ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

ASSESSMENT OF HEALTH PROMOTION SERVICES IN COMMUNITY PHARMACIES OF ADDIS ABABA, ETHIOPIA

By: Hiwot Moges (B. Pharm)

JANUARY 2019

ADDIS ABABA UNIVERSITY

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SCHOOL OF PHARMACY

DEPARTMENT OF PHARMACEUTICS AND SOCIAL PHARMACY

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Assessment of Health Promotion Services in Community Pharmacies of Addis Ababa, ETHIOPIA

BY HIWOT MOGES

Under the supervision of

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Master's thesis Submitted to the Department of Pharmaceutics and Social

Pharmacy, School of Pharmacy in Partial Fulfillment of the Requirements for the **Degree of Master of Science** in **Pharmacoepidemology and Social Pharmacy**

January, 2019

Addis Ababa, Ethiopia

Abstract

Pharmacist's role is changing globally from drug compounding and dispensing to health promotion and patient care. Despite the fact that Ethiopia is facing a double burden from non-communicable and communicable diseases, community pharmacists in the country are rarely involved in health promotion services. This study aimed to identify level of involvement, barriers for pharmacists to provide health promotion functions in community pharmacies and assess community pharmacists' beliefs, willingness and perceived ability in providing health promotion services in community pharmacies. Qualitative and quantitative methods of data collection were used to answer the study objectives. For the quantitative part, self-administered questionnaires were distributed to 315 community pharmacists who were working in Addis Ababa. Simple descriptive statistics and multiple regression were used to analyze the data. For the qualitative part, in-depth interviews were held with stakeholders from Ministry of Health, Ethiopian Food, Medicine, Healthcare Administration and Control Authority and Ethiopian Pharmaceutical Association. The study revealed that 58% of pharmacists interviewed were not rendering health promotion services in community pharmacies. Age and work experiences found to be associated with provision of health promotion services. In such a way that pharmacists between 22-27 years old and with work experience 3 years and less are more involved on providing health promotional services. Furthermore, majority of community pharmacists 283(95.3%) felt that provision of health promotion services in community pharmacies have favorable impact on preventing disease and promoting health. They are also willing 263(88.6%) to perform health promotional functions. Moreover, they felt they are good at promoting physical activity 223(75%), screening diabetes 219(73.7%), promoting healthy eating 217(73%), on the other hand community pharmacists perceived unable on utilizing the test kits for screening cholesterol 149(50%) and explaining physiologic harms of khat chewing 121(41%). Absence of guideline on pharmacists' health promotion role , lack of space to maintain privacy, knowledge and skill gaps were claimed to be barriers for rendering health promotion services in community pharmacies. Thus, community pharmacists' involvement in health promotion is low. It is recommended to develop guideline on health promotion role of pharmacists in the scope of practice, strengthen pre-service and in service training on health promotion and implementation of MoHlatest directives towards health promotion role of community pharmacists.

Acknowledgement

First of all I would like to thank Almighty God for everything I have and everything that happened in my life.

I am very much grateful to my advisor Dr. TeferiGedif for his valuable advice and comments on developing the proposal and finalizing the thesis. I would like to express my heartfelt gratitude to Mr. DawitTeshome for his cooperation and constructive comments in developing and finalizing this research paper. I am also pleased to thank data collectors, Key informants and community pharmacists who participated in this research.

Moreover, I would like to thank families and friends for their unreserved support. Furthermore Ethiopian Public Health Institute and African Union Commission for internet and library contributions.

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Acronyms

EFMHACA- Ethiopian Food, Medicine, Healthcare Administration and Control Authority

EHRIG- Ethiopian Hospital Reform Implementation Guidelines

ESA - Ethiopian Standards Authority

EPA- Ethiopian Pharmaceuticals Association

FIP- International Pharmaceutical Federation

FMOH- Federal Ministry of Health

PHC- Primary Health Care

PI- Principal Investigator

RCT- Randomized Controlled Trial

SPSS- Statistical Package for Social Science

1. Introduction

Across the world, millions of people visit community pharmacies for their daily health care needs. Pharmacists are placed at the first point of contact in the healthcare system due to their easy accessibility (WHO, 2014). ThereportofInternationalPharmaceuticalFederation(FIP)GlobalPharmacy Workforcesurvey showed that on average, 58% of pharmacists were found to work in retail community pharmacies,exceptthe SouthEastAsianregionwherethepharmaceuticalindustryemploysup to55%ofthepharmacist workforce(FIP,2009).

According to International Pharmaceutical Federation (FIP), community-based pharmacists are experts in pharmaceutical care and health promotion. These concerns the attitudes, functions, knowledge and skills of the pharmacist on the provision of public health promotion services with the goal of succeeding on health promotion , disease prevention and quality of life (FIP,2014).

The world has changed demographically and socio-economically. As a result new patterns of health care needs have evolved. Consequently, scope of practice of pharmacists has changed. They become key players in promoting wellness, preventing disease and contributing to disease management and medicine compliance, in close collaboration with other healthcare professionals and institutions (FIP, 2014; Karen, 2009).

Unfortunately, chronic diseases are appearing with increasing frequency in younger adults and even children, likely a direct result of societal trends including unhealthy diets, oversized serving portions, and inactivity, which collectively contribute to early development of type 2 diabetes, dyslipidemias, and obesity. Likewise, preventable complications from each of these conditions are also on the rise. While chronic diseases are common and costly, many are also preventable through strategies such as healthy eating, being physically active and avoiding tobacco use (U.S Department of Health and human service, 2013; Iversen et al, 2009).

The increasing burden of chronic conditions on patients, their families, communities and the health system is leading the developed world to investigate new approaches to caring for patients. Primary

health care, as the first level of contact with the health system for many individuals has been refocused to emphasize on health promotion, illness prevention and chronic disease management (Pruitt et al, 2005).

Furthermore,non-communicable diseaseshave emergedasimportantpublic healthproblemin Ethiopiaveryrecently. WHOestimated34%ofEthiopianpopulationis dying fromNCD,witha nationalcardiovasculardisease prevalence of 15%, cancer andchronicobstructive pulmonary diseaseprevalenceof4%each,and diabetes mellitus prevalenceof2%(WHO, 2011). Similarly, systematicreviewsontheimpactof NCDsrevealedthat:cardiovasculardiseaseaccountsfor 24% of deathsinAddisAbaba,cancercauses10% of deathsintheurbansettingsand2% deaths inruralsetting,anddiabetescauses5%and chronicobstructivepulmonarydiseasecauses3% ofdeaths. Hence, manystudies suggested that oneofthe ways forwarded to solve such problems is engagingoftheprofessionalsinmultidisciplinary expertiseanditisbelievedthatthe underutilized resource, particularly pharmacists could make a greater contribution in the provision ofqualityhealth care(WHO, 1996).

Pharmacists' involvement in public health is a means to increase relevance and service delivery of the profession. However, limited training in public health and lack of clearly defined public health roles for community pharmacists hinders involvement of pharmacist in public health activities (Gaziano et al., 2010).

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).

Operational Definition

In the present study health promotion services of community pharmacists refers to promoting healthy life style (smoking cessation, physical-exercise, healthy eating, weight management, alcohol consumption control and assisting khat chewing cessation) and preventing diseases through screening for major health problems.

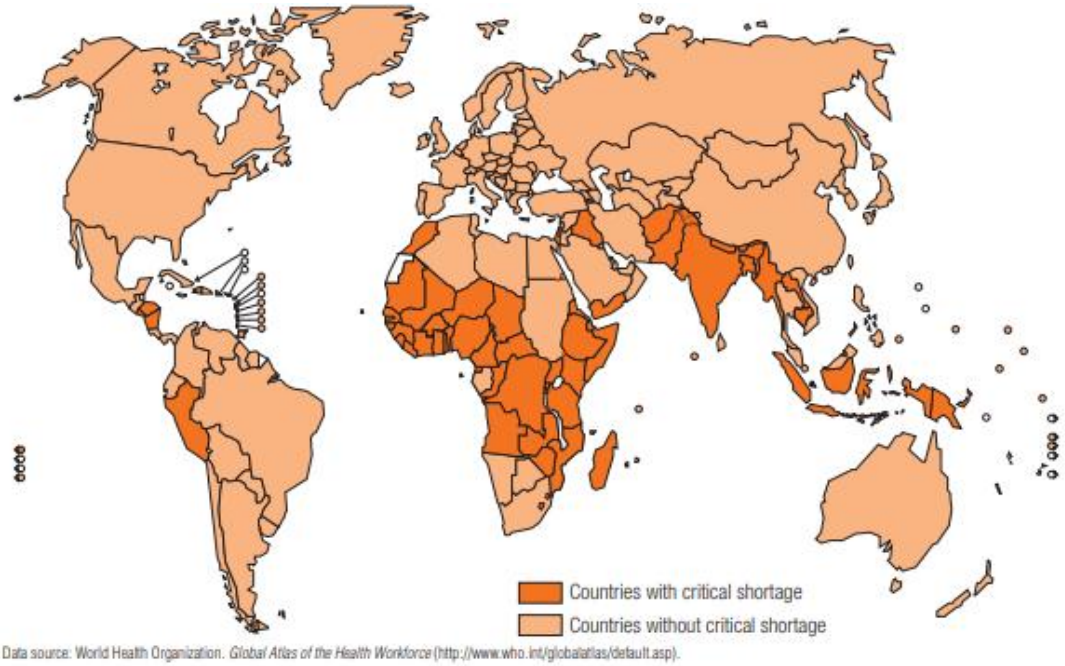
2. Statement of the Problem

Health promotion is the processes which enable people to increase control over and to improve their health to reach a state of complete physical, mental and social well-being (WHO, 1986).

Similarly, Ethiopia is guided by disease prevention and health promotion based policy; through facilitating prompt diagnosis and treatment, discouraging the acquisition of harmful habits such as cigarette smoking, alcohol consumption, drug abuse and irresponsible sexual behavior, and encouraging the awareness and development of health promotive life-styles (EFDRE, 1993). Researchers showed that in developed and developing countries community pharmacists are highly involved in the above activities and fill information and accessibility gaps (Soyemi and Hunpoun- Husu, 2013; Fajemisin, 2013).

Moreover, WHO has identified countries threshold in workforce density as 2.5health care professionals per100populations; in which Ethiopia is one of the countries fall below the edge. In these kinds of scenarios it will be crucial to use available resources efficiently as it is only possible to achieve national goals and objectives through healthy and productive citizens (WHO, 2006).

Figure 1 Countries with and without critical shortage of health service providers



Data source: World Health Organization. *Global Atlas of the Health Workforce* (http://www.who.int/globalatlas/default.asp).

Not involving community pharmacists in public health activities affects the country in multiple ways. For instance, it contributes for the uneven distribution and shortage of health professionals as well as growing prevalence of non-communicable diseases (FMoH, 2010).

Although there is clear potential for community pharmacies to contribute in a unique way to public health, changes in the behavior of pharmacists, clients and policy makers are required for the service to be successful. For instance, the extent to which pharmacists accept their role on performing public health functions and policy makers and regulatory bodies' commitment are crucial to carry out the services (Eades et al, 2011).

2.1 Significance of the study

This particular study attempted to assess the roles of community pharmacists in providing public health promotion services, their perceived ability to perform health promotion functions as well as identify barriers for performing health promotion functions in community pharmacy settings. Documenting information about community pharmacists' level of involvement, beliefs, perceived abilities and potential barriers to participate in public health promotion activities is essential for policy makers to exploit untapped potential of community pharmacists in cost effective manner. Educational institutions would also benefit if the gaps are identified to enhance pharmacists' ability to exert the desired functions.

3. Literature Review

3.1 Community Pharmacists' Practice on Health Promotion

In a study done in Legos, Nigeria pharmacists participate in patient education and provision of drug information services (89.1%), this includes provision of tobacco cessation advices (83.3%), participation in provision of alcohol cessation advice (84.2%) and detection of adverse drug reaction (80.8%). Their participation helps in improving and maintaining the quality of life of patients and also prevents death, disease and disability (Soyemi and Hunpoun- Husu, 2013).

In study done in Gonder, Northern Ethiopia 68% of pharmacists was participated in nutrition and physical activity. Also 58.3% were involved on weight management; 81% in diabetic counseling. Similarly, a study done in DebreMarkos, Gondar, Dessie, Bahir Dar, Woldya and DebreBirhan indicated that majority of community pharmacists (64%) were not involved in rendering public health promotional services. On the other hand age and work experence(AOR= 2.099, 2.01) respectively found to be associated with rendering health promotional servicies (Gelayeeetal, 2017; Erku and Mengesha, 2017).

Community pharmacies in Europe offer a wide range of professional and commercial services to their customers. For instance in England community pharmacists are involved in a wide range of roles in public health; the seven dominant themes were smoking cessation services, provision of emergency hormonal contraceptives, prevention and management of drug abuse, misuse and addiction, healthy eating and lifestyle advice, chronic disease management, infection control and prevention and minor ailment schemes. Moreover through health screenings and health education, pharmacists play a key role in prevention as well as access to care. In light of work force shortages among health professionals, pharmacists may act as first responders, providing clinical advice include over-the-counter (OTC) relief that may aid in decreasing unnecessary emergency room visits for common conditions (Fajemisin, 2013; Mossialos, etal 2013).

3.1.2 Community Pharmacists participation in Screening

Pharmacy - based screening programs in South Africa showed that 57% of the pharmacies provided at least one screening test daily. Blood pressure measurement, serum cholesterol, capillary glucose and pregnancy testing were the most commonly offered services. Screening tests were conducted less than five times a week, except for blood pressure measurement that was more frequent. Only 35% of pharmacies kept records. No quality control procedures were used and pharmacists' knowledge about the tests such as false positive and false negative results

was poor (Moses, 2012). On the other hand in Ghana, many of pharmacists are involved in screening of at risk patients for the disease, for example hypertension (70.8%) and also a request for laboratory tests by clients, for example malaria parasite and widal test (SoyemiHunpoun-Husu, 2013).

TherateofHospitaladmissionduetothesediseaseshavealsoincreasedbetween1970sand2000s:cardiovasculardiseaseaccountsfor3%-12.6%;canceraccountsfor1.1%-2.8%, diabetesaccounts for0.5%-1.2%, andchronicobstructivediseasesaccount for 2.7%-4.3% of morbidity.Associatedriskfactorsdocumentedwere:hypertension,tobacco-use,andharmful useofalcohol,overweight/obesity,andkhat-chewing(Misganaw*etal*.,2014),allofwhichcan be attributed to modifiable behavioral risk factors (Mokdad*et al*., 20).

3.1. 3 Barriers on Providing Health Promotion in Community Pharmacies

Most common barriers for the execution of health promotional functions in community pharmacies are: lack of continuing education programs with emphasis on health promotion and disease prevention, exclusion of primary health care course work and experiential activities as part of the curriculum in pharmacy schools, legal framework of community pharmacists' involvement in PHC are not clearly stated and unwillingness of parents or care givers to use community pharmacies for routine immunization of their wards. Lack of time was perceived by most pharmacists (63.9%) as a major barrier. Other highly recognized barriers were lack of privacy (57.1%) and lack of additional reimbursement, additional staff (n = 49, 59.7%). The pharmacists' perceived training needs to be given on different public health functions(56.2%) (Azuka and Arigbe, 2008; Ayoub, 2016).

A study done in Gonder, northern Ethiopia revealed that most common barriers for provision of health promotion service in community pharmacies are lack of training 79%, insufficient management support 79%, absence of standard treatment guideline 77%, lack of reimbursement 68% and lack of profitability 66% (Gelayeeetal, 2017).

3.1. 4 Community Pharmacists involvement in smoking cessation

In US Fifteen community chain pharmacists were trained using a smoking cessation training manual developed at the Virginia Commonwealth University School of Pharmacy. From April 1, 1997, through December 31, 1999, interested patients met individually with a study pharmacist during scheduled clinic times in semiprivate counseling areas. A patient chart was maintained at

the site and updated after each visit. The first 30 patients completed a questionnaire after the third visit to the smoking cessation clinic to assess satisfaction with pharmacists and the overall program. Of the 48 patients, 12 (25.0%) abstained from smoking cigarettes for 12 months or more beyond their predetermined quit dates. Abstinence rates for 1, 3, and 6 months were 43.8%, 31.3%, and 25.0%, respectively. Compared with other types of previously reported interventions, a community pharmacist-managed smoking cessation clinic achieved greater long-term smoking cessation rates (Kennedy et al, 2002).

On the other hand in a randomized trial on community pharmacies in UK a total of 976 smokers were included. The trials were set in the UK and involved a training intervention which included the stages of Change model; they then compared a support program involving counseling and record keeping against a control receiving usual pharmacy support. In both studies a high proportion of intervention and control participants began using nicotine replacement therapy. One study showed a significant difference in self-reported cessation rates at 12 months: 14.3% versus 2.7% ($p < 0.001$); the other study showed a positive trend at each follow-up with 12.0% versus 7.4% ($p = 0.09$) at nine months. The majority of pharmacists and pharmacy assistants thought that: the stages of change model was a good way of understanding smoking cessation, that the training was a good learning experience and a good use of their time. They felt they had been able to utilize the training, that it had made a difference to the way they counseled customers, that it had helped them to help their customers, and that it had increased their job satisfaction (Blenkinsopp et al, 2003).

3.1.5 Community pharmacists' perception on promoting weight Management and healthy eating

A study conducted in Scotland revealed that most pharmacists were 'very confident' or 'confident' in measuring weight ($n = 78$, 93.9%), height ($n = 78$, 93.9%) and BMI ($n = 78$, 93.9%). They were also confident about giving advice on healthy eating ($n = 70$, 84.3%) and physical activity ($n = 66$, 79.5%) and also giving advice on weight-loss drugs ($n = 65$, 78.3%). Services commonly offered were advice on diet ($n = 59$, 71.9%), advice on weight-loss products ($n = 59$, 71.9%), BMI calculation ($n = 56$, 67.4%), physical activity advice ($n = 53$, 65.4%) (Eades and O'Carroll, 2011).

In a review on assessment of community pharmacists role in weight management Pharmacists' confidence in achieving positive outcomes in weight management counseling was low in one study. Pharmacists in a study in the USA reported mean confidence (1 = not at all confident and 5 = extremely confident) scores of only 3.0 for achieving weight loss in patients as a result of pharmacist counseling and 2.8 for achieving consumption of a calorie controlled diet in patients. Mean confidence scores for medicine related aspects of obesity counseling (e.g. minimization of adverse effects of anti-obesity medication) were higher at between 3.3 and 3.4. Self-reported frequency of obesity counseling was found to be positively correlated with confidence in achieving positive outcomes (Newlands, 2011).

4. Objectives

4.1 General Objective

- To asses community pharmacists' involvement in rendering health promotion functions

4.2 Specific objectives

- To assess community pharmacists' beliefs and willingness on providing health promotion services

- To assess community pharmacists' perceived ability in providing health promotion services

- To identify barriers to give health promotion services in community pharmacies.

5. Methods

5.1 Study setting and period

The study was conducted in Addis Ababa, capital city of Ethiopia. The city occupies a total area of 540km^2 with a total population of 3,195,000. Administratively it 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-Kalityand Yeka. (AACAIB, 2015; CSA, 2013).

At the time of this study, Addis Ababa had 13 public referral hospitals, 29 general hospitals (7 public, 22 private), 3 private primary hospitals, 97 public health centers, 572 community pharmacies (21 public and 551 private) and 306 private drug stores. This study was conducted in community pharmacies (both public and private) in 5 sub-cities selected randomly (AACAIB, 2015).

5.2 Study design

Mixed data collection methods composed of cross sectional survey and qualitative study were used. Data collection was carried out from March to May 2018 in Addis Ababa.

5.3 Source and study population

All pharmacists working in community pharmacies of Addis Ababa were the source population and those have been working in selected community pharmacies at the time of the survey were study population.

5.4 Sample size determination and sampling techniques

Single proportion estimate were used to determine the sample size in quantitative part using the following formula (Sanders, 1995):

$$n = \frac{(Z\alpha/2)^2\, p\,(1-p)}{d^2} = \frac{(1.96)^2(0.5)\,(0.5)}{(0.05)^2} = 384$$

n is the minimum sample size required

Z is the critical value for a given confidence interval

α is the probability of type I error

P is expected proportion of the event to be studied (% of pharmacists who are involved on health promotion activities is assumed to be 50%)

d is margin of error

Since the size of the study population is less than 10,000 the sample size need to be corrected using the formula;

$$\text{Corrected sample size} = \frac{n \text{ x } N}{n + N}$$

Where:

– n is the non-corrected sample size

– N is the size of the source population

Currently there are 572 community pharmacies in Addis Ababa and each pharmacy have at least two pharmacists so the minimum number of pharmacists working in community pharmacies of Addis is 1114.

(384x1114)/ (384+1114) = 286, adding 10% contingency for non-response rate, the ultimate sample size was 286+29=315.

Therefore 315 pharmacists selected by identifying 5 sub cites using simple random sampling, number of community pharmacies addressed from each randomly selected sub cities identified using proportional sampling technique and particular pharmacies selected applying systematic random sampling technique from the registry of community pharmacies of selected sub-cities arranged by their opening years.

K= 1114= 3.5

315

For the qualitative data collection 9 key informants were selected purposively from Ministry of Health, EFMHACA and EPA.

5.5 Data collection

Self -administered Questionnaires

Structured self-administered questionnaire developed from pervious similar studies (Offu et al, 2015; Erku, 2017) with moderate modification (questions regarding chat chewing cessation, pharmacists perceived ability, willingness and beliefs were included in this study) to suit to our purpose. The questionnaire consists of a series of questions to asses' community pharmacists' practice, beliefs, willingness and barriers towards performing health promotion functions (Annex I). The questionnaire prepared in English language were distributed to pharmacists working in

the selected communitypharmacies by data collectors after explaining the purpose. Filled questioners were collected the following days suggested by study participants.

Key Informant Interviews

An interview guide was prepared in English containing questions as what are health promotion roles of community pharmacists, the barriers to render health promotion services in community pharmacy and how challenges can be averted. It has been translated to Amharic language and translated back to English then the interviews were performed in Amharic at the respective offices of respondents by principal investigator (PI) and all interviews were recorded and notes has been taken by a note taker (Annex II).

5.6 Data quality assurance

The questionnaires reviewed by three instructors from School of Pharmacy and two community pharmacists then pre-tested. Routine onsite supervision was carried out by the principal investigator. The collected questionnaires were checked for completeness, accuracy, clarity and consistency by the PI on daily bases.

5.7 Data entry and analysis

The collected data was manually checked for completeness and consistencies before being entered into the computer. The quantitative data was entered and analyzed by using SPSS version 25. Descriptive statistic such as percentage, proportion and mean used to present the data. Crude and adjusted odds ratio multivariate logistic regression and chi square were used to analyze the association between potential explanatory variables and the outcome. The qualitative data was analyzed thematically; in such a way that the recorded interview was transcribed and translated to English after transcription. The transcribed document has been coded by the PI after going through it multiple times. Then the codes had merged to themes by the PI and advisor independently and discuss on the emerging themes.

5.8 Ethical consideration

Ethical approval was obtained from the Ethics Review Board of the School of Pharmacy, Addis Ababa University (Annex III).Verbal consent from all respondents was obtained before enrolling them as the respondents of the study. During the consent process, the respondents were provided with information regarding the purpose of the study, why and how they were selected and what was expected of them. They were also informed that they could withdraw from the study at any

time during the interview process. Participants were also assured about confidentiality of the information that was obtained in the course of the study. To assure the anonymity of the respondents' personal identifiers were not used during the data collection.

6. Results

6.1 Self-administered Questionnaires

6.1. 1 Socio demographic characteristics of respondents

A total of 315 pharmacists working in 130 community pharmacies were approached. Of these, 297 completed the self-administered questionnaire; making a response rate of 94%. The mean age of the survey respondents was 28.3 years (SD=4.08, range 22 to 50 years). One hundred sixty (53.9%) of the respondents were females. Two hundred eighty five (96%) had from 5 month to 3 year's work experience. Twelve (4%) of them had 4-8 years of experience (Table1).

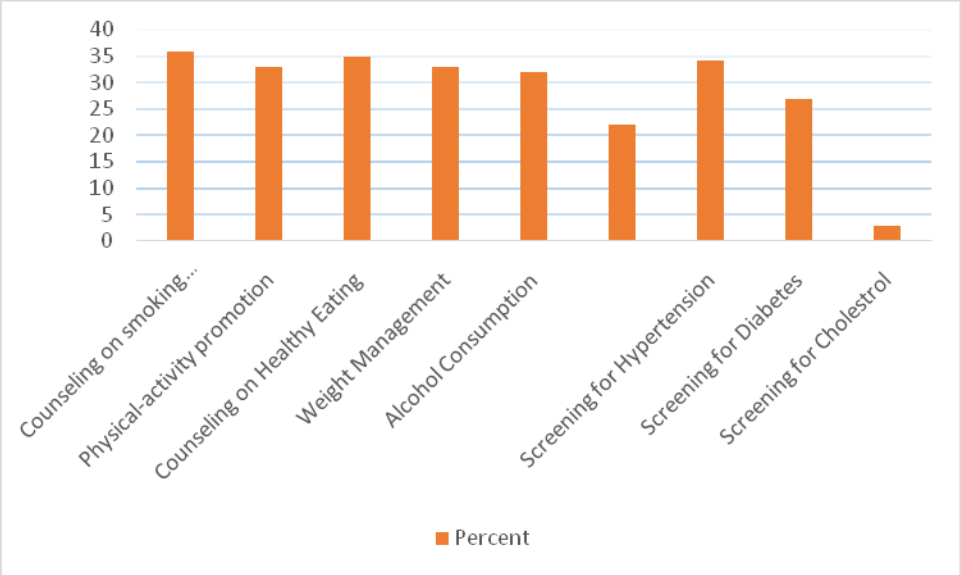
Table: - 1 Socio demographic characteristics of community pharmacists working in community pharmacies of Addis Ababa, 2018.

Socio demographic Variables	Frequency/Percentage
Gender	
Male	137(46.1)
Female	160(53.9)
Age	
22-27 Years	82(27.6)
28-33 Years	120(40.4)
34-40 Years	63(21.2)
Greater than 40 years	32(10.8)
Marital status	
Single	103(34.7)
Married	153(51.5%)
Divorced	34(11.4%)
Widowed	7(2.4%)
Educational status	
B.Pharm	214(72.1)
MSc Degree	83(27.9)
Work experiences	
$\leq$ 3 years	285(96.0)
4-8 years	12(4.0)

6.1.2 Community pharmacists' involvment in health promotion servicies

Of 297 respondents, 173(58%) of them were not giving any form of health promotion services such as counseling on smoking cessation, physical activity promotion, counseling on healthy eating, weight management, alcohol consumption control, explaining physiological harms of khat, screening for hypertension, diabetics and cholesterol for the last one month. On the other hand 124 (42%) of pharmacists in Addis Ababa were found providing some of the health promotion services mainly counseling on smoking cessation, promoting healthy eating and screening for hypertension. However, they were rarely participating on screening for cholesterol and diabetes, and explaining physiologic harms of khat chewing (Figure 3).

Figure 2: Health promotion activities rendered by community pharmacists in Addis Ababa, 2018.



Respondents' age and work experience were associated with rendering health promotion services. In this regard, proportions of respondents between the age of 22-27 years and with work experience of 5 month to 3 years who claimed to have been performing health promotion functions in community pharmacies greater than the other categories AOR = 2.09 (2.036-4.252) and 2.01(1.994-4.021), respectively). However, gender, marital status and education did not show association with provision of health promotion services (Table 2).

Table 2 Factors associated with provision of health promotion services in Addis Ababa, 2018

Services	Counseling on smoking cessation	Physical-activity promotion	Counseling on Healthy eating	Wtmgt	Alcohol consumption Control	Explain physiological harms of chat chewing	Screen for hypertension	Screen for diabetics	Screen for cholesterol
Variables									
Gender									
Male	137(46.1)	46(47%)	53(50%)	48(46%)	49(51%)	28(61%)	48(48%)	36(45%)	6(70%)
Female	160(53.9)	52(53%)	53(50%)	49(51%)	48(49%)	19(39%)	53(52%)	44(54%)	3(30%)
P value	0.28	0.56	0.36	0.66	0.89	0.77	0.34	0.3	0.8
Age									
22-27	82(27.6)	102(34%)	77(73%)	26(25%)	29(28%)	4(2%)	61(73%)	20(25%)	0
28-33	120(40.4%)	79(27%)	20(8%)	23(24%)	26(25%)	15(21%)	20(8%)	20(25%)	3(25%)
34-40	63(21.2)	24(9%)	9(3%)	29(28%)	23(24%)	11(29%)	9(3%)	20(25%)	3(25%)
>40 yrs	32(10.8)	6(2%)	0	19(22%)	19(20%)	17(36%)	13(5%)	20(25%)	3(25%)
P value	0.002*	0.06	0.08	0.004*	0.09	0.3	0.01*	0.78	0.99
Work exp									
≥3 years	285(96.0)	65(25%)	57(53%)	56(54%)	57(53%)	4(2%)	65(25%)	26(25%)	0
4-8 years	12(4.0)	43(13%)	33(40%)	22(19%)	33(40%)	11(21%)	20(13%)	23(24%)	3(25%)
>8 years	285(96.0)	31(11%)	7(2%)	20(17%)	7(2%)	29(28%)	31(11%)	19(20%)	3(25%)
P value	0.004*	0.5	0.07	0.03*	0.4	0.41	0.005*	0.58	0.34

*Significant association

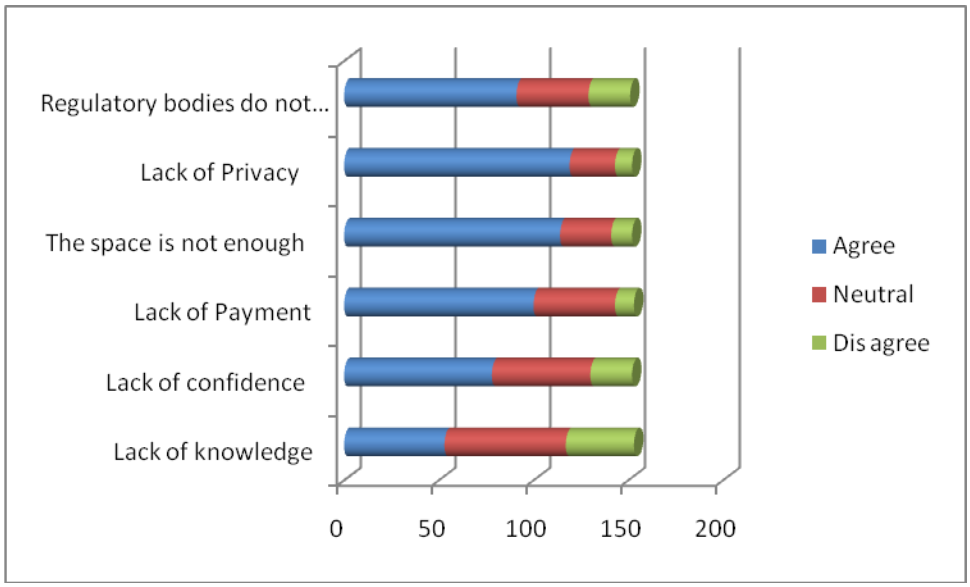
6.1. 3 Pharmacists' belief and willingness towards providing health promotion services

The study revealed that majority of community pharmacists 283(95.3%) believed that their involvement in health promotion services would have favorable impact on promoting health. Majority 263(88.6%) of them were willing to perform health promotion functions.

6.1.4 Barriers of providing health promotion services in community pharmacies

The respondents identified numerous barriers for not providing health promotion services. Lack of space to make private discussions and absence of payment scheme for health promotion services were among the top reasons. Regulatory limitation, lack of confidence and knowledge were also indicated as barriers from rendering health promotion services in community pharmacies (Figure 4).

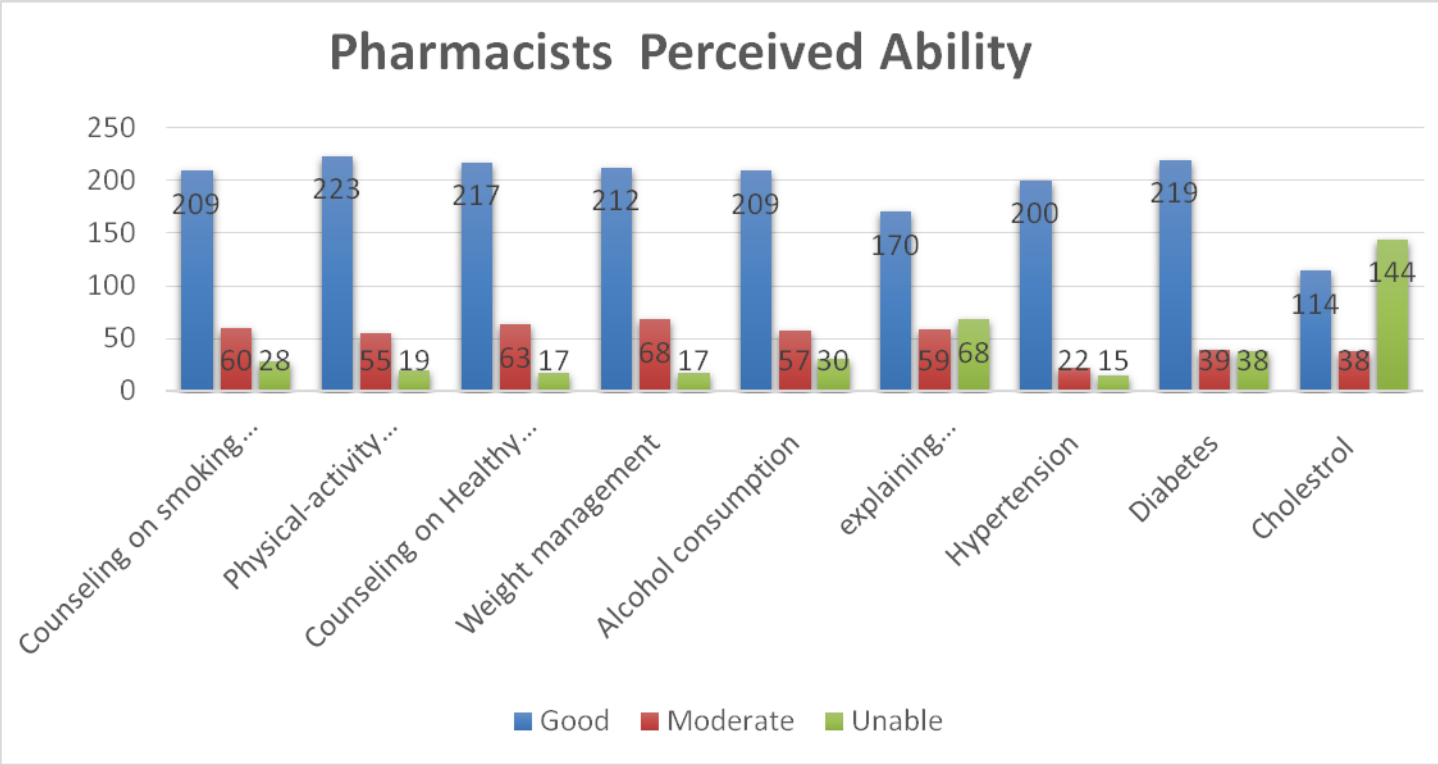
Figure 3: Barriers of providing health promotion services in community pharmacies in Addis Ababa, 2018



6.1.5 Pharmacists perceived ability to provide health promotion services

Regarding the respondents' perceived ability, 223(75.08%) said they are good at promoting physical activity, 219 (73.7%) screening for diabetic and 217(73.03%) promoting healthy eating. On the contrary, screening for cholesterol and explaining physiologic harms of chat chewing were areas claimed by the respondents to have been deficient.

Figure 4: Number of pharmacists perceived ability towards health promotion activities in Addis Ababa, 2018



6.2 Results from Key informant interview

A total of 9 key informants from EFMHACA, Ministry of Health, and Ethiopian Pharmaceutical Association were contacted. Eight of them were males and with a median age of 42 years (Range 34-57 years). Six were pharmacists and the remaining 3 were with public health background; having mean work experiences of 17 years (SD= 7.3; range 11-40 years). Themes were set in such a way that the principal investigator and the advisor went through the transcribed data independently and come up with suggested themes then decided the final themes together.

A. Public Health Role of Community Pharmacists

There is a divided opinion among key informants opinion on the public health role of a pharmacist. Three key informants said community pharmacists have public health role.Others said community pharmacists have partially or no public health role. In relation to these, sayings from two key informants from the two groups are quoted below:

One key informant said:

"Of course community pharmacists have public health roles, educating the public on health promotion or healthy life style, disease prevention, rational medicine use, ADR monitoring and screening for chronic diseases as hypertension and diabetics are public health roles expected from community pharmacies. (Male, EPA)

Another said

"Although providing health promotion services in community pharmacies is not forbidden, I can't say they have public health role. Their main role is making medicines (brand and generic) accessible. Moreover, they support the curative service through maintaining drug supply system according to the community need" (Male, MoH).

B. Current community pharmacies performance towards health promotion

All respondents agreed that community pharmacies are not accomplishing their roles towards health promotion. Also they mention experiences related to health promotion services.

One respondent said

"Around 2011 it was common to observe community pharmacies providing screening for chronic diseases such as hypertension and diabetic. However, in some community pharmacies regulatory authority officers (inspectors) identified limitations related to waste disposal mechanism and infection prevention .Thus governments make them stop the service" (Male, EFMHACA).

C. Challenges

Respondents identified that unclear definition of pharmacists' health promotion role and lack of under graduate courses are the challenges.

One respondent said

''Health promotion roles of pharmacists are not origin from behavioral health problems yet community context is usually ignored when promotional activities are designed and the activities would rely on theoretical, out of the book promotional concepts. Also, promotional activities relied on general health workers, the focus being health extension workers, who do not have the high level behavioral expertise which would have enabled detailed community level study to identify root causes of unwanted health behaviors''(Male, MOH).

Another said

Absence of guidelines on public health roles of pharmacists, Also, lack of regarding infection prevention and waste disposal, trained of perceiving community pharmacies only as medicine retail outlet as it is almost the only place where retail service is provided, the space is not enough for performing dispensing, screening and counseling as well (Male, EFMHACA).

D. Way forward

Ministry of health launched a directive on establishment of community pharmacies by public hospitals, community pharmacy establishment is found important, in order to use local resource and manpower effectively, make drugs and medical supplies available for health insurance members; through provision of health promotion and disease prevention service, make the community visit health facilities timely.

Hence, in order to make this happen employees of model community pharmacies should get on job trainings; in which public hospitals, ministry of health, regional or city administration should

arrange the trainings. model community pharmacies should givestandard health promotion, disease prevention and drug information services; having private and silent counseling room and five pharmacists perform screening for non-communicable diseases (hypertension diabetic) through implementing medicine waste management and disposal directive 02/2011 provide appropriate information and advice as well as check body temperature and BMI. They should also give education on health promotion and disease prevention.

7. Discussion

In developing countries like Ethiopia inaccessible, inequitable, and non-responsive health-care services are some of the contributors to deaths. However, these problems can be minimized through advocating healthy life style changes and increasing access for early identification of asymptomatic diseases. Despite this, the present study revealed that low engagement of community pharmacists on rendering health promotion services in Addis Ababa. In which this findings are in agreement with a study done in Addis Ababa assessing the community perception regarding extended roles of pharmacists reported that thetwo primary reasonsforvisitingacommunity pharmacyweretopurchasemedicinesprescribedbya physician(88.7%)andtopurchaseoverthecounter medicines (43.3%)(Zeleke and Gedif, 2015).

On the contrary, pharmacists perceived themselves to have been good in promoting physical activity, screening for diabetic and promoting healthy eating. But screening for cholesterol and explaining physiologic harms of chat chewing found to be areas that pharmacists perceived they are unable to perform. Moreover majority of community pharmacists are willing to perform health promotion functions in community pharmacies; also believe providing health promotional services in community pharmacies have favorable economic and health outcome.

Smoking cessation, promoting healthy eating and screening for hypertension was top three health promotional services given in the community pharmacies of Addis Ababa. Also, community pharmacists perceived they are good at promoting physical activity, screening for diabetic and promoting healthy eating. On the other hand due to the fact that regulatory bodies identified a gap on pharmacists practice on waste disposal and infection prevention are found to be among the reasons performing screening services in community pharmacies were banned; also this is the reason why the pharmacists perceived they are good on performing screening for diabetics and not giving it. To the contrary in both developing and developed countries screening services given by community pharmacists contributed for early detection and avoid disease complication, hospitalization and take proactive measures (FIP, 2014).

On the other hand community pharmacists felt unable to perform screening for cholesterol and explaining physiologic harms of chat chewing. Similarly, study done in DebreMarkos, Gondar, Dessie, Bahirdar, Woldya and Debrebirhan revealed that majority of the respondents (79.9%)

felt unable on utilizing blood lipid level testing kit (Erku and Mengesha, 2017); which agrees with the findings of similar studies conducted in Nepal (76.5%), Libya (69.6%), and Qatar (60%).The reasons of poor level of ability could be due to absence of on job training and in adequate pre service education for pharmacists on utilizing different screening kits and injection skills (Bhuvanetal , 2013; El Haji, 2013; Beshia, 2011).

This study also revealed age and work experencefound to be associated with rendering health promotional servicies with (AOR = 2.09 (2.036-4.252) and 2.01(1.994-4.021) respectively. In such a way that pharmacists between 22-27 years old and with an experence 3 years and less provide health promotional servicies 2 times higher than pharmacists with different age and work experence. This can be due introduction of clinical pharmacy in recent years. Low awareness of the pharmacist's extended role and perceiving that pharmacists are to be primarily involved in medicine supply, rather than providing health promotion services are tendencies that have been shown in other contexts (Gidman,2013; PFSA, 2015).Similarly a study done in Debremarkos, Gondar, Dessie, Bahirdar, Woldya and Debrebirhan also indicated community pharmacists with comparable age group and work experience were more engaged on health promotion services (Erku and Mengesha, 2017).

Almost all pharmacists have favorable belief and they would be willing to provide health promotion servicies. This compliments the global paradim shift towards extended role of pharmacists particularly in delivering targeted health promotion , raising public awareness of health issues and empowering people to look after their own health (WHO, 2015). Also, community based study in Addis Ababa revealed that 61% of community members interviewed; approved the potential health promotion functions of a community pharmacist listed to them.Themostcommonreasonsforapprovingnewservicesinthecommunity pharmaciesare proximity 955(84.3%), lesswaitingtime457(40.3%),beingabletoaccesspharmacistseasilythan general practitioners 624(55.1%) aswellasnoappointmentrequiredtovisitthepharmacy623(55.0%)(Zeleke and Gedif, 2015).

On the other hand, absence of guideline on health promotional role of pharmacists, lack of space for client and pharmacist to maintain privacy, absence of scheme to charge patients for extended scope of practice, government focus was on health extension workers for health promotional

services, in adequate pre services and lack of on job training found to be major barriers for not engaging community pharmacists in health promotion services. The barriers seem resulted from disintegration of stake holders such as academic institutions, health policy makers, regulatory bodies, professional assocations and non-governmental organizations (FMoH, 2010).

There integration also helps to look forward the best solutions even for different gaps identifed in this partcular study and beyond; including but not limited to giving on job training and preparing gudeline for infection prevention and waste disposal problems observed at community pharmacists; than prohibiting and excuding this indispensible health proffesionals to primary health care. But, the directive prepared by ministry of health on establishment of community pharmacies by public hospital appears promising with respect to effective utilization of local resource and manpower effectively through provision of health promotion and disease prevention service and make the community visit health facilities timely (FMoH, 2018).

8. Strength and Limitation of the Study

Validity of quantitative data was checked by calculating Cronbach's alpha (0.68). Also both quantitative and qualitative data collection techniques were used for strengthens the findings. Recall bias, respondents' error and incomplete surveys are the limitations. The study was also limited to urban setup. Hence generalization to rural community could not be made.

9. Conclusion and Recommendation

This study revealed low involvement of community pharmacists in providing health promotion services in Addis Ababa. Community pharmacists are willing to perform health promotion functions in community pharmacies and believe strong health promotional services can be given by community pharmacists. Furthermore majority of pharmacists felt able on promoting physical activity, screening for diabetic, promoting healthy eating. On the contrary screening for dyslipidemia and explaining physiologic harms of chat chewing were activities pharmacists claimed that they were unable to execute. Move over, lack of clear definition of public health role of community pharmacists, absence of guideline on health promotion role of pharmacists, lack of space to make private discussion and payment schemes are top three reasons for not giving health promotional service in community pharmacy. Although, this study identifies the introduction of clinical pharmacy have favorable impact on provision of health promotion services; there are still gaps observed on perceived ability of pharmacists, legislation and disintegration.

Thus, standardize public health roles of pharmacists, integration among stakeholders providing specific trainings that will fill the knowledge and skill gap required for the provision of health promotion services both in academic instituions and practice settings, implimentation of model community pharmacy implementation directive by Federal Ministry of Health and Regional Health Bureaus are recommended.

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Annex I

Self-Administered Questioner

Information sheet and consent form

My name is Hiwot Moges. I am a 2nd year Pharmacoepidemiology and Social pharmacy M.Sc. student at Addis Ababa University, College of Health Sciences, currently I am doing my research on ***"Assessment of Pharmacists' Role on the provision of Health Promotion Services in Community Pharmacies of Addis Ababa, Ethiopia***", for the partial fulfillment of the M.Sc. program. The objective of the research is to assess understanding/believes, willingness and perceived ability of pharmacists towards performing health promotional services. You are selected because you are community pharmacist and sections were made. I politely request you to fill the following questioner. The response will be treated anonymously and confidentially. The result of this research will also be used as baseline information for stake holders to see the view of community pharmacy professionals to give health promotional services. If you are willing please fill the following questioner.

Your participation is voluntary. You can refuse to participate and will be free to withdraw from the research anytime without penalty or responsibilities. Thank you for your help and time for participating in the research.

If you have question(s) or ambiguity you can contact by the following addresses.

Address

HiwotMoges

Email- hiwotmoges81@yahoo.com/hiwotmoges81@gmail.com Telephone- 251913013192

Questioner to asses' community pharmacists' role on providing health promotional services. We appreciate your honest opinion. The response will be treated anonymously and confidentially.

In this study, health-promotion refers s to consultation services provided by pharmacist on smoking cessation, Physical-activity, Healthy eating, Weight management, Alcohol consumption and chat chewing); and disease prevention activities through health screening (such as Hypertension, Diabetes, Cholesterol).

I .Socio Demographic Information

1. Gender ☐ Male ☐ Female

2 Marital status ☐ Single ☐ Married ☐ Divorced ☐ Widowed

3Age--------years

4. Education ☐ BSc ☐ MSc ☐ others (specify)_____

4.1 Year of graduation for BSc _____ E.C

4.2 Institute of graduation ☐ Public ☐ Private

5.Work experience as pharmacist _____ years

5.1 Work experience as community pharmacist _____ years

6. Position in community pharmacy

☐ Owner ☐ Employee

7. Have taken on job training on health promotion ☐ Yes ☐ No

7.1 If Yes before 0-2 years ☐

Before 3-5 years ☐

Before > 6 years ☐

II. Questions related to belief/understanding and willingness on the importance of providing public health services

1. For the following questions below, please tick one which best describes the level of your agreement

S.A= strongly agree A= Agree N= Neutral D.A= Dis agree S.D= strongly disagree

No	Activity	S.A	A	N	D.A	S.D
1	Health promotion services by community pharmacists make positive change on health outcomes					
2	Health promotion services by community pharmacists increase quality of life of the community					
3	Providing health promotional services in community pharmacy will be economical for					

	the community (for the users/ client)					
4	Providing health promotional services in community pharmacy will have positive economic outcome for the community pharmacy					
5	I am willing to involve on the provision of health promotional activities					
6	I believe strong health promotional activities can be given by community pharmacists					

Part III. Barriers

III. For the following questions below, please thick on statements you think it is appropriate for respective questions,

1. Do you think you are rendering health promotional services in a community pharmacy for the last 1 year Yes ☐ No ☐

2. If your answer is yes for number 1 in which of the following health promotional activities have you ever been involved (**more than one answer can apply**)

- ☐ Counseling on smoking cessation
- ☐ Physical-activity promotion
- ☐ Counseling on Healthy eating
- ☐ Weight management
- ☐ Alcohol consumption
- ☐ Explaining physiological harms of chat chewing
- ☐ Screening for Hypertension
- ☐ Screening for Diabetes
- ☐ Screening for cholesterol

3. If your answer is no for # 1 what do you think is the reason for not giving the service

No	Activity	**S.A**	**Agree**	**Neutral**	**D.A**	**S.D**
1	Lack of knowledge					

2	Lack of confidence					
3.	Lack of on job training					
4	Employers are not willing to pay more if the pharmacists' scope of practice is wider (**answer only if you are an employee**)					
5	The space is not enough					
6	Lack of payment scheme					
7	Regulatory bodies do not allow to do so					

Others (specify) _____

4. In your opinion which requirements should be full filled for pharmacists to perform health promotional activities in community pharmacy **(more than one answer can apply)**

- ☐ Provide in service trainings
- ☐ Make more payment for pharmacists
- ☐ Arrange private space for the client and the pharmacist
- ☐ Different courses should be added to the BSc curriculum to provide health promotional functions
- ☐ Increase number of pharmacists

Others (specify) _____

III. Perceived ability questions

How do you rate your ability for the following health promotion functions, please tick one which best describes the level of your agreement

S.no	**Activity**	**Very good**	**good**	**moderate**	**Slightly able**	**Unable**
1.	Counseling on smoking cessation					
2.	Physical-activity promotion					
3	Counseling on Healthy eating					
4.	Weight management					
5.	Alcohol consumption					
6.	explaining physiological harms of chat chewing					
	Screening (skills of using the kit for screening the following)					
8.	Hypertension					
9.	Diabetes					
10.	Cholesterol					

Annex II

An interview guide for qualitative part.

Introduction

Hello. My name is Hiwot Moges. I am a student in AAU, school of Pharmacy and doing my MSc thesis on **Assessment of Pharmacists' Role on the provision of Health Promotion Services in Community Pharmacies of Addis Ababa.** As you know community pharmacists role in health promotion is limited. I am interviewing stakeholders on this issue. Thus you are selected purposefully.

Purpose

The purpose of the visit today is to discuss on the issue stated above and collect information on the barriers of provision of Health Promotion Services in Community Pharmacies.

.

Procedure

After I get your permission, I will ask you a serious of questions.

Justice

This facility and you are selected purposively. I am contacting stakeholders from policy makers, regulatory bodies and professional associations.

Risk

Since you are involving in this study I may take 30 – 60 minutes of your time. But this study doesn't have any additional discomfort.

Benefit and compensation

By participating in this study you may not get any compensation or benefit right now. But the results of the assessment will provide information for developing recommendations and planning improvements on increasing health promotional roles of community pharmacies.

Confidentiality

We are not going to take any personal identifiers. The collected data will be analyzed in aggregate without making any personal manipulation.

Right to withdraw

If you feel any discomfort or harm, you can withdraw from the study at any time. In addition to this, you are not obliged to answer every question. You have the right not to answer those questions that you do not want to answer.

Contact address

If you have any question or comment, you can contact me by this address.

HiwotMoges
Email- hiwotmoges81@yahoo.com/hiwotmoges81@gmail.com
Telephone- 251913013192

1. Do you think community pharmacies have health promotion role?

2. What types of public health roles are expected from community pharmacies?

3. What do you think are the barriers to render health promotional activities in Ethiopia?

4. How it is possible to avert challenges towards performing health promotional functions in community pharmacies

5.* Is there any plan from the government to work on their health promotion role?

Annex III

Ethical Clearance

Annex IV

Sampling strategy