality of pharmaceutical care; data was entered and analyzed using SPSS version 15. Descriptive statistics was used for data analysis and independent sample t-test was used to explore associations. And for the qualitative aspect of the study, data were analyzed using a thematic analysis approach. Initial categories for analyzing data were drawn from the interview guide and themes and patterns emerged after reviewing the data. Key themes to emerge were: structural aspects; provision of pharmaceutical are and job satisfaction. For this part of the study, data was handled manually.

4.6 Variables for the study

Assessment of the availability of relevant infrastructure and personnel

Independent variables: availability of important dispensing aids, storage facilities offices and policies, the number of staff and their qualification

***Dependent variables*:** structural quality of the pharmaceutical service

Assessment of level of involvement of pharmacy professionals in pharmaceutical care

Independent variables: socio-demographic variables like: sex, age, level of education, and current job position of pharmacy staff
Dependent variables: extent of involvement in the different aspects of pharmaceutical care

Level of clients' satisfaction

Independent variables: Socio-demographic variables including: age, sex, employment status, educational status, marital status, religion, and payment status of clients
Dependent variables: level of satisfaction with pharmaceutical service

Level of job satisfaction and perceived quality of care by the pharmacy staff

Independent Variables: Socio-demographic variables including: sex, age, level of education, and current job position of pharmacy staff

Dependent Variables: Level of job satisfaction and level of perceived quality of pharmaceutical care

4.7 Ethical considerations

Ethical approval was obtained from the ethics review committees of the School of Pharmacy, Addis Ababa University, and the Addis Ababa City Administration Health Bureau. The study was conducted in the selected health facilities after permission from the relevant body administering the institutions. Participants of the study were asked for consent before participating in the study. During the consent process, they were provided with information regarding the purpose of the study, why and how they were selected to be involved in the study, and what was expected of them and that they can withdraw from the study at any time. Participants were also assured about confidentiality of the information obtained in the course of the study by not using personal identifiers and analyzing the data in aggregates. Concerning the specific case of key informant interviews: interviews were tape recorded after obtaining the consent of key informants, the name of the informants and the hospital in which they work did not appear in data analysis, and informants were ensured that the information they provide will only be handled by the research team, and that it will not be discussed with hospital administrators or other participants of the study.

5. Results

5.1 Structural aspects of the pharmacy service in the studied hospitals

General setup of the pharmacies

A total of nineteen pharmacy units found in the selected hospitals were studied. This included: all of the inpatient, free outpatient, and ART outpatient pharmacies in all the hospitals and the special pharmacies in Tikur Anbesa and St Paul specialized hospitals. The inpatient pharmacy of one of the hospitals was excluded for the reason that it was under maintenance and was not functional during the time of the study. And all of the Kenema public pharmacies operating in the premises of the hospitals under the Addis Ababa city administration health bureau were excluded from the study as they were not managed by the hospitals. This made the number of pharmacy units involved in the study to be 5 inpatient and 14 outpatient pharmacy units.

The average area of the dispensaries of the pharmacy units was 20.84 m^2 (SD=12.57). The minimum area was 6.50m^2 and the maximum was 47.52 m^2. The area of 3 (60.0%) and 7(50.0%) of the inpatient and outpatient dispensaries respectively were less than 16 m^2 (Figure 5.1.1). On the average two staff would work at a time. Since there are no separate meeting areas in all the pharmacy departments, the pharmacy professionals use the dispensary or the office of the head pharmacist as meeting area.

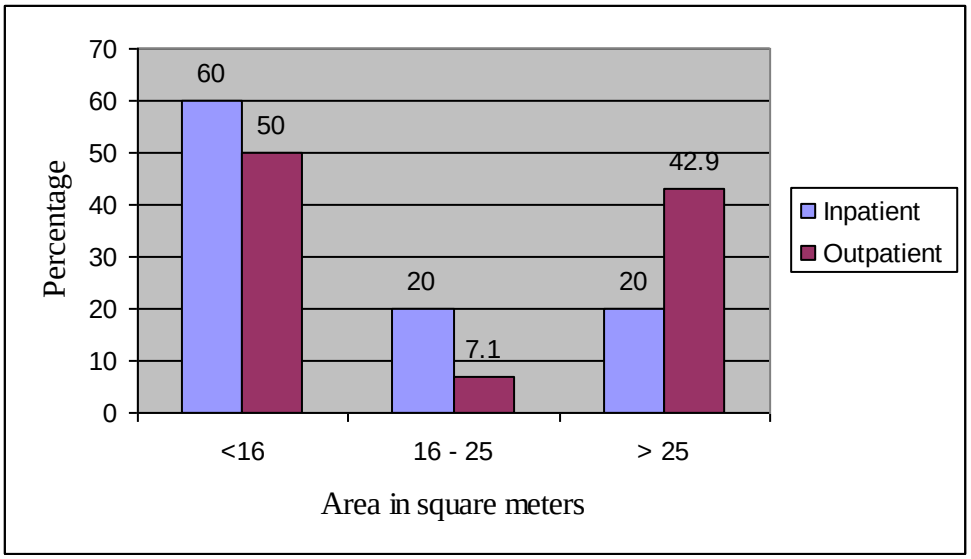


Figure 5.1.1 Areas of pharmacy dispensaries in government hospitals of Addis Ababa, Ethiopia, 2009

The dispensary rooms of all the pharmacy units involved in the study did not have fire extinguisher. All of the pharmacy units did not have system for documentation of pharmacy professionals' activities. Among the structural aspects that showed severe deficiencies in all of the hospitals were: unavailability of water supply for washing equipments, unavailability of toilet facilities, unavailability of private counseling room, lack of privacy in counseling and unavailability of chairs for waiting patients/clients. Simple dispensing aids like tablet counting tray were absent in 8 (42.1%) of the pharmacy units and the rest had only one per each pharmacy unit (Table 5.1.1).

Table 5.1.1 Availability of important infrastructure and dispensing aids in different pharmacy units of government hospitals in Addis Ababa, Ethiopia, 2009 (n=19)

No.	Items	*Yes* *n (%)*	*No* *n (%)*
1.	Availability of fire extinguisher	0 (0.0)	19 (100.0)
2.	Documentation system for pharmacy professional's interventions	0 (0.0)	19 (100.0)
3.	Availability of water supply for washing equipments	2 (10.5)	17 (89.5)
4.	Availability of toilet facilities	5 (26.3)	14 (73.7)
5.	Availability of private counseling room*	4 (21.1)	10 (52.6)
6.	Privacy of counseling*	4 (21.1)	10 (52.6)
7.	Availability of chairs for waiting patients/clients*	4 (21.1)	10 (52.6)
8.	The availability of patient waiting area*	6 (31.6)**	8 (42.1)
9.	Availability of tablet counting tray	11 (57.9)	8 (42.1)
10.	Registration of filled prescriptions	11 (57.9)	8 (42.1)
11.	The availability of sufficient shelves	12 (63.2)	7 (36.8)
12.	Availability of water supply in dispensaries for washing hands	12 (63.2)	7 (36.8)
13.	Refrigerator with thermometer	15 (78.9)	4 (21.1)
14.	Are expired medicines separated from the other medicines?*	12 (63.2)	4 (21.1)
15.	Are there expired medicines	16 (84.2)	3 (15.8)
16.	Availability of spoon/spatula	16 (84.2)	3 (15.8)
17.	The availability of dispensing counter (table)	17 (89.5)	2 (10.5)
18.	Lockable cabinet for Narcotic and Psychotropic Substances (NPS)*	9 (47.4)	2 (10.5)
19.	Availability of table and chair for staff use	17 (89.5)	2 (10.5)

** The percentages do not add up to hundred because there were cases where the measurement was not applicable to some of the pharmacy units due to unavailability of specific activities or drugs*

*** Corridor (no properly designated waiting area)*

All of the medical stores had access to electricity. However, all did not have water supply. Five (83.3%) of the medical stores did not have adequate space for storage of drugs and medical supplies. Drugs were stored in corridors and dispensaries. Fans and air ventilation system and drains to catch runoff were absent in all of the stores. Medical equipments and drugs were stored separately in all of the hospitals. All of the medical stores had refrigerators. All except one had generators in case of power cuts. Only 4 (66.7%) of the medical stores had lockable cabinet or separate room for storage of Narcotic and Psychotropic Substances (NPS). All of the medical stores did not have wall-mounted-thermometers and well ventilated storage space for inflammable substances which is insulated and built with fire proof materials. The stock record system in the majority of the stores (66.7%) was manual. All except one did not have fire extinguisher. All of the medical stores did not have sufficient shelves and pallets. Two (33.3%) of the stores did not even have pallets. All except one had expired drugs. Half of the stores did not have trolley and cold boxes.

Personnel and organization

The average number of pharmacists (with BPharm) working in the different hospitals was found to be 6.5 (the minimum number was 3 while the maximum was 12). And the average number of pharmacy technicians was 7.2, the minimum being 5 while the maximum was 9. Overall there were 13 pharmacy professionals on average in each hospital. When we classify this number into university (affiliated with medical school) and non university hospitals, the university hospitals had an average of 17.5 pharmacy professionals when compared to the non-university hospitals which had 11.8 pharmacy professionals on average. Three (50%) of the pharmacy department heads believed that they have enough number of pharmacy professionals for the work they are expected to do. All the ART pharmacies had at least one data clerk while half of the non-ART pharmacies did not have clerk. Four (66.7%) of the hospital pharmacies did not have secretarial staff. It was observed that one of the hospital pharmacies had a person who is not a pharmacy professional (formerly a health assistant) but is involved in dispensing.

The average number of years that heads of the pharmacy departments served since graduation was found to be 2.4 (the minimum being 1.4 and the maximum was 3.4 years). All except one of the heads of the pharmacy departments had either long or short term management training. Eighty percent of those with management training had short term

training in drug supply management. It was also found that procedures exist for the routine evaluation of the pharmacy staff in all except one of the hospital pharmacies. And pharmacy professionals working in the two university hospitals did not have written job descriptions.

All of the hospital pharmacies were providing 24 hours services to customers. However, all of the hospital pharmacies did not give extemporaneous compounding services. Four (66.7%) of the hospital pharmacies did not have a functional drug information center. One of the hospitals had DIC which is under its management (without subscription to online drug information resources) and the other one had a drug information center managed by the School of Pharmacy, Addis Ababa University (with subscription to online drug information resources). More than half (66.7%) of the hospital pharmacies did not have internet connection. In addition, all of them except one did not have subscription to online drug information resources. All of the hospitals except one had Drug and Therapeutics Committee (DTC). However, only two (40%) of the DTCs were reported having regular meetings at the time of the study. And only one of the hospital pharmacies reported having its own Essential Drug List (EDL) while the national EDL was available in all of the hospitals.

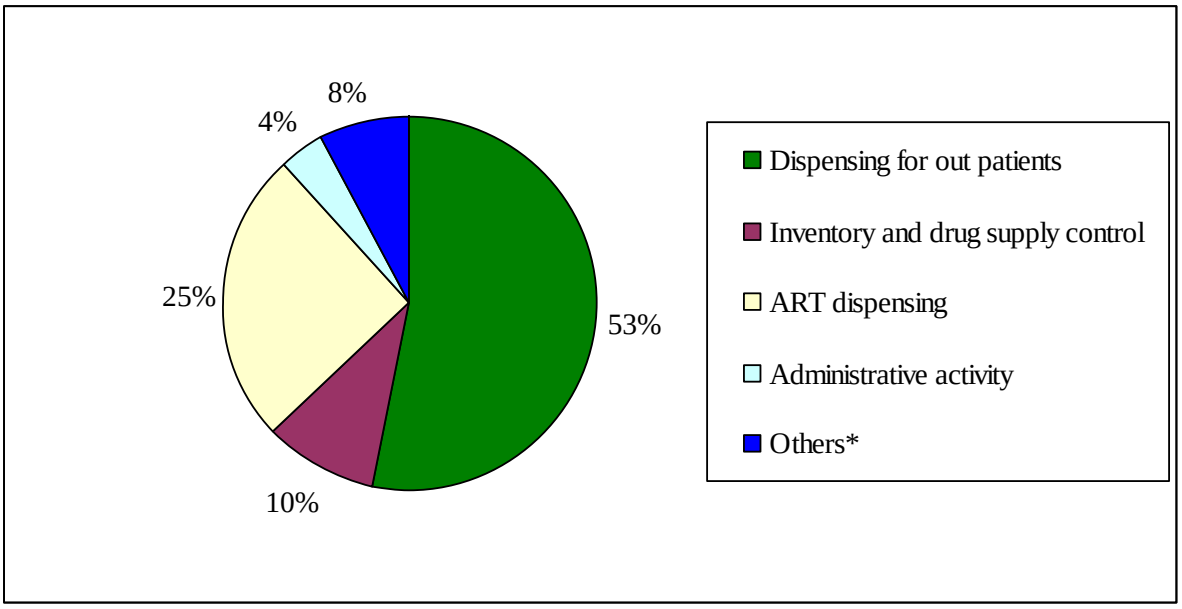
5.2 Provision of pharmaceutical care in the studied hospitals

Socio-demographic characteristics of respondents

Out of the total of 66 pharmacy professionals who were at work during the time of the study and willing to fill the questionnaires, 51 returned the questionnaires, making the response rate of 77.3%. The mean age of the respondents was 27.3 (SD=6.4). The minimum age was 23 and the maximum was 60. Most of the participants of the study were single (74.5%). Almost half (49.0%) were pharmacists with BPharm and the primary job responsibility of the majority of the respondents (53.0%) was dispensing in the outpatient pharmacies (not including ART out patient pharmacies) of the hospital (Table 5.2.1 & Figure 5.2.1). The average number of years since graduation for the professionals was 4.3 (SD = 4.3) and the average number of years at current job was 3.2 (SD = 2.5). The average number of hours worked per week was 41.3 hours (SD = 4.6).

Table 5.2.1 Socio-demographic characteristics of pharmacy professionals working in government hospitals of Addis Ababa, Ethiopia, 2009

Socio-demographic Profile		N (%)
Sex	Male	30 (58.8)
	Female	21 (41.2)
Age	20-29	42 (82.4)
	30-60	7 (13.7)
	Not Stated	2 (3.9)
Marital Status		
	Single	38 (74.5)
	Married	12 (23.5)
	Widowed	1 (2.0)
Highest Academic Degree		
	BPharm (BSc in Phramcy)	25 (49.0)
	Diploma in Pharmacy	26 (51.0)



** Drug information services, dispensing for inpatients, purchasing, intravenous fluids production*

Figure 5.2.1 Primary Job responsibility of pharmacy professionals working in government hospitals of Addis Ababa, Ethiopia, 2009

Provision of some important aspects of pharmaceutical care

The different items of the questionnaire which measured the direct patient care aspects of pharmaceutical care were organized into different domains as found by Odedina and Segal (1996). The domains were: documentation; patient assessment; implementation of

therapeutic objective and monitoring plans; patient record screening; patient advising and counseling; and the verification of patient understanding. Each item in the identified domains was rated on a scale of 0 to 5 which indicated the number of patients to whom the activities measured by each item were performed. In this regard, the performance of pharmacy professionals with the documentation; patient assessment; and implementation of therapeutic objective and monitoring plans domains was consistently below half of the expected maximum point had these aspects of pharmaceutical care been fully implemented in the hospitals (Table 5.2.2). No significant differences were seen in the documentation; implementation of therapeutic objective and monitoring plans; patient record screening; and verification of patient understanding domains among pharmacists and pharmacy technicians. However pharmacy technicians reported better performances than pharmacists with respect to the patient assessment and patient advising and counseling domains (Table 5.2.3).

Table 5.2.2 Aspects of pharmaceutical care provision in government hospitals of Addis Ababa, Ethiopia, 2009

Domain	Items*	Mean	SD	Max	Min
Documentation	3, 4, 6, 17, 18, 22	11.72	(8.04)	30	0
Patient Assessment	1, 2, 5, 10, 11, 12, 13	16.92	(8.17)	35	0
Implementation of therapeutic objective and monitoring plans	19, 20, 21	6.32	(5.19)	15	0
Patient record screening	7	2.78	(1.71)	5	0
Patient advising and counseling	8	3.37	(1.57)	5	0
Verification of patient understanding	9	3.32	(1.63)	5	0

**For description of the items see annex 2*

Table 5.2.3 Differences in the provision of pharmaceutical care by pharmacists and pharmacy technicians in government hospitals of Addis Ababa, Ethiopia, 2009

Domain	Academic Degree*	Mean	SD	t	*p*
Documentation	BPharm	9.18	8.43	-1.86	0.720
	Diploma	14.00	7.13		
Patient Assessment	BPharm	13.96	8.90	-2.68	0.011
	Diploma	19.77	6.35		
Implementation of therapeutic objective and monitoring plans	BPharm	5.00	5.14	-1.25	0.219
	Diploma	7.25	5.15		
Patient record screening	BPharm	2.48	1.94	-1.24	0.220
	Diploma	3.08	1.44		
Patient advising and counseling	BPharm	2.80	1.83	-2.676	0.011
	Diploma	3.92	1.05		
Verification of patient understanding	BPharm	3.08	1.73	-1.04	0.304
	Diploma	3.56	1.53		

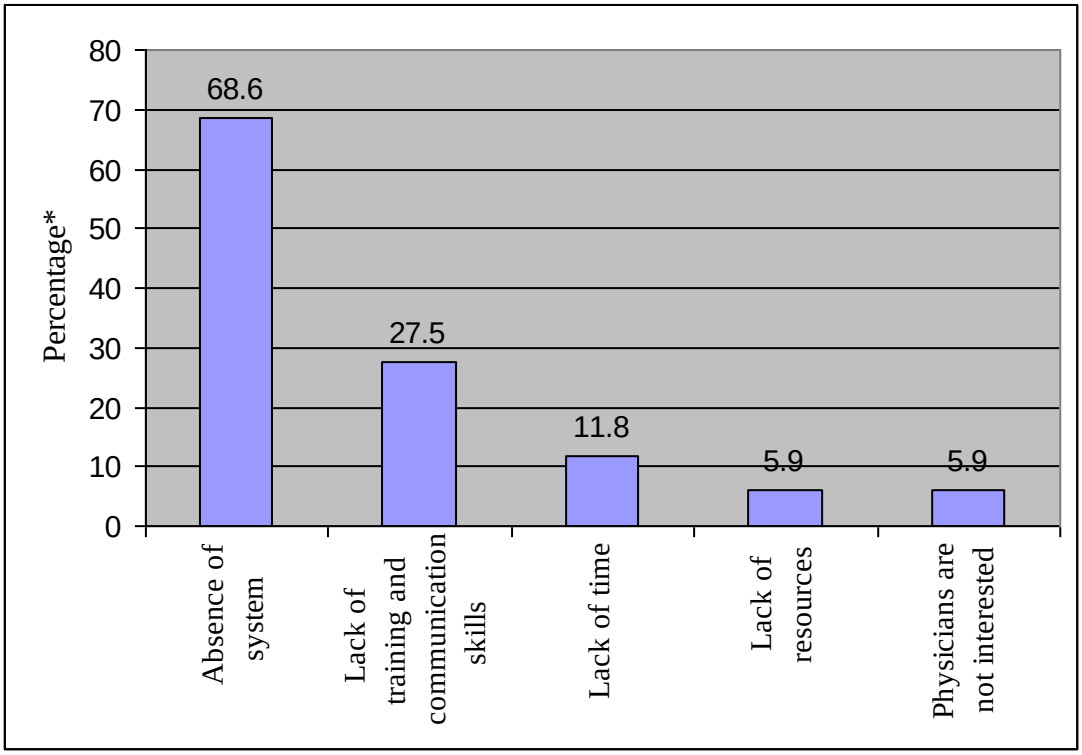
** Professionals with BPharm degree are considered as Pharmacists and those with Diploma are regarded in this study as Pharmacy Technicians*

Concerning the provision of referral, consultation and other aspects of pharmaceutical care the following activities were reported to be performed relatively lesser than the others (with > 30% of the respondents reporting not at all or almost never performing the activities): providing written copies of patient information to professional colleagues authorized to have such information (49.1%), asking patients about their satisfaction with service in order to evaluate professional work (45.1%), using the clinical outcomes of patients to evaluate professional work (39.6%), providing physicians (upon referral) a written summary of the patient's medication history and any related problems (34%) and initiation of discussion with physicians in case of patients experiencing drug related problems (31.2%) (Table 5.2.4)

Table 5.2.4 Provision of referral, consultation and other aspects of pharmaceutical care in government hospitals of Addis Ababa, Ethiopia, 2009

Activity	No. of Responses	Not at all n (%)	Almost Never n (%)	Sometimes n (%)	Often n (%)	Very Often n (%)
Consulted with other pharmacists in my practice group about difficult or unusual patient problems	49	2 (4.1)	4 (8.2)	13 (26.5)	15 (30.6)	15 (30.6)
Made referrals to other pharmacists whenever it was in the best interest of the patient	50	3 (6.0)	4 (8.0)	16 (32.0)	10 (20.0)	17 (34.0)
Made referrals to a physician when necessary	49	1(2.0)	6 (12.3)	10 (20.4)	8 (16.3)	24 (49.0)
Provided physicians (upon referral) a written summary of the patient's medication history and any related problems	50	9 (18.0)	8 (16.0)	14 (28.0)	13 (26.0)	6 (12.0)
Initiated discussion with physicians whenever I believed one of their patients was experiencing a drug-related problem or might experience a drug-related problem	48	9 (18.7)	6 (12.5)	11 (22.9)	9 (18.8)	13 (27.1)
Used a quiet location for patient counseling	51	9 (17.6)	6 (11.8)	16 (31.4)	9 (17.6)	11 (21.6)
Used the clinical outcomes of my patients to evaluate my work	48	14 (29.2)	5 (10.4)	12 (25.0)	10 (20.8)	7 (14.6)
Provided written copies of patient information to professional colleagues authorized to have such information	51	14 (27.5)	11 (21.6)	11 (21.6)	8 (15.7)	7 (13.7)
Provided general medical information to patients	51	3 (5.9)	3 (5.9)	12 (23.5)	14 (27.5)	19 (37.3)
Asked patients about their satisfaction with my services in order to evaluate my work	51	14 (27.5)	9 (17.6)	13 (25.5)	5 (9.8)	10 (19.6)
Participated in ward rounds with physicians	51	35 (68.6)	8 (15.7)	4 (7.8)	2 (3.9)	2 (3.9)

As shown in Table 5.2.4 the majority of the pharmacy professionals (68.6%) never participated in ward rounds. The professionals gave different reasons for this. Among the major reasons for the absence of participation in ward rounds were: Absence of System in the hospital to involve pharmacists in ward rounds and lack of training and communication skills (Figure 5.2.2).



**Percentages do not add up to hundred because one person may give more than one reason*

Figure 5.2.2 Reasons given by pharmacy professionals for not participating in ward rounds in government hospitals in Addis Ababa, Ethiopia, 2009

Supply of medicines through nurses was the major service provided by the pharmacy professionals to inpatients. Education and training of other health care professionals and pharmacokinetics and therapeutic drug level monitoring were among the least performed activities in the wards of the studied hospitals (Table 5.2.6)

Table 5.2.5 Pharmacy services provided to inpatients in government hospitals of Addis Ababa, Ethiopia, 2009

Activity	n	%*
Supply of medicines through nurses	42	82.4
Review of prescriptions/patient charts for inpatients	22	43.1
Modifying doses for inpatients	17	33.3
Auditing use of medicines	17	33.3
Provide advice to physicians on drug related aspects	13	25.5
Medication errors and adverse drug reaction reporting	12	23.5
Discharge planning for patients	8	15.7
Comprehensive medication history taking for inpatients	6	11.8
Provide counseling and education for inpatients	6	11.8
Pharmacokinetics and therapeutic drug level monitoring	4	7.8
Education and training of other health care professionals	3	5.9

**Percentages do not add up to hundred because one person may give more than one answer*

5.3 Pharmacy professionals' job satisfaction

Among the 51 pharmacy professionals who participated in the level of involvement in pharmaceutical care survey, 49 also completed a job satisfaction survey. Two male (one pharmacist, married and one pharmacy technician, single) did not fill the job satisfaction survey. Other than that the socio-demographic profile of respondents was similar to the one presented in Table 5.2.1 and Figure 5.2.1.

This survey examined pharmacy professionals' job satisfaction as a major factor that influences the interpersonal quality of the process of pharmaceutical care. The survey instrument used items which covered the different aspects of their job (i.e. a facet item job satisfaction questionnaire was used). Since all except one (my formal education overqualified me for my job) of the statements were positively worded, smaller mean values showed lesser satisfaction. The case is also the same with the negatively worded question as the ratings were reversed while analyzing the data. Accordingly, the mean satisfaction score for all the respondents was found to be 2.9 ± 0.52 in a scale of 1-5. The least satisfaction score was obtained for appropriateness of salary. The main domains of pharmacy professionals' job satisfaction assessed were: work environment, professional interaction and personal outlook (Table 5.3.1).

Table 5.3.1 Overall job satisfaction of pharmacy professionals working in government hospitals in Addis Ababa, Ethiopia, 2009

No.	Item	Mean (SD)
Work environment		
1.	The opportunity for promotion within the hospital where I currently work is good	2.76 (1.13)
2.	Employees have sufficient amount of freedom to decide how they do their work in the pharmacy	3.17 (1.10)
3.	Staffing is adequate; enough employees are hired to cover the workload in the pharmacy	3.11 (1.29)
4.	My supervisor has an adequate knowledge to perform his duties	3.33 (1.19)
5.	The hospital management respects and treats pharmacy professionals similar to other health professionals in the hospital	2.81 (1.30)
6.	My environmental working conditions (lighting, air condition, toilet facilities, etc.) are adequate	2.77 (1.13)
	Subtotal	2.9 (0.81)
Professional interaction		
7.	Physicians consult me on professional matters	2.83 (0.97)
8.	Physicians cooperate when I communicate "job-related" matters with them	2.92 (1.01)
9.	My fellow employees treat me with professional respect	3.69 (0.97)
10.	The people with whom I work are friendly	4.04 (0.90)
11.	Nurses cooperate when I communicate "job-related" matters with them	3.75 (0.93)
12.	Nurses often initiate consultations with me on professional matters	3.34 (1.13)
13.	I am satisfied with the "on-the-job" relationships I have with others	3.28 (1.04)
14.	The lay person is knowledgeable about the level of education of pharmacists	2.40 (1.03)
	Subtotal	3.2 (0.58)
Personal outlook		
15.	My salary is appropriate	1.87 (1.04)
16.	My talents are fully utilized on my job	2.62 (1.07)
17.	My formal education overqualified me for my job	2.84 (0.99)
18.	All things considered, I am satisfied with my job	2.75 (1.10)
19.	The idea of spending the remainder of my working life in a job like my current one is satisfying	2.70 (1.02)
20.	The time goes by quickly while I am at work	3.40 (1.10)

21.	I often leave work with a feeling that I'm doing something which I enjoy	3.06 (1.24)
22.	Knowing what I know now, if I had to decide all over again, I would still choose pharmacy	3.33 (1.28)
23.	If my children were interested in pharmacy, I would encourage them to pursue it as a career	3.18 (1.30)
	Subtotal	2.9 (0.65)

No significant differences in satisfaction with the three domains of job satisfaction were seen by gender, among pharmacists and pharmacy technicians, between single and married participants and based on the primary job responsibility of the professionals. However looking at the situation deeper revealed that pharmacists had significantly lesser satisfaction than pharmacy technicians on items: the lay person is knowledgeable about the level of education of pharmacists ($t = -2.19$; $p = 0.033$) and my talents are fully utilized on my job ($t = -2.21$; $p = 0.032$). Regarding differences in job satisfaction by marital status, only one item had statistical significance. Accordingly it was shown that, unmarried participants reported lesser values for the item: I often leave work with a feeling that I am doing something which I enjoy ($t = -2.97$; $p = 0.005$).

5.4 Clients' satisfaction with the pharmacy service

Socio-demographic characteristics of respondents

A total of 2641 clients of the out patient pharmacies of the selected hospitals were included in the study. The average time taken to undertake the interview was five minutes (SD=1.75). One thousand four hundred eighty three (56.2%) of the respondents were male. The mean age of the respondents was 36.3 (SD=13.0). The minimum age was 18 and the maximum was 83 and most of the participants of the study were married (55%). Majority were Orthodox Christians 1690 (64.0%); from Addis Ababa 2218 (84.0%); visited the hospital pharmacy for the first time 2193 (83.0%); came to take medicines for themselves 1514 (57.3%) and were taking medicines for free 1315 (49.8%). Regarding the educational level of the participants: 896 (33.9%) had secondary school level education, 785 (29.7%) had Certificate, Diploma, Degree or above and 533 (20.2%) had primary education. One thousand twenty (38.6%) were employed in government, private or other nongovernmental organizations and 646 (24.5%) were unemployed (Table 5.4.1).

Table 5.4.1 Socio-demographic characteristics of respondents of client satisfaction survey with pharmacy services in hospitals of Addis Ababa, Ethiopia, 2009

Socio-demographic Profile		N (%)
Sex	Male	1483 (56.2)
	Female	1158 (43.8)
Age	18-29	989 (37.5)
	30-39	760 (28.8)
	40-49	448 (17)
	50-59	246 (9.3)
	60-69	145 (5.4)
	70 and above	48 (1.8)
	Not Mentioned	5 (0.2)
Marital Status		
	Single	947 (35.9)
	Married	1454 (55.0)
	Others	240 (9.1)
Level of Education		
	Not attended school (Unable to read and write)	138 (5.2)
	Able to read and write (Informal Education)	147 (5.6)
	Basic and General Primary Education (Grades 1-8)	533 (20.2)
	Secondary School (Grades 9-12)	896 (33.9)
	College/University Students	138 (5.2)
	Certificate, Diploma, Degree and above	785 (29.7)
	Not Mentioned	4 (0.2)
Status of Employment		
	Unemployed	646 (24.5)
	Employed in Government Private or other Nongovernmental Organization	1020 (38.6)
	Merchant (Businessman/Businesswoman)	398 (15.1)
	Student	300 (11.4)
	Retired	132 (5.0)
	Farmer	86 (3.2)
	Others*	59 (2.2)
Religion		
	Orthodox Christian	1690 (64.0)
	Protestant	453 (17.1)

	Muslim	420 (15.9)
	Others**	78 (3.0)
Address		
	Addis Ababa	2218 (84.0)
	Out of Addis Ababa	423 (16.0)
Frequency of Visit		
	New Visit	2193 (83.0)
	Repeat Visit	448 (17.0)
Reason for Visit		
	To take medicines for self	1514 (57.3)
	To take medicines for Friend/Family	1127 (42.7)
Payment Status		
	Credit	133 (5.0)
	Free	1315 (49.8)
	Cash	1186 (44.9)
	Cost Sharing (Partly credit and partly cash)	7 (0.3)

** Religious Services**,** House Servant, Athlete, chauffeur, Daily Laborer, Artist and which was not mentioned (4-0.2%)*
******* *Catholic, No Religion**,** Jehovah's Witnesses, "Hawariat" and which was not mentioned (2-0.1%)*

Overall satisfaction with pharmaceutical care

The mean satisfaction score for the participants was found to be, 2.7. The items which had lesser values and thus showed lesser level of clients' satisfaction were: the pharmacist's interest in your health, how well the pharmacist explains possible side effects, the information the pharmacist gives you about the proper storage of your medication, the availability of medicines that were prescribed to you in the pharmacy, the way your pharmacist works together with your doctor to make sure your medications are the best for you and the information the pharmacist gives you about the results you can expect from your drug therapy. Overall, the mean values obtained for eleven out of the 21 items were less than 3 (Table 5.4.2).

Table 5.4.2 Overall satisfaction of clients with specific aspects of pharmaceutical care in government hospitals of Addis Ababa, Ethiopia, 2009

Item	Statement	No. Responses	Mean*	SD	% rating as excellent	% rating as poor
1	The pharmacist's interest in your health	2392	2.41	1.12	2.8	29.2
2	The professionalism of all the pharmacy staff	2455	3.06	0.91	6.6	4.8
3	The courtesy and respect shown to you by the pharmacy staff	2639	3.29	1.02	11.7	6.1
4	The privacy of your conversations with the pharmacist	2612	2.94	1.05	7.5	10.6
5	How well the pharmacist explains possible side effects	2298	2.38	1.23	4.2	35.9
6	The promptness of prescription drug service	2626	3.03	1.11	8.6	11.9
7	The care that the pharmacy professional takes while supplying your medicines	2518	3.08	0.99	6.2	8.1
8	The fairness of cost of medicines in the pharmacy	1290	3.15	1.10	11.0	9.8
9	The amount of time the pharmacy professional spends with you	2548	2.74	1.05	5.1	15.6
10	The clarity of the pharmacy professional's instructions about how to take your medication	2588	3.17	1.01	9.6	8.0
11	The information the pharmacist gives you about the proper storage of your medication	2329	2.28	1.24	4.9	40.1
12	How well the pharmacy professional answers your questions	2312	2.96	1.00	5.4	10.4
13	The information the pharmacist gives you about the results you can expect from your drug therapy	2221	2.08	1.18	2.7	47.1
14	The way your pharmacist works together with your doctor to make sure your medications are the best for you	1575	1.68	1.02	1.6	63.8
15	The amount of time you spend waiting for your prescription to be filled	2609	2.73	1.15	7.6	18.2
16	The availability of medicines that are prescribed to you in the pharmacy	2624	2.36	1.17	5.3	30.3
17	The clarity of the label on the medicines supplied to you	2473	3.04	0.97	6.7	9.2
18	Your feelings about the quality of medicines dispensed to you	2327	3.15	0.95	8.8	5.3
19	The overall cleanliness and comfort of the waiting area	2629	2.76	0.98	4.1	11.4
20	The location of the pharmacy relative to other service areas	2628	3.01	0.98	7.0	7.6
21	Your pharmacy services overall	2618	3.04	0.91	5.3	5.2

** Responses ranged from excellent (5) to poor (1)*

Factor analysis and reliability of client satisfaction instrument

The Kaiser-Meyer-Olkin measure of sampling adequacy for the factor analysis was found to be 0.92. Factor analysis with principal components and varimax rotation resulted in three factors. The identified factors were interpersonal relationship, general satisfaction and pharmaceutical care (Table 5.4.3 & 5.4.4). The reliability of the instrument's scales was assessed with Cronbach's alpha. The value of the reliability coefficient for the whole questionnaire (21 items) was 0.90 and values for the three dimensions (factors) identified during factor analysis were as follows: the Interpersonal relationship dimension had a reliability coefficient of 0.82, the General satisfaction dimension a value of 0.83 and the Pharmaceutical care dimension 0.78 (Table 5.4.4).

Table 5.4.3 Item content and rotated factor loading for all the items of the questionnaire

Items	Statements	Factor		
		1	2	3
1	The pharmacist's interest in your health		0.31	***0.53***
2	The professionalism of all the pharmacy staff	***0.65***		
3	The courtesy and respect shown to you by the pharmacy staff	***0.75***		
4	The privacy of your conversations with the pharmacist	***0.68***		
5	How well the pharmacist explains possible side effects			***0.62***
6	The promptness of prescription drug service	0.38	***0.58***	
7	The care that the pharmacy professional takes while supplying your medicines	***0.64***		0.33
8	The fairness of cost of medicines in the pharmacy	0.34	***0.41***	
9	The amount of time the pharmacy professional spends with you		***0.55***	0.42
10	The clarity of the pharmacy professional's instructions about how to take your medication	***0.46***		0.35
11	The information the pharmacist gives you about the proper storage of your medication			***0.70***
12	How well the pharmacy professional answers your questions	***0.53***		0.39
13	The information the pharmacist gives you about the results you can expect from your drug therapy			***0.79***
14	The way your pharmacist works together with your doctor to make sure your medications are the best for you.			***0.68***

15	The amount of time you spend waiting for your prescription to be filled		***0.75***		
16	The availability of medicines that are prescribed to you in the pharmacy		***0.62***		
17	The clarity of the label on the medicines supplied to you	***0.39***		0.35	
18	Your feelings about the quality of medicines dispensed to you	***0.47***	0.34		
19	The overall cleanliness and comfort of the waiting		***0.60***		
20	The location of the pharmacy relative to other service areas		***0.59***		
21	Your pharmacy services overall	0.46	***0.55***		

Table 5.4.4 Factor analysis results and descriptive statistics of clients' satisfaction with pharmacy services in hospitals of Addis Ababa, 2009

No.	Factor	Items	Mean	SD	Chronbach's alpha
1	Interpersonal communication	2, 3, 4, 7, 10, 12, 17	3.10	0.12	0.82
2	General satisfaction	6, 8, 9, 15, 16, 18, 19, 20, 21	2.73	0.31	0.83
3	Pharmaceutical care	1, 5, 11, 13, 14	2.07	0.28	0.78

Differences in the mean satisfaction values among different groups of respondents

When we look at the ratings by men and women, men tended to rate most of the attributes of the pharmaceutical service they received less than that of women. Among the items which showed statistically significant ($p < 0.05$) differences between men and women were: the promptness of prescription drug services, the amount of time that the pharmacy professional spends with you and your pharmacy services overall (Table 5.4.5).

Table 5.4.5 Differences in satisfaction of clients of hospital pharmacies in Addis Ababa by gender, 2009

No.	Items	Gender	Mean	t	*p*
1	The pharmacist's interest in your health	Male	2.40	-.816	.414
		Female	2.43		
2	The professionalism of all the pharmacy staff	Male	3.08	1.042	.298
		Female	3.04		
3	The courtesy and respect shown to you by the pharmacy staff	Male	3.26	-1.439	.150
		Female	3.32		
4	The privacy of your conversations with the pharmacist	Male	2.94	.021	.983
		Female	2.94		
5	How well the pharmacist explains possible side effects	Male	2.35	-1.177	.239
		Female	2.41		
6	The promptness of prescription drug service	Male	2.98	-2.902	.004
		Female	3.10		
7	The care that the pharmacy professional takes while supplying your medicines	Male	3.08	.186	.853
		Female	3.07		
8	The fairness of cost of medicines in the pharmacy	Male	3.17	.759	.448
		Female	3.12		
9	The amount of time the pharmacy professional spends with you	Male	2.68	-3.157	.002
		Female	2.81		
10	The clarity of the pharmacy professional's instructions about how to take your medication	Male	3.13	-1.989	.047
		Female	3.21		
11	The information the pharmacist gives you about the proper storage of your medication	Male	2.24	-1.719	.086
		Female	2.33		
12	How well the pharmacy professional answers your questions	Male	2.94	-1.301	.193
		Female	3.00		
13	The information the pharmacist gives you about the results you can expect from your drug therapy	Male	2.04	-1.795	.073
		Female	2.13		
14	The way your pharmacist works together with your doctor to make sure your medications are the best for you	Male	1.72	2.316	.021
		Female	1.60		
15	The amount of time you spend waiting for your prescription to be filled	Male	2.69	-1.653	.098
		Female	2.77		
16	The availability of medicines that are prescribed to you in the pharmacy	Male	2.33	-1.292	.197
		Female	2.39		

17	The clarity of the label on the medicines supplied to you	Male	3.01	-1.409	.159
		Female	3.07		
18	Your feelings about the quality of medicines dispensed to you	Male	3.14	-.964	.335
		Female	3.17		
19	The overall cleanliness and comfort of the waiting	Male	2.74	-1.574	.116
		Female	2.80		
20	The location of the pharmacy relative to other service areas	Male	3.04	1.388	.165
		Female	2.98		
21	Your pharmacy services overall	Male	3.00	-2.119	.034
		Female	3.08		

Clients who came to the pharmacy for the first time rated the different items significantly higher than those who had repeat visits. These included: the promptness of prescription drug service, the clarity of the pharmacy professional's instructions, the information the pharmacist gives you about storage of your medication, how well the professional answers your questions, the clarity of the label on the medicines supplied to you, the overall cleanliness and comfort of the waiting area and your feelings about the quality of medicines dispensed to you. The only item which was rated significantly lower by new visitors was the availability of medicines in the pharmacy (Table 5.4.6).

Table 5.4.6 Differences in satisfaction of clients of hospital pharmacies in Addis Ababa by frequency of visit, 2009

No	Items	Frequency of Visit	Mean	t	*p*
1	The pharmacist's interest in your health	New visit	2.42	.362	.718
		Repeat Visit	2.39		
2	The professionalism of all the pharmacy staff	New visit	3.06	-.026	.979
		Repeat Visit	3.06		
3	The courtesy and respect shown to you by the pharmacy staff	New visit	3.29	.274	.784
		Repeat Visit	3.28		
4	The privacy of your conversations with the pharmacist	New visit	2.93	-.418	.676
		Repeat Visit	2.96		
5	How well the pharmacist explains possible side effects	New Visit	2.40	1.861	.063
		Repeat Visit	2.27		
6	The promptness of prescription drug service	New visit	3.06	2.497	.013
		Repeat Visit	2.91		

7	The care that the pharmacy professional takes while supplying your medicines	New visit	3.09	1.534	.126
		Repeat Visit	3.01		
8	The fairness of cost of medicines in the pharmacy	New visit	3.13	-1.256	.210
		Repeat Visit	3.22		
9	The amount of time the pharmacy professional spends with you	New visit	2.75	.785	.432
		Repeat Visit	2.70		
10	The clarity of the pharmacy professional's instructions about how to take your medication	New visit	3.19	2.061	.040
		Repeat Visit	3.08		
11	The information the pharmacist gives you about the proper storage of your medication	New visit	2.31	2.686	.007
		Repeat Visit	2.13		
12	How well the pharmacy professional answers your questions	New visit	2.98	2.034	.042
		Repeat Visit	2.87		
13	The information the pharmacist gives you about the results you can expect from your drug therapy	New visit	2.10	1.479	.140
		Repeat Visit	2.00		
14	The way your pharmacist works together with your doctor to make sure your medications are the best for you.	New visit	1.68	.451	.652
		Repeat Visit	1.65		
15	The amount of time you spend waiting for your prescription to be filled	New visit	2.73	-.011	.992
		Repeat Visit	2.73		
16	The availability of medicines that are prescribed to you in the pharmacy	New visit	2.32	-3.166	.002
		Repeat Visit	2.52		
17	The clarity of the label on the medicines supplied to you	New visit	3.07	3.603	.000
		Repeat Visit	2.88		
18	Your feelings about the quality of medicines dispensed to you	New visit	3.17	2.526	.012
		Repeat Visit	3.05		
19	The overall cleanliness and comfort of the waiting	New visit	2.78	2.083	.037
		Repeat Visit	2.67		
20	The location of the pharmacy relative to other service areas	New visit	3.02	1.259	.208
		Repeat Visit	2.96		
21	Your pharmacy services overall	New visit	3.05	1.943	.052
		Repeat Visit	2.96		

Clients who visited the hospital pharmacies to take medicines for friends or family consistently rated almost all aspects of the pharmaceutical service they received, lower than those who came to the pharmacies to take medicines for themselves. How well the pharmacist explains possible side effects, the clarity of the pharmacy professional's instructions about how to take your medication and the information the pharmacist gives you

about the proper storage of your medication; were among the items which showed statistically significant differences (Table 5.4.7).

Table 5.4.7 Differences in satisfaction of clients of hospital pharmacies in Addis Ababa based on whether the drug is for self or somebody else, 2009

No	Items	take medicines for	Mean	t	*p*
1	The pharmacist's interest in your health	self	2.47	2.989	.003
		Friend/Family	2.33		
2	The professionalism of all the pharmacy staff	self	3.04	-1.202	.229
		Friend/Family	3.09		
3	The courtesy and respect shown to you by the pharmacy staff	self	3.34	2.808	.005
		Friend/Family	3.22		
4	The privacy of your conversations with the pharmacist	self	2.95	.385	.700
		Friend/Family	2.93		
5	How well the pharmacist explains possible side effects	self	2.50	5.387	.000
		Friend/Family	2.22		
6	The promptness of prescription drug service	self	3.18	7.907	.000
		Friend/Family	2.83		
7	The care that the pharmacy professional takes while supplying your medicines	self	3.08	.446	.656
		Friend/Family	3.06		
8	The fairness of cost of medicines in the pharmacy	self	3.15	-.088	.930
		Friend/Family	3.15		
9	The amount of time the pharmacy professional spends with you	self	2.86	6.877	.000
		Friend/Family	2.57		
10	The clarity of the pharmacy professional's instructions about how to take your medication	self	3.26	5.572	.000
		Friend/Family	3.04		
11	The information the pharmacist gives you about the proper storage of your medication	self	2.36	3.725	.000
		Friend/Family	2.17		
12	How well the pharmacy professional answers your questions	self	2.98	.887	.375
		Friend/Family	2.94		
13	The information the pharmacist gives you about the results you can expect from your drug therapy	self	2.20	5.639	.000
		Friend/Family	1.92		
14	The way your pharmacist works together with your doctor to make sure your medications are the best	self	1.68	.004	.997
		Friend/Family	1.68		
15	The amount of time you spend waiting for your prescription to be filled	self	2.91	9.297	.000
		Friend/Family	2.49		

16	The availability of medicines that are prescribed to you in the pharmacy	self	2.43	3.952	.000
		Friend/Family	2.25		
17	The clarity of the label on the medicines supplied to you	self	3.07	1.923	.055
		Friend/Family	2.99		
18	Your feelings about the quality of medicines dispensed to you	self	3.20	2.975	.003
		Friend/Family	3.09		
19	The overall cleanliness and comfort of the waiting	self	2.80	2.243	.025
		Friend/Family	2.71		
20	The location of the pharmacy relative to other service areas	self	3.04	1.743	.082
		Friend/Family	2.97		
21	Your pharmacy services overall	self	3.10	4.124	.000
		Friend/Family	2.95		

As shown in Table 5.4.8, the ratings that university hospitals obtained were significantly lower for most of the items (16 out of 21) than that for hospitals under the Addis Ababa City Administration's Health Bureau. The five items which appeared to have non-significant differences among university and non university hospitals were all among the interpersonal communication dimension of the client satisfaction instrument.

Table 5.4.8 Differences in satisfaction of clients of hospital pharmacies in Addis Ababa by the type of hospital, 2009

No.	Items	Hospitals	Mean	t	*p*
1	The pharmacist's interest in your health	University Hospitals	2.34	-6.212	.000
		Non Univ Hospitals	2.65		
2	The professionalism of all the pharmacy staff	University Hospitals	3.03	-3.245	.001
		Non Univ Hospitals	3.16		
3	The courtesy and respect shown to you by the pharmacy staff	University Hospitals	3.21	-6.939	.000
		Non Univ Hospitals	3.50		
4	The privacy of your conversations with the pharmacist	University Hospitals	2.88	-4.741	.000
		Non Univ Hospitals	3.09		
5	How well the pharmacist explains possible side effects	University Hospitals	2.28	-7.460	.000
		Non Univ Hospitals	2.71		
6	The promptness of prescription drug service	University Hospitals	2.91	-10.343	.000
		Non Univ Hospitals	3.37		
7	The care that the pharmacy professional takes while supplying your medicines	University Hospitals	3.07	-.767	.443
		Non Univ Hospitals	3.10		

8	The fairness of cost of medicines in the pharmacy	University Hospitals	3.15	-1.400	.162
		Non Univ Hospitals	3.44		
9	The amount of time the pharmacy professional spends with you	University Hospitals	2.66	-7.225	.000
		Non Univ Hospitals	2.97		
10	The clarity of the pharmacy professional's instructions about how to take your medication	University Hospitals	3.10	-5.817	.000
		Non Univ Hospitals	3.36		
11	The information the pharmacist gives you about the proper storage of your medication	University Hospitals	2.21	-4.753	.000
		Non Univ Hospitals	2.49		
12	How well the pharmacy professional answers your questions	University Hospitals	2.98	1.145	.252
		Non Univ Hospitals	2.92		
13	The information the pharmacist gives you about the results you can expect from your drug therapy	University Hospitals	1.98	-7.371	.000
		Non Univ Hospitals	2.39		
14	The way your pharmacist works together with your doctor to make sure your medications are the best for you	University Hospitals	1.66	-1.013	.311
		Non Univ Hospitals	1.72		
15	The amount of time you spend waiting for your prescription to be filled	University Hospitals	2.48	-21.387	.000
		Non Univ Hospitals	3.43		
16	The availability of medicines that are prescribed to you in the pharmacy	University Hospitals	2.27	-5.876	.000
		Non Univ Hospitals	2.60		
17	The clarity of the label on the medicines supplied to you	University Hospitals	3.03	-.925	.355
		Non Univ Hospitals	3.07		
18	Your feelings about the quality of medicines dispensed to you	University Hospitals	3.10	-4.546	.000
		Non Univ Hospitals	3.31		
19	The overall cleanliness and comfort of the waiting	University Hospitals	2.71	-4.889	.000
		Non Univ Hospitals	2.91		
20	The location of the pharmacy relative to other service areas	University Hospitals	2.98	-3.234	.001
		Non Univ Hospitals	3.11		
21	Your pharmacy services overall	University Hospitals	2.99	-4.318	.000
		Non Univ Hospitals	3.16		

Moreover clients who were paying for the pharmacy service they received demonstrated lower satisfaction with the service. And this difference was found to be statistically significant for all items in the questionnaire except for item number 20. Item number 8 was excluded from the table as cost did not apply to clients taking medicines free of charge (Table 5.4.9).

Table 5.4.9 Differences in satisfaction of clients of hospital pharmacies in Addis Ababa based on their payment status, 2009

No	Items	Status of Payment*	Mean	t	*p*
1	The pharmacist's interest in your health	paying	2.22	-8.455	.000
		free	2.60		
2	The professionalism of all the pharmacy staff	paying	3.02	-2.279	.023
		free	3.10		
3	The courtesy and respect shown to you by the pharmacy staff	paying	3.14	-7.351	.000
		free	3.43		
4	The privacy of your conversations with the pharmacist	paying	2.90	-1.985	.047
		free	2.98		
5	How well the pharmacist explains possible side effects	paying	2.12	-10.240	.000
		free	2.64		
6	The promptness of prescription drug service	paying	2.73	-14.622	.000
		free	3.34		
7	The care that the pharmacy professional takes while supplying your medicines	paying	2.95	-6.538	.000
		free	3.21		
9	The amount of time the pharmacy professional spends with you	paying	2.51	-11.621	.000
		free	2.98		
10	The clarity of the pharmacy professional's instructions about how to take your medication	paying	2.97	-9.894	.000
		free	3.36		
11	The information the pharmacist gives you about the proper storage of your medication	paying	2.13	-5.586	.000
		free	2.42		
12	How well the pharmacy professional answers your questions	paying	2.84	-5.866	.000
		free	3.09		
13	The information the pharmacist gives you about the results you can expect from your drug therapy	paying	1.83	-10.158	.000
		free	2.33		
14	The way pharmacist works together with your doctor to make sure your medications are the best for you	paying	1.63	-1.989	.047
		free	1.74		
15	The amount of time you spend waiting for your prescription to be filled	paying	2.36	-17.393	.000
		free	3.10		
16	The availability of medicines that are prescribed to you in the pharmacy	paying	2.25	-4.912	.000
		free	2.47		
17	The clarity of the label on the medicines supplied to you	paying	2.89	-7.674	.000
		free	3.19		

18	Your feelings about the quality of medicines dispensed to you	paying	2.99	-8.395	.000
		free	3.32		
19	The overall cleanliness and comfort of the waiting	paying	2.62	-7.568	.000
		free	2.91		
20	The location of the pharmacy relative to other service areas	paying	2.98	-1.864	.062
		free	3.05		
21	Your pharmacy services overall	paying	2.87	-9.419	.000
		free	3.20		

** Clients who took drugs on credit and cost sharing basis were considered to be paying for the convenience of data analysis*

5.5 Pharmacy professionals' perceived quality of pharmaceutical services

The socio-demographic profile of respondents was similar to that presented in Table 5.2.1 and Figure 5.2.1 except for the fact that one male, pharmacy technician participant did not respond to the questions on professionals' perceived quality of pharmaceutical services. He was single, 24 years old and had a primary job responsibility of ART dispensing.

Fifty percent of the professionals rated the service that their pharmacy provides, as fair or poor with respect to the availability of important dispensing aids and the way they work with physicians. More than 55% of them rated the availability of medicines in the hospital pharmacy at all times as either poor or fair. None of the respondents rated some of the items as excellent. These items were: availability of medicines in the hospital pharmacy at all times, the way pharmacy professionals work together with physicians, the level of patients'/clients' satisfaction and the overall quality of service (Table 5.5.1).

Further analysis of the results did not detect major associations between the perceived quality of service and respondents' gender, marital status, educational background and primary job responsibility. The only statistically significant differences in perceived quality of service detected were: males rated the quality of medicines that were purchased by the hospital pharmacy better than females (t=2.64; *p=0.011*); professionals who were single rated the appropriateness of the location of the pharmacy less than the married ones (t=-2.36; *p=0.022*) and the married participants rated the appropriateness of cost of medicines less than single participants (t=2.15; *p=0.039*); and pharmacists rated the availability of medicines in the hospital pharmacy less than pharmacy technicians (t=-2.64; *p=0.011*).

5.5.1 Pharmacy professionals' perception about the quality of pharmaceutical service they provide in pharmacies of government hospitals in Addis Ababa, Ethiopia, 2009

	No. of Responses	Rating as poor n (%)	Rating as fair n (%)	Rating as good n (%)	Rating as very good n (%)	Rating as excellent n (%)
The appropriateness of the location of the pharmacy with respect to other service areas in the hospital	49	7 (14.3)	6 (12.2)	15 (30.6)	17 (34.7)	4 (8.2)
The privacy of your conversations with the patient	48	12 (25.0)	5 (10.4)	14 (29.2)	10 (20.8)	7 (14.6)
The internal organization of the pharmacy	46	8 (17.4)	7 (15.2)	20 (43.5)	10 (21.7)	1 (2.2)
The availability of important dispensing aids in the pharmacy	50	14 (28.0)	11 (22.0)	16 (32.0)	7 (14.0)	2 (4.0)
The availability of medicines in the hospital pharmacy at all times	49	10 (20.4)	17 (34.7)	18 (36.7)	4 (8.2)	0 (0)
The quality of medicines that are purchased by the hospital pharmacy	49	6 (12.2)	13 (26.5)	22 (44.9)	7 (14.3)	1 (2.0)
The accuracy of prescription filling (dispensing) in the hospital pharmacy (i.e. the drugs that patients receive are the ones prescribed to them)	47	3 (6.4)	10 (21.3)	16 (34.0)	14 (29.8)	4 (8.5)
The quickness of prescription filling at your pharmacy	49	6 (12.2)	6 (12.2)	19 (38.8)	16 (32.7)	2 (4.1)
The amount of time you spend with each patient/client that comes to the pharmacy	49	5 (10.2)	8 (16.3)	26 (53.1)	7 (14.3)	3 (6.1)
The way you work together with physicians to make sure that prescribed medications are the best for the patient	46	10 (21.7)	13 (28.3)	15 (32.6)	8 (17.4)	0 (0)
The appropriateness of cost of medicines dispensed in the pharmacy	47	4 (8.5)	10 (21.3)	18 (38.3)	13 (27.7)	2 (4.3)
The level of patients/clients satisfaction with the service you provide	48	9 (18.8)	9 (18.8)	21 (43.8)	9 (18.8)	0 (0)
The overall quality of service provided in this pharmacy	49	4 (8.2)	9 (18.4)	21 (42.9)	15 (30.6)	0 (0)

5.6 Findings of key informant interviews

In-depth interviews were held with all the heads of the pharmacy departments in the hospitals involved in the study (a total of six). All except one were pharmacists. The one professional who was not pharmacist was pharmacy technician and was holding the position by delegation, since the pharmacist in charge was on maternity leave. Four of the key informants were female and the rest male. Different problems were witnessed during the interviews with regard to the structural aspects and the process of pharmaceutical services. And most of the pharmacy administrators think that the job satisfaction of pharmacy professionals is low.

Structural issues

Among the structural problems mentioned by all key informants was problem in the supply of medicines. All of them mentioned the fact that drugs are supplied by one government supply agency as a major cause of this problem. All reported that this government supply agency does not provide the medicines they request in both the type and quantity required. Another problem that was mentioned by all key informants was inadequate space for the different hospital pharmacy services. Space problem for pharmacy store was shared with the pharmacies in all of the hospitals. According to key informants, limited budget allocated to the hospital to build new facilities and renovate the existing ones, and the poor attitude of the hospital management towards pharmacy were mentioned as major reasons for inadequate space allocation for pharmacy services. A statement made by one key informant demonstrated this fact:

"A one story building which included all the facilities and rooms needed for a hospital pharmacy was constructed in the hospital premise. However, when the building was finished, an ENT specialist came from school and they gave that building to her. We argued a lot; tried our best to get the building back but no one listened to us.... Not enough attention is given to the pharmacy section."

Documentation of the desired therapeutic objectives for the patient, medications currently being taken by the patient, information about the patient's medical conditions, drug related problems and intervention made in case of drug related problems was found to be very uncommon practice in the hospitals studied. Only one of the hospitals had the experience of

manually recording the drugs prescribed to patients in all of the pharmacy units under the hospital pharmacy. According to the respondents, in case of drug related problems pharmacy professionals either write their comments on the back of the prescription to send it to the prescribing physician or they would go to the prescribing physician to discuss the case. Moreover, interventions made by pharmacists are not actually documented in patient's medical and pharmacy records. However one of the key informants mentioned an experience of filing wrongly filled prescriptions. The case of ART pharmacies is somewhat different in that, there are formal recording systems for the drugs that the patient is on and any switches in the products used by the patient are recorded in a computerized system in all of the hospitals. However, pharmacists' activities, like identified drug related problems and the interventions made are not documented in all the pharmacy units of the studied hospitals.

All of the respondents mentioned that there are no continuous and systematic quality assurance and quality improvement programs in their hospital as well as in the pharmacy. The case of adequacy of staff was inconsistent among the hospitals studied. Three of the respondents mentioned that they had enough number of pharmacy professionals while the rest mentioned that there is shortage of staff. Furthermore one of the respondents mentioned that the quality of some of the drugs that they procure is very low and that they have no telephone line in the pharmacy.

Different aspects of pharmaceutical care provision

All the respondents reported that, access to patient data including laboratory data and other medical information is very limited. In some cases there is no access and in others the pharmacy professionals do not have the habit of reading such medical information when available. However one of the key informants mentioned that pharmacy professionals review patient cards in case of the free outpatient pharmacy and ART pharmacy.

The reasons given for not reviewing the patient medical history while available ranged from simply not having the habit to high work load and limited number of staff.

All of the respondents mentioned that the only service that the hospital pharmacy gives to inpatients is the supply of medicines through nurses. According to the key informants: medication use evaluations (audits) in the wards with structured methods, pharmacokinetics

and therapeutic drug level monitoring, medication history taking and patient profile monitoring for inpatients, provision of advice and counseling for inpatients, and educating patients during hospitalization and discharge in their respective hospitals are not provided by the hospital pharmacy. One respondent explained:

"*…let alone this we don't have any proper system of ensuring that the medication that we dispensed is getting to the said patient or not, other than looking at the reports by nurses"*

All the respondents asserted that pharmacy professionals are not involved in ward rounds in their respective hospitals. However one of the respondents reported that they started to attend morning sessions with physicians. High work load and shortage of staff, lack of personal commitment, physicians' distrust and absence of professional respect were reasons mentioned for not getting involved in ward rounds. One key informant said that hospital administrators do not consider ward round as a part of pharmacists' responsibility.

All key informants identified lack of communication skill as a major barrier to their involvement in wards. This was exemplified by a statement made by one key informant:

"*… when we go to any physician to discuss about the drug they prescribed, what they do is they keep on using different medical terms about the disease pathology which we barely understand. So we get lost in the middle of the conversation. So if we have some training to tackle such problems we can easily communicate with physicians and involvement in wards will be easier for us*."

Resistance by physicians and nurses to accept the pharmacist as member of the health care team was mentioned by some as a reason for not continuing their involvement in ward rounds they had already started.

When key informants were asked whether they would be confident to actively participate in ward rounds, all expressed that they did not have appropriate skill for such practice, that their undergraduate education did not give them experience of working in a team with other health care professionals and is deficient with some "clinical" education. However all argued that personal commitments to read further, having more exposure to the practice and short term trainings would make them fit for such activities. According to one of the respondents:

"The way we were educated did not make us fit to be involved in ward rounds right away. However as far as a pharmacist is willing to read and update himself/herself with the

current issues in drug therapy s/he can do a great job participating in the wards, since many of the foundations are laid in school"

Another one adds on this:
"The point is not that you know everything there is to know at the start of your involvement in wards…it is that you will learn through the process and the patient will be benefited from your involvement in wards."

All (except one) of the respondents mentioned that there were no efforts made from the side of the hospital pharmacy to facilitate pharmacists' involvement in ward rounds. Regarding ADR reporting, all of the respondents evaluated their respective hospital pharmacy and pharmacists as inactive. Although some of the respondents mentioned the advocacy works by the government and the availability of the forms, they witnessed that there were no reports that passed through the hospital pharmacy. Regarding the differences in the activity of pharmacists and pharmacy technicians all the respondents stressed on the fact that there is no major difference in the work that they do even if they have different educational background. However the respondents argued that administrative posts are given to pharmacists and pharmacists have some leadership roles in cases where drug therapy problems are identified, and when new programs and activities (like preparation of essential drug lists) are put in place. One of the respondents mentioned:
"…one difference that I could site from my experience is that pharmacists are entitled to handle narcotic and psychotropic drugs while pharmacy technicians are not. Other than that I basically noticed no difference in activities. Even until recently the head of the pharmacy department was a pharmacy technician in the presence of 12 pharmacists."

Job satisfaction of pharmacy staff

All key informants expressed their dissatisfaction with their job. According to the majority of the respondents, the disparity between what they learnt and the practice is the major source of their dissatisfaction.

Very low salary especially when compared to the private sector and poor public attitude towards pharmacists were also mentioned by some of the key informants as causes for the generally low job satisfaction among pharmacy professionals.

Majority of the participants suggested that, involving pharmacists in direct patient care and giving them specific trainings to this effect would be an important satisfying factor. In connection with this one respondent mentioned:

"*Even if your salary is low, job satisfaction comes from doing what you have to do as professional. So involving pharmacists in different clinical activities including ward rounds would be motivating and hence conducive environment should be created to realize this."*

Creation of post graduate and other educational opportunities for pharmacists working in hospitals, improving awareness of physicians and the general public about pharmacy, increasing number of staff (reducing work load), salary adjustment and improvements in the drug procurement process were among the suggestions made to improve the job satisfaction of pharmacy professionals working in the hospitals studied.

6. Discussion

This study attempted to give the full picture of quality of pharmaceutical care in government hospitals found in Addis Ababa. In doing so it measured the three basic aspects of pharmaceutical care quality which are: the structure, process and outcome. It also looked at service providers' and clients' views of the pharmaceutical services in the hospitals. It has used qualitative method as a means of triangulating quantitative data. Apart from assessing the quality of pharmaceutical care, this study also shades light on the level of job satisfaction of pharmacy professionals practicing in the studied hospitals.

This study revealed that the pharmacy units in all of the studied hospitals faced multiple structural deficiencies. This is manifested by the fact that the area of space allocated for the dispensaries of majority of the pharmacy units was not enough. And some of them are multipurpose; acting as dispensaries, offices, and meeting areas. Although no standards exist in Ethiopia for pharmacy units in government hospitals, the standard for pharmacy units in private hospitals requires that the inpatient pharmacy dispensary should have at least 16 m^2 area and that of outpatient pharmacy to have at least 25 m^2 area (DACA, 2004). If we compare the hospital pharmacy dispensaries with this requirement, many of them (60.0% of the inpatient pharmacies and 57.1% of the outpatient pharmacies) fall below the standard. Another important thing to note is that there is a wide variation among the different pharmacy units within the same hospital.

The present study also documented that simple dispensing aids and vital equipments which should be present in the dispensaries were absent during the time of this survey. Even when they are present, they were insufficient in number. For example only one tablet counting tray and one spoon/spatula was present in the dispensaries having such dispensing aids. More over, there were some dispensaries without such aids (no tablet counting tray in 8 (42.1%) of the 19 dispensaries studied). This shows how much the structural quality of pharmaceutical services in the hospitals is compromised. Although there is little data in this area we can actually see that such structural deficiencies are also shared by other aspects of health care in the country (Wako and Berhane, 2000).

Privacy of counseling was also found to be poor in all the hospitals involved in the study. This is partly because of the unavailability of private counseling rooms and/or dispensing

booths in some and the inappropriate use of the already available ones. The later is shown by the fact that more than one client is allowed in the counseling rooms and dispensing booths at the time of dispensing. The unavailability of properly designated area with chairs for waiting patients aggravates lack of privacy in counseling by causing patients/clients to cluster to the dispensary window making privacy of counseling impractical. Although data are lacking about privacy in the pharmaceutical care sense, it seems that this problem is shared by other aspects of health services in Ethiopia. For example, in a study of the quality of family planning services, Fantahun (2005) documented lack of privacy of client provider interaction both from the perspective of clients and by observation of the facilities.

There were also encouraging results in that all of the hospital pharmacies gave 24 hours service, that most had DTC, all ART pharmacy units had at least one data clerk in charge of keeping patient records and all of the hospitals had national EDL. The fact that pharmacists are involved in the DTC is also encouraging. However, the hospital without DTC should be encouraged to establish one for the many advantages that the presence of such committee in the hospital could bring. And the available DTCs should be encouraged to hold regular meetings, as they are recommended for proper functioning of DTCs in hospitals (Holloway and Green, 2003).

The distribution of pharmacists and pharmacy technicians is somewhat inconsistent among the different hospitals. The number of pharmacy professionals is greater in the university hospitals (with medical school affiliation) which could be justified by their size and the number of people they serve. Secretarial and clerical staff are lacking in many of the hospitals especially for the non-ART services. This could increase the work load of the pharmacy professionals in general and the head of the pharmacy section in particular and cause poor documentation practices.

With regard to the storage facilities all of the medical stores had electricity supply and all except one had access to generator in case of power cuts. Moreover all of the stores had refrigerators. This is a crucial factor in maintaining the quality of drugs requiring cold chain (John Snow, Inc./DELIVER in collaboration with the World Health Organization, 2003). All of the medical stores had stock record system (at least manual). However, medical stores in two of the hospitals lacked lockable cabinet or separate room with locks for NPS. This is not in line with the general recommendation, that medical stores should have such facilities for

NPS (MOH, 1998). Moreover, all of the stores did not have sufficient shelves and pallets and this is proven by the fact that there were many cartons containing medicines put directly on the floor in all of the stores which is not recommended (John Snow, Inc./DELIVER in collaboration with the World Health Organization, 2003).

Generally, the pharmacy units in all of the studied hospitals face deficiencies of space for different purposes. The key informant interviews identified some reasons for this as perceived by the heads of the pharmacy departments. The two major reasons mentioned were inadequacy of budget allocation to the hospital and problem in the attitude of the hospital management towards pharmacy. The later needs to be studied further so that we can have a clear idea about the attitudes of other professionals and administrative staff working in the different hospitals, towards the profession of pharmacy and positively build the image of pharmacy.

To measure their level of provision of pharmaceutical care pharmacy professionals were asked to report, to how many patients with chronic diseases (like diabetes and asthma) they provided pharmaceutical care activities. Since it would be unreasonable to expect pharmacy professionals in our country (where the practice of pharmacy is largely traditional) to provide pharmaceutical care to all kinds of patients, the questionnaire items were described on the basis of specific patient care services provided to patients with chronic conditions who need regular drug therapy. This is similar to the approach Odedina and Segal (1996) followed while validating the behavioral pharmaceutical care scale for measuring pharmacist activities.

The results of this study indicated that the core direct patient care aspects of pharmaceutical care (documentation, patient assessment and implementation of therapeutic objective and monitoring plans) were underperformed by the professionals. The findings of this study with regard to documentation and implementation of therapeutic objectives and monitoring plans domain is comparable to that found by Odedina and Segal (1996) before fifteen years among community pharmacists in Florida, USA. The comparability of this data shows that pharmaceutical care is at its level of infancy in Ethiopia as it was 15 years earlier in community pharmacies of the USA. Higher value was obtained in the patient assessment domain in this study than the Florida study. The exact reason for this difference is unknown.

As found by the key informant interviews, the absence of formal documentation system in the hospital pharmacy could be a major reason for the low performance of professionals with this respect. Although it needs further research, the low level of involvement in documentation and implementation of therapeutic objective and monitoring plans could be due to low perception of the professionals about their importance or simply not knowing that these activities are important as a survey which used a similar instrument on community pharmacists in Kazakhstan found (Cordina et al., 2008). Penaforte et al., (2007) also reported that documentation of pharmacists' activities is not a common practice in a Brazilian university hospital. The documentation of pharmacy professionals' activities is a crucial aspect of pharmaceutical care provision and ASHP recommends documentations to be made on patients' medical records (American Society of Health-System Pharmacists, 2003). In this regard all the studied hospital pharmacies fail to meet this recommendation as the already available documentation systems are pharmacy records.

Better performances (slightly above the mid point) were seen with patient advising and counseling (3.37) and verification of patient understanding (3.32) domains. These domains measured by the items (respectively), discussed the patient's drug therapy with him or her and verified that the patient understood the information I presented to him or her by asking for feedback, were aspects of pharmaceutical care which are more or less related to the traditional dispensing practice. One should also note that professionals tend to over rate the pharmaceutical care activities they provide to patients as found by one study from Denmark where actual and perceived provision of pharmaceutical care showed discrepancies (Rossing et al., 2005). But still, one can see that the professionals are not performing as expected. The value obtained for patient record screening domain (2.27) in this study was also not as expected in that pharmacy professionals working in hospitals are believed to have better access to patient record.

Although not much significant differences in the provision of the different pharmaceutical care activities were seen with the different socio-demographic variables, pharmacy technicians were found to rate the patient assessment and patient advising and counseling domains significantly higher than pharmacists. As pharmacists have better level of education the reverse would have been expected. It is not clear whether this is due to pharmacists under reporting what they do or pharmacy technicians over rating their activities or both.

However the heads of the pharmacy departments reported little or no differences in the activities of pharmacists and pharmacy technicians.

Some of the referral aspects of pharmaceutical care were well done in the hospital pharmacies as the great majority of the pharmacy professionals made referrals to other pharmacists and physicians when deemed necessary. However, provision of written copies of patient information to physicians and other professionals is less practiced. This could be due to the limited accessibility of patient records to pharmacy professionals working in the hospital pharmacies.

A majority (84.3%) of the pharmacy professionals, not at all or almost never participated in ward rounds with physicians. The major reasons for this were: absence of system in the hospital pharmacy to involve pharmacists in ward rounds, undergraduate education which was not enabling and lack of communication skills. And this (especially the later two) could explain why there were no attempts made by the majority (83.3%) of the hospital pharmacies to involve pharmacists in ward rounds. So capacity building on the structural aspects (i.e. improving policies; modifying undergraduate education and instituting continuing education for pharmacists in a way that enhances their clinical and inter-professional communication skills) would be necessary to realize effective involvement of pharmacists in ward rounds (Nijjer et al., 2008).

Moreover the inpatient pharmacy services were mainly limited to the supply of drugs through nurses (82.4% of professionals) and review of prescriptions or patient charts (43.1% of professionals). Although it was interesting to find that, some pharmacy professionals reported being involved in the provision of discharge planning, comprehensive medication history taking, counseling and education and pharmacokinetic and therapeutic drug monitoring for inpatients; this was not supported by the qualitative aspect of the study. The heads of the pharmacy departments confirmed that such services are not provided to inpatients in their hospitals. According to a report from the United Kingdom, supply activities accounted for only 12% of clinical pharmacists' activities for inpatients. A study from Australia also revealed that medication review takes the majority of clinical pharmacists' activities in wards. This difference between our country and the others could be partly due to the presence of system to involve pharmacists in wards in the case of the mentioned countries. However, it proves how far behind the practice of hospital pharmacy in

our country is when compared to these countries (Boardman and Fitzpatrick, 2001, Stuchbery et al., 2007).

Health care professionals' job satisfaction is known to influence the overall performance of the professionals and thus the quality of care (Utsugi-Ozaki et al., 2008, Wallace et al., 2009). Accordingly the overall job satisfaction of pharmacy professionals was found in this study to be 2.9± 0.52 in a five point scale. This study used job satisfaction domains as that used by Kerschen et al., (2006) and lesser satisfaction was observed with the work environment and personal outlook domains than the professional interaction domain. This finding is further confirmed by the in-depth interviews with the heads of pharmacy departments. The reason the key informants mentioned as major cause of dissatisfaction among the pharmacy staff was under utilization of skills. This is in line with findings of other studies, where perceived utilization of skills was found to determine pharmacists' job satisfaction (Cox and Fitzpatrick, 1999).

Although prior researches found associations between socio-demographic variables and different domains of job satisfaction, no significant associations were witnessed in this study (Cox and Fitzpatrick, 1999, Hardigan and Carvajal, 2007). However pharmacists were less satisfied than technicians with utilization of their talents and the picture of pharmacy in the general public (specific items in the personal outlook and professional interactions domains). This might have something to do with the way pharmacists do their job as they have mainly distributive roles. And limiting pharmacists' activities to distributive roles is known to be a major cause of pharmacists' dissatisfaction with their job (Kerschen et al., 2006, Olson and Lawson, 1996). This study also identified that there is no visible difference in what pharmacists and pharmacy technicians do in the studied hospitals which could explain pharmacists' lesser satisfaction with the utilization of their talents at their job.

The questionnaire to assess patient satisfaction was designed to measure the traditional practice of pharmacy in the selected hospitals as well as pharmaceutical care. Since, satisfaction with pharmaceutical care like any other aspect of medical care is multidimensional, factor analysis of the questionnaire items gave rise to three dimensions (Johnson et al., 1998). The three dimensions identified in the factor analysis were more or less similar to those identified by a study from Spain on community pharmacies (Traverso et al., 2007). Item number 18 had a higher factor loading in the interpersonal communication

domain than general satisfaction. However this item was placed in to the domain of general satisfaction as it was more related in context to this domain than interpersonal communication.

The reliability of the questionnaire was found in this study to be very good. This is indicated by the fact that Cronbach's alpha values found for the different scales in the questionnaire and the overall questionnaire were found to be superior to 0.70. This shows that the items in the scales are sufficiently correlated to constitute a scale (Pallant, 2007). Therefore the Amharic version of this questionnaire can be used as a reliable instrument to assess clients' satisfaction with pharmaceutical care in hospital pharmacies. However, further research to deepen the validity of the questionnaire in different parts of the country should not be ignored.

As an important indicator as well as outcome of quality, clients' satisfaction with pharmaceutical care in the studied hospitals was generally low having a value of 2.7 in a five point scale. Looking at the different dimensions of the questionnaire, the pharmaceutical care dimension showed lesser values than the others. This could be due to the fact that provision of pharmaceutical care is not a common practice in the hospitals of the country. This is shown by the large number of non responses (up to 40%) to the items measuring satisfaction with specific aspects of pharmaceutical care, although it was administered in the form of interview. Patients were facing difficulty in rating these items as they did not get the services. Since this study is the first in assessing patient satisfaction with pharmaceutical services in hospitals of Addis Ababa using multidimensional instrument, the results concerning the pharmaceutical care dimension can be used as baseline for further studies after the implementation of this modern concept in our country.

Significant differences in satisfaction were observed with socio-demographic characteristics of respondents and the type of hospital visited. Females were found to be more satisfied with the clarity of pharmacy professionals' instructions, promptness of services, and the amount of consultation time. The fact that females were more satisfied with different aspects of pharmaceutical care is consistent with the findings of Mohamed and Al-Dogaither, (2004) from a teaching hospital in Saudi Arabia.

In this study it was found that frequent visitors of the out patient pharmacies were more critical of the different aspects of the service than new visitors. They were found to be less satisfied with structural aspects like: promptness of service, cleanliness of waiting area and the quality of medicines; and interpersonal aspects such as: clarity of verbal and written instructions and answers to questions. This could be because of the higher expectation of frequent visitors towards these aspects than new visitors. The lesser satisfaction with promptness of service is also in congruence with the study from Saudi Arabia (Mohamed and Al-Dogaither, 2004).

This study also revealed that people who came to the outpatient pharmacy to take medicines for friends or family were less satisfied with the service they received. Although these people were significantly less satisfied with many of the aspects of the service they received, the interpersonal communication aspect needs special emphasis. This is because; the care giver (the person who came to take the medicine for a friend or relative) would be the one who ultimately delivers the advice to the patient. So if this person is not clear with the instructions he received then how could the patient be?

University hospitals appeared to perform significantly less in ensuring the satisfaction of their clients with outpatient pharmaceutical services. Their performance with all the items in the pharmaceutical care and general satisfaction dimensions were significantly lower compared to the hospitals under the health bureau of the Addis Ababa City Administration. This could be due to the very high number of clients that these hospitals are expected to serve. However, it is still concerning that the university hospitals are performing lesser when they are normally expected to be superior.

The payment status of patients was found in this study to be significantly associated with satisfaction. Paying patients appeared to have lesser satisfaction with apparently all of the components of the service. This could be due to higher expectation of paying patients to the services they received.

In the perceived quality of services section pharmacy professionals rated the structural aspects of quality (like location and internal organization of the pharmacy, availability and quality of medicines and dispensing aids) relatively lower than other items. In this regard, administrators should give due attention to these aspects as they could affect the job

satisfaction of pharmacy professionals and their intention to quit their jobs (Lin et al., 2008). The ratings by pharmacy professionals for some of the items were relatively comparable to those of the ratings of the same items by clients of the service thus showing how important the problems are. Some of the items which got comparable ratings by both pharmacy professionals and clients were: promptness of prescription drug service, the amount of time the pharmacy professional spends with the client, and the availability of medicines in the hospital pharmacy. Items about quality of medicines and privacy of conversation were rated poorer by professionals when communication between pharmacists and physicians was rated poorer by clients. This difference probably came from the difference in the level of professional knowledge and lack of information from the clients' side about how pharmacy professionals and physicians communicate.

7. Conclusion and Recommendations

From this study it can be concluded that all the pharmacy departments face multiple deficiencies in structural quality as measured by availability of important dispensing aids, different facilities for provision of pharmaceutical care and staff. It is also evident that pharmacy professionals working in government hospitals of Addis Ababa are not active regarding the provision of pharmaceutical care to inpatients as well as outpatients. The major factors that hinder pharmacists from involvement in wards were identified in this study to be: absence of system and inadequate undergraduate training. The satisfaction of clients visiting the outpatients of the studied hospitals with the service they received was found to be low. Different aspects of client satisfaction appeared to significantly vary with respondents gender, payment status, reason for and frequency of visit and type of hospital visited (whether university or non university). Pharmacy professionals working in the studied hospitals have low level of job satisfaction. And they perceive the pharmacy service they provide to be generally of low quality.

Based on the findings of this study the following recommendations can be made:

- The government should give due attention to the hospital pharmacy departments in order to solve their structural deficiencies
- Pharmacy professionals should start documenting the interventions they make to the quality of drug therapy as a proof of their importance in medication therapy
- Pharmaceutical care services should be started at least at a pilot scale in the university hospitals
- Quality assurance and quality improvement activities should be made an integral aspect of the pharmacy practice in hospitals of Addis Ababa
- The undergraduate education of pharmacists should be made dynamic and be modified in a way that enhances the clinical and communication skills of graduates
- Given the immense advantage of pharmacists' involvement in wards with regard to patient outcomes and reducing cost, pharmacists should be encouraged to start such services in government hospitals of Addis Ababa.
- Appropriate short term and long term trainings should be organized for pharmacy professionals on the different areas of pharmaceutical care

8. Suggestions for Future Work

- Studies that aim at assessing the quality of pharmaceutical care should be done in different parts of the country in public as well as private health care facilities.
- Studies that assess the benefits of involving pharmacists in hospital wards within the Ethiopian context should be done
- Further validation of the client satisfaction questionnaire should be done in different parts of the country (both in Amharic and other languages spoken in Ethiopia)
- Pharmacy professionals' job satisfaction should be studied in the different sectors of pharmacy practice in Ethiopia
- Studies that employ direct observation should be done to assess pharmacy professionals' activities with different aspects of patient care

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Annex 1 Check list for the Availability of Relevant Infrastructure, Personnel and Materials Used for Effective Provision of Pharmaceutical Care

Hospital _____ Date_____

No.	Items	*Outpatient Pharmacy*		*In-patient*	*ART*
		Free	**Spec.**		
1. 1.1.	**<u>The Dispensing Room and its Surroundings</u>** The availability of dispensing counter (table)				
1.2.	The availability of sufficient shelves				
1.3.	Availability of private counseling room				
1.4.	Privacy of counseling				
1.5.	Refrigerator with thermometer				
1.6.	Lockable cabinet for NPS				
1.7.	The availability of patient waiting area				
1.8.	Availability of chairs for waiting patients/clients				
1.9.	Area of the dispensing room				
1.10.	Number of staff working at a time				
1.11.	Number of students (if any) working at a time				
1.12.	The dispensing room is neat				
1.13.	The shelves and other materials are arranged in a way that facilitates dispensing				
1.14.	Are there expired medicines If so are they separated from the other medicines?				
1.15.	Availability of water supply for: Washing hands or Washing equipments				
1.16.	Availability of table and chair for staff use				
1.17.	Proper ceiling				
1.18.	Appropriate lighting				
1.19.	Appropriate air conditioning				
1.20.	Availability of fire extinguisher				
1.21.	Office for pharmacist				

No.	Items	*Outpatient Pharmacy*		*In-patient*	*ART*
		Free	**Spec.**		
1.22.	Meeting areas				
1.23.	Availability of toilet facilities				
2. 2.1.	**<u>Important Dispensing Aids</u>** Spoon/spatula				
2.2.	Graduated cylinders, flasks, and conical graduates				
2.3.	Tablet counting tray				
2.4.	Packaging envelop				
2.5.	Balances				
2.6.	The cleanliness of dispensing aids and good state				
2.7.	Proper maintenance and validation				
3. 3.1.	**<u>Documentation</u>** Registration of filled prescriptions				
3.2.	Are they separated and documented by day, month and year				
3.3.	Kept in the pharmacy for 2 years (for ordinary prescriptions) and 5 years (for NPS)				
3.4.	***Is there a documentation system for pharmacy professional's interventions? for example:***				
3.4.1.	Adverse effect identified				
3.4.2.	Drug-drug interaction identified				
3.4.3.	Drug-food interaction identified				
3.4.4.	Drug-lab interaction identified				
3.5.	Is there an adequate space for maintaining and storing records?				

4. Personnel

4.1. The educational qualification of dispensing staff

Pharmacist (BPharm) _____

Pharmacy Technician (Diploma in Pharmacy) _____

Others Please Specify _____

4.2. Clerks _____

4.3. Secretarial staff _____

4.4. Are they enough? _____

4.5. Is there any staff who do not have the relevant training in pharmacy, but is involved in provision of pharmaceutical care like dispensing? (Yes ☐, No ☐)

4.6. Is the head of the pharmacy department a pharmacist? (Yes ☐, No ☐)

4.7. Number of years since graduation_____

4.8. Did the director have any long or short term Management Training? (Yes ☐, No ☐)

4.9. If Yes, Please Specify_____

4.10. Are there procedures for the routine evaluation of the performance of pharmacy personnel? (Yes ☐, No ☐)

4.11. Are there written position descriptions for the pharmacy personnel? (Yes ☐, No ☐)

5. Drug Information References

5.1. Is there internet connection (Yes ☐, No ☐)

5.2. Is there access to online DI resources (for e.g., Micromedex, Cochrane library online resources, etc) (Yes ☐, No ☐)

5.3. Does the hospital have its own essential drugs list? (Yes ☐, No ☐)

5.4. Is there a national essential drugs list available in the hospital? (Yes ☐, No ☐)

6. Extemporaneous Compounding

6.1. Is there extemporaneous compounding service in your hospital? (Yes ☐, No ☐)

6.2. Are there adequate QA procedures for these operations? (Yes ☐, No ☐)

7. Medication Histories

7.1. Do Pharmacists in the hospital prepare or have immediate access to comprehensive medication histories for each patient's medical record or other databases (e.g., medication profile), or both? (Yes ☐, No ☐)

7.2. Is there a pharmacist-conducted medication history analysis for each patient?

Inpatients (Yes ☐, No ☐); **Out patients** (Yes ☐, No ☐); **ART** (Yes ☐, No ☐)

8. Medication-use policy development

8.1. Is there a functional DTC in the hospital? (Yes ☐, No ☐)

8.2. Does the DTC have regular meetings? (Yes ☐, No ☐)_____

8.3. Is a pharmacist a member of the P&T committee in the hospital? (Yes ☐, No ☐)

8.3.1 The infection control committee (Yes ☐, No ☐)

8.3.2 Medication-use evaluation and other committees that make decisions concerning medication use (Yes ☐, No ☐)

9. General Questions

9.1. Is there a 24 hour pharmaceutical service in the hospital? (Yes ☐, No ☐)

9.2. If not, is there a pharmacist available on an on-call basis? (Yes ☐, No ☐)

9.3. Is there a functional drug information center in the hospital? (Yes ☐, No ☐)

10. Check List for Evaluation of the Facilities of the Pharmaceutical Store

No.	Infrastructure	Yes	No	Remark
1.	Availability of water and electricity supply			
3.	Size of Store			
4.	Availability of cross aisles			
5.	Does the store have one floor layout			
6.	Availability of fan and air vent system			
7.	Availability of drains to catch run off			
8.	Availability of Generators (kerosene refrigerators) in case of power cuts			
9.	Availability of a separate area/room for drugs, medical supplies, laboratory reagents, diagnostic and medical equipments			
10.	Lockable cabinets/separate rooms for storage of NPS			
11.	Availability of storage for inflammable substances, well ventilated and insulated and built with fire proof materials			
12.	Availability of adequate shelves			
13.	Pallets			
14.	Trolley			
15.	Cold boxes			
16.	Refrigerators and/or freezers			
17.	Wall thermometer			
18.	Ladders			
19.	Dust Bin			
20.	Do you have expired drugs in the store?			
21.	Is there a functional stock record system?			
22.	Fire Extinguisher			
23.	Sanitation of the store			
24.	Freedom of the store from infestation by rodents/birds/insects			

Annex 2 Self administered questionnaire for data collection on pharmacy professionals' level of involvement in pharmaceutical care, job satisfaction and perceived quality of service.

Addis Ababa University

School of Pharmacy

Department of Pharmaceutics

Purpose: this study is designed to assess the level of involvement of pharmacy professionals working in government hospitals of Addis Ababa in Pharmaceutical Care, level of Job Satisfaction and their perceived quality of service. Your answers are very important and valuable to the successful completion of this study.

Please be honest in filling this questionnaire, as it will be solely used for research purposes. This survey will be confidential, anonymous, and data will be analyzed in aggregates.

For comments/questions please contact **Eskinder Eshetu** (0911944218) principal investigator for the study

Section I. Socio-demographic Characteristics of Respondents

This section contains questions that help us understand your answers to the other sets of questions in the next section. If you are unsure about how to reply to any of the questions, please give the best answer you can and write your comments beside the question.

1.1. You are:

Male ☐ Female ☐

1.2. Age in years_____

1.3. Marital Status

☐ Single ☐ Married

☐ Divorced ☐ Widowed

1.4. Highest academic degree

☐ Certificate in Pharmacy ☐ Diploma in Pharmacy

☐ BPharm (BSc in Pharmacy) ☐ Others, Please Specify_____

1.5. Year you graduated with your current degree/diploma _____Ethiopian Calendar

1.6. Number of years at current job (in this Hospital) _____years

1.7. Average number of hours that you work per day _____hrs

1.8. Average number of days that you work per week _____days

1.9. Current Job title _____

1.10. Primary job responsibility

- ☐ Dispensing
- ☐ Compounding in the hospital pharmacy
- ☐ Inventory and drug supply control
- ☐ Drug information services
- ☐ ART dispensing
- ☐ Administrative activity
- ☐ Other, please specify_____

Section II. **Questions on Pharmacy Professionals Level Involvement in the Provision of Pharmaceutical Care**

Think about the last five patients or customers of yours who presented a **new prescription** used to treat a chronic condition such as **asthma or diabetes**. Please indicate how many of these five patients you provided the following activities to by circling the appropriate response [numerals ranging from 0 to 5].

No.	**Activities**	**No. of patients you provided the activities**					
1.	Asked the patient to describe his or her medical condition, including a description of medical problems and symptomatology.	0	1	2	3	4	5
2.	Obtained patient's description; social history; vital signs; and applicable laboratory values.	0	1	2	3	4	5
3.	Documented information about the patient's medical conditions on written records or computerized notes or by other formal mechanisms	0	1	2	3	4	5
4.	Documented all medications currently being taken by the patient (including over the counter drugs) on written records or by other formal mechanisms	0	1	2	3	4	5
5.	Asked the patient what he or she wanted to achieve from the drug therapy.	0	1	2	3	4	5
6.	Documented (write) the desired therapeutic objectives for the patient	0	1	2	3	4	5
7.	Checked the patient's records (like; patient card or patient medication profile) for potential drug-related problems	0	1	2	3	4	5
8.	Discussed the patient's drug therapy with him or her.	0	1	2	3	4	5

9.	Verified that the patient understood the information I presented to him or her by asking for feedback	0	1	2	3	4	5

Next, we would like you to think about the last five patients or customers of yours who presented a refill prescription used to treat a chronic condition such as asthma or diabetes. Please indicate how many of these five patients you provided the following activities to by circling the appropriate response [numerals ranging from 0 to 5].

No.	**Activities**	**No. of patients you provided the activities**					
10.	Asked the patient questions to assess actual patterns of use of the medication he/she took in his/her last visit	0	1	2	3	4	5
11.	Asked the patient questions to find out if he or she might be experiencing drug-related problems	0	1	2	3	4	5
12.	Asked the patient questions to find out how he/she perceived the effectiveness of the drugs he or she was taking	0	1	2	3	4	5
13.	Asked the patient questions to ascertain whether the therapeutic objective(s) was (were) being reached	0	1	2	3	4	5

14. Have you ever identified any kind of drug related problem (Adverse reaction, wrong drug for the patient's condition, wrong dose or potential drug-drug or drug-food interaction) for any of the 10 patients either for conditions like diabetes and asthma OR HIV/AIDS (see questions #7 and #11 OR questions #23 and #27)?

    ☐ Yes ☐ No

15. If your answer to question #30 is **Yes**, please go on to question #33
16. If your answer to question #30 is **No**, a drug-related problem was not uncovered because:

    ☐ I do not check for drug-related problems in my patients. (Skip to question #39)

    ☐ I routinely check for drug-related problems, but these 10 patients did not experience any. (Go to question #33 and answer the questions on the basis of the last few patients who experienced drug-related problems.)

Now, think about the last five patients or customers of yours who you discovered were experiencing drug-related problems. Please indicate how many of these five patients you provided the following activities to by circling the appropriate response [numerals ranging from 0 to 5].

No.	Activities	No. of patients you provided the activities					
17.	Documented (wrote) the drug-related problems, potential or actual, on written notes	0	1	2	3	4	5
18.	Documented (wrote) the desired therapeutic objective(s) for each of the drug-related problems identified	0	1	2	3	4	5
19.	Implemented a strategy to resolve (or prevent) the drug-related problems	0	1	2	3	4	5
20.	Established follow-up plans to evaluate the patient's progress toward his or her drug therapy objectives	0	1	2	3	4	5
21.	Carried out the follow-up plans established for the patient's progress toward his or her drug therapy objectives	0	1	2	3	4	5
22.	Documented (wrote) any intervention made on the patient's file, prescription, report, or medical order in a form that could be read and interpreted by another health care professional	0	1	2	3	4	5

Now, we would like to ask you some questions about your dealings with colleagues and other health care providers when providing pharmaceutical care to your patients. In general, considering all the patients you saw in the past two weeks, please indicate how often you actually carried out the following activities. Underline the appropriate response [***five points running between "not at all" (0); Almost Never (1); Sometimes (2); Often (3) and "very often" (4)***]. For questions that deal with communication, we are referring to communication that you as a pharmacy professional initiate.

No.	**Items**	**0**	**1**	**2**	**3**	**4**
23.	Consulted with other pharmacists in my practice group about difficult or unusual patient problems	0	1	2	3	4
24.	Made referrals to other pharmacists whenever it was in the best interest of the patient	0	1	2	3	4
25.	Made referrals to a physician when necessary	0	1	2	3	4
26.	Provided physicians (upon referral) a written summary of the patient's medication history and any related problems	0	1	2	3	4

27.	Initiated discussion with physicians whenever I believed one of their patients was experiencing a drug-related problem or might experience a drug-related problem	0	1	2	3	4
28.	Used a quiet location for patient counseling	0	1	2	3	4
29.	Used the clinical outcomes of my patients to evaluate my work	0	1	2	3	4
30.	Provided written copies of patient information to professional colleagues authorized to have such information	0	1	2	3	4
31.	Provided general medical information to patients	0	1	2	3	4
32.	Asked patients about their satisfaction with my services in order to evaluate my work	0	1	2	3	4
33.	Participated in ward rounds with physicians	0	1	2	3	4

34. If your answer to question #49 is **Not at All or Almost Never**, which of the following do you think is/are the reasons for this? (more than one answer possible)

- ☐ Lack of time
- ☐ Lack of training
- ☐ Lack of communication skills
- ☐ Lack of resources
- ☐ Absence of System in the hospital to involve pharmacists in ward rounds
- ☐ Others [Please Specify] _____

35. Considering pharmacy services provided to inpatients admitted in the wards of the hospital, which of the following do you provide to inpatients (more than one answer possible)

- ☐ Supply of medicines through nurses
- ☐ Modifying doses for inpatients
- ☐ Auditing use of medicines
- ☐ Medication errors and adverse drug reaction reporting
- ☐ Pharmacokinetics and therapeutic drug level monitoring
- ☐ Comprehensive medication history taking for inpatients
- ☐ Review of prescriptions/patient charts for inpatients
- ☐ Provide advice to physicians on drug related aspects
- ☐ Provide counseling and education for inpatients
- ☐ Discharge planning for patients
- ☐ Education and training of other health care professionals

Others, Please Specify _____

Section III. Questions on Pharmacy Professionals Level of Job Satisfaction

In this section, we ask your feelings about your work. For each statement on the left, please encircle one number which best describes the level of your agreement (***1=Strongly Disagree (SD); 2=Disagree (D); 3=Neutral-N (Neither agree nor disagree); 4=Agree (A) and 5=Strongly Agree (SA)***)

No.	Items	SA	A	N	D	SD
1.	The opportunity for promotion within the hospital where I currently work is good	5	4	3	2	1
2.	Employees have sufficient amount of freedom to decide how they do their work in the pharmacy	5	4	3	2	1
3.	Staffing is adequate; enough employees are hired to cover the workload in the pharmacy	5	4	3	2	1
4.	My supervisor has an adequate knowledge to perform his duties	5	4	3	2	1
5.	The hospital management respects and treats pharmacy professionals similar to other health professionals in the hospital	5	4	3	2	1
6.	My environmental working conditions (lighting, air condition, toilet facilities, etc.) are adequate	5	4	3	2	1
7.	Physicians consult me on professional matters	5	4	3	2	1
8.	Physicians cooperate when I communicate "job-related" matters with them	5	4	3	2	1
9.	My fellow employees (staff working with me) treat me with professional respect	5	4	3	2	1
10.	The people with whom I work are friendly	5	4	3	2	1
11.	Nurses cooperate when I communicate "job-related" matters with them	5	4	3	2	1
12.	Nurses often initiate consultations with me on professional matters	5	4	3	2	1
13.	I am satisfied with the "on-the-job" relationships I have with others	5	4	3	2	1
14.	The lay person is knowledgeable about the level of education of pharmacists	5	4	3	2	1

No.	Items	SA	A	N	D	SD
15.	My salary is appropriate	5	4	3	2	1
16.	My talents are fully utilized on my job	5	4	3	2	1
17.	My formal education overqualified me for my job	5	4	3	2	1
18.	All things considered, I am satisfied with my job	5	4	3	2	1
19.	The idea of spending the remainder of my working life in a job like my current one is satisfying	5	4	3	2	1
20.	The time goes by quickly while I am at work	5	4	3	2	1
21.	I often leave work with a feeling that I'm doing something which I enjoy	5	4	3	2	1
22.	Knowing what I know now, if I had to decide all over again, I would still choose pharmacy	5	4	3	2	1
23.	If my children were interested in pharmacy, I would encourage them to pursue it as a career	5	4	3	2	1

Section IV. Questions on Pharmacy Professionals' Perceived Quality of Service Provided

In this section, we ask your perception about the quality of service you provide to patients. For each statement on the left, please encircle one number which best describes your feelings ***1=Poor (P); 2=Fair (F); 3=Good (G); 4=Very Good (VG) and 5=Excellent (E)***

No.	Items	E	VG	G	F	P
1.	The appropriateness of the location of the pharmacy with respect to other service areas in the hospital	5	4	3	2	1
2.	The privacy of your conversations with the patient	5	4	3	2	1
3.	The internal organization of the pharmacy	5	4	3	2	1
4.	The availability of important dispensing aids (like tablet counting tray, packaging materials, flasks, measuring cylinders) in the pharmacy	5	4	3	2	1
5.	The availability of medicines in the hospital pharmacy at all times	5	4	3	2	1
6.	The quality of medicines that are purchased by the hospital pharmacy	5	4	3	2	1

No.	Items	E	VG	G	F	P
7.	The accuracy of prescription filling (dispensing) in the hospital pharmacy (i.e. the drugs that patients receive are the ones prescribed to them)	5	4	3	2	1
8.	The quickness of prescription filling at your pharmacy	5	4	3	2	1
9.	The amount of time you spend with each patient/client that comes to the pharmacy	5	4	3	2	1
10.	The way you work together with physicians to make sure that prescribed medications are the best for the patient	5	4	3	2	1
11.	The appropriateness of cost of medicines dispensed in the pharmacy	5	4	3	2	1
12.	The level of patients/clients satisfaction with the service you provide	5	4	3	2	1
13.	The overall quality of service provided in this pharmacy	5	4	3	2	1

Annex 3 Questionnaire for data collection on clients' satisfaction with pharmaceutical care in government hospitals of Addis Ababa, 2009

Addis Ababa University

School of Pharmacy

Department of Pharmaceutics

ID code No. _____

Hospital Code: _____

Verbal consent form before conducting interview

Greeting

Hello, my name is _____. I am working with the research team of the Department of Pharmaceutics, School of Pharmacy, Addis Ababa University. I would like to ask you a few questions regarding your attitudes and feelings about the service provided by the outpatient pharmacy of this hospital. The interview would take 5-10 minutes of your time. The purpose of this study is to assess the quality of pharmaceutical services provided in this hospital. This will be helpful in improving the quality of the health services in general and the pharmaceutical services in particular. Your participation is completely voluntary. You can refuse to answer any questions and/or withdraw from the study at any time without a problem to you or the services you get in the hospital. All your responses will remain strictly confidential: the hospital staff will not have access to your responses, your name will not appear on the interview guide (will not be recorded), and your responses will not be linked to your identity at any time. Do I have your permission to continue?

Yes ☐ No ☐

If Yes, Continue to the Next Page

If No, Skip to the next Respondent

Date of Interview_____

Time Started_____

Time Finished _____

Section 1. Questions on Respondents Satisfaction with Pharmaceutical Services

[Excellent (E); Very Good (VG); Good (G); Fair (F); Poor (P)]

No.	Items	E	VG	G	F	P
1.	The pharmacist's interest in your health	5	4	3	2	1
2.	The professionalism of all the pharmacy staff	5	4	3	2	1
3.	The courtesy and respect shown to you by the pharmacy staff	5	4	3	2	1
4.	The privacy of your conversations with the pharmacist	5	4	3	2	1
5.	How well the pharmacist explains possible side effects	5	4	3	2	1
6.	The promptness of prescription drug service	5	4	3	2	1
7.	The care that the pharmacy professional takes while supplying your medicines	5	4	3	2	1
8.	The fairness of cost of medicines in the pharmacy	5	4	3	2	1
9.	The amount of time the pharmacy professional spends with you	5	4	3	2	1
10.	The clarity of the pharmacy professional's instructions about how to take your medication	5	4	3	2	1
11.	The information the pharmacist gives you about the proper storage of your medication	5	4	3	2	1
12.	How well the pharmacy professional answers your questions	5	4	3	2	1
13.	The information the pharmacist gives you about the results you can expect from your drug therapy	5	4	3	2	1
14.	The way your pharmacist works together with your doctor to make sure your medications are the best for you.	5	4	3	2	1
15	The amount of time you spend waiting for your prescription to be filled	5	4	3	2	1
16.	The availability of medicines that are prescribed to you in the pharmacy	5	4	3	2	1
17.	The clarity of the label on the medicines supplied to you	5	4	3	2	1
18.	Your feelings about the quality of medicines dispensed to you	5	4	3	2	1
19.	The overall cleanliness and comfort of the waiting area	5	4	3	2	1
20.	The location of the pharmacy relative to other service areas	5	4	3	2	1
21.	Your pharmacy services overall	5	4	3	2	1

Section 2. Socio-demographic Characteristics of Respondents

1.1. You are:

Male ☐ Female ☐

1.2. How old are you? Age in years_____

1.3. Marital Status

☐ Single ☐ Married

☐ Divorced ☐ Widowed

1.4. What is the highest level of Education that you finished?

☐ Not attended school (Unable to read and write) _____

☐ Primary School (Grades 1-6)

☐ Junior Secondary (Grades 6-8)

☐ Secondary/Vocational (Grades 9-12)

☐ Higher Education (Certificate, Diploma, First degree & Above)

1.5. Status of Employment _____

☐ Governmental employee ☐ No job

☐ Employee of private company ☐ Farmer

☐ Merchant (Businessman/Businesswoman) ☐ Other, Please Specify _____

1.6. Religion

☐ Orthodox ☐ Catholic

☐ Protestant ☐ Muslim

☐ No religion ☐ Others, Please Specify_____

1.7. Address

☐ Addis Ababa

☐ Out of Addis Ababa

1.8. Frequency of Visit

☐ New visit

☐ Repeat Visit

1.9. Why did you come to the pharmacy?

☐ To take medicines for yourself

☐ To take medicnes for Friend/Family

1.10. Payment Status

☐ Paying

☐ Free

Annex 4 Guide for key informant interviews with heads of pharmacy departments

Quality of Pharmaceutical Care in Hospitals of Addis Ababa

Introduction: I want to thank you for taking the time to meet with me today. My name is Eskinder Eshetu and I am the principal investigator for the study entitled "Quality of Pharmaceutical Care in Hospitals of Addis Ababa, Ethiopia". And I would like to talk with you about your attitudes and feelings regarding the service provided by the pharmacy department of this hospital.

Purpose of Interview:

It is known that pharmaceutical care is considered to be the current standard of quality hospital pharmacy practice and measuring the quality of pharmaceutical care is important to identify problems in a system (also known as opportunities for improvement) and to monitor improvements in quality. We are interested in knowing your views about the provision of pharmaceutical care and its quality in this hospital. The interview should take less than an hour. I will be taping the session because I don't want to miss any of your comments. Although I will be taking some notes during the session, I can't possibly write fast enough to get it all down. Because we're on tape, please be sure to speak up so that we don't miss your comments. All responses will be kept confidential. This means that your interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. Remember, you don't have to talk about anything you don't want to and you may end the interview at any time.

Are you willing to participate in this interview?

Yes ☐ No ☐

Interview Begins

Theme list for in-depth interview with director of pharmacy

1. What is the situation of quality assurance and quality improvement programs in the hospital as well as the pharmacy?
2. How do you describe pharmacists' access to patient data (laboratory data and other medical information?
3. How is the documentation process of pharmacists' activities in this hospital pharmacy?
4. How do you see the differences in the activity of pharmacists and pharmacy technicians? Are there any differences in activity and responsibility?
5. Considering pharmacy services provided to inpatients admitted in the wards of the hospital, what services are provided by the hospital pharmacy to inpatients?

   Probe I: probe for the presence of modification of doses for inpatients (how?), medication use evaluations (audits) in the wards with structured methods, pharmacokinetics and therapeutic drug level monitoring, medication history taking and patient profile monitoring for inpatients, provision of advise and counseling for inpatients, educating patients during hospitalization and discharge, education and training of other health care professionals?
6. What is the situation of ADR reporting in this hospital? (how many reported so far, pharmacists' involvement)
7. Adequacy of space allocation for different purposes in the pharmacy
   Reasons for inadequate space allocation
8. What is the level of involvement of pharmacists in wards?
   If none: Are there any efforts made so far by the hospital pharmacy to involve pharmacists in ward rounds?
9. How do you assess the overall job satisfaction of employees working in the hospital pharmacy?
   a. Possible satisfying factors?
   b. Possible dissatisfying factors?
10. Is there anything more you would like to add?

I'll be analyzing the information you and others gave me and submitting a draft report to the department of pharmaceutics, school of pharmacy Addis Ababa University in one month. I'll be happy to send you a copy to review at that time, if you are interested.

Thank you for your time and cooperation

Annex 5 Amharic Version of Questionnaire for data collection on clients' satisfaction with pharmaceutical care in government hospitals of Addis Ababa, 2009

አዲስ አበባ ዩኒቨርሲቲ

ፋርማሲ ትምህርት ቤት

ፋርማሲቲክስ ትምህርት ክፍል

በአዲስ አበባ ከተማ ውስጥ በሚገኙ የመንግስት ሆስፒታሎች የፋርማሲ አገልግሎተ ያገኙ ተገልጋዮች ስለፋርማሲ አገልግሎቱ ያላቸውን አስተያየት ለመሰብሰብ የተዘጋጀ መጠይቅ፣ 2001 ዓ.ም

የመጠይቁ መለያ ቁጥር _____

የሆስፒታሉ መለያ ቁጥር _____

የፋርማሲ አገልግሎቱ ተጠቃሚዎች በጥናቱ ለመሳተፍ ፈቃደኝነታቸዉን የሚገልፁበት ቅጽ

ጤና ይስጥልኝ እኔ _____ እባላለሁ በአሁኑ ወቅት በአዲስ አበባ ዩኒቨርሲቲ፣ ፋርማሲ ትምህርት ቤት፣ የፋርማሲዩቲክስ ትምህርት ክፍል የጥናት ቡድን አባል ነኝ፤ በመሰራት ላይ ያለው ጥናት በዚህ ሆስፒታል ውስጥ የሚሰጠዉን የፋርማሲ አገልግሎት የጥራት ደረጃ የመገምገም ዋና አላማ ያለው ሲሆን ባጠቃላይ የጤና ግልጋሎቱን የጥራት ደረጃ በተለይም ደግሞ የፋርማሲ አገልግሎቱን የጥራት ደረጃ ለማሻሻል ይረዳል፣ ይህንን እውን ለማድረግ በዚህ ሆስፒታል የፋርማሲ ክፍል ስላገኙት አገልግሎት ያለዎትን አስተያየት በተመለከተ የተወሰኑ ጥያቄዎችን ልጠይቅዎት እወዳለሁ፣ መጠይቁ ከጊዜዎ ከ 5 — 10 ደቂቃ የሚወስድ ሲሆን በዚህ ጥናት ውስጥ የርስዎ ተሳታፊነት ሙሉ በሙሉ በርስዎ ፈቃደኝነት ላይ የተመሰረተ ነዉ፤ በዚህ ጥናት ውስጥ መሳተፍዎም ሆነ ላለመሳተፍ መወሰንዎ በሆስፒታሉ ውስጥ በሚያገኙነት አገልግሎተ ላይ ምንም አይነት ተጽእኖ የማይኖረው ሲሆን ቃለመጠይቁን በማንኛውም ሰአት ማቋረጥ ወይም ጥያቄዎችን አለመመለስ ይችላሉ፡፡ በጥናቱ ውስጥ ለተነሱት ጥያቄዎች የሚሰጡት ሙሉ በሙሉ በምስጢር የሚጠበቁ ሲሆን የርስዎም ስም በማንኛዉም መልኩ በጥናቱ ውስጥ አይገለጽም፤ እንዲሁም የሚአጡት ምላሽከርስዎ ማንነት ጋር በማንኛውም መልኩ አይያያዝም፡፡

በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት?

አዎ ☐ አይደለሁም ☐

ፈቃደኛ መሆናቸውን ካረጋገጡ ቃለመጠይቁን ይጀምሩ

ፈቃደኛ ካልሆኑ ወደሚቀጥለው ተገልጋይ ይሸጋገሩ

ቃለ-መጠይቁ የተደረገበት ቀን _____

የተጀመረበት ሰዓት_____

ያለቀበት ሰዓት_____

ክፍል አንድ፡- የጥናቱ ተሳታፊዎች ከሆስፒታል ፋርማሲው ባገኙት አገልግሎት ላይ ያላቸውን አስተያየት የሚዳስሱ ጥያቄዎች

1 =ጥሩ እይደለም (ጥአ)፣ 2= ደህና ነው (ደ)፣ 3= ጥሩ ነው (ጥ)፣ 4= በጣም ጥሩ ነው (በጥ) 5= እጅግ በጣም ጥሩ ነው (እበጥ)

ተ.ቁ	ጥያቄዎች	እበጥ	በጥ	ጥ	ደ	ጥአ
1.	የፋርማሲ ባለሙያው ስለርስዎ ጤንነት ለማወቅ ያለው ፍላጎት	5	4	3	2	1
2.	በፋርማሲው ውስጥ የሚሰሩ ባለሙያዎች ሙያዊ ችሎታና ብቃት	5	4	3	2	1
3.	በፋርማሲው ውስጥ የሚሰሩ ባለሙያዎች ለርስዎ ያሳዩት ትህትናና አክብሮት	5	4	3	2	1
4.	ከፋርማሲ ባለሙያው ጋር በምትነጋገሩበት ወቅት የነበረዎት ነፃነት/ንግግራችሁን ሌሎች ሰዎች ያለመስማታቸው ሁኔታ	5	4	3	2	1
5.	ከመድሃኒቱ ጋር በተያያዘ ስለሚከሰቱ ችግሮች ከባለሙያው ያገኙት ምክር ሁኔታ	5	4	3	2	1
6.	የመድሃኒት ቤቱ አገልግሎተ ቅልጥፍና	5	4	3	2	1
7.	መድሃኒቱን በሚሰጥዎት ወቅት የፋርማሲ ባለሙያው ያደረገው ጥንቃቄ	5	4	3	2	1
8.	ከፋርማሲው ያገኟቸው መድኃኒቶች ዋጋ አግባብነት	5	4	3	2	1
9.	የፋርማሲ ባለሙያው ከርስዎ ጋር በመነጋገር የሚያሳልፈው ጊዜ አግባብነት	5	4	3	2	1
10.	ስለመድሃኒቱ የፋርማሲ ባለሙያው የሰጠዎት የቃል መመሪያ ግልጽነት	5	4	3	2	1
11.	የፋርማሲ ባለሙያው በድሃኒቱ እንዴት መቀመጥ እንዳለበት የሰጠዎት በረጃ/ገለፃ	5	4	3	2	1
12.	የፋርማሲ ባለሙያው ለጥያቄዎችዎ የሰጠዎት መልሶች ተገቢነት	5	4	3	2	1
13.	ከመድሃኒት ህክምናው ስለሚያገኙት ውጤት በፋርማሲ ባለሙያው የተሰጠዎት መረጃ	5	4	3	2	1
14.	ከፋርማሲው የሚያገኟቸው መድሃኒቶች ለርስዎ ተስማሚ እንዲሆኑ የፋርማሲ ባለሙያው ከሃኪምዎ ጋር በመነጋገር የሚያደርገው ጥረት	5	4	3	2	1
15.	አገልግሎተ ለማግኘት ተሰልፈው የሚጠባበቁበት የጊዜ ቆይታ	5	4	3	2	1
16.	የታዘዘልዎት መድሃኒት በሆስፒታሉ ፋርማሲ ውስጥ የመገኘት ሁኔታ	5	4	3	2	1
17.	በተሰጠዎት መድሃኒት ላይ የተፃፉት የአጠቃቀም መመሪያዎች ግልጽነት	5	4	3	2	1
18.	ከፋርማሲው ስላገኟቸው መድሃኒቶች ጥራት ያለዎት አመለካከት	5	4	3	2	1
19.	የፋርማሲ አገልግሎት ለማግኘት የሚጠባበቁበት ቦታ ንፅህናና ምቾት	5	4	3	2	1
20.	ከሌሎች የሆስፒታሉ አገልግሎት መስጫ ቦታዎች አንፃር የመድሃኒት ቤቱ ቅርበት	5	4	3	2	1
21.	በዚህ ሆስፒታል ያገኙት የፋርማሲ አገልግሎት ባጠቃላይ	5	4	3	2	1

ክፍል ሁለት- እርስዎን በተመለከተ አተቃላይ መጠይቅ

1.1 ፆታ

☐ ወንድ ☐ ሴት

1.2 እድሜዎት ምን ያህል ነው? _____አመት

1.3 የጋብቻ ሁኔታ

☐ ያላገባ/ች ☐ አግብተው የፈቱ

☐ ባለትዳር ☐ የትዳር ጓደኛን በሞት ያጡ

1.4 በአሁኑ ወቅት ያለዎት የትምህርት ደረጃ

☐ ማንበብና መፃፍ አለችልም

☐ ማንበብና መፃፍ እችላለሁ (መደበኛ ያልሆነ ትምህርት/የሃይማኖት ትምህርት)

☐ አንደኛ ደረጃ ትምህርት (ከ 1ኛ-6ኛ ክፍል)

☐ መለስተኛ ሁለተኛ ደረጃ ትምህርት (ከ7ኛ-8ኛ ክፍል)

☐ ሁለተኛ ደረጃ/መሰናዶ ትምህርት (ከ 9ኛ-12ኛ ክፍል)

☐ ከፍተኛ ትምህርት (ሰርተፍኬት፣ ዲፕሎማ፣ የመጀመሪያ ዲግሪና ከዚያ በላይ)

☐ ሌሎች፣ ይገለፅ_____

1.5 የስራ ቅጥር ሁኔታ

☐ የመንግስት ሰራተኛ ☐ ሥራ የሌለው/የሌላት

☐ አርሶ አደር ☐ የግል መሥሪያ ቤት ተቀጣሪ

☐ ነጋዴ (በግል የንግድ ሥራ የተሰማሩ) ☐ መንግስታዊ ያልሆነ መሥሪያ ቤት ተቀጣሪ

☐ ተማሪ ☐ ጡረተኛ/ በጡረታ ከሥራ የተገለሉ

☐ ሌሎች፣ ይገለፅ_____

1.6 ሃይማኖት

☐ ኦርቶዶክስ ☐ ካቶሊክ

☐ ፕሮቴስታንት ☐ ሙስሊም

☐ ሃይማኖት የሌለዉ ☐ ሌሎች፣ ይገለጽ_____

1.7 የመኖሪያ አድራሻ

☐ አዲስ አበባ ከተማ ውስጥ ☐ ከአዲስ አበባ ከተማ ውጭ

1.8 ከአሁን በፊት ወደዚህ ሆስፒታል ፋርማሲ መጥተው ያውቃሉ?

☐ አዎ ☐ የለም

1.9 አሁን ወደዚህ ሆስፒታል ፋርማሲ የመጡት

☐ ለራስዎ መድሃኒት ለመዉሰድ ነው

☐ ለዘመድ/ጓደኛ መድሃኒት ለመውሰድ ነው

1.10 የክፍያ ሁኔታ

☐ መስሪያ ቤቴ ይከፍላል

☐ በነፃ ታካሚ

☐ በጥሬ ገንዘብ

ቃለ-መጠይቁን ጨርሰናል፣ ስላደረጉልን ትብብር ከልብ እናመሰግናለን

Annex 6 Amharic version of guide for key informant interviews with heads of pharmacy departments

አዲስ አበባ ዩኒቨርሲቲ
ፋርማሲ ትምህርት ቤት
ፋርማሲዩቲክስ ትምህርት ክፍል

በአዲስ አበባ ከተማ ውስጥ በሚገኙ የመንግስት ሆስፒታሎች ውስጥ የሚሰጠውን የፋርማሲ አገልግሎት የጥራት ደረጃ በተመለከተ ከፋርማሲ ክፍል ኃላፊዎች ጋር ለሚደረግ ቃለ-መጠይቅ የተዘጋጀ *መመሪያ*

መግቢያ፡- ጤና ይስጥልኝ ስሜ እስክንድር እሸቱ ይባላል፡፡ በአዲስ አበባ ከተማ የሚገኙ የተመረጡ የመንግስት ሆስፒታሎች ውስጥ የሚሰጠውን የፋርማሲ አገልግሎት የጥራት ሁኔታ ለሚገመግመው ጥናት ዋና ተመራራማሪ ነኝ፡፡ በፋርማሲ ክፍሉ ስለሚሰጡ አገልግሎቶች የጥራት ደረጃ ለመነጋገር ውድ ጊዜዎን ሰውተው ፈቃደኛ ስለሆኑልኝ ከልብ አመሰግናለሁ፡፡

የቃለ-መጠይቁ ዋና አላማ፡-

የፋርማሲ አገልግሎትን የጥራት ሁኔታ የመገምገም ስራ በአገልግሎቱ የጥራት ደረጃ ላይ የሚከሰቱ ችግሮችን እንደዚሁም የጥራት ደረጃው ላይ የሚደረጉ መሻሻሎችን ለመከታተል ከፍተኛ አስተዋጽኦ እንዳለው ይታወቃል፡፡ በዚህም ረገድ በፋርማሲያችሁ ውስጥ የምትሰጡትን አገልግሎት በተመለከተ ያለዎትን የግል አስተያየት በግልጽ እንዲነግሩን እንፈልጋለን፡፡ ይሄም ከጊዜዎት ከአንድ ሰዓት ያነሰ ጊዜ ይወስዳል፡፡ በቃለመጠይቁ ወቅት የሚያነሱዋቸውን ነጥቦች ሙሉ በሙሉ ለማስቀረት ይረዳን ዘንድ ይህ ቃለ-መጥይቅ በመቅረጸ-ድምጽ የሚቀዳ ይሆናል፡፡ ይህም በመሆኑ ድምፅዎን በሚሰማ መልኩ ጮክ ብለው እንዲናገሩ በማክበር እጠይቃለሁ፡፡ በዚህ የቃለ-መጠይቅ ሂደት የሚገኙ ማናቸውም መረጃዎች በምስጢር የሚጠበቁ ይሆናል፡፡ ይህም ማለት የሚሰጡንን መረጃ ከጥናት ቡድኑ አባላት ውጭ ለማንም የማናሳይ ሲሆን የሚዘጋጁ የቃለመጠይቆች ዘገባዎችም እርስዎን እንደ መረጃ ሰጪ የማይጠቅሱ ይሆናሉ፡፡ እርስዎ ለመናገር ስለማይፈልጉት ነገር ለመናገር እንደማይገደዱ እና ቃለመጠይቁን በማንኛውም ጊዜ ማቋረጥ እንደሚችሉም ላስታውስዎት እወዳለሁ፡፡

በቃለ-መጠይቁ ለመሳተፍ ፈቃደኛ ነዎት?

አዎ ☐ አይደለሁም ☐

በቃለመጠይቁ ለመሳተፍ ፈቃደኛ ከሆኑ ቃለ-መጠይቁ ይጀምራል

በቃለመጠይቁ ወቅት የሚነሱ ነጥቦች ዝርዝር፡-

1. በሆስፒታላችሁ እንዲሁም በፋርማሲ ክፍሉ ውስጥ የሚሰሩ የጥራት ማረጋገጫና የአገልግሎት ጥራት ማሻሻያ ስራዎች ምን ይመስላሉ?
2. በሆስፒታላችሁ የሚሰሩ ፋርማሲስቶች የበሽተኞችን መረጃ (laboratory data and other medical information) የማግኘታቸውን ሁኔታ እንዴት ይገልፁታል?
3. በሆስፒታላችሁ የሚሰሩ ፋርማሲስቶች የሚሰሯቸውን ስራዎች የመመዝገብ ሁኔታ ምን ይመስላል?
4. በፋርማሲስቶች እና ፋርማሲ ቴክኒሻኖች መካከል ያለዉን የስራ ልዩነት እንዴት ይመለከቱታል? ምን አይነት የስራና የሀላፊነት ልዩነቶች አሉ?
5. በሆስፒታላችሁ አልጋ ይዘው ለሚታከሙ ህመሞን የፋርማሲ ክፍሉ ምን ምን አይነት አገልግሎቶች ይሰጣል? የሚከተሉት አገልግሎቶች አሉ?

   Modification of doses for inpatients (how?), medication use evaluations (audits) in the wards with structured methods, pharmacokinetics and therapeutic drug level monitoring, medication history taking and patient profile monitoring for inpatients, provision of advise and counseling for inpatients, educating patients during hospitalization and discharge, education and training of other health care professionals?
6. በሆስፒታላችሁ ውስጥ "ADR reporting" ምን ይመስላል? የፋርማሲ ባለሙያዎችስ ተሳትፎ ምን ይመስላል? እስካሁን ምን ያህል ሪፖርቶች ተደርገዋል?
7. ለፋርማሲ ክፍሉ የተለያዩ አገልግሎቶች የተመደበው ቦታ በቂነት ምን ይመስላል?
   በቂ ቦታ ከሌለ ምክንያቱ ምንድን ነው?
8. ፋርማሲስቶች በተለያዩ ዋርዶች ውስጥ ያላቸው ተሳትፎ ምን ይመስላል?
   ፋርማሲስቶችን በዋርዶች ለማሳተፍስ የተሰሩ ስራዎች ምን ይመስላሉ?
9. የፋርማሲ ባለሙያዎች በሥራቸው ያላቸዉን እርካታ/ደስተኝነት በተመለከተ ያለዎት ግምገማ ምን ይመስላል?
   ሀ) በሥራቸው ደስተኛ እንዲሆኑ የሚያደርጓቸው ነጥቦች ምን ምን ናቸው?
   ለ) በሥራቸው ደስተኛ እንዳይሆኑ የሚያደርጓቸው ነጥቦችስ ምን ምን ናቸው??
10. ከዚህ በተጨማሪ ሊነግሩኝ የሚፈልጉት ነገር ካለ እድሉን ለርስዎ ልስጥ

ፈቃደኛ የሚሆኑ ከሆነ ከአንድ ወር በኋላ ለፋርማሲዩቲክስ ትምህርት ክፍል የማቀርበውን የዚህንና የሌሎችን ቃለመጠይቆች ረቂቅ ዘገባ ለርስዎም ብልክልዎት ደስ ይለኛል

ስለሰጡኝ ጊዜና ስላደረጉልኝ ትብብር ከልብ አመሰግናለሁ

Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented for a degree in any other university.

Name: Eskinder Eshetu
Signature: _____

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

Name: Teferi Gedif (PhD)
Signature: _____

Place and date of submission: Addis Ababa, Ethiopia
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