ASSESSMENT OF COMMUNITY'S USE AND PERCEPTION ON THE EXTENDED ROLES OF PHARMACISTS IN COMMUNITY PHARMACIES OF ADDIS ABABA, ETHIOPIA

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This is to certify that the thesis prepared by Kefyalew Zeleke entitled Assessment of public's use and perception on the extended roles of pharmacists in community pharmacies of Addis Ababa, Ethiopia, and submitted in partial fulfillment of the requirement of the degree of masters of science (MSc) in Pharmacoepidemiology and Social pharmacy complies with the regulation of the University and meets the accepted standards with respect to originality and quality.

Signed by the examining committee

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Chair of the Department

Abstract

Assessment of public's use and perception on the extended roles of pharmacists in community pharmacies of Addis Ababa, Ethiopia

By: Kefyalew Zeleke

Addis Ababa University, 2015

Community pharmacies are the most convenient place for providing preventive health care services for the local community because of their characteristic accessibility. Studies in many countries have documented positive outcomes concerning community pharmacists' involvement in preventive health care services such as diagnostic screening and chronic disease management services. In Ethiopia, however; these services have been under-utilized resources. The perspective of the community is important to consider when expanding the horizon of pharmacy practice. The purpose of this study is to determine the extent of use of community pharmacies and assess the perception of community on pharmacists' extended roles in Addis Ababa. Community based cross-sectional study was conducted and semi structured questionnaire was used to collect information from the community. Response rate was 91 % (1152/1268) and 66% of the respondents had made at least one visit to the community pharmacies before the interview date. Most of the respondents visited community pharmacy for purchasing prescription medicines (88.7%) and non-prescription medicines (43.3%). Convenience of location (85%), quality services (36%) and presence of wide range of products (37%) were the major predictors of the respondents' choice of particular community pharmacy. Majority of the respondents (61%) welcomed the introduction of the extended roles of community pharmacists, particularly screening for blood pressure (94.7%), blood cholesterol (89.5%) and blood glucose (91.0%), immunization, chronic disease management and counseling services (93.6%).

Community pharmacists' integration in preventive health care services is required. Regulatory framework of practice for involvement in expanded services is needed.

Keywords: community pharmacist, community's perception, extended roles, Ethiopia

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List of acronyms

AACAIB	Addis Ababa City Administration & Information Bureau
AAU	Addis Ababa University
AOR	Adjusted odds ratio
CI	Confidence interval
CSA	Central statistical Agency
FMOH	Federal Ministry of Health
FIP	International Pharmaceutical Federation
GPs	General practioniors
HHs	Households
HIV	Human Immune Deficiency Virus
OTC	Over the counters
PI	Principal Investigator
RCT	Randomized clinical trial
SD	Standard deviation
SPSS	Statistical package for social sciences
STIs	Sexually Transmitted Infections
NCD	Non Communicable Disease
WHO	World Health Organization

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1. Introduction

1.1. Background

The contribution that community pharmacists could make in the public health issues is gaining interest recently. Many studies have shown that community pharmacies are the right place for providing credible public health service for large segment of the population because of their characteristic accessibility, with frequent contact with the public and convenient working hours as well as wide geographic distribution (Paluck *et al*., 1994; O'Loughlin *et al.,* 1999; Chandra *et al.,* 2003).

Studies from many countries have documented positive outcomes concerning the roles of community pharmacy services on a wide range of important public-health concerns, including diabetes (Hersberger *et al., 2006;* Snella *et al.,* 2006), hypertension and dyslipidemia (Snella *et al*., 2006), smoking cessation (Maguire *et al*., 2001), contraception (Anderson *et al*., 2006), osteoporosis (Goode *et al*., 2004) and immunization (Weitzel and Goode, 2000; Hess *et al*., 2010).

It has been stated that primary prevention provides education and decreases susceptibility and risk factors for disease. A pharmacist service such as vaccinations is one example that could fit into this category. Secondary prevention is aimed at early detection and treatment to avoid the consequences of illness. Screening for diabetes, cholesterol, blood pressure and others is a secondary prevention service that could be provided by pharmacists. Tertiary prevention focuses on individuals with symptomatic disease. The goal is to slow disease progression and alleviate the effects of the disease. Pharmacists who encourage patients with diabetes or heart disease to

take their medications appropriately (pharmacotherapy) are involved in tertiary prevention (Karen *et al*., 2010).

WHO also enforces pharmacists to share responsibility in self-care, health promotion and disease prevention activities, which are the goals for primary health care (WHO, 1996).

The broader involvement of community pharmacists in the public health roles could also contribute to cost savings on the health care system. One study report from Australia showed that well trained and remunerated pharmacists were able to save the health care cost six times greater than those of a control group with no access to the same education or remuneration. It was estimated that adequately trained and remunerated pharmacists would save the health care system US$100 million a year (Benrimoj and Frommer, 2004).

Consequently, the extended roles of the community pharmacists in the multidisciplinary provision of healthcare have been acknowledged in many developed countries such as Australia, United States and United Kingdom (Haig and Kiser, 1991; Adepu and Nagavi, 2006). In USA, many community pharmacies offer smoking cessation programs, weight management and nutrition wellness sessions, and disease state management programs for asthma, cholesterol, diabetes, hypertension, peptic ulcer disease and anticoagulation (Giberson *et al.*, 2011). In Germany, a pharmacy-based intervention service for asthma patients was proven effective and therefore the health insurance fund made a contract with the representatives of community pharmacists in order to take part in this programme (Eickhoff and Schulz, 2006).

However, these services are underutilized resources in Ethiopia and no study has addressed the community's need to be provided in the community pharmacies.

Since patient oriented pharmacy practice is being implemented in Ethiopia, it is hoped that the introduction of the extended roles of community pharmacists could definitely complement their clinical practice. However, before the introduction of new services, the needs of the community should be appropriately assessed which requires some level of community involvement in the assessment to ensure that their needs are appropriately addressed as well the barriers or facilitating factors could be identified, which could help the community pharmacies to improve their services.

The main objective of the current study is to assess the community perception on the extended roles of community pharmacists namely, blood glucose testing/monitoring, blood pressure measuring, cholesterol testing/monitoring, management of long term conditions (asthma, diabetes), immunization and sexual health service. The study also investigated the public's use of community pharmacy to reflect on the status of the interaction between the public and the community pharmacists.

1.2. Statement of the problem

An earlier study by WHO documented a shortage of more than 4 million health care workers worldwide. About 57 countries fall below the WHO threshold of 2.5 healthcare professionals per 100 populations of which Ethiopia is one of them (WHO, 2006). These shortages of qualified health workers have a negative consequence on the health outcomes of the society and form a barrier to a country aiming to be a middle income country by 2025. This could not happen unless the country has healthy society. Therefore, the additional capacity available in community pharmacies may contribute a lot if this target has to be met (Beedemariam and Gedif, 2013).

Furthermore, non-communicable diseases have emerged as important public health problem in Ethiopia very recently. WHO estimated 34% of Ethiopian population is dying from NCD, with a national cardiovascular disease prevalence of 15%, cancer and chronic obstructive pulmonary disease prevalence of 4% each, and diabetes mellitus prevalence of 2% (WHO, 2011). Similarly, systematic reviews on the impact of NCDs revealed that: cardiovascular disease accounts for 24% of deaths in Addis Ababa, cancer causes 10% of deaths in the urban settings and 2% deaths in rural setting, and diabetes causes 5% and chronic obstructive pulmonary disease causes 3% of deaths. The rate of Hospital admission due to these diseases have also increased between 1970s and 2000s: cardiovascular disease accounts for 3%-12.6%; cancer accounts for 1.1%-2.8%, diabetes accounts for 0.5%-1.2%, and chronic obstructive diseases account for 2.7%-4.3% of morbidity. Associated risk factors documented were: hypertension, tobacco-use, and harmful use of alcohol, overweight/obesity, and khat-chewing (Misganaw *et al*., 2014), all of which can be attributed to modifiable behavioral risk factors (Mokdad *et al*., 2004).

Hence, many studies suggested that one of the ways forwarded to solve such problems is engaging of the professionals in multidisciplinary expertise and it is believed that the underutilized resource, particularly pharmacists could make a greater contribution in the provision of quality health care (WHO, 1996). This is especially mandatory in developing countries, where there is dearth of qualified health care professionals (Harvey, 1993; Udu *et al*., 2002; Smith, 2004). Anderson (2007) in his study also emphasized that pharmacist's involvement in public health is a step in the right direction as the profession attempts to increase relevance and service delivery.

Engaging community pharmacists in preventive health services has ample advantages. They could lower overall health care expenditures over time by addressing potential health problems (Marin and Zitter, 2004). One study has estimated that by preventing cardiovascular diseases, the economic health burden would decline by nearly 17%, which translates to US$149 billion (Trogdon *et al*., 2007). As indicated by Pennant *et al (*2010), besides trying to reduce cardiovascular risk factors such as tobacco use, poor diet, physical inactivity, alcohol consumption, regular blood pressure checkups and cholesterol screenings have been identified as useful preventive care services. Blood pressure and cholesterol screenings are quick and simple and can aid in the timely diagnosis of hypertension and hyperlipidemia (Stuart-Shor *et al*., 2006). Many studies in USA have witnessed the usefulness of these screenings and, as a result, aimed to increase their utilization among the eligible United States population (Nelson *et al*., 2002).

Jesson (2007) also argued that access is a key attribute of community pharmacy, which could even target too deprived communities. Community pharmacists may also be able to capture populations who are not motivated to use other health services (McGlynn *et al.*, 2000), that is

community pharmacies are visited by both healthy and sick people, thus having access to a large proportion of the population before major disease is evident (Blenkinsopp *et al*., 2000).

In UK, for example, around 90% of the population visits a community pharmacy at least once each year (Royal Pharmaceutical Society of Great Britain, 1996). For these reasons, community pharmacies may be suitable settings for provision of diagnostic screening to facilitate earlier diagnosis of previously unrecognized conditions, or identification of risk factors for major diseases; especially opportunistic screening services (Ayorindea *et al*., 2013).

Another benefit of extending the horizon of pharmacists' roles is that it can increase their job satisfaction and hence decrease job turn over. A study of pharmacy work force in Ethiopia has indicated the fourteen years (1993-2006) annual average pharmacists' loss rate to be 6.5%, which was predominantly attributed to lack of satisfaction with their job (Beedemariam and Gedif, 2013). It was also argued that pharmacists' perceived utilization of their skills could affect their level of job satisfaction (Kerschen *et al*., 2006).

Despite the increased interest in broadening the role of community pharmacists, there is a need to know the perception of the community because extending the roles of the community pharmacists' roles could only be successful if the new roles are what community want and find it acceptable (Laliberté *et al.,* 2012).

This study could also help us reflect on the level of public's use of community pharmacies. Information about public utilization of pharmacists helps in meeting customers' needs, in enhancing the quality of their services and improving customer satisfaction as well as help in the development and in optimizing the uptake of pharmacy tools and services.

Greater customer satisfaction strengthen the relation between the pharmacists and the community and this in turn, be translated into greater loyalty to particular pharmacies, which can facilitate the provision of pharmaceutical care through better customer–pharmacist communication (Oparah and Kikanme, 2006)

There is scarcity of information related to the perception of community towards the extended roles of community pharmacists in Ethiopia. Besides, information regarding the public's use of community pharmacy services was not documented in Ethiopia.

Accordingly, this study was undertaken to assess the community's perceptions on the extended roles of community pharmacists in Addis Ababa, Ethiopia.

1.3. Literature review

1.3.1. Roles of community pharmacists in public health: International scenario

Since 1970, community pharmacists have been encouraged to play active role in public health by displaying health education literature and a 1978 working party on general practice pharmacy argued that health education and diagnostic testing were their important roles (Anderson, 2002). As documented by a survey run jointly by the Family Planning Association and the Pharmaceutical Society, many pharmacists were already involved in giving advice on contraception and related problems, and were enthusiastic to extend this role further (Pilot scheme for extending pharmacists' advisory role Pharmaceutical, 1982). It was also found that pharmacists were able to play an active role in safety of medicines, dental health, prevention of coronary diseases and patient compliance and information was conveyed to patients using posters, leaflets and audiovisual displays (Blenkinsopp *et al.,* 1999). Some pharmacists were trained to monitor blood pressure. A systematic review report from Pharmacy Health Link demonstrated the effectiveness of pharmacy-based interventions in reducing high-risk behaviors and risk factors for coronary heart disease (Blenkinsopp, 2003) and of pharmacy involvement in sexual health services and services for drug users (Anderson *et al*., 2003).

1.3.1.1. Diagnostic screening

In Estonia, Netherlands, South Africa, Brazil, Nigeria and Belgium, within the scope of extended services, many community pharmacies provide diagnostic screening for blood pressure, blood cholesterol, and capillary glucose)(Flobbe *et al*., 1999; Wasmann-Van Wisse *et al.,* 2002; Simoens *et al.,* 2005; Pamela, 2006; Volmer *et al.*, 2006; Adje and Oparah, 2013). In German, apart from the promotion of rational prescribing and appropriate use of medicine, community

pharmacists provide health promotion, drug information, pharmaceutical care and preventive care services for asthma, diabetes, and hypertension (Eickhoff *et al.,* 2001; Eickhoff and Schulz, 2006).

A survey in Australia found significantly more positive attitudes in those that had experience of pharmacy health screening or promotion than those that did not. Attitudes in those with no experience of public health services were also found to be significantly more positive compared to a similar survey carried out around seven years previously (Teh *et al*., 2001).

Community pharmacists could also be involved in osteoporosis risk assessment. Community pharmacy Osteoporosis risk screening service was provided for women in Thailand (MacLaughlin *et al*., 2005; Chaiyakunapruk *et al*., 2006; Johnson *et al*., 2008). Several studies described the uptake assessments on osteoporosis risk and bone density measurement with advice and referral. Overall the results show that community pharmacy-based bone health assessments can identify people who need to be referred for further medical assessment (Elliott *et al*., 2002a, 2002b; Lata *et al.,* 2002; Lai *et al.,* 2003; Cerulli & Zeolla, 2004). There is some evidence that advice given to women identified to be at lower risk may result in increased dietary intake of calcium and increased exercise. User feedback about the services was highly positive (Gray *et al.,* 2002; Cerulli & Zeolla, 2004). A cost-effectiveness evaluation found that offering such a service could be financially viable depending on the local situation (Cerulli & Zeolla, 2004). In Nigeria , the community pharmacists' osteoporosis educational program was a community pharmacist intervention pilot project in which high risk individuals were followed up for up to six months. At the end of the study, more than half of the patients began taking calcium supplementation, an equal number sought consultation from primary care physicians,

and nearly one third obtained bone density test. Apart from screening for osteoporosis, portable devices like the Lunar Achilles Utrasonometer have been used to do actual determination of bone density in the pharmacy and this demonstrated that pharmacist's involvement in osteoporosis is both feasible and practical (Newman and Hanus., 2001). A study which had assessed the impact of a community pharmacy osteoporosis risk assessment service in collaboration with GP practices showed that patient knowledge about bone health increased, appropriate daily calcium intake increased and that appropriate high risk patients were referred to the GP (Gray *et al*., 2002). In USA, nearly all individuals receiving community pharmacy osteoporosis screening and education reported that the information provided increased awareness (98%), that they were satisfied with the interaction (92%) and found the advice valuable or highly valuable (Law and Shapiro, 2005; McLaughlin, 2005).

1.3.1.2. Sexual health advices

Community pharmacists have also an increasingly important role in sexual healthcare services. They are providing emergency contraception (Harrison-Woolrych *et al*., 2001) pregnancy tests, condoms, and treatment for vaginal candida infection (Hassell *et al*., 2001), information on hepatitis B and HIV (Watson *et al*., 2003) and sexual health promotion (Vic, 2004). Two pilot studies from UK and Netherlands demonstrated the feasibility of providing Chlamydia screening through community pharmacies. The authors of the UK study conclude that the provision of Chlamydia testing in community pharmacy seemed to increase access to testing among those who would not otherwise have been tested, and could potentially reduce demand in other sexual health services, and that community pharmacies are a suitable location for Chlamydia testing and treatment. Clients valued speed and convenience in the service and a friendly, non-judgmental approach (Van Bergen *et al*. 2004; Baraitser *et al.,* 2007).

In Swedish, the majority of participants in studies on health screening(71%) and promotion (74%), and Chlamydia testing (75%) thought that pharmacists were appropriate providers of these(Lawrie *et al*., 2004; Baraitser *et al*., 2007; Bjorkman *et al*., 2008).

1.3.1.3. Immunization

Immunization services were being given by community pharmacists in USA and Aderemi-Williams and Agile (2007) argued that community pharmacies could be possible centers for routine immunization. A study from USA also showed that pharmacists have been already permitted by law to administer vaccination to adults in all 50 states (Krisberg, 2012). The vaccines administered by pharmacists to adult patients included influenza, pneumococcal, tetanus, diphtheria, pertussis, hepatitis A, B, C, Human papilloma virus, measles, mumps, rubella and shingles vaccines (Neuhaser *et al.,* 2004). Evidence in published medical literature with respect to immunization services suggests that pharmacies are uniquely positioned to influence previously difficult-to-reach populations (Hogue *et al*., 2006; Uscher-Pines *et al., 2010;* Westrick, 2010; Crawford *et al*., 2011). Francis and Hinchliffe (2010) conclusion based on a review of pharmacy-led immunization programs found that pharmacies could be effective in immunizing high-risk, older adults who are more likely to need prescription medications and, therefore, use pharmacy services. Pharmacist interventions have been shown to improve medication adherence, provide increased access to health care expertise and advice and perform a variety of primary care services (Jiang *et al*., 2010). It has also been supported by Weitzel and Goode (2000) that immunization services can be provided safely through community pharmacies. Pharmacy patient medication records are effective in identifying ‘at risk’ clients who can then be invited for immunization and pharmacy-based services can extend the reach of immunization programmes (Davidse & Perenboom, 1995).

Users' satisfaction with the immunization service is high and support for non-physician immunization was found to be greater for adult than for child immunization (Grabenstein and Ernst *et al.,* 2001). A UK pharmacy-based immunization service (for influenza in particular) seems to have been reasonably well-accepted by patients, physicians and pharmacists (Hind *et al*., 2004). A survey of users of pharmacy-based immunization services conducted in the US (Grabenstein, 2001) also stated a preference for pharmacy immunization based on access, convenience, trust, and cost. Most users reported being satisfied with the service received and said they would recommend it to others. A study report in West Virginia, USA also concluded that convenience of location and opening times were the most influential factors in mothers' preferences for their children to be vaccinated at the pharmacy (Ndiaye *et al*., 2003). In the Netherlands, community pharmacists worked with local family doctors to promote vaccination and the coverage of vaccination was found to increase by 50% to 75.5% in the intervention group, compared with an increase of 18% for a group of comparable non-participating family doctors (Davidse and Perenboom, 1995).

1.3.1.4. Weight management services

Regarding weight management services, one study in Denmark reported the results of 'the effort to lose weight for obese clients. Average weight loss (self-reported by clients measured on scales in the pharmacy) was 5.3 kg for females and 6.2 kg for males. At one-year follow-up, 20% of clients who completed the course had maintained a weight loss of 5 kg or more (Tubro, 1999). In a Swiss study, 3800 people who had participated in community pharmacy-based screening for diabetes were asked to take part in a program of lifestyle counseling. Of the 1370 who took part, the mean weight loss was 0.6–1.9 kg at 3 months. People in the high-risk counseling group (245) showed weight loss of 2.25% at 3 months and 2.74% at 1 year (Botomino *et al.,* 2008).

In Sweden and Belgium, fitness check services, providing advice on weight loss, diet and health, as well as lectures on fitness, health and group exercises have been delivered (Westerlund and Björk, 2006; Mehuys *et al*., 2009).

1.3.1.5. Chronic disease management

The evidence for positive outcomes of community pharmacists' involvement at improving general health and maintaining the health of those with existing disease is strongest, particularly in cardiovascular disease prevention, blood pressure management, diabetes and possibly asthma and heart failure (Van Wijk, 2005; Blenkinsopp and Bond, 2008; Agomo, 2012). Community pharmacies have an important role to play in diabetes management (Johnson and Beach, 1997; Blake *et al.,* 1999; Jacobson, 2000). In addition to dispensing prescription medications, their involvement shows beneficial effects in patient education and disease management (McElnay *et al.,* 1993; Teh *et al.,* 2001). Diabetes management in both clinics (Jaber *et al*., 1996; Davidson *et al*., 2000) and community pharmacy settings are highly effective and a high proportion of consumers currently support pharmacist provision of health testing services. Such programs may include a range of services: support of self-blood glucose monitoring and promoting patient adherence with medication and other components of self-management, identifying and resolving drug-related problems, providing targeted education, monitoring blood pressure, weight and lipids (Armour *et al*., 2004; Clifford *et al*., 2005). In Finland and Portugal, since the late 1990s, pharmacies have actively participated in national public health programs, in the areas of asthma and diabetes, and in the treatment and prevention of heart disease (Bell *et al.,* 2007; Costa *et al.,* 2006).

There is also evidence from Australian studies of effectiveness of pharmacy-based diabetes management services that lead to a significantly greater reduction in HbA1c compared with controls. An Australian RCT also showed that pharmacy-based targeting of people with risk factors for diabetes together with 'point of care' blood glucose testing prior to referral was more effective and cost-effective than targeting and referral alone (Krass *et al*., 2007b). A survey in Sweden found that around three quarters of pharmacy customers thought that pharmacy could influence people's willingness to improve their health (Larsson *et al.*, 2008).

With respect to blood pressure management, a study in Finland found out that there is room for improvement in hypertension management and that many problems were caused by patients' behavior with medicines (Enlund *et al*., 2001). In Switzerland, "resistant hypertension" was the main problem which was caused by poor adherence (Burnier *et al.,* 2001). Under the name "disease management," the Portuguese has implemented a pharmaceutical care program for hypertensive patients and the program resulted in significantly better blood pressure control (Garcao and Cabrita, 2002). A pilot study in the UK showed that the implementation of a pharmacist-led hypertension clinic improved blood pressure control and appropriate prescribing of anti-platelet agents and statins for primary prevention of coronary heart disease and secondary prevention of arthrosclerosis (Reid *et al*., 2005). Similarly, in rural Portugal, a RCT in one community pharmacy tested an intervention comprising an individualized plan for action in relation to diet, physical activity, obesity and alcohol intake (Garcao & Cabrita, 2002) and blood pressure control were found to be improved significantly in the intervention group. A similar study by Cote *et al (*2003) also found that the blood pressure control was improved in the intervention arm of a community pharmacy-based 'health promotion programme.

Many studies into the effect of pharmaceutical care for asthma patients in community pharmacies have been conducted in a number of countries, including Denmark, Finland, Germany, Malta, Northern Ireland, the Netherlands and Spain. Most studies were successful and showed significant impact on economic, clinical and humanistic outcomes (Grainger-Rousseau and McElnay, 1996; Narhi *et al.*, 2000; Cordina *et al., 2001;* Herborg *et al.*, 2001; Schulz *et al.*, 2001; Andres and Garcia, 2003; Mangiapane *et al.*, 2005). A study in New Zealand determined the impact of a community pharmacy-based pharmaceutical care service to asthma patients. The service involved the creation of a patient record, identification of medication-related problems and development of strategies to resolve these problems and monitor outcomes. The study showed that this service led to improvements in asthma management and quality of life for the majority of patients (Shaw, 2000). In USA, the majority of participants receiving self-management interventions from community pharmacists for asthma (89%) and diabetes (97.5%) were satisfied with the care they received from the pharmacist (Nahri *et al,* 2002; Fera *et al.*, 2008). However, only 71% and 61% of those receiving the asthma self-management interventions were satisfied by the education and counseling provided by physicians and nurses respectively (Nahri *et al*, 2002).

1.3.2. Community pharmacy services from users' perspective

The reason and frequency of visits to community pharmacies varies in different countries. In terms of using community pharmacies, about 70.8 % in Malta, 67.4% in Jordan, 52% in Qatar and 74.6% in Northern Ireland had reported to have given at least one visit to community pharmacy per month (Cordina *et al*., 1998; Wazaify *et al.*, 2005; Wazaify *et al*., 2008; El Hajj *et al.*, 2011).

In Jordan, the sex and age of participants were significantly associated with the frequency of pharmacy visit with males (X^2= 8.865, P<0.05) and those older than >=60 years old (X^2= 11.7, P<0.05) visiting community pharmacies on a more regular basis (Wazaify *et al*., 2008). In Zimbabwe, respondents aged 40 years and over visited the pharmacy more frequently than those aged less than 40 years (p = 0.001)(Govo *et al*., 2008). Female clients visited community pharmacies more frequently than male ones (p = 0.002). In Northern Ireland, females and those >60 years visited community pharmacies on a more regular basis than males or other age groups (P < 0.001) (Wazaify *et al.,* 2005). In UK, Women (76%) were more likely to have visited community pharmacy than men (63%) (Boardman *et al.,* 2005).

The main reasons for visiting community pharmacies were to purchase prescription medicines followed by OTC medicines. Accordingly, in terms of seeking for medicines prescribed by doctor, the reported occurrence was 84.30% in Sudan, 91% in Zimbabwe, 46.70% in India, 90% in Malta, 55.30% in Palestine (West Bank), 86.80% in Bosnia and Herzegovina, 83% in Qatar and 59% in UK. Similarly, to purchase OTC medicines, the reported occurrence was 70.90% in Sudan, 47.80% in Zimbabwe, 23.40% in India, 65% in Malta, 42.0% in Palestine (West Bank), 81.90% in 83% in Bosnia and Herzegovina, 93% in Qatar and 40% in UK. In terms of seeking for health related advice, the reported occurrence was 41.7% in Sudan, 34.30% in Zimbabwe, 9.10% in India, 40.00% in Malta, 28.0% in Palestine (West Bank), 39.00% in Bosnia and Herzegovina,35% in Qatar and 12% in UK and to purchase para- pharmaceutical products, the reported occurrence was 37.00% in Sudan, 34.30% in Zimbabwe, 15.50% in India, 25% in Malta, 21.400% in Bosnia and Herzegovina, and 66% in Qatar (Cordina *et al.,* 1998; Boardman *et al.,* 2005;Wazaify *et al., 2005* ; Govo *et al*., 2008; El Hajj *et al*., 2011; Khdour and Hallak, 2012; Catic *et al.,* 2013;Mahmoud *et al*., 2014).

1.3.2.1. Loyalty to single community pharmacy

There was a difference in the level of community pharmacy users' loyalty to a single community pharmacy. Accordingly, 37.5% in Sudan, 62.8% in Malta, 66.4% in Jordan, 68.5% in Northern Ireland, 61.0% in Bosnia and Herzegoviniaand, and 38.8% in Zimbabwe declared visiting the same pharmacy most frequently (Cordina *et al.*, 1998; Wazaify *et al.*, 2005; Govo *et al*., 2008, Wazaify *et al*., 2008; Catic *et al*., 2013, Mahmoud *et al*., 2014).

Many factors influence the choice of a particular pharmacy. These factors show that the patients' decisions are based on multiple and various grounds. Factors described by Wirth *et al* (2010) in Malta were: pharmacy location (indicated by 80% of respondents); friendly staff (44%); fast service (29%); and appearance of a pharmacy (17%). Similar outcomes were shown in Qatar, where the location of a pharmacy (90% of respondents), provision of a good range of products and services (79%), convenient pharmacy opening hours (76%), and pharmacist's professional knowledge (66%) were considered primary choice factors (El Hajj *et al*., 2011). In Bosnia and Herzegovina(Catic *et al*., 2013), proximity and reasonable prices (74.4%), wide range of products (71.7%), impact of advertisement and image of pharmacy(43.3%), established relationships with pharmacist(40.0%) and sympathy for the pharmacist(29.4%) were important factors. In Sudan, 68% preferred a pharmacy that was close to their home, 71.1% for friendliness of pharmacy staffs, 69.6% for good and competitive price, 16.9% preferred it for product availability, and 86.8% of patients / consumers preferred the pharmacy because of reliable advice (Mahmoud *et al.*, 2014). In Palestine, proximity of the pharmacy (31.8%), wide range of products/services (24.5%), convenient working hours (19.0%), efficient and prompt services (13.2%) were important factors (Khdour and Hallak, 2012). In

Zimbabwe (Govo *et al.*, 2008), convenience (62.9 %), keen interest taken by and good advice given by the pharmacist (27%), wide range of products/services (53.7%) were the main factors. Similarly, in Jordan proximity of the pharmacy to the individual's home (26.2%) was the primary factor and the second and third most commonly cited reasons for using a particular pharmacy were the provision of good advice (20.9%) and a prompt service (12.4%)(Wazaify *et al.*, 2008).

1.3.3. Perception of the community on pharmacists' extended roles

Provision of diagnostic testing (87%) and presence of a private consultation area in the pharmacy (80%) were the two main areas the Maltase communities are interested to get in the community pharmacies (Wirth *et al.*, 2010).

In the North east of Scot land; UK, respondents were particularly in favor of community pharmacists providing support for other health professionals 74(77%), for healthy living sessions 71(74%) and for health screening to be provided by pharmacists 68(71%). However, respondents were less in favor of pharmacists' involvement in monitoring of long term illness such as asthma (22%) (Iverson *et al*., 2001).

A structured interview on communities in West Bank – Palestine indicated that consumers were happy to receive different extended services in the community pharmacy. Most of the proposed extended services appear to be in high demand with 72.9% requesting weight, height and temperature measurement, 87.5% blood glucose monitoring, 66.8% blood pressure monitoring and 59.1% cholesterol level monitoring (Khdour and Hallak, 2012).

In Sudan, the services mostly favored by the consumers were: medication review followed by blood pressure measurement (57.6%), availability of consultation rooms (51.2%) and blood glucose testing (44.8%). Services which received low profiles were: pregnancy testing (29.6%), smoking cessation (14.1%), and vaccination for children (28.8%) (Mahmoud et *al*., 2014).

In Jordan, one in every four participants (26.8%) mentioned that study participants sought other services than medicines from community pharmacies, including blood pressure measurement (38.1%), blood glucose measurement (15.7%) or both (11.4%). Moreover, 22.9% of the respondents to this question (n = 291) reported getting 'other' services in the community pharmacy such as weight measurement and first aid services (Wazaify *et al.*, 2008).

1.3.4. Community Pharmacies and pharmacists in Ethiopia

The report of International Pharmaceutical Federation (FIP) Global Pharmacy Workforce survey showed that on average, 58% of pharmacists were found to work in retail community pharmacies, except the South East Asian region where the pharmaceutical industry employs up to 55% of the pharmacist workforce (FIP, 2009). In Ethiopia, the pharmaceutical sector is guided by a National Drug Policy which was developed in line with the National Health Policy and the sector is regulated by the "Food, Medicine and Health Care Administration and Control Proclamation No. 661/2009" (Federal Negarit Gazeta, 2009). According to a report by the Ministry of Health, the country has a total of 194 hospitals, 2660 health centers, 377 community pharmacies, 1669 drug stores and 1392 rural drug vendors (FMOH, 2011).

Data from the local study showed that hospital pharmacies employ the largest sector of the pharmacists workforce (33.6%) followed by community pharmacies (18.5%) and sales and

marketing 18.6%. Slightly more than half (53.7%) of the pharmacists in Ethiopia are working in public/ government organizations and 39.3% of the pharmacists were either working in private sectors or self-employed (Beedemariam and Gedif, 2013).

Ideally, the main activities of pharmacists are processing prescriptions, care of patients, monitoring of drug utilization, extemporaneous preparation, information to health care professionals and the public, and health promotion (WHO, 1988). As they are the most accessible of all health workers, they are expected to play a key role in the delivery of health care services at all levels. Hence, in many countries of the world their responsibility has evolved from that of a compounder and supplier of pharmaceutical products to a provider of patient care. However, in Ethiopia pharmacists are still working as a compounder, supplier of pharmaceuticals and some minor counseling on the medication (Beedemariam and Gedif, 2013).

2. Objectives

2.1. General objective:

- To determine the extent of use of community pharmacies and assess the perception of community on the pharmacists' extended roles in Addis Ababa

2.2. Specific objectives

- To determine the extent of use of community pharmacies by the community.
- To identify most common reasons for community's choices of particular community pharmacy.
- To assess the community's perception on extended roles of the community pharmacists.

3. Methods

3.1. **Description of the study area**

This study was conducted in Addis Ababa, the capital city of Ethiopia. It is the largest city in Ethiopia, with a population of 3,384,569 according to the 2007 population census with annual growth rate of 3.8%. According to the census, 662,728 households were counted living in 628,984 housing units, which results in an average of 4.1 persons per household (CSA, 2007).

Addis Ababa is where the African Union Head Office is based. The city is populated by people from different regions of Ethiopia – the country has as many as 80 nationalities speaking 80 languages and belonging to a wide variety of religious communities. It is home to Addis Ababa University. Addis Ababa lies 9°1′48″N latitude and 38°44′24″E longitude. The city is located at the heart of the country, at an altitude ranging from 2,100 meters at Akaki in the south to 3,000 meters at Entoto Hill in the North. The city occupies a total area of 540 Sq.Km^2 (AACA IB, 2013).

At the time of this study, the city is divided into ten sub-cities which are the second administrative units next to city administration. In terms of area coverage, Bole is the largest sub-city followed by Akaki- Kality and Yeka. Addis Ketema is the smallest and followed by Lideta and Arada Sub-cities (Annex-VI). The sub-cities are also divided into weredas, which are the smallest administrative unit in the city. There are 116 weredas in the City Administration. The number of woredas varies based on their size (AACA IB, 2013).

3.2. Study design

Community based cross sectional study design was employed using semi-structured interview methods from January to March, 2014.

3.3. Source and study population

All head of the HHs who reside in Addis Ababa city Administration were used as the source of study participants and all head of HHs in the selected Woredas were used as study population. The study unit is households.

3.4. Inclusion and exclusion criteria

- All heads of households >= 18 years old were included in the household survey
- Those participants who were not Ethiopian citizen, guests and those who could not speak Amharic language at the time of the study were excluded from the study.

3.5. Sample size determination

To determine the number of head of households to be included in the study, single population proportion formula was used:

$$N = Z(\alpha/2)^2 P(1-P) / d^2$$ (Sanders, 1995)

Where: n= sample size; P = community pharmacy service utilization rate

Z = Z- score at first level of significance at 95%CI

d = marginal error

Using 95% confidence interval, taking "p" as 50% since community pharmacy service utilization rate in this area is not known, and this refers to number of persons visiting the community pharmacy and considering marginal error as 5%:

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

In order to take care of the design effect because the sampling procedure involves three stages, three times the calculated sample size was taken:

N= 384x3= 1152

Taking 10 % compensation for non-response, the total sample size become

N= 1152 + (10%X1152) = 1152 + 115.2 = **1268**

3.6. Sampling and procedures

A multi- stage sampling techniques was employed to select the required study units. The city was stratified to 10 sub-cities and 116 woredas. Two sub- cities were selected for the study from which Bole sub city was selected purposively and Nifas Silk Lafto was selected randomly by lottery method. Bole sub- city was selected purposively because it is where most socioeconomically affluent people assumed to live. In Bole and Nifas Silk Lafto sub-cities, there are 14 and 12 newly formed woredas, respectively. A 2013 projected population estimate showed that the 14 woredas in Bole had a population of 268,750 with total household size of 65,549 (Bole Sub-city Health Bureau, 2013), whereas Nifas Silk lafto Sub city had a total population of 365, 608 and house hold size of 73,110 (Nifas Silk Lafto Sub city Health Bureau, 2013).

The study was conducted in Woreda 3 of Bole sub city with a projected total population and household size of 9,450 and 2,305, respectively. Similarly, the study was conducted in Woreda 12 of Nifas Silk Lafto sub-city which was selected randomly. It has a total population of 12,759 with a household size of 5,150 during the time of the study (Annex V).

Information on the number of households and list of house numbers in each of the selected woredas was obtained from the respective administrative health offices of the woredas. The total sample size was divided among the two woredas proportional to the number of households in each. The list of existing house numbers of the houses were used as sampling frames. The required number of samples, from each woredas, was selected by systematic sampling techniques, employing independent sampling intervals for each. The sampling interval used in each woreda was determined by dividing the total number of households in a woreda by the number of households (N/n) to be sampled from that woreda and found to be 5-6. This was done until the required samples from each woreda were achieved. Thus, the minimum of 394 and a maximum of 874 households were chosen from each woreda. The direction from which the data collection should begin was determined by tossing a coin. The schematic representation of the sampling procedure is shown in Annex VII.

3.7. Study variables

3.7.1. Independent variables

- Sex
- Age
- Level of education
- Income level
- Occupation
- Marital status

of HH heads

3.7.2. Dependent variables:

- The respondents' use of community pharmacy
- The respondents' loyalty to particular community pharmacy
- The respondents' perception on the proposed extended roles of community pharmacists

3.8. Data collection instruments

The data were collected using semi- structured questionnaire and the survey questionnaire was adopted from two similar studies conducted in Malta (Wirth et *al*., 2010) and Qatar (El Hajj et al., 2011). The questionnaire was designed in such a way that all the relevant variables were included so as to meet their respective objectives. It was prepared in English and translated into Amharic; working language of the city, and then to English to maintain consistency.

The main focus of the questionnaire was to gather information on the respondents' socio-demographic characteristics, their use of community pharmacy and opinion concerning possible future additional services (Annex-II).

3.9. Data collection and management

3.9.1. Recruitment and training of data collectors

Sixteen data collectors (10 females and 6 males); who were grade 10^{th} complete and B.Ed degree/diploma holders, were recruited. Training of one day was given to data collectors as to how they should fill out the questionnaire, what sort of approach they need to have towards sampled households.

The data collectors were introduced to the objectives of the survey during the training. Training manual prepared in English was distributed to each data collectors and the general procedures while conducting the interview was discussed thoroughly (Annex-IV). Then, the interviewers were instructed to approach heads of the households (Husband/ wife) who were above the age of 18 years.

Before the actual survey was conducted, the data collectors have conducted a pre- test on 63(5%) heads of randomly selected HHs in one of the woredas. The findings and experiences from the pretest were utilized in modifying the data collection procedures and tools. After the pre-test, the inclusion of ethnicity and religion as socio-demographic variables were found to be irrelevant and removed from the questionnaire as it did not give comfort for the respondents. In addition, the time of data collection was made mainly on the weekends as it was difficult to get the head of HHs at home during the weekdays.

3.9.2. Data collection

The survey was conducted by trained interviewers over a 3-months period between January to March, 2014. To ensure full co-operation of the study participants, the data collectors explained the rationale behind the interview to the heads of HHs. The data collectors made a house to house survey in strict adherence to the pre- determined sampling intervals. When the heads of households in a sampled household was not available in the first visit, the data collectors made a special note for that house and alternative visits were arranged.

Data collectors made three repeated visits to get the head of the household not found in the first visit. If he/she was not available in all these visits or unwilling to participate in the study, that household was jumped and the immediate next household in the sampling frame was considered. Accordingly, about 116(9%) of the study participants were unwilling to participate in the study and that household was jumped and the immediate next household in the sampling frame was considered.

3.9.3. Data quality control

The questionnaires were prepared carefully and were pretested carefully and modified accordingly. Validation of the questionnaire was also carried out by two MSc pharmacy students, three AAU instructors from school of pharmacy and two community pharmacists. The validation group members were asked to go through the questionnaire and suggest any amendments. Spot checking and routine on site supervision was carried out by the principal investigator. The collected questionnaires were checked for completeness, accuracy, clarity and consistency by the PI on daily basis.

3.10. **Data entry and analysis**

After conducting the survey, the completed questionnaires were returned to the principal investigator. Then, the data was edited, coded, entered into a computer and analyzed using version 20 SPSS software. Data was entered every day after collection from the field. Frequency tables and graphs were also used to present the data.

The adjusted odds ratio was used to analyze the association between potential explanatory variables and respondents' use of community pharmacy as well as their perception towards the extended roles of community pharmacists. A P-value of < 0.05 was taken as significant.

3.11. Ethical consideration

Ethical approval was sought from the Ethics Review Committee of Addis Ababa University, School of Pharmacy and Addis Ababa City Administration Health Bureau. Participants of the study were asked verbal consent before participating in the study. They were provided with the information regarding the purpose of the study, why and how they were selected to participate in the study and what is expected from them. Participants were assured of confidentiality of information in the course of the study.

3.12. Operational definition

- **Community**- A group of people living in the same defined area sharing the same basic values, organization and interests (WHO, 1998b).
- **Community perception**: in this particular study refers to their opinion or extent of approval/acceptance on the new services to be introduced in community pharmacies
- **Community pharmacist**- is a practitioner who has a bachelor degree in pharmacy from a recognized institution, registered by a licensing authority to deliver professional services to the community (FMHACA, 2014).
- **Community pharmacy**- a community pharmacy is a healthcare facility that is able to provide pharmacy services to people in a local area or community. http:/en.wikipedia.org/wiki/.
- **Consumers:** community pharmacy users/customers
- **Extended roles of community pharmacists**- include new services intended to be introduced in community pharmacies, namely blood glucose testing, blood pressure measuring, cholesterol level testing, osteoporosis screening, sexual health services, and immunization.
- **Health promotion** '...the process of enabling people to increase control over, and to improve, their health' (WHO, 1986).
- **Household heads**: refers to husband/wife
- **Minor ailments**- are conditions that will resolve on their own and can be reasonably self- diagnosed and include common conditions such as cough, tonsillitis, headaches, back pain, insect bites, diaper rash, heartburn or indigestion, nasal congestion etc. (Yadav, 2008).

4. Results

4.1. Household survey

A total of 1268 HH heads were visited for the survey and 1152 of them were used for the analysis. Of these 31 %(394) were from Woreda 3 of Bole Sub city where as 874 (69%) were from woreda 12 of Nifas Silk Lafto Sub city.

4.2. Socio demographic information of household respondents

The socio-demographic characteristics of respondents are summarized in Table 1. The mean age was 41 years, with a standard deviation of ±11.8 years (range 20-80 years), and majority of the respondents were females (57%). Over two third (72.7%) of the respondents were married. Six hundred fifty one (56.5%) had at least university or college education. The average monthly family's income of the respondents was 4688(Range: 294-45,000).

Table : Socio demographic characteristics of household respondents in Addis Ababa, March, 2014 (N = 1152)

Characteristics	Categories	Frequency	Percent
Sex(1150)	Male	494	43.0
	Female	656	57.0
Age(1124)*	20-29	205	18.2
	30-39	356	31.7
	40-49	280	24.9
	49^{+}	283	25.2
	Mean $\pm$ SD		41. 0 $\pm$ 11.8
Marital status(1150)	Never married	193	16.8
	Married	836	72.7
	Divorced	65	5.6
	Widowed	56	4.9
Occupation(1152)	Government Employee	255	22.1
	Nongovernmental employee	186	16.1
	Housewives	209	18.1
	Private business	297	25.8
	Others**	205	17.8
Educational status(1152)	Illiterate	39	3.4
	Only read and Write	25	2.2
	Primary(1-8)	112	9.7
	Secondary(9-12)	325	28.2
	Graduated from college/university	651	56.5
Average monthly family income (957)***	151-650	54	5.6
	651-1400	131	13.7
	1401-2350	176	18.4
	2351-3550	166	17.3
	3551-5000	198	20.7
	5000+	232	24.2

**28 participants were not willing to disclose their age*

*Others**: housemaid, student, jobless, daily laborer*

**** 195 participants were not willing to disclose their income*

4.3. Respondents' use of community pharmacy

4.3.1. Community pharmacy visit

Out of 1152 respondents, 762(66%) reported to have at least one visit to the community pharmacy before the interview date. Average monthly income of the respondents was associated with community pharmacy visit (AOR = 2.01; 95%CI [1.005-4.03]. However, sex, age, educational status, occupation and marital status were not found to affect the respondents'' visit to the community pharmacy (Table 2).

Table : Determinants of respondents' community pharmacy visit: March, 2014, Addis Ababa (N= 1152).

Variables		Community pharmacy visit		Crude OR (95% CI)	Adjusted OR[a] (95%CI)
		Yes	No		
		N (%)	N (%)		
Sex(1146)	Male	324(66)	168(34)	1	1
	Female	437(67)	217(33)	1.04(0.82-1.34)	1.02(0.75-1.40)
Age(1120)	20-29	88(43)	116(57)	1	1
	30-39	103(29)	252(71)	1.86(1.29-2.66)	1.36(0.89-2.07)
	40-49	78(28)	201(72)	1.96(1.34-2.86)	1.52(0.94-2.44)
	49^{+}	104(37)	178(63)	1.29(0.89-1.88)	1.28(0.79-2.05)
Educational status(1148)	Illiterate	15(39)	24(62)	1	1
	College & above	452(69)	199(31)	0.28(0.14-0.54)	2.15(0.91-5.06)
	Others *	295(64)	163(36)	0.35(0.18-0.68)	1.86(0.83-4.17)
Occupation(1148)	G. employee	174(68)	81(32)	1	1
	NG.employee	142(77)	42(23)	1.57(1.02-2.43)	1.66(0.99-2.78)
	House wife	136(65)	73(35)	0.87(0.59-1.28)	1.21(0.72-2.05)
	P. business	188(63)	108(37)	0.81(0.57-1.16)	0.99(0.66-1.48)
	Others**	122(60)	82(40)	0.69(0.47-1.02)	0.97(0.60-1.59)
Marital status(1146)	Single	111(58)	81(42)	1	1
	Married	577(69)	256(31)	0.61(0.44-0.84)	1.31(0.85-1.99)
	Others ***	73(60)	48(40)	0.90(0.57-1.43)	1.19(0.65-2.22)
Average monthly family's income(953)	151-650	25(47)	28(53)	1	1
	651-1400	61(47)	68(53)	0.99(0.53-1.89)	1.02(0.53-1.98)
	1401-2350	61(35)	115(65)	1.68(0.90-3.14)	1.59(0.82-3.08)
	2351-3550	56(34)	110(66)	1.75(0.94-3.29)	1.53(0.77-3.03)
	3551-5000	64(33)	133(68)	1.86(1.002-3.44)	1.45(0.74-2.87)
	5000+	57(25)	175(75)	2.74(1.48-5.08)	2.01(1.005-4.03)[b]

*Others: * read and write, primary and secondary education,*

**** Widowed, Divorced; **b**: P values < = 0.05*

*** Housemaid, student, jobless, daily laborer*

[a] *- adjusted for sex, age, marital, education, employment status, and income level*

4.3.2. Most common reason for visiting community pharmacies

The main reasons for visiting a community pharmacy are summarized in Table 3. The two primary reasons for visiting a community pharmacy were to purchase medicines prescribed by a physician (88.7%) and to purchase over the counter medicines(43.3%).Other reasons included: to purchase cosmetics, hair care, baby care products 254(33.6%) and 26.4% of the respondents visited the community pharmacies to get health related advice .

Table : Common reasons for visiting community pharmacies: March, 2014, Addis Ababa (N = 1152).

Primary reason	Frequency	Percent
To purchase medicines recommended by doctor	670	88.7
To purchase over the counter medicines	327	43.3
To ask pharmacist for health related advice	199	26.4
To obtain para-pharmaceutical products*	254	33.6

- *Para-pharmaceutical products include, for example, sunscreens, cosmetics, toiletries, hair care, and baby care products*
- *The percent did not add up to 100 as there is possibility for respondents to choose more than one alternatives in multiple responses.*

4.3.3. Minor ailment schemes

Minor ailments for which the consumers consulted the community pharmacists are summarized in Table 4. The most common minor ailments for which the respondents consulted the community pharmacist are cough (46.2%), headache (44.3%) and tonsillitis (31.6%).

Table : Minor ailments for which participants consulted community pharmacists, before the interview date: March, 2014, Addis Ababa.

Ailments	Frequency	Percent
Cough	316	46.2
Tonsillitis	216	31.6
Skin disorders such as ringworm, rash/spots	152	22.2
Headache	303	44.3
Indigestion and other stomach disorders	127	18.6
Constipation	114	16.7
Diarrhea	131	19.2
Muscle/Joint Pain	9	1.3
Hemorrhoids	107	15.6
Back pain	79	11.5

- *The percent did not add up to 100 as there is possibility for respondents to choose more than one alternatives in multiple responses*

4.3.4. Loyalty to a particular community pharmacy

Determinants of respondents' loyalty to a particular community pharmacy are summarized in Table-5. Majority of the respondents 422(54.6%) did not visit the same community pharmacies most frequently, whereas only 351(45.4%) of the respondents showed loyalty to the same community pharmacy. This did not differ significantly with regard to age, sex, employment status and income of participants. However, respondents who have college/university education (AOR = 0.21, 95% CI [0.05-0.85] were less likely to visit the same community pharmacy as compared to the illiterate ones. With regard to marital status, those who were married were more likely to use the same community pharmacy when compared to single ones (AOR = 1.87; 95%CI [1.02-3.45] and likewise those who were divorced and widowed were 2.48 times more likely to use the same community pharmacy as compared to unmarried ones(AOR= 2.48, 95%CI [1.08-5.69].

Table : Determinants of respondents' loyalty to a particular community pharmacy, March, 2014, Addis Ababa

Variables		Loyalty to community pharmacy		Crude OR (95%. CI)	Adjusted OR[a] (95%.CI)
		Yes N (%)	No N (%)		
Sex	Male	145(44)	186(56)	1	1
	Female	205(47)	235(53)	1.12(0.84-1.49)	1.03(0.69-1.51)
Age	20-29	79(67)	39(33)	1	1
	30-39	150(60)	102(41)	1.38(0.87-2.18)	0.75(0.42-1.31)
	40-49	98(47)	109(53)	2.25(1.41-3.61)	1.16(0.64-2.11)
	49+	89(49)	92(51)	2.09(1.29-3.39)	1.28(0.68-2.38)
Educational status	Illiterate	11(69)	5(31)	1	1
	College& above	188(41)	269(59)	0.32(0.11-0.93)	0.21(0.05-0.85)[b]
	Others *	152(51)	148(49)	0.47(0.16-1.38)	0.29(0.07-1.14)
Occupation	G. employee	65(37)	109(63)	1	1
	NG. employee	76(52)	69(48)	1.85(1.18-2.89)	1.19(0.68-2.07)
	House wives	77(55)	62(45)	2.08(1.32-3.28)	1.53(0.81-2.86)
	P. business	75(40)	115(61)	1.09(0.72-1.67)	1.08(0.66-1.77)
	Others**	58(46)	67(54)	1.45(0.91-2.32)	1.00(0.57-1.81)
Marital status	Single	32(28)	81(72)	1	1
	Married	278(48)	306(52)	2.30(1.48-3.57)	1.87(1.02-3.45)[b]
	Others ***	41(55)	34(45)	3.05(1.66-5.63)	2.48(1.08-5.69)
Average family's monthly income	151-650	16(53)	14(47)	1	1
	651-1400	38(56)	30(44)	0.90(0.38-2.14)	0.95(0.37-2.40)
	1401-2350	80(70)	35(30)	0.50(0.22-1.14)	0.69(0.28-1.71)
	2351-3550	63(56)	49(44)	0.89(0.39-1.99)	1.25(0.51-3.08)
	3551-5000	77(58)	56(42)	0.83(0.38-1.84)	2.14(0.89-5.14)
	5000^{+}	77(43)	101(57)	1.49(0.69-3.26)	

[a:] *adjusted for sex, education, marital, age, employment and income status- b: P –value < 0.05*

*Others: * read and write; primary, secondary education*

*** Widowed, Divorced; **** Housemaid, student, jobless, daily laborer*

4.3.5. Reasons for choosing a particular pharmacy

The main reasons for respondents' to use any particular pharmacy are shown in Figure 1. The primary reasons were the pharmacy locations (community pharmacy being close to home or work place) 298(85.1%), presence of wide range of products 131(37.4.0%), and prompt services-125 (35.7%). Other reasons included good and competitive prices 84(24.0%), good knowledge and advice given by pharmacists-106 (30.3%).

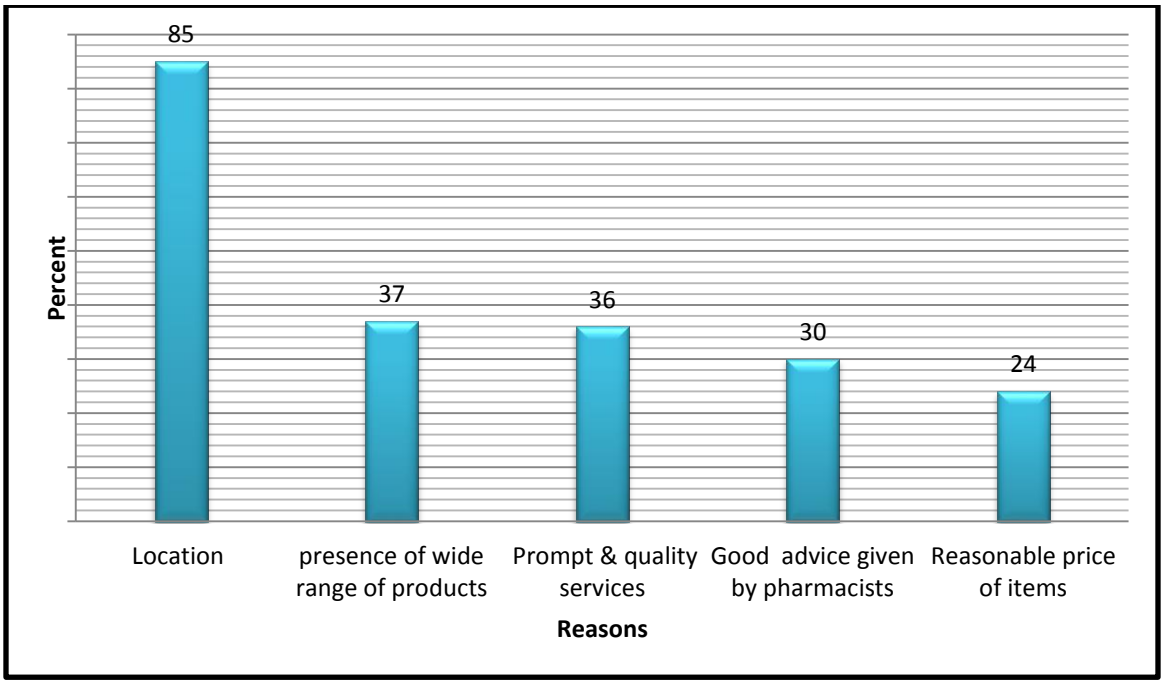

Figure : Respondents' main reasons for using a particular community pharmacy: March, 2014, Addis Ababa

4.4. Perception of the community on pharmacists' extended roles

The respondents' extent of approval on the extended roles of community pharmacists are shown in Table 6. The extended services in high demand and requested by the respondents were measuring weight and height 1109(96.4% of respondents), blood pressure testing 1090(94.7%), blood cholesterol screening 1030(89.5%) and blood glucose screening 1047(91.0%), vaccination service 989 (85.6%), lifestyle and dietary advice services 1054 (91.5%), advice and treatment services on minor ailments such as diarrhea, cough, tonsillitis 1068 (92.8%), and management of life quality of patients with chronic diseases such as asthma, diabetes 973(84.5%). The consumers were also highly interested if there would be separate counseling room in the community pharmacies 1078(93.6%): Others include: bone mineral density testing or Osteoporosis screening 753(65.4%) and screening of STIs 757(65.8%).

Table : Respondents' extent of approval on the extended roles of community pharmacists: March, 2014, Addis Ababa, (N = 1152).

Extended services	Extent of approval		
	Yes	No	Don't know
	N (%)	N (%)	
Height and weight measurement	1109(96.4)	34(3)	8(0.7)
Blood pressure screening	1090(94.7)	47(4.1)	14(1.2)
Blood cholesterol screening	1030(89.5)	92(8.0)	29(2.5)
Blood glucose screening	1047(91.0)	87(7.6)	17(1.5)
Osteoporosis screening	753(65.4)	290(25.2)	108(9.4)
Screening of STIs*	757(65.8)	353(30.6)	41(3.6)
Chronic disease management e.g. asthma, diabetes	973(84.5)	152(13.2)	26(2.3)
Providing and promoting immunization services	989(85.6)	138(12.0)	24(2.1)
Getting lifestyle and dietary advice services	1054(91.5)	71(6.2)	26(2.3)
Giving advice and treatment services on minor ailments such as diarrhea, cough, tonsillitis	1068(92.8)	70(6.1)	13(1.1)
Getting separate counseling room in the community pharmacy	1078(93.6)	53(4.6)	20(1.7)

- ** STIs include: genital chlamydia, syphilis, Gonorrhea*

The respondents' characteristic and their overall extent of approval towards the extended services are summarized in Table-7. Only the respondents' average monthly income were found to affect the perception of the respondents towards seeking for the extended services and the result in this particular study showed that those with lower income showed more positive approval towards the extended services than those with higher income(AOR = 0.29, 95% CI[0.13-0.65].

The combined result of this study showed that 702(61%) of the study participants had shown positive responses to community pharmacists extended roles (Fig-2).

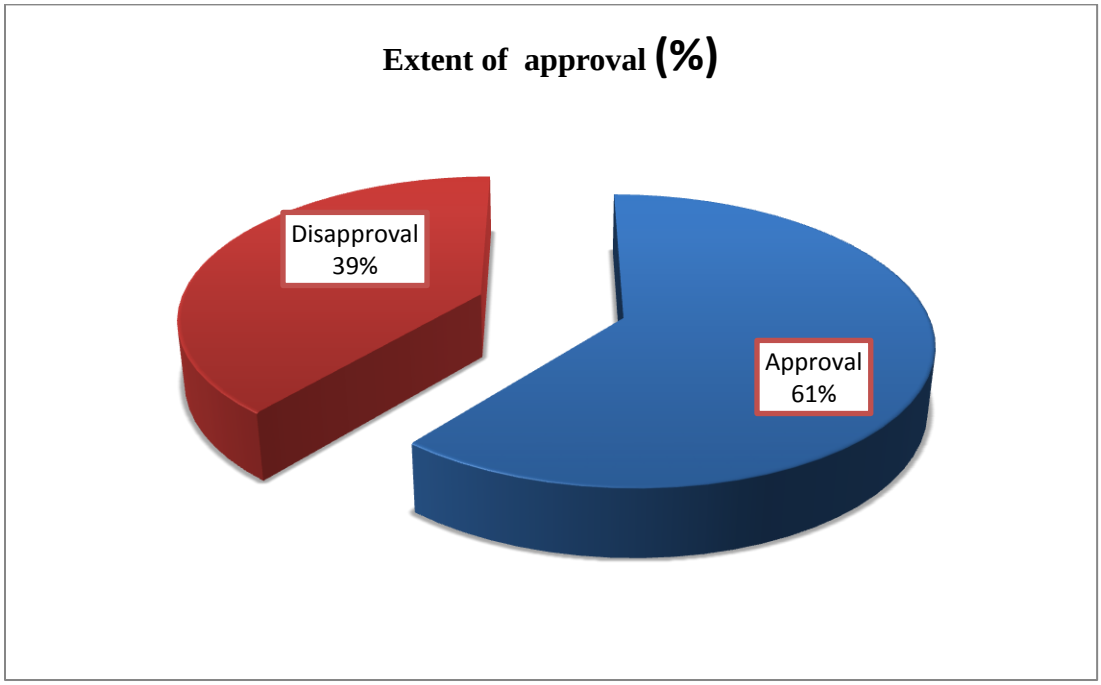

Figure : Respondents' overall extent of approval on the extended roles of community pharmacists: March, 2014: Addis Ababa

Table : Determinants of respondents' overall approval on the extended roles of community pharmacists, March, 2014: Addis Ababa (N= 1152)

		Approval status (%)		Crude OR(95%CI)	Adjusted OR(95% CI) [a]
variables		disapproval	approval		
Sex	Male	196(40)	297(60)	1	1
	Female	253(39)	403(61)	1.05(0.83-1.34)	0.94(0.69-1.27)
Age					
	20-29	73(36)	132(64)	1	1
	30-39	146(41)	209(59)	0.79(0.56-1.13)	1.03(0.67-1.58)
	40-49	125(45)	155(55)	0.69(0.47-0.99)	0.93(0.58-1.49)
	49+	93(33)	190(67)	1.13(0.77-1.65)	1.11(0.68-1.82)
Educational status					
	Illiterate	10(26)	29(74)	1	1
	College & above	288(44)	363(56)	0.43(0.21-0.91)	0.74(0.27-2.05)
	Others *	151(33)	310(67)	0.71(0.34-1.49)	0.91(0.34-2.42)
Marital status					
	Single	75(39)	118(61)	1	1
	Married	332(40)	503(60)	0.96(0.69-1.33)	1.29(0.84-1.99)
	Others ***	41(34)	80(66)	1.24(0.77-1.99)	1.11(0.58-2.10)
Occupation					
	G. employee	126(49)	129(51)	1	1
	NG.employee	83(45)	102(55)	1.20(0.82-1.76)	0.66(0.40-1.07)
	House wife	65(31)	144(69)	2.16(1.48-3.17)	0.87(0.52-1.46)
	P. business	110(37)	187(63)	1.66(1.18-2.33)	1.04(0.60-1.81)
	Others**	65(32)	140(68)	2.10(1.43-3.09)	0.92(0.57-1.47)
Average monthly income					
	151-650	10(19)	44(82)	1	1
	651-1400	10(19)	44(82)	0.96(0.42-2.15)	1.16(0.51-2.65)
	1401-2350	25(19)	105(81)	0.38(0.18-0.80)	0.50(0.23-1.10)
	2351-3550	66(38)	110(63)	0.31(0.15-0.66)	0.40(0.18-0.90)[b]
	3550-5000	70(42)	96(58)	0.32(0.15-0.66)	0.41(0.19-0.91)
	5000+	83(50)	115(50)	0.23(0.11-0.48)	0.29(0.13-0.65)

*Others: * read and write primary, secondary education; ***- Widowed, Divorced; **housemaid, student, jobless, daily laborer; b- P-value < 0.05; [a:] adjusted for sex, education, marital, age, employment and income status; Disapproval- respondents' who said no and I don't know.*

The most common reasons for requesting new services in the community pharmacies are summarized in Figure 3. Majority of them had mentioned the pharmacies proximity 955(84.3%), less waiting time 457(40.3%), being able to access pharmacists easily than doctors 624(55.1%) as well as no appointment required to visit the pharmacy 623(55.0%) as important reasons for their demand for the services to be introduced in community pharmacies.

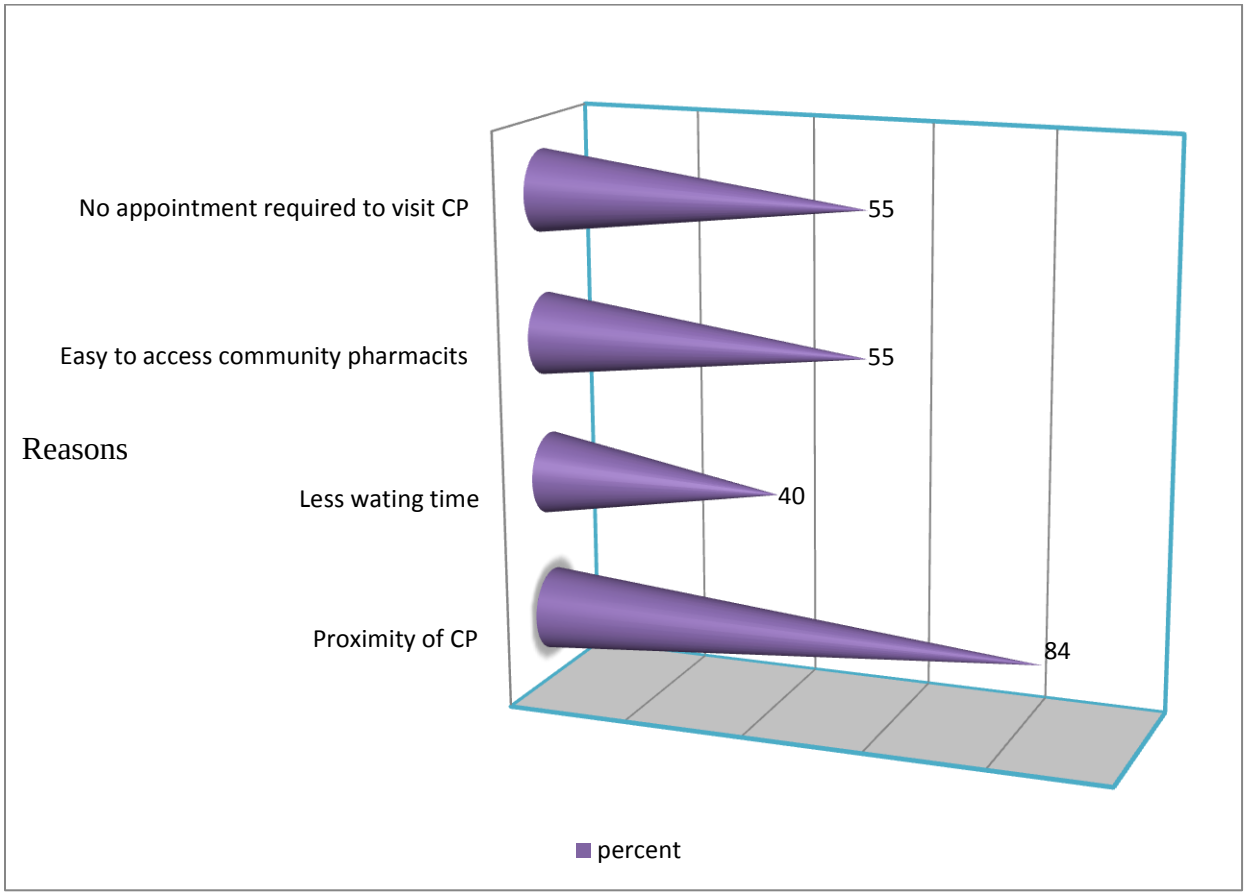

Figure : Most common reasons mentioned by respondents for requesting new services in community pharmacies: March, 2014: Addis Ababa

The result of the analysis also showed that 39% of the respondents had shown reluctance in seeking the extended services. The most common reasons mentioned by the respondents are shown in Figure 4.

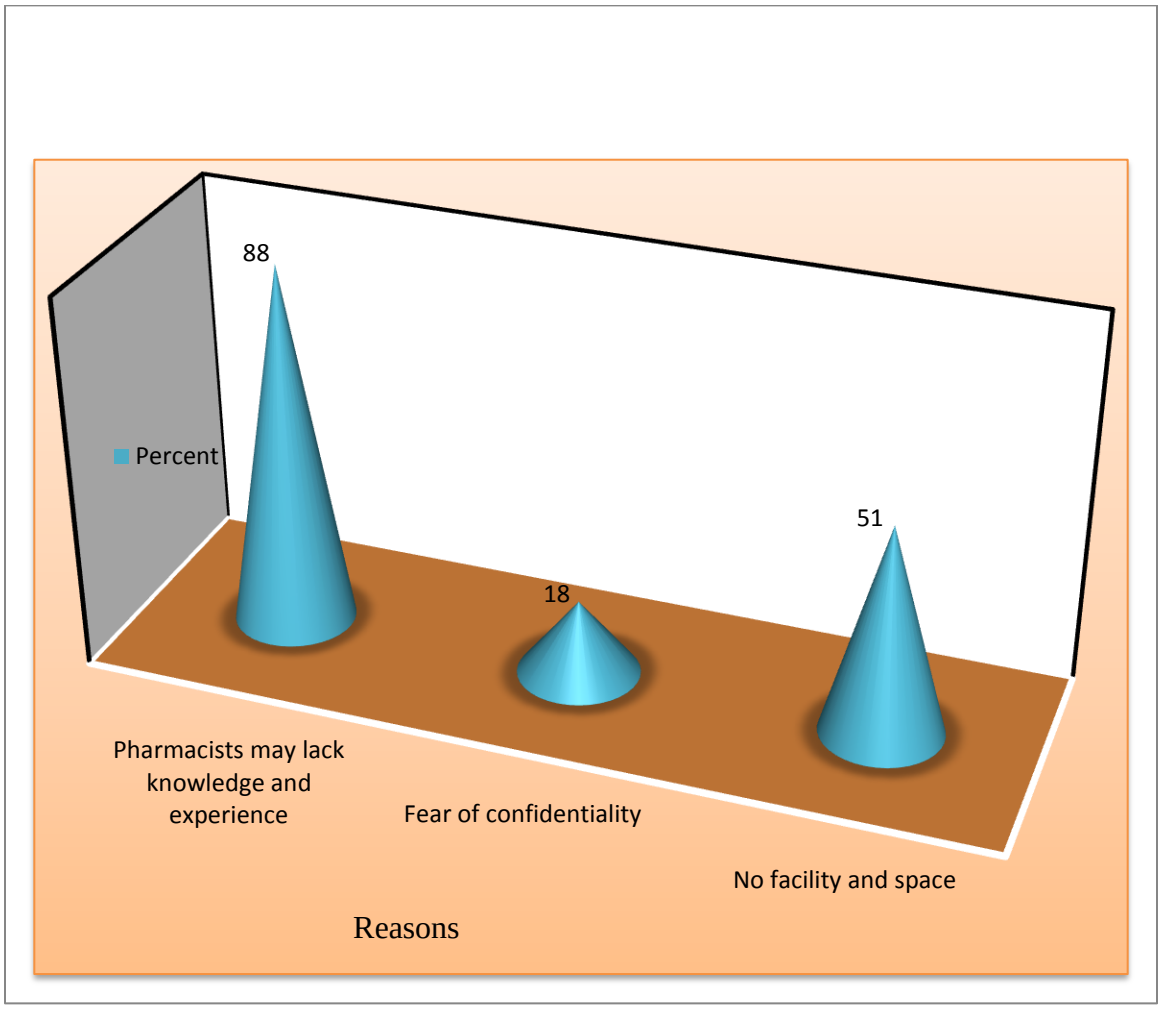

Figure : Respondents' common reasons for showing reluctance on the extended services to be given in community pharmacies: March, 2014: Addis Ababa

5. Discussion

This study determined the extent of respondents' visit to community pharmacies, most common reasons for visiting community pharmacies, loyalty to particular pharmacy and important reasons for respondents to choose a particular pharmacy. In addition, the respondents' opinion regarding the new roles of pharmacists was assessed.

The present study revealed that over two third of the respondents (66%) reported that they had used community pharmacies to obtain medicine, para-medical products or ask for health advice at least once before the interview date. This finding was in agreement with the results of studies conducted in Jordan (67.4%), Northern Ireland (74.6%), and Palestine (55.3%) (Wazaify *et al*., 2005; Wazaify *et al*., 2008; Khdour and Hallak, 2012). This signifies that there is good use of the community pharmacies among respondents in Addis Ababa. Such good use of community pharmacy services by the respondents could give the chance to initiate opportunistic health initiatives to be delivered, such as the extended pharmacists' roles (Boardman *et al*., 2005). The results obtained from regression analysis confirmed that the consumers were found to use the community pharmacies regardless of sex, age, educational, marital status and employment. Our findings in relation to sex was; however, in contrary to the findings of studies conducted in UK and Zimbabwe where women were found to use community pharmacies more frequently than men (Boardman *et al*., 2005;Govo *et al*., 2008). On the other hand, study conducted in Sudan showed that men were frequent users of community pharmacies compared to women (Mahmoud *et al*., 2014). This difference might be attributed to the differences in the cultures, methods and scale of measurements used. Our study therefore may indicate that both head of the households are equally responsible for the family and take a visit to community pharmacies.

The current study indicated that interviewees with relatively highest average monthly income were more likely to use community pharmacy services as compared to those with lower income (AOR = 2.01, 95%CI [1.005- 4.03]. This agrees with other study that indicates better income usually results in higher use of health care services and health facility (Muller, 1986).

The findings of this study indicated that the primary reason for visiting the community pharmacies among respondents was filling a prescription (88.7%). Similar rates were reported from studies in Zimbabwe(91%), Sudan(84.3%), Malta(90%), Qatar(83%) and in Bosnia and Herzegovina(86.8%)(Govo *et al.*, 2008; Wirth *et al.*, 2010; El Hajj *et al*., 2011; Catic *et al*., 2013; Mahmoud *et al*., 2014). This result indicated that majority of the consumers mainly use the dispensing services than the health information services that pharmacist could provide. This reflected that community pharmacists are not being used to their full potential. This is may be because respondents may have limited understanding of the role of pharmacists in healthcare (Wirth et al., 2010). The second reason is that lack of privacy in the pharmacy could be a barrier to seek pharmacists health related advice as it was witnessed by 18% of the respondents in the current study and 50% of consumers in Qatar (El Hajj *et al*., 2011). If the transition to pharmaceutical care is to occur successfully, the Ethiopian community pharmacists should make considerable efforts to raise public expectations about their professional roles and must demonstrate the potential benefits of extending their contributions beyond dispensing and providing basic counseling. Besides, more campaigns should be done to increase awareness of the community towards community pharmacy services and pharmacists' skills in order to increase the utilization of their services and products. This would reduce the workload on other health professionals and demand for hospital visits.

The second most common reason for consumers to visit the community pharmacies were to purchase OTC medicines (43.3%). This study reflected the findings from Palestine (42%), UK (40%), and Zimbabwe (47%) (Boardman *et al.*, 2005; Govo *et al*, 2008; Khdour and Hallak, 2012). This figure is significant and may invite for the misuse of these medications, and hence the community pharmacists should be aware of its appropriate usage by the community and have a primary responsibility in promoting the safe, proper, and effective use of these medications.

Our findings also assessed the consumers' use of community pharmacies for treating minor ailments. Accordingly, the most common ailments for which they contacted the community pharmacists were cough (46.2%), headache (44.3%) and tonsillitis (31.6%). This reflected a report from Malta in which the consumers would primarily seek advice from a community pharmacist for cough (44%), constipation (38%), diarrhea (32.0%), indigestion (31%), and headache (14%)(Wirth *et al*., 2010). This indicated that consumers' visit the community pharmacists for several health related problems and this could give access to expand the community health services. It has been argued that pharmacist's centralized placement in the community and their unique expertise are invaluable to serve as a public health resource to diagnose and treat minor ailments, which could help alleviate doctors load and to concentrate on more serious illnesses(Lunde, 1990; Blenkinsopp and Bradley, 1996).

With regard to consumers' habit of visiting the same pharmacy, the current study showed that only 45% the respondents were found to use the same pharmacy more often. This result is slightly higher than the previous study conducted in Sudan (37.5%), but much lower as compared to the report from Malta (62.8%), Jordan (66.4%), Northern Ireland (68.5%) and Bosnia and Herzegovinia (61.0%) (Cordina *et al*., 1998; Wazaify *et al.*, 2005;

Wazaify *et al.*, 2008; Catic *et al*., 2013; Mahmoud *et al*., 2014). Such less loyalty to a particular CP indicates that there may be low satisfaction with the service being offered in that particular pharmacy and this was witnessed by 38.8 % of the consumers in Zimbabwe (Govo *et al*., 2008). Any healthcare service quality affects patient satisfaction, which in turn influences positive patient behaviors such as loyalty (Naidu, 2009). Besides, the consumers' use of different pharmacies more often could be a challenge to implement patient oriented pharmacy practice (pharmaceutical care) that is being implemented in Ethiopia and it is also difficult to trace drug-related (Mahmoud *et al.*,2014). One study also showed that loyalty to a single pharmacy was found to increase with the increase in the clinical roles of pharmacists (Hargie *et al*., 1992; Pray, 1996). Consumers' use of the same community pharmacy could also ease the implementation of health insurance system, which gives pharmacists the chance for proper counseling, record keeping and monitoring(Mahmoud *et al*., 2014). In this study, loyalty to a particular community pharmacy did not differ significantly with regard to age and sex of study participants. This is in contrary with study report by Xu (2002) and Merks *et al* (2014), where women and older respondents tended to use a single community pharmacy more often than men. This comparison could be limited by methodological and cultural differences. However, consumers who have college/university education were less likely to visit the same community pharmacy as compared to the illiterate ones. Similar findings were reported from Poland, where respondents with a university degree visited the same pharmacy less often than those with a lower level of education (Merks *et al.*, 2014). This might be because educated people could be able to compare the difference in the services delivered in community pharmacies and seek for pharmacies that could serve them better as they have access to relevant and appropriate information on quality services. Dixon *et al*(2010) also argued that respondents' level of education became a significant

predictor of awareness, with those holding a university degree more likely to be aware of choice than those with no formal qualifications, whereas consumers from poorer backgrounds and with lower education levels will be less likely able to exercise choice. With regard to marital status, those who were married were more likely to use the same community pharmacy when compared to unmarried respondents (AOR = 1.92; 95%CI [1.05-3.52] and likewise those who were divorced and widowed were more likely to use the same community pharmacy as compared to unmarried respondents (AOR= 2.47, 95%CI [1.08-5.62]. This might be because those who are married are more likely in contact with health care providers and have better experiences to identify who could serve them better, which in turn positively influences their decision to choose a specific healthcare provider (Taylor SA., 1994).

Similar to studies from other countries, respondents' reason for choosing a particular pharmacy was convenience of location (88%). This reflected the findings from Zimbabwe (63%), Sudan (68%), Qatar (90%), and Malta (80%). In addition, professional services such as good advice and quality services given by pharmacists have attracted more than one quarter of the study participants indicating a direction to which the development of patient oriented service should progress to amplify patient benefits (Govo *et al.,* 2008; Wirth *et al,* 2010; El Hajj *et al,* 2011; Mahmoud *et al*., 2014).

The study participants responded positively regarding the extended community pharmacy services, regardless of sex, age, education, employment and marital status. However, as income of respondents increase the probability of welcoming the services were observed to decrease. This is may be due to the fact that these groups of people could access higher level health care providers as compared to those with lower income level. Overall, 702 (61%) of the respondents

in the current study approved the introduction of health screening as well as health promotion/prevention services. This is in line with the findings from Qatar (81%), Malta (87%), UK (71%) and Iraq (59%) (Iverson *et al*., 2001; Wirth *et al*., 2010; El Hajj *et al.*, 2011; Ibrahim et *al*., 2013).

In particular, the extended services in high demand and requested by the consumers were measuring weight and height, blood pressure testing, blood cholesterol and blood glucose testing. Similarly, in Palestine, most of the proposed extended services in high demand were requesting weight and height, blood glucose monitoring, blood pressure monitoring and cholesterol level monitoring (Khdour and Hallak, 2012). In Sudan, the services mostly favored by the consumers were: blood pressure measurement, availability of consultation rooms and blood glucose testing. A study from Mysore also reported that majority of the study subjects were in favor of health screening and monitoring services in community pharmacies (Jaidev *et al*, 2014).

This study also found that the majority of the respondents are highly interested to have most pharmacy-based chronic disease management programs in which the pharmacist provides care to consumers with diabetes, asthma, hypertension or hyperlipidemia. McManus and Mant (2001) and Turnacilar *et al (*2009) argued that the consumers' acceptance of such services could enhance the beginning of pharmaceutical care or patient oriented practice in community pharmacies, which could lead to improved patient care and outcomes. Pirmohamed *et al (*2004) also added that pharmacists could play a much bigger part in helping patients get the best from their use of medicines, and there is ample evidence suggesting that this is a fruitful direction for pharmacists.

The current study also documented that about 92% of the respondents have requested to get advice on healthy eating and lifestyle from community pharmacies. Similar proportion was reported from other study in Malta (90%) (Cordina *et al*., 1998). Pharmacists are clearly well placed to detect and manage obesity, provide targeted information and advice on diet and physical activity, and provide weight-reduction programs (Gordon, 2011; Agomo and Brown *et al*., 2012). Here, the community pharmacists could help patients with chronic ailments, like diabetes, to select right foods for their different health conditions. Counseling the community on the dangers of certain agents like cigarette smoking, alcohol intake, etc. is also an essential part of the pharmacist's roles in the community (Anderson, 2000).

Getting advice and treatment services on minor ailments is another aspect that community pharmacists could serve the community. Accordingly, 92.8% of the respondents welcomed the services and this is better when compared to the findings from Qatar (79%), and Jordan (36%) (Wazaify *et al.*, 2008; El Hajj *et al.*, 2011). In UK, patients see pharmacies as the most appropriate place for the treatment of minor illness (Hassell *et al*, 1997). Studies have shown that minor ailments comprise 18 – 40% of GP office visits (Yadav, 2008). So, several studies showed that pharmacists have shared an appreciable amount of the minor ailment care burden from GPs and it was particularly most successful in socially disadvantaged areas (Brown *et al*., 2012). In South Africa, 83.3% of the consumers reported to be highly satisfied with thoroughness of the pharmacist's consultation on minor ailments (Bornman *et al.,* 2006). Similarly, a study in North Eastern England showed that 72% of patients visited the pharmacy every 3 to 4 weeks to seek advice and treatments on minor ailments from community pharmacy and 76% were confident of pharmacists giving advice in this area (Winit-Watjana and Nazir, 2011).

Regarding introduction of immunization services in community pharmacies, about 85.6% of the respondents in the current study welcomed the services, which is greater than the report from Sudan (28.8%, Mahmoud *et al.,* 2014). A study in West Virginia showed that convenience of location and opening times were the most influential factors in mothers' preferences for their children to be vaccinated at the pharmacy (Ndiaye *et al.*, 2003). Similarly, a study in California that investigated the acceptance rates of travel related vaccine and medication recommendations in a pharmacist-run travel health found an 85% overall patient acceptance of pharmacist made recommendations. The high rate of patient acceptance and satisfaction indicates the adoption of pharmacists as non-traditional providers of health services (Hess *et al*., 2010). As indicated by several studies, community pharmacies are positioned to dramatically increase vaccine coverage by reducing the burden of the disease nationwide (Taitel *et al.*, 2011). A study in USA showed that pharmacists' involvement in vaccination was found to increase its coverage from 25% to 49% among adults, and 39% to 72%, among older adults (Setse *et al*., 2011). Francis and Hinchliffe (2010) also argued that the consumers' acceptance of expanded roles of community pharmacists into immunization services is necessary to increase access to preventive care and ultimately improve vaccination coverage.

The findings of this study also indicated that about two third of the respondents are interested to get osteoporosis screening services in the community pharmacies. A study which had assessed the impact of a community pharmacy osteoporosis risk assessment service in collaboration with GP practices showed that patient knowledge about bone health and daily calcium intake increased and that high risk patients were referred to the GP (Gray *et al*., 2002). Similarly, nearly all individuals receiving community pharmacy osteoporosis screening and education in two surveys in the USA reported that the information provided increased awareness (98% of

respondents) and the respondents were satisfied with the interaction (92%) and found the advice valuable or highly valuable (MacLaughlin., 2005; Law and Shapiro,2005).

The other important aspect of public health initiatives could be involvement of community pharmacies in sexual health services, including screening for most prevalent STIs. Accordingly, these services have got acceptance by 65.8% of the respondents. This is in line with findings from Sweden (75%) which believed that pharmacists are appropriate providers of this service (Lawrie *et al*., 2004; Bjorkman *et al*., 2008). Another studies in South east London and Netherlands showed that Chlamydia testing and treatment in community pharmacies is feasible and acceptable to users. They stated that these services may increases access to young women at high risk of STIs, although confidentiality when asking for the service at the counter could be suboptimal (Baraitser *et al*., 2007; Van Bergen *et al.*, 2004). According to Baraitser *et al* (2007), the provision of Chlamydia testing in community pharmacies increased access to testing among those who would not otherwise have been tested. This could potentially reduce demand in other sexual health services, and that community pharmacies are a suitable location for Chlamydia testing and treatment. Therefore, adequate information and education by the pharmacist regarding the mode of transmission, prevention, and management of STIs is an important public health drive as sexually transmitted diseases and the other reproductive diseases can negatively affect fertility and overall reproductive health of an individual.

Another service development of which consumers in this study were in favor was availability of separate counseling room in the community pharmacies, and 93.6% of the participants endorsed a need to have consultation room. This study reflected similar finding from Malta (80%) (Wirth *et al*., 2010). In the current study, significant number of consumers stated the absence of

privacy as one of the important reason for showing reluctance (18% of respondents) in accepting the proposed extended services of community pharmacists. Similar complaints against lack of privacy in community pharmacies have been reported in Netherlands (Pronk *et al*., 2003). Presences of consultation room to discuss health issues were also observed to affect consumer's choice of particular pharmacy (Mobach, 2008). Community pharmacists needed to be responsive to respect the consumers' confidentiality through use of private consultation areas for routine counseling, health promotion and medicines information. As it was indicated in some studies, privacy is particularly important on consumer attitudes to pharmacy advice on contraception, sexual health and woman health (Folkes *et al*, 2001).

6. Limitation and strength of the study

Recall bias in respondents' use of CP is one of the limitations. The study was also limited to urban areas where we could find socio economically better community as well as no question of accessibility of health care services and hence generalizability to rural community could not be made.

The strength of this study is that unlike studies in other countries, the current study incorporated large number of samples and it was community based survey. Hence, it is more likely representative for the study area

7. Conclusion

This study revealed that majority of the respondents had made at least one visit to the community pharmacies to obtain medicine, para-medical products or to ask for health advice before the interview date. This could give the chance for opportunistic public health initiatives to be delivered. The current study also found that high rate of community pharmacy use was related to the collection of prescriptions and OTC medicines.

Convenience of location, quick and quality services, presence of wide range of products and services were found to be the predictors of the respondents' choice of particular community pharmacy.

There was very high support from respondents regarding the introduction of the proposed extended services of community pharmacists. They are highly aspired for more services to be provided in the pharmacies such as diagnostic screening, health promotion, and counseling services.

8. Recommendation

✓ In the best interests of the community's demand and the additional responsibilities arising from an expanded scope of pharmacy practice, the following recommendations are forwarded:

❖ **To community pharmacists**:

☞ Need to improve their image as health care provider and promote their potential and services beyond the supply of medicines.

☞ Should make themselves ready with all the necessary knowledge and skills to undertake relevant health screening processes for early disease detection within the practice framework developed by the regulatory bodies

☞ Would be required to participate in an accredited training program which may address the standards, scope of practice as well as guideline protocols before being granted authorization to provide the extended services

☞ Should fulfill suitable facilities for sample collection, test execution, instrument storage, safe disposal of sharps and clinical waste and storage of consumables under the appropriate conditions as defined by the manufacturer

❖ **To FMHACA/ Federal Ministry of Health**

- ☞ Provide access to training that incorporates the extended roles and minor ailments management schemes which is likely to be crucial in increasing pharmacists' confidence in dealing with such services appropriately and effectively.
- ☞ Develop Standard Operating Procedure and scope of practice guidelines to implement the extended services
- ☞ Create supportive environment that could address social, economic and political limitations to implement the services
- ☞ Create community awareness to use the added services in CP

➢ **To the training institutions**

- ☞ Educators and professional bodies in Ethiopia should take the lead to implement continuing education program and restructure the syllabus of the various courses to meet the ever changing needs of pharmacy practice, particularly on the expansion of pharmacists' roles.

➢ **To the researchers**

- ☞ Additional research might be needed to identify the facilitators and inhibitors of the proposed extended services of community pharmacists. Besides, a study on the views of the community pharmacists on these issues could be used as an input to the present study.

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Annex I: Information sheet and consent form

1. **Introduction**:

Greeting (Good Morning/ after noon)? My name is _____. I am working for Ato Kefyalew Zeleke, who is doing his thesis for the partial fulfillment of master's degree in pharmacoepidemiology and social pharmacy at School of Pharmacy, Addis Ababa University. The study is designed to assess the perception of the community on the extended roles of community pharmacists in Addis Ababa City and thus I am going to ask you some questions related to these issues that are not difficult to answer.

Your participation in this study is completely voluntarily. Your decision not to participate in this study will not in any way affect the service you get from those pharmacies or any other health institutions. Your name will not be written on this form and will never be used in connection with any of the information you will tell me. You do not have to answer any question that you do not want to answer and you may end this interview at any time you want to. However, your honest answer to these questions will help us expand as well as improve the community pharmacy services. The interview will take about 15-20 minutes.

We greatly appreciate your help in responding to this survey.

Would you be willing to participate? (Indicate by ticking the appropriate response?

Yes _____ No_____

Date of interview _____ Name of supervisor _____

Name of interviewer_____ Signature _____

Signature _____

If you have any questions you can access, Ato Kefyalew Zeleke(principal investigator) and Dr. Teferi Gedif(Advisor) with the following address:

Mail: kefyalew2006@yahoo.com

Mobile: 09 11 77 55 23

Advisor: Dr. Teferi Gedif , Addis Ababa University

Mob፡09 11 68 48 54/09 13 10 20 33፡ ኢ-ሜይል፡ tgedif@gmail.com

Annex II: Survey questionnaire to assess perception of the community members (head of households) on the extended roles of community pharmacists: March, 2014: Addis Ababa

Location:

Sub- city _____ Woreda _____House number_____ Date_____

Questionnaire (English)

I. SOCIO-DEMOGRAPHIC INFORMATION		
No.	Questions	Suggested options for the questions(circle on the given options)
1.1	What is the sex of the respondent? (Don't ask this question)	1. Male_____ 2. Female_____
1.2	How old are you?(enter in the space)	_____ years
1.3	What is the highest level of schooling you completed?	1. Illiterate(can't read and write) 2. Read only 3. Read and write only 4. primary (grade 1- grade 8) 5. Secondary (grade 9- grade12) 6. College and above
1.4	Employment of the household head	1. Government employee 2. Nongovernmental employee 3. Housewife 4. Private business 5. Agriculture 6. Laborer 7. Pensioner 8. Jobless 9. Other(please specify)_____
1.5	Marital status	1. Never married 2. Married 3. Divorced 4. Widowed
1.6	Average monthly family income in Ethiopian birr	_____birr

Part II. Questionnaires about the head of household's use of community pharmacies

March, 2014- Addis Ababa

2.1.During the past 4 weeks, did you visit any of the community pharmacies at least once?

☐ Yes ⟶ continue with question no 2.2

☐ No ⟶ Skip to part III

2.2. What are the most common reasons for you to visit any community pharmacy? (Choose all that apply). I visit any community pharmacy to:

☐ collect prescription medicines

☐ collect medications that I can purchase without prescription (OTC)

☐ ask pharmacist for health advice

☐ to purchase para-pharmaceutical products- cosmetics, baby foods and baby products etc.

☐ Others (please specify) _____

2.3. For which of the following minor ailments did you consult the community pharmacists in the last one month?

☐ Cough

☐ Tonsillitis

☐ Skin disorders such as ringworm, rash/spots etc.

☐ Headache

☐ Indigestion and other stomach disorders

☐ Constipation

☐ Diarrhea

☐ Muscle/Joint Pain

☐ Hemorrhoids

☐ Back pain

☐ Others(please specify)

2.4. Do you often get the services from the same pharmacy?

☐ Yes ⟶ continue with question no 2.5

☐ No ⟶ Skip to part III

2.5.What are your main reasons for visiting the same community pharmacy?

☐ Location (pharmacy being close to work, close to home, or clinic)

☐ Presence of wide range of products/services

☐ Quick and quality services given by pharmacist

☐ Good advice given by pharmacist

☐ Good and competitive prices

☐ Other reason (please specify)_____

Part III. Community's perception on the extended roles of community pharmacists

Would you be interested to have the following services in the community pharmacy by the community pharmacists in the future?

No.	Consumer's preferences for new services	Yes	No	I don't know
3.1	Measuring weight, height(Body mass index determination)	☐	☐	☐
3.2	Blood pressure testing	☐	☐	☐
3.3	Blood cholesterol testing	☐	☐	☐
3.4	Blood glucose testing	☐	☐	☐
3.5	Management of life quality of patients with chronic diseases such as asthma, diabetes etc.	☐	☐	☐
3.6	Osteoporosis screening(bone mineral density testing)	☐	☐	☐
3.7	Providing sexual health services. e.g. screening of sexually transmitted infection such as syphilis, gonorrhea and genital Chlamydia testing etc.	☐	☐	☐
3.8	Immunization services	☐	☐	☐
3.9	Getting lifestyle and dietary advice services	☐	☐	☐
3.10	Giving services on minor ailments such as diarrhea, cough, tonsillitis etc.	☐	☐	☐
3.11	Getting separate counseling room in the community pharmacy	☐	☐	☐

Note. Questions 3.12 and 3.13 are based on the responses given in Part III

For the "Yes" responses ⟶ continue with question no.3.12

For the "No" responses ⟶ Skip to question no. 3.13

3.12. Why are you more interested to get the services mentioned under part III in the community pharmacy in the future? (Choose all that apply)

- ☐ Because of proximity of community pharmacies
- ☐ No awaiting time in pharmacies
- ☐ It is easy to access community pharmacists than doctors
- ☐ No appointment required to visit the pharmacy
- ☐ Others (please specify) _____

3.13. What are the most common reasons that you are not interested to get some of the services mentioned above in the community pharmacy in the future? (Choose all that apply) It is because:

- ☐ community pharmacists may not have experience or knowledge to provide such services
- ☐ of confidentiality and lack of privacy to take up screening
- ☐ Community pharmacies may not have facility and space to provide such services
- ☐ Other reason (please specify

Annex III: Amharic consent form and questionnaire for household survey

ለጥናቱ ተሳታፊዎች መረጃ መስጫ ቅጽ

መግቢያ፡-

ሰላምታ(እንደምን ዋሉ/አደሩ);

ስሜ _____ ይባላል፡፡

እኔ የምሰራው በአደስ አበባ ዩኒቨርስቲ የማስተሬት ዲግሪያቸውን በፋርማኮኢፒዲሞሎጂ እና ሶሻል ፋርማሲ ት/ት ክፍል በመማር ላይ ለሚገኙ አቶ ከፍያለዉ ዘለቀ ነዉ፡፡ከትምህርታቸው ጋር በተያያዘ ሕብረተሰቡ በመድኃኒት ቤቶች (ፋርማሲ) ውስጥ ለወደፊት እንዲሰጡ በታሰቡት ተጨማሪ አገልግሎቶች ላይ የሕብረተሰቡን ሀሳብ ለማሰባሰብ የተመለከተ ጥናት ነው፡፡ስለሆኔም ይህን ጉዳይ በተመለከተ አንዳንድ ቀላል ጥያቄዎችን አቀርብልዎታለሁ፡፡

1. **የጥናቱ ርዕስ**

   "Assessment of community perception on the extended roles of community pharmacists in Addis Ababa, Ethiopia"- ሕብረተሰቡ በመድኃኒት ቤቶች (ፋርማሲ) ውስጥ ለወደፊት እንዲሰጡ በታሰቡት ተጨማሪ አገልግሎቶች ላይ የሕብረተሰቡን ሀሳብ ለማሰባሰብ የተመለከተ ጥናት ነው፡፡

2. **የተሳትፎ ግብዣ**

በዚህ ጥናት እንድሳተፉ በአክብሮት እጠይቆታለሁ፡፡

3.**የጥናቱ ዋና ዋና አላማዎች**

- ህብረተሰቡ በመድኃኒት ቤቶች ውስጥ የሚሰጠውን አገልግሎቶች አጠቃቀም በተመለከቴ ዳሰሳ ማካሄድ
- ለወደፊቱ በሰለጠኑ የፋርማሲ ባለሙያዎች አንዳንድ ተጨማሪ የጤና አገልግሎቶች በህብረተሰብ መድኃኒት ቤቶች ዉስጥ ለመስጠት የህብረተሰቡ ፍላጎት መሆኑን ለማረጋገጥ ሀሳባቸዉን ማሰባሰብ

4. **የጥናቱ ጥቅም**

ከጥናቱ በኃላ የህብረተሰብ መድኃኒት ቤቶችን አገልግሎት በማስፋፋት ለህብረተሰቡ አማራጭ የጤና አገልግሎቶችን ማቅረብና በሽታን ቀድሞ ለመከላከል ከፍተኛ አስተዋጽኦ አለዉ፡፡ በተጨማርም ለፖሊሲ አዉጪዎች ጠቃሚ መረጃን በማመንጨት የህብረተሰቡን ፍላጎት ባገናዘቤ መልኩ የፋርማሲ ባለሙያዎች ለማሰልጠን ይረዳል፡፡

5. **ጥናቱ በተሳታፍዎች ላይ የሚያስከትለዉ ጉዳት**

ይህ ጥናት በተሳታፍዎች ላይ የሥራ ሰዓትን ከመሻማት በስተቀር ምንም አይነት ጉዳት አያስከትልም ፡፡

6. **<u>በጥናቱ መሳተፍ ሙሉ በሙሉ በፍቃደኝነት ላይ የተመሠረተ ነዉ</u>**

በዚህ ጥናት የርስዎ ተሳትፎ ሙሉ በሙሉ በፍቃደኝነትዎ ላይ የተመሰረተ ነዉ፡፡ በቃለመጠየቁ ላለመሳተፍ መወሰንዎ በመድኃኒት ቤቶች ወይም ከሌላ ጤና ተsማት በሚያገኙት አገልግሎት ላይ ምንም ተጽኢኖ አይኖረዉም፡፡ በቃለመጠየቁ ላይ ስሞ አይመዘገብም፤ በማቀርበው ጥያቄ ትክክል ወይም ስህተት የሚባል መልስ የሌለ ሲሆን ከእርስዎም የሚጠበቀው የሚሰማዎትን ሃሳብና አስተያየት አንዲገልፁልኝ ብቻ ነው፡፡ የሚሰጡኝ መረጃ እና አስተያየት ከጥናቱ አገልግሎት ውጪ ለማንም በምንም ሁኔታ አይገለጽም፡፡

7. **<u>በጥናቱ ሲሳተፉ የሚወስደዉ ጊዜ</u>**

ከጥናቱ ተሳታፊ ጋር የሚደረገዉ ዉይይት የሚወስደዉ ጊዜ ቢበዛ 20 ደቂቃ ሲሆን ተሳታፍዉ አንድ ጊዜ ይጎበኛል፡፡ ነገር ግን መጠይቆቹ ሙሉ ካልሆኑ ድጋሜ ጉብኝት ልኖር ይችላል፡፡

8. **<u>ከተሳታፍዉ የሚጠበቀዉ ምንድነዉ</u>**

ተሳታፍዉ በሚቀርብለት ጥያቄ መሠረት የሚሰማዉን ትክክለኛ መረጃ መስጠት ተገቢ ይሆናል፡፡

9. **<u>ሚስጥር መጠበቅ</u>**

ለጥናቱ ተብሎ ከእርስዎ የሚሰበሰብ ማንኛዉም መረጃ ሚስጥራዊነቱ ሙሉ በሙሉ የተጠበቀ ነዉ፡፡

10. **<u>ተጨማሪ መረጃ እንደት ማግኘት እንደሚችሉ</u>**

በዚህ ጥናት ላይ ማንኛዉም አይነት ቅሬታ ቢኖሮት የጥናቱን ባለቤትና ዋና አማካሪ በሚከተለዉ አድራሻ በመጠቀም ለጥያቄዎ መልስ ማግኘት ይችላሉ፡፡

ቃለ ምልልሱን ለማካሄድ ፍቃደኛ በመሆንዎና ጊዜዎን ስለሰጡኝ አመሰግናለሁ፡፡

የሚቀርብልዎትን ጥያቄዎች ለመመለስ ፍቃደኛ ነዎት?

☐ አዎን

☐ አይደለሁም

ፍቃደኛነቱን ያረጋገጠ መረጃ ሰብሳቢ ስም፡- _____ ፊርማ፡-_____ ቀን _____

የተቆጣጣሪ ስም፡_____ ፊርማ፡_____ ቀን _____

የጥናቱ ባለቤት፡ አቶ ከፊያለዉ ዘለቀ፡ ሞባይል፡ 09 11 77 55 23፡ ኢ-ሜይል፡ Kefyalew2006@yahoo.com

የጥናቱ ዋና አማካሪ፡ ዶ/ር ተፍሪ ገድፍ፡ አዲስ አበባ ዩኒቨርሲቲ

ሞባይል፡09 11 68 48 54/09 13 10 20 33፡ ኢ-ሜይል፡ tgedif@gmail.com

ክፍል አንድ፡- የቤተሰቡ አስተዳዳሪ (Head of household) መግለጫ ጥያቄዎች(በአማርኛ)

ከፍለ ከተማ፡_____ ወረዳ፡-____የቤት ቁጥር_____ቀን_____

ተ.ቁ	መጠይቅ	አማራጭ መልስ(መልሱን ያክቡበት)
1.1	ፆታ (ይህን ጥያቄ አትጠይቅ/ቂ)	1. ወንድ 2. ሴት
1.2	እድሜዎ ስንት ነው? (በባዶ ቦታው ላይ ይፃፍ)	_____ ዓመት
1.3	ያጠናቀቁት ከፍተኛ የትምህርት ደረጃ ስንት ነው?	1. አልተማርኩም(ማንበብና መፃፍ የማይችል) 2. ማንበብ ብቻ 3. ማንበብና መፃፍ 4. 1ኛ ደረጃ (ከ1ኛ-8ኛክፍል) 5. ሁለተኛ ደረጃ (9ኛ-12ኛክፍል) 6. ኮለጅና ከዚያ በላይ
1.4	በአሁኑ ወቅት በየትኛዉ ስራ ነዉ የሚተዳደሩት?	1. የመንግስት ሠራተኛ 2. መንግስታዊ ባልሆኔ ድርጅት ተቀጣሪ 3. የቤት እመቤት 4. የግል ሥራ 5. ግብርና 6. የቀን ሠራተኛ 7. ጡረተኛ 8. ሥራ አጥ 9. ሌላ ካለ ይጠቀስ_____
1.5	የጋብቻ ሁኔታ	1. ያላገባ 2. ያገባ 3. የተፋታ 4. የትዳር ጓደኛ በሞት የተለየ
1.6	አማካይ ወርሀዊ ገቢዎ ስንት ነዉ(በባዶ ቦታ ይፃፍ)?	_____ብር

ክፍል ሁለት፡- የቤተሰብ አስተዳዳሪውን ስለ ህብረተሰብ መድኃኒት ቤት አጠቃቀም(community pharmacy use) በተመለከቱ የቀረቡ መጠይቆች

2.1. ባለፉት 4 ሳምንታት ውስጥ የህብረተሰብ መድኃኒት ቤቶችን ሄደው ተጠቅመው ያውቃሉ?

☐ አዎን ⟶ ወዴ ጥያቄ 2.2 ይለፉ

☐ አይደለም ⟶ ወዴ ክፍል III ይለፉ

2.2. ማንኛዉንም የህብረተሰብ ሙድኃኒት ቤት የሚሄዱበት ዋና ዋና ምክንያቶች ምንድናቸው?(ከአንድ ጊዜ በላይ መልስ መምረጥ ይቻላል)

☐ በሀኪም የታዘዘውን መድኃኒት ለመግዛት

☐ ከሀኪም ትዕዛዝ ዉጭ የሚሸጡ መድኃኒቶችን ለመግዛት

☐ የታመሙ ጊዜ ፋርማሲስቶቹን ለማማከር

☐ ኮስሞቲክሶችን፤የህፃናት ምግቦችንና ሌሎች ነገሮችን ለመግዛት

☐ ሌላ ምክንያት ካለ ይጠቀስ _____

2.3. ባለፈዉ አነድ ወር ዉስጥ ከሚከተሉት ቀላል ህመሞች መካከል በየትኞቹ ፋርማሲስቶቹን አማክረዋል?

☐ ሳል(ጉንፋን)

☐ ቶንሰል

☐ ከቆዳ ጋር በተያያዙ ችግሮች፡

☐ ለራስ ምታት

☐ የምግብ አለመፈጨትና ሆድ ህመም

☐ የሆድ ድርቀት

☐ ተቅማጥ

☐ የመገጣጠሚያዎች ህመም

☐ ከንታሮት

☐ ጀርባ ህመም

☐ ሌላ ምክንያት ካለ ይጠቀስ _____

2.4. አብዛኛውን ጊዜ ከአንድ መድኃኒት ቤት ነው ግልጋሎት የሚያገኙት?

☐ አዎን ⟶ ወዴ ጥያቄ ቁ.2.5 ይለፉ

☐ አይደለም ⟶ ወዴ ክፍል 3 ይለፉ

2.5. ከአንድ መድኃኒት ቤት መጠቀምን የሚያዘወትሩበት ዋና ዋና ምክንያቶች ምንድን ናቸዉ?(ከአንድ ጊዜ በላይ መልስ መምረጥ ይቻላል)

☐ ለመኖሪያ ቤትዎ፤ ለስራ ቦታዎ፤እንዲሁም ለክሊኒክ ቅርብ በመሆኑ

☐ የምፈልጉትን ዕቃ/ገልግሎት በብዛት ስለሚያገኙ ነዉ

☐ ፈጣንና ጥራት ያለዉ አገልግሎት ከፋርማሲስቶቹ ስለሚያገኙ

☐ ጥሩ የማማከር አገግሎት ስለሚያገኙ

☐ ጥሩና ተወዳዳሪ የሆነ የዋጋ ልዩነት ስላለዉ

☐ ሌላ ምክንያት ካለ ይጠቀስ_____

ክፍል ሦስት፡ <u>ተጨማሪ የፋርማሲስቶችን ተግባር በተመለከተ የቤት አባወራዎችን ሀሳብ ለማሰባሰብ የተዘጋጀ መጠይቅ</u>

ለወደፊቱ የሚከተሉትን አገልግሎቶች በሰለጠኑ የፋርማሲ ባለሙያዎች በህብረተሰብ መድኃኒት ቤቶች ቢያገኙ ደስተኛ ነዎት?

ተ.ቁ	የአገልግሎቶቹ ዓይነቶች	አዎን	አይደለም	አላዉቅም
3.1.	የሰውነት ክብደትና ርዝመት መለካት ፤	☐	☐	☐
3.2	የደም ግፊትዎን መለካት፤ መከታተልና መቆጣጠር	☐	☐	☐
3.3	የኮለስትሮል መጠንዎን መለካት፤ መከታተልና መቆጣጠር	☐	☐	☐
3.4	የሰውነትዎን የስኳር መጠን መለካት፤ መከታተልና መቆጣጠር	☐	☐	☐
3.5	ለአስምና ለስኳር ህመምተኞች ክትትል በማድረግ ጤናቸዉን ማሻሻል	☐	☐	☐
3.6	የሰዉነት አጥንት መሳሳት ችግር መለካት፤ መከታተልና መቆጣጠር	☐	☐	☐
3.7	በአባለዘር በሚተላለፉ በሽታዎች የምክርና የምርመራ አገልግሎት መስጠት፡፡ ለምሳሌ፡ ጨብጥ፤ ክላሚድያና ወዘተ	☐	☐	☐
3.8	የክትባት አገልግሎት ማግኘት፤ ለምሳሌ፡ ተታነስ፤ እንፉለንዛ ወ.ዘ.ተ	☐	☐	☐
3.9	የሕብረተሰቡን ጤናማ የአኗኗር ዘዬዎች ላይ የምክር አገልግሎት መስጠት፤ለምሳሌ፡ ስለ አመጋገብ ስርአትና ወዘተ	☐	☐	☐
3.10	ቀለል ባሉ ህመሞች ላይ የመጀመሪያ እርዳታ ማግኘት፡ለምሳሌ፡ ሳል፤ቶንስል፤ ወዘተ	☐	☐	☐
3.11	የምክር አገልግሎት የሚሰጥበት ክፍል በህብረተሰብ መድኃኒት ቤት ማግኘት	☐	☐	☐

ማስታወሻ፡ ክፍል 3 ሥር በተጠየቁት ጥያቄዎች ላይ በመመርኮዝ“ ጥያቄ ቁ 3.12 እና 3.13 ይመልሱ፡፡

3.12. ከላይ የተዘረዘሩትን አገልግሎቶችን በህብረተሰብ መድህኒት ቤቶች ማግኘት የፈለጉበት ዋና ዋና ምክንያቶች ምንድንናቸዉ?(ከአንድ በላይ መልስ መምረጥ ይቻላል) ምክንያቱም፡

- ☐ ህብረተሰብ መድህኒት ቤቶች ለመኖሪያ ቤቴ እና ለስራ ቦታ ቅርብ በመሆናቸዉ
- ☐ በህብረተሰብ መድህኒት ቤቶች ወረፋ መጠበቅ አያስፈልግም
- ☐ ከሀኪሞች ይልቅ ፋርማሲስቶቹን በቀላሉ ማግኘት ስለሚቀል፤
- ☐ ፋርማሲስቶቹን ለማግኘት ቀጠሮ መያዝ ስለማያስፈልግ
- ☐ ሌላ ምክንያት ካለ ይጠቀስ

3.13. ከላይ የተዘረዘሩትን አገልግሎቶች በህብረተሰብ መድሀኒት ቤቶች ቢያገኙ ደስተኛ ያልሆኑበት ዋና ዋና ምክንያቶች ምንድንናቸዉ?(ከአንድ በላይ መልስ መምረጥ ይቻላል) ምክንያቱም

- ☐ ፋርማስስቶቹ እነዚህን አገልግሎቶች ለመስጠት ልምድና ዕዉቀት ላይኖራቸዉ ይችላል
- ☐ ፋርማሲስቶቹ ሚስጥሬን(privacy) ላይጠብቁ ይችላሉ
- ☐ የተጠቀሱትን አገልግሎቶች የሚሰጥበት አመቺ ቦታና መሳሪያ ላይኖራቸዉ ይችላል
- ☐ ሌላ ምክንያት ካለ ይጠቀስ _____

3.14. በመጨረሻም ከህብረተሰብ ፋርማሲስቶቹ ጋር ካለዎት ልምድ በመነሳት ከላይ የተጠቀሱትን አገልግሎቶች የህብረተሰብ ፋርማሲስቶቹ እንዲሰጡ ያለዎት አምነት ምን ይመስላል?

- ☐ እተማመንባቸዋለሁ
- ☐ አልተማመንባቸዉም
- ☐ ምንም ማለት አልችልም(neutral)

Annex IV: Interviewers' guide

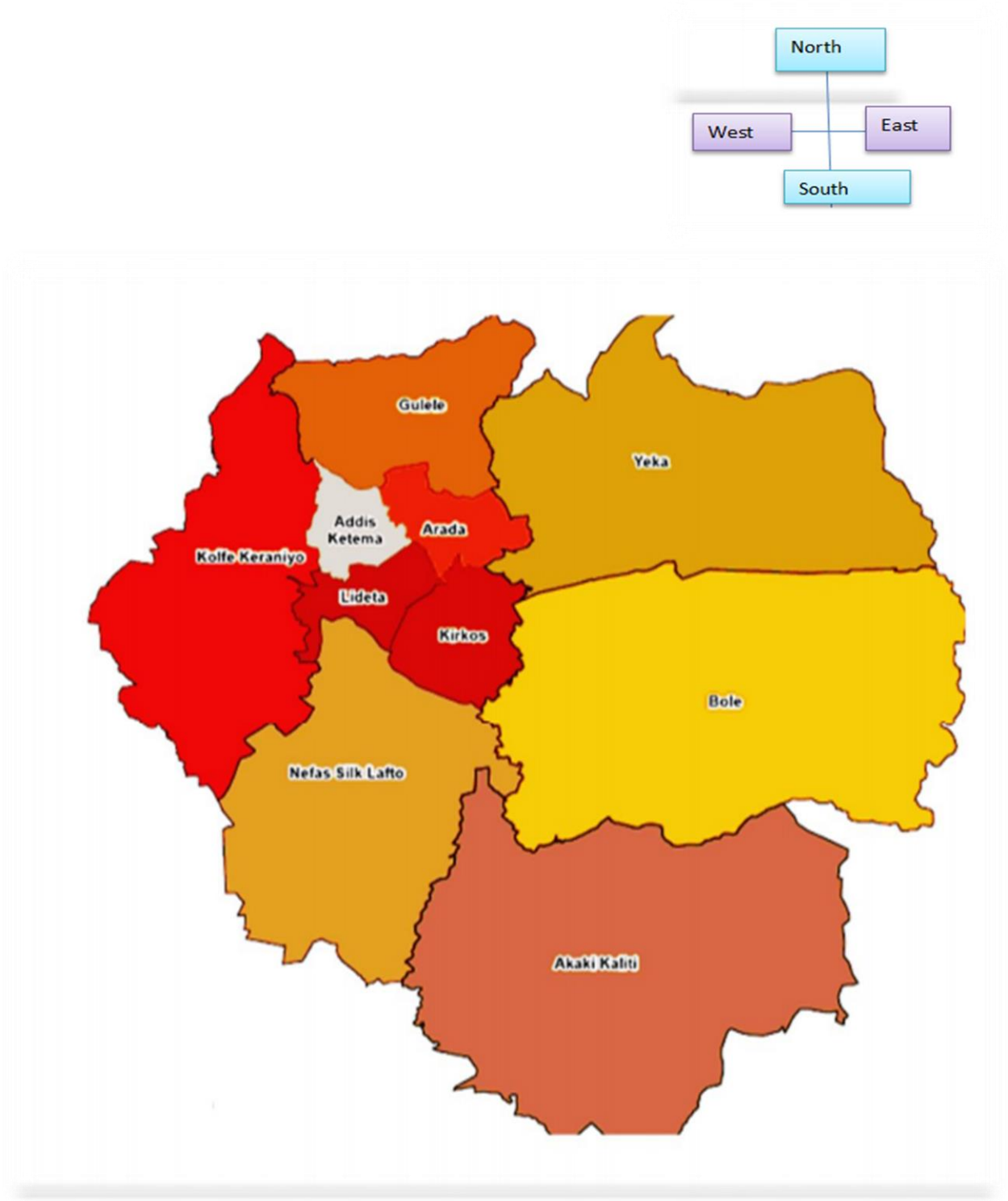
1. You must be sure that you have well understood the sampling procedure and the inclusion and exclusion criteria of study subjects; and adhere to it throughout your work
2. When you meet a respondent, please:
    - Great warmly and try to create a welcoming and friendly atmosphere
    - Introduce yourself
    - Ensure that the respondent is comfortable and try your best to keep her/his privacy
3. Inform the objective of the study to the respondent briefly in a way that he/she could understand
4. Discuss confidentiality issues with the respondent
    - Assure the interviewee that the information collected from him/her will be kept confidential and will not be accessed to anyone other than the research team
    - The respondent should be informed that his/her name will not be written
5. Inform the respondent that the participation in the study is only voluntarily and with full consent and the respondent has the right not to respond questions if she does not want to answer; and end the interview at any time he/she want to.
6. Inform the respondent that reliability and accuracy of the information given by her/him is very much important to achieve the objective of the study
7. Ask the willingness of the respondent and ask for consent
8. After discussing the above points with the respondent and obtained his/her full consent, continue to complete the questionnaire
9. If the respondent refuses to participate and you must leave him/her, don't forget to thank
10. If the respondent refuses to respond certain items, allow her/him to do so; and incase when a respondent wants to discontinue at the middle of the interview thank her/him and discontinue the interview
11. Try to fill all the necessary data before departing from the respondent
12. Respect the religion, belief and attitude of the respondents. Respect the response given by any respondent

Annex V: Number of projected population and households in Bole sub- city and Nifas Silk Lafto sub- city, 2013.

Bole sub-city			Nifas Silk Lafto sub- city		
Woreda	Number of population per Woreda	House hold size	Woreda	Number of population per Woreda	House hold size
1	24731	6032	1	36,558	7,310
2	5120	1249	2	37,258	7,450
3	9450	2305	3	40,264	8,050
4	26650	6500	4	15,557	3,110
5	15150	3695	5	31,115	6,220
6	16064	3918	6	38,745	7,750
7	36092	8803	7	23,875	4,770
8	18450	4500	8	18,509	3,700
9	27392	6681	9	31,247	6,250
10	10077	2458	10	23,875	4,780
11	10861	2649	11	42,846	8,570
12	18532	4520	12	12,759	5,150
13	30246	7377	total	365,608	73,110
14	19934	4862			
Total	268,750	65,549			

Source: Bole and Nifas Silk Lafto sub- city Health Bureau.

Annex VI: Administrative Map of Addis Ababa



Source: http://en.wikipedia.org/wiki/Addis_A

Annex VII: Sampling architecture