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Literature Review

Evaluation of Primary Health Care Service Implementation Focusing on Prevention and Treatment of Non Communicable Diseases in Yeka Subcity Addis Ababa, 2022

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Abstract

Background: Availability of resources, accessibility and satisfaction of the service users are differentiated to be the main challenges for the primary health care non communicable diseases service provision.

Objective: To evaluate the implementation of Primary Health Care service focusing on non-communicable diseases in Yeka sub city, Addis Ababa Ethiopia, 2021.

Methods: The Facility based cross sectional study design involving both qualitative and a quantitative method was used. A study was conducted from October 1 up to November 5, 2021. Sample Size was calculated by using single proportion formula. NCD (Non-Communicable Diseases) follow up register were reviewed and structured interview was also held for 421 NCD patients visiting the five selected health centers. And 30 experts were interviewed and fifteen observation of laboratory practice and patient-provider interaction were held. Bivariate analysis result and those having association (p-value less than 0.05) were taken as a candidate for logistic regression analysis.

Results: The unavailability of all essential NCD drugs, interrupted supply and early stock out of drugs were the main constrains. Absence of NCD corner, Guidelines were also challenges. The compliance of HCWs (Health Care Workers) was judged as Good. The Satisfaction level was 72.1%. The employment status OR [1.074] 95%, CI [1.024 - 1.122]), affordability of the service given in the facility (OR [1.042] 95% CI [1.0033 - 1.055] had significant association with Satisfaction.

Conclusion and Recommendation: The overall service provision was poor. It is recommended that there should be adequate and continuous supply of NCD drugs, decreasing the waiting time to be seen by HCW, privacy of counseling rooms, availability of guidelines, drugs and refresher training for providers and planed, regular supervision mechanisms of the service should be strengthened.

Keywords: *Primary Health Care; Access; Non-Communicable Disease; Compliance; Satisfaction*

Abbreviations

ANC: Ante Natal Care; DM: Diabetes Mellitus; EDHS: Ethiopian Demographic Health Survey; FBG: Fasting Blood Glucose; FHT: Family Health Team; FMOH: Federal Ministry of Health; HC: Health Center; HEP: Health Extension Program; HW: Health Worker; KAP: Knowledge Attitude and Practice; NCD: Non Communicable Disease; NGO: Nongovernmental Organization; ORT: Oral Rehydration Therapy; PHC: Primary Health Care; RBG: Random Blood Glucose; UNICEF: United Nations Children's Fund; VCHW: Voluntary Community Health Workers; WHO: World Health Organization

Definition of terms

Client-provider interaction: The way primary health care providers and consumers interact during the counseling and communication through service provision.

Operational definition

Availability: Is the presence of drugs, laboratory agents, human resources and infrastructures for primary health care provision as per guideline which is measured by twelve indicators and 90 - 100 = v. good, 80 - 89 = good, 70 - 79 = fair and 70% as poor [1].

Compliance: Is the occurrence of primary health care service provision activities based on national guideline recommendations which are measured by document review and observation with fourteen indicators. The level of compliance is judged based on the judgment matrix as 90 - 100 = v. good, 80 - 89 = good, 70 - 79 = fair and 70% as poor [1].

Satisfaction: It is used to assess waiting time, the appointment system, appropriateness of working hours, convenience of primary health care service provision rooms and measured by five indicators.

Introduction

Background

In 2019, non-communicable diseases (NCDs) accounted for about 74% and 32% of total deaths globally and in Ethiopia [2]. Primary health care (PHC) is a vital instrument to achieve universal health coverage (UHC) and address the ever-increasing NCD burden [3]. PHC provides a decentralized healthcare platform and is the best strategy for delivering integrated and equitable NCD care [4].

Non infectious diseases and accidents are becoming a public health problem in urban settings. A study done in Addis Ababa shows that 51% of death is a result of non communicable diseases and 6% of death follows accidents [5].

To tackle the emerging public health problems of the Addis Ababa, the city government of Addis Ababa redefine primary health care in the city. This new definition sets up a family health team as a sole primary health care provider in the public sector [5]. The family health team as a core for primary health care provision is composed of different Health professionals. It will be assigned into a certain ketena.

We evaluated the implementation of NCD service provision in context of primary health care since NCD service provision is embedded to other services given in primary health care. Availability, accessibility, compliance, and satisfaction were evaluation dimensions.

Statement of the problem

Even though primary health care had a big role in increasing coverage of access and quality of the health service especially in developing countries the changing trend in disease pattern and different factors make it difficult to the existing health system to meet the changed needs and expectations. This is a big trouble for the health system in developing countries, which had mostly succeeded in combating communicable disease but had no the right equipment, skill and know how to combat non communicable diseases.

NCDs are by far the leading cause of death worldwide. In 2016, they were responsible for 71% (41 million) of the 57 million deaths which occurred globally. The NCDs responsible for these deaths included cardiovascular diseases (17.9 million deaths, accounting for 44% of all NCD deaths and 31% of all global deaths); cancers (9 million deaths, 9% of all NCD deaths and 16% of all global deaths); chronic respiratory diseases (3.8 million deaths, 9% of all NCD deaths and 7% of all global deaths); and diabetes (1.6 million deaths, 4%

of all NCD deaths and 3% of all global deaths) (Figure 1). An even higher proportion (75%) of premature adult deaths (occurring in those aged 30 - 69 years) were caused by NCDs, demonstrating that NCDs are not solely a problem for older populations. The global probability of dying from one of the four main NCDs in 2016 was 18%, with a slightly higher risk for males (22%) than for females (15%) [6].

Scarcity of funds, training of professionals without considering the need of PHC-centered healthcare model, and the development of cross-sectorial initiatives were the main challenges primary health care was facing in Brazil in service provision of NCD [7]. Shortage of drugs and other medical supplies, and the inability to replace broken or obsolete equipment were the main challenges detected in Cuba [8]. Shortcomings in the planning of the reforms, inadequate commitment to integration of PHC in the system and collateral effects of a market model in healthcare emerged as limitations to successful FMP implementation in turkey [9].

In our continent Africa primary health care is also facing challenges which includes shortage of drugs, drugs which expire in large quantities due to lack of facilities to care for them, drugs which are illegally sold by nurses were found in a study at Lesotho [10].

In our country, Ethiopia primary health care provision on NCD service provision had a number of challenges. This challenges included productivity and efficiency of health workers [11] low satisfaction of community especially women [12] distance from health posts and lack of transportation [13,14]. Cost of care seeking whether real or perceived [15,16], inconsistent availability of service [17,18], HWs substandard skill [19]. In NCD service provision in primary health care in Ethiopia, shortage of essential NCD drugs and diagnostic facilities and lack of treatment guidelines were also major challenges [20].

Here in the capital city Addis Ababa, lack of coordination between the primary health care program and other sectors, poor supply management system, having no clearly defined career and education path for Health workers and lack of motivation and incentives were some of the challenges posed in the primary health care program implementation [21].

Improving PHC program in NCD service provision helps the program to reach the people regardless of economic status, disability, social position and other factors. Equitable health services call for better health outcomes.

Significance of the evaluation

Primary health care in general, NCD service provision in particular hadn't get much attention in developing countries like Ethiopia despite inflicting heavy costs economically and in human lives.

Primary health care, the most accessible health care system tier in Ethiopia and NCD the main killer in Ethiopian health care delivery system, had a big room for improvement and could bring a big impact if improved on everyday life of Ethiopians and to create productive and prosperous Ethiopians.

There were no researches or evaluations emphasizing on primary health care implementation focusing on NCD service provision done to know if it is working in a socio, economic environment of Ethiopian Urban in general and Addis Ababa in particular which I know of. This evaluation tries to fill this gap.

Evaluation Questions and Objectives

Evaluation questions

1. Are resources needed available for the primary health care NCD service provision in Yeka sub city? If yes How? If not why?
2. Is NCD services provided by primary health care service accessible in Yeka sub city? If yes How? If not why?

3. Did the primary health care providers comply with the standards during provision of NCD service in Yeka sub city? If yes how? If not why?

4. Is primary health care NCD service provision satisfactory for the patients?

Objectives of evaluation

General objective

To evaluate the process of primary health care service on NCD in Yeka sub city, Addis Ababa City, Ethiopia, 2021.

Specific objectives

1. To assess the availability of resources for the process of primary health care service on NCD at Yeka sub city, Addis Ababa, Ethiopia, 2021.

2. To assess the accessibility of primary health care service on NCD in Yeka sub city Addis Ababa, Ethiopia, 2021.

3. To assess the compliance of primary health care service on NCD with the primary health care service reform guideline Yeka Sub city, Addis Ababa, Ethiopia, 2021.

4. To assess satisfaction of consumers on the primary health care service on NCD at Yeka sub city Addis Ababa, Ethiopia, 2021.

Methods of Evaluation

Study area and period

Yeka sub city is one of eleven sub cities found in Addis Ababa. It has 12 weredas Located at the Northern end of the Addis Ababa. It is bordered on the east, south, and west by the Oromia Region, on the northwest by bole subcity and on the northeast by Arada sub city; the total population of the sub city is 1,163,233. There are 2 Specialized Hospitals, 12 Health Centers, 12 health posts, 122 drug vendors. The evaluability assessment was conducted in September 2021. This study was conducted from October 1 to November 5, 2021.

Evaluation approach and focus

The formative evaluation approach was used. The evaluation focused on non communicable diseases (NCD) which are the main cause of death in Addis Ababa [5].

Evaluation design

The study used a facility-based cross-sectional study design in the randomly selected five health centers in the Yeka sub city.

Evaluation dimensions

Primary health care service program evaluation used four dimensions. Availability, accessibility satisfaction, and compliance from the access framework. Compliance of the program to national guidelines, was added to the dimension because it is very important to the program and go along with three dimensions.

Measurement of indicators

The availability of resources was assessed using 11 indicators to determine whether essential drugs and medical equipment required for the program were supplied or not in the health facilities. The compliance of healthcare providers was also assessed using a 9 indicators through measuring the adherence level of the healthcare providers to the national primary health care guideline during the patients visit. Moreover, primary health care consumer satisfaction was measured using a 5 item questions, each containing a five-point Likert scale (1 = strongly dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied and 5 = strongly satisfied) alternatives, and patients who scored more than cut of points out of the total satisfaction measuring score were considered as satisfied with the primary health care provision. The cutoff point for this categorization was calculated using the demarcation threshold formula.

Variables

- **Dependent variable:** Satisfaction of clients towards the primary health care service.
- **Independent variable:** Socio-demographic and economic variables (educational status, address, occupational status). Health care facility and health care relate related factors waiting time, resource availability, waiting area, counseling, health worker communication, distance of HC).

Population and sampling

Source population

Primary health care program managers in sub city, all documents of primary health care consumers, health care providers, all consumers that are utilizing at Yeka sub city public health center and health post will be the source population.

Study population

- Selected program managers for interview
- NCD diagnosed patients who are utilizing service in the selected HCs and who participate in the study
- Selected individual patient folders which are reported or registered since a year and half ago
- Health care providers in the selected health centers which stay longer than a year in the health center and are selected for the interview were the study population.

Study unit

Health center in Yeka sub city, the individual folder of primary health care consumers, OPD, IPD patient unit register, program manager and health care providers will be the study units.

Unit of analysis

Primary units of analysis are health centers in Yeka sub city, while the secondary unit of analysis are patients using the respective health centers in Yeka sub city.

Sample size determination and procedures

Sample size determination

There are five purposively selected health centers who are included in the study.

Exit interview: For exit interview, the sample size is calculated by using the single population proportion formula. In computing sample size to achieve adequate precision, the sampling error/precision of the study took like 5% and 95% confidence interval. In addition, P is the proportion of satisfaction of patients in Yekatit 12 Medical college, Addis Ababa, Ethiopia which is 47% so p = 47% is (23) taken to have maximum sample size. Based on these assumptions the actual sample size for the study is computed by using the formula for a single population proportion:

$N=(1-P)z\alpha/2/d2$

n= Sample size,

Z α/2= Critical value=1.96,

P= Patient satisfaction in Yekatit 12 Hospital medical college, Addis Ababa Ethiopia (23)

d= Precision (marginal error) = 0.05,

Then n = (1.96)2 (0.47)∗(0.53)/(0.05)2) = 383

We added 10% non-response rate

383+38 = 421

Four hundred twenty one interviews were held.

Record review

The sample size is calculated by using the single population proportion formula. In computing sample size to achieve adequate precision, the sampling error/precision of the study take like 5% and 95% confidence interval. In addition, P is the proportion of compliance of PHC standards, a study conducted in Buno bedelle town, in South West Oromia Ethiopia (37) taken to have maximum sample size. Based on these assumptions the actual sample size for the study is computed by using the formula for a single population proportion:

$N=(1-P)z\alpha/2/d2$

n= Sample size,

Z α/2= Critical value=1.96,

P= Compliance with guideline among health practitioners in Illubabor and Buno Bedelle Zones, South West Ethiopia (37)

d= Precision (marginal error) =0.05,

Then n = (1.96)2 (0.3364∗0.6636/(0.05)2) =343

We will add 10% non-response rate

343+34= 377

Three hundred seventeen seven records were reviewed.

Sampling techniques and procedures for qualitative data

Key informant interview

Key informant were interviewed purposely on challenges of primary health care service provision, how it will be improved, how the program is implemented, on purposefully selected five primary health care service coordinators, five health extension program supervisors, two health professional from family health team from each health center, two health extension worker from each health center.

Direct observation

According to standards, PHC guideline direct observations per site are needed to check compliance of laboratory service and patient-provider interaction. Five up to six observation per each site were conducted for evaluating how laboratory technicians perform FBG and all-important procedures during the procedures and observation were done for how NCD focal was handling NCD patients, ways of counseling the patients, ways of giving health education and how they respect the patients.

Sampling techniques and procedures for quantitative data

Exit interview

All NCD OPD patients who utilized the services and agreed to participate in the study during the study period were interviewed. All NCD patients are obtained when they come to the health institution seeking medical attention. Proportionally patients are allocated for each health center according to the number of weekly patients. The exit interview assessed the patient's satisfaction.

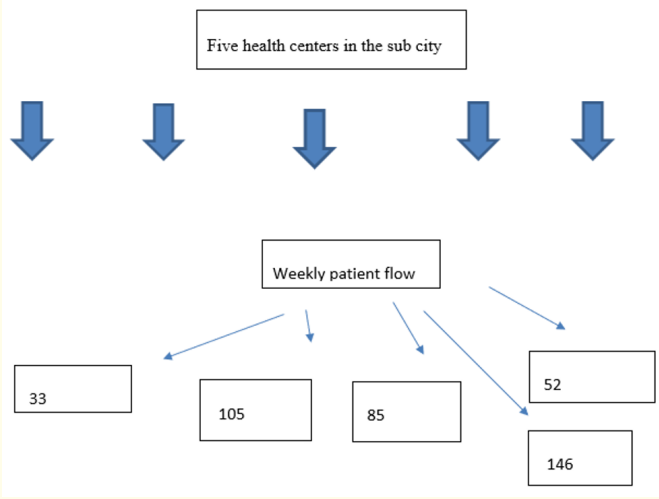

Figure 1: *A diagrammatic representation showing selection of participants for exit interview in Yeka sub city, 2022.*

Individual patient folder

The sample size of individual patient folders were allocated to the five purposively selected HCs in Yeka sub city, which provide primary health care service. Proportional allocation were based on the average number of weekly adult patients visiting the HCs. Then, consecutive patient folders were retrospectively selected from the study period backward until the required sample size were obtained from individual patient folders registered for service provision from May 1/2020 to October 30/2021.

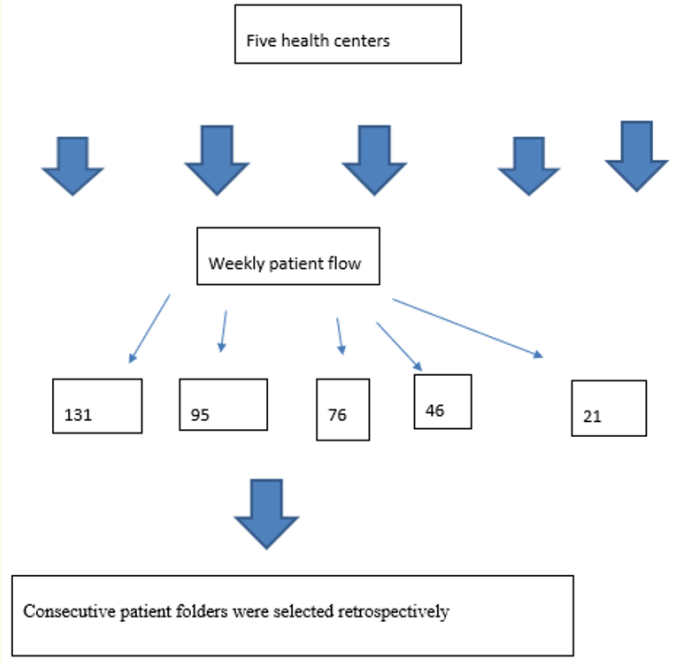

Figure 2: *A diagrammatic representation showing selection for record review in Yeka sub city, 2022.*

Exclusion and inclusion criteria

- **Inclusion criteria**: NCD patients during the study period and HWs who worked at the chosen health facilities at least for the preceding of one year were included in the evaluation.
- **Exclusion criteria:** Patients who were less than 18 years old and emergency cases.

Data collection

Development of tools

Data collectors

The tools contain three parts: document review (family folder register, individual patient folder and reports), direct observation (patient-provider interaction and laboratory observation), interview (key informant and exit interview).

The tools were developed after reviewing the primary health care guideline, NCD Clinical and programmatic management for health care workers and WHO standard Checklists. Primary health care resource inventory, laboratory practice observation, reviewing the documents; provider-patient interaction observation are prepared with the consideration of primary health care guideline and WHO standards [38]. The tools were adapted to the local context. For satisfaction tools were developed by reviewing different literatures [1,34-36].

Quantitative data: Three certified health officers collected the quantitative data.

Qualitative data: A key informant interview and observation were conducted by the principal investigator. The data collectors were recruited from the Arada Sub city wereda 3 which is not part of the study. One MPH holder had overseen data collectors.

Data collection and field works

Data were collected through document review, interviewer administer questionnaire, key informant interview, observation.

Data quality management and analysis

Data cleaning and entry

Questionaries were adapted from national guidelines and a variety of evaluations and studies were initially developed in English and translated to Amharic, and back to English to ensure consistency. A pre-test was administered on a 5% patient in wereda 3 district in Arada sub city. The final versions of the tools were modified based on the pre-test findings before the actual data collection.

Data analysis

The quantitative data, which is obtained from document review, facility audit and exit interview was cleaned and entered into Epi-info version 3.1 software and exported to SPSS version 20 for analysis. Degree of association between satisfaction and independent variables was assessed using bivariate analysis to examine association and those variables that have association (p-value less than 0.2) were taken as statistically significance association. Bivariate analysis result and those having association (p-value less than 0.05) were taken as a candidate for logistic regression analysis that was done through forward LR method to identify the independent variable that determine the level of satisfaction. Hosmer-Lemeshow goodness of fit was done.

Field notes were properly taken during the key informant interviews, and audio records of key informants were transcribed in the Amharic and translated to English. The qualitative data was analyzed using thematic analysis through thematizing the availability of resources, accessibility, compliance and satisfaction of primary health care service. Finally, each dimension of the process of the primary health service implementation was judged based on the predetermined judgmental criteria to decide the level of the implementation.

Matrix of analysis and judgment

The matrix of analysis is developed and agreed with stakeholders along with their indicators using the rational approach. The weight of the measurements and the respective measures was given depending on their level of importance to the program. The judgment parameter were determined based on the previous evaluation and judged 90 - 100 = v. good, 80 - 89 = good, 70 - 79 = fair and 70% as poor.

Ethical issue

Ethical clearance was obtained from the ethical review board of institute of health, Jimma University Which was sent to Addis Ababa Health Bureau Ethical Board. AAHB had given permission to the evaluation team to conduct the evaluation in the health center which was sent to Yeka sub city which in turn writes to each health center participating in the study.

Result

Socio demographic characteristics of the respondents

The exit interview respondents were 421 with response rate of 100%. The age of all patients was 18 year and above, the mean age was 36.80 (SD +/- 16.14).

Variables	Category	Frequency	Percent
Sex	Male	193	45.8%
	Female	228	54.1%
Religion	Orthodox	198	47%
	Protestant	101	24%
	Muslim	122	29%
Age	18 - 29	60	14.3%
	30 - 45	160	38%
	45 - 64	139	33%
	> 64	64	15.1%
Marital Status	Married	260	61.8%
	Single	92	21.8%
	Widowed	19	4.5%
	Divorced	49	11.6%
Education	Educated	324	77%
	Illiterate	97	23%
Employment	Employed	303	72%
	Unemployed	118	28%

Table 1: *Table demographic characteristics of respondents in Yeka sub-city, Addis Ababa Ethiopia, 2022.*

Availability of resources

All health facilities provide NCD treatment and follow up and each health center had trained health professional on NCD management. And also there was no RBG/FBG examination service in one of HCs. NCD corner was established in 3 HCs. NCD treatment and laboratory service was provided throughout the week in each HC. In most HCs there was no adequate amount of adult dose of NCD drugs that are provided for DM and for hypertension.

	Indicators	Expected	Weight	Observed Value	Result	Result in %	Judgment
1	Overall Availability Dimension	55	30%	25	.46	46%	Poor

Table 2: *Summary of indicators of availability dimension in Yeka sub city 2022.*

Compliance dimension

Diagnosis of DM and hypertension

FBG/RBG examination was ordered for 371 (98.4%) of 377 patients. FBG/RBG performed only for 366 (97.8%) of DM suspects. Two results of FBG/RBG was found in 278 (73%) of the patient cards. 42 (11.4%) of which were in diabetic range, and thus diagnosed as Diabetic. But only 11 (26.1%) of the patient start medication.

Blood pressure measurement was ordered/done for 375 (99.4%) of 377 patients. 371 (98.4%) measurements were recorded on the patient card. But only 32 (28.5%) patients from 112 patients whose blood pressure measurement is above normal is put on Hypertension medication.

The finding of laboratory practice observation

Fifteen laboratory practice observation was conducted. Each patient submitted 1 specimen, therefore the total number of blood specimen submitted were (1X15 = 15). Observation conducted from collection of blood up to recording and dispatching of the result. In all HCs the laboratory technicians were responsible for specimen collection. Clinicians sent the DM suspects with the FBG/RBG request paper to the laboratory unit. Laboratory technicians instructed all patients to sit tight during examination. For all specimens (specimen number=15). Laboratory technicians wash their hand first when they begin to work, but not after each test. New needle sticks to pierce and new glucometer measurers were used. All laboratory technicians arranged equipment and materials before starting blood glucose test**.** All technicians discard the test after examination.

Compliance Dimension	Expected	Weight	Observed	Result	Result in %	Judgment
Overall compliance	377	20	271	.72	72	Good

Table 3: *Summary of indicators of compliance dimension in Yeka sub city 2022.*

The finding of provider - patient interaction

Fifteen patients were observed during the study period while visiting chronic outpatient department. There was no barrier of communication concerning the language, all of patients and providers were using Amharic. After greeting their clients, providers took the patient cards and tick on the NCD register; then after asking a series of questions and doing physical examination gave them the drug. 15 out of 15 (100%) observed patients were treated by the providers assigned for NCD treatment, and treatment monitoring chart of 3 (20%) patients was not filled in NCD register during treatment. Providers knew and call each of their clients in their name. They asked their clients about their health status on daily basis.

Patient satisfaction

Total 421 NCD patients participated in this study with hundred percent response rates.

Satisfaction Indicators	Expected	Observed	Weight	Result	Result in%	Judgment
Overall satisfaction of the clients	421	303	20	.723	72.3	Good

Table 4: *Summary indicators of client accommodation level at Yeka sub city, 2022.*

Client satisfaction was assessed using 10 likert scale items. The satisfaction level was found to be 72.1%. It was calculated by using demarcation threshold formula.

Accessibility of primary health care

Almost all (98%) of the clients live in a distance below a 30 minutes distance to a health facility.

	Expected	Observed	Weight	Result	Result in%	Judgment
Accessibility	265	207	10%	.782	78.2%	Good

Table 5: *Accessibility of the primary health care service in Yeka sub city, 2022.*

Dimension	Expected (%)	Weight Score %	Observed Value %	Judgment Parameter
Availability	100%	30%	46%	> 90 v. good, 80 - 89 good, 70 - 79 fair, <70 poor
Compliance	100%	20%	72%	
Satisfaction	100%	20%	72.3%	
Accessibility	100%	10%	78%	
Overall	100%	100%	64.8%	
Overall Judgment			Poor	

Table 6: *Judgment matrix for the evaluation of primary health care service in Yeka sub city Addis Ababa Ethiopia, 2022.*

Association with the dependent variable

Binary logistic regression analysis found that employment status (OR [1.134] 95%, CI [1.024 - 1.122]), affordability of the service given in the facility (OR [1.042] 95% CI [1.0033 - 1.055] had significant association with Satisfaction.

Discussion

The availability of the essential medicines and technologies for NCD service provision in primary health care setting in Yeka sub city was 46%. The result is far below the WHO target which is 80% [22]. One or more trained HWs trained on NCD diagnosis treatment and follow up were found in each health center which is 100% and is a minimum requirement of WHO Package of Essential NCD PEN [22]. A separate NCD clinic availability for the sub city 60% which is below the WHO PEN [22] standard 100%. According to one of the HC Head response "because of a problem in design of the HCs in Addis Ababa there were no free rooms available to separate for NCD diagnosis and treatment". On the other burning issue the stock and supply of NCD drugs was interrupted in all health centers. One of the health center Head explained why as we all know as a country after the covid situation and war in the north of the country the supply of most drugs had decreased. For example, amoxicillin and paracetamol were produced in Ethiopia in Adigrat but After the war the factory was destroyed. On NCD drugs there is a foreign currency issue and also the international market had also decreased its supply". On the other hand only two Health Centers (Yeka and Kotebe HC) had NCD treatment guideline. Which sets 40% availability far below the 100% expected by WHO [22]. When asked one of the HC head said "we had a primary health care guideline which encompasses all cases in the HC. Even though it might be helpful to had it I don't think it will create a confusion".

Only 69% of the essential tracer items were found in primary health care NCD service provision in Yeka sub city, which is low compared with a study done in Rwanda [25] and the WHO recommendation [22]. The result is in line with a study done in Addis Ababa during the pilot year of primary health care service which signifies lack of timely provision of supplies and drugs to address some basic health problems at household and community levels [26].

The stock and supply of NCD drugs is interrupted in all health centers (100%) which is far greater than 60% from a study done in Zambia [33] and well below a standard limit set by WHO which is 0%. 11 (26.1%) of the patient start on DM medication from those who had two FBG measurements in diabetic range which is far less than from a study done in Netherlands which stands on 51% [38] and

well below WHO standard which is 50% [22]. Only 32 (28.5%) patients from 112 patients whose blood pressure measurement is above normal is put on hypertension medication. The result is below the WHO standard of 50% [22].

Satisfaction of clients of a primary health care service focusing on non-communicable diseases in Yeka sub city was 72.2%. The result is greater in comparison with a systematic review and meta-analysis done in Ethiopian health institutions which was 63.7% [28]. The result is almost at the same level with a study done in among outpatients received mental health services at public hospitals in Mekele [29]. Convenience in using adherence counseling services (84.52%) followed by The appointment system of the health center (83.3%) had a highest rate of satisfaction in contrast to the amount of time spent waiting to see by HCW in the HC 132 (49.8%) and convince of waiting room in the health center (34.7%) which had the highest level of dissatisfaction. The result is far greater than from a study done in Northwest Ethiopia, Awi zone danigela [30] in which 59.5% felt that the scheduled hours at the health facility were not convenient for them.

According to our result those employed are 1.134 times more likely to be satisfied on primary health care service provision in Yeka sub city. This finding is in line with a systematic review and meta-analysis done on patient satisfaction in Ethiopian context [28]. Additionally, those who say the service is affordable were 1. 042 times more likely to accept the service provision. Demographic characteristics like age, religion and marital status were not significantly associated with satisfaction of primary health care provision, which is against a study done in Saudi Arabia [32] in which age is significantly associated and in turkey in which marital status was significantly associated [31]. Finally regarding the educational status the association was insignificant. This result is opposite to a result found in Saudi Arabia in which those learnt were less satisfied to the service [32] and in line with a study done in turkey in which level of education was not significantly associated with satisfaction [31].

Researches and new ideas towards combating NCDs are crucial for the better health in tomorrow. This researches mainly focus on the four main risk factors of NCD which include, physical inactivity, cigarette smoking, dietary habit and harmful alcohol drinking and also complications of NCD like Stroke. A study in Germany focusing on individualized physical exercise promotion program in people with manifested risk factors for multi morbidity is underway [39]. Regarding the complications on NCD, there is a study underway on a structured, progressive protocol integrated with typical daily physical therapy improved walking and quality of life measures over usual care [40].

Conclusion

The overall service provision on non-communicable diseases was poor. Accessibility had the highest score, followed by satisfaction and compliance. Unavailability and interrupted supply of drugs were major constraints in the provision of primary health care. Absence of NCD drugs, low number of patients put on medication against the guideline, absence of separate NCD units and absence of NCD register were some of the constraints. Likewise, prescribing incorrect dose of drug and poor supervision trends were some of the constraints. Though all patients were satisfied with majority of satisfaction items, relatively high proportion, 31.1% were dissatisfied with daily visiting of HCs and 29.5% were dissatisfied with the convenience of HCs to their home.

Recommendation

In yeka sub city

Sub city health office should:

- Facilitate refresher in-service training for HCWs working at diagnosis units by using the NCD guideline.
- Make sure timely and adequate availability of NCD drugs in every institute.

- NCD focal person in the sub city should carry out specific supportive supervisions visits in HCs monthly on a regular basis.

Health centers in Yeka sub city

- Should supervise the performance of the HCWs regularly (preferably once per week).
- Make sure continuous supply of NCD drugs.
- Should construct NCD room separately.
- Should construct comfortable waiting rooms for patients.
- Decrease waiting time to see a health care professional.

Bibliography

1. Penchansky R and Thomas JW. "The concept of access: definition and relationship to consumer satisfaction". *Medical Care* (1981): 127-140.
2. Global Burden of Diseases (GBD) COMPARE. Analyze updated data about the world's health levels and trends from 1990 to 2019 in this interactive tool using estimates from the Global Burden of Disease (GBD) study (2019).
3. World Health Organization. Global Action Plan for the Prevention and Control of NCDs 2013-2020 (2013).
4. Kane J., *et al*. "A systematic review of primary care models for non-communicable disease interventions in Sub-Saharan Africa". *BMC Family Practice* 18.1 (2017): 46.
5. Primary Health Care Reform Guideline, Addis Ababa, Ethiopia, Addis Ababa Health Bureau (2009).
6. World health statistics 2019: monitoring health for the SDGs, sustainable development goals. Geneva: World Health Organization (2019).
7. Luciano José Arantes., *et al*. "The benefits and challenges of the Family Health Strategy in Brazilian Primary Health care: a literature". 21.5 (2016): 1499-1509.
8. Wim De Ceukelaire., *et al.* "Cuba's health system: challenges ahead Pol De Vos". *Health Policy and Planning* 23 (2008): 288-229.
9. Espinosa-González AB and Normand C. "Challenges in the implementation of primary health care reforms: a qualitative analysis of stakeholders' views in Turkey". *BMJ Open* 9 (2019): e027492.
10. Emeka E Obioha and Masemote G. "Functioning and Challenges of Primary Health Care (PHC) Program in Roma Valley, Lesotho". *Molale2 Ethno-Medicine* 5.2 (2011): 73-88.
11. Assefa., *et al*. "Community health extension program of Ethiopia, 2003–2018: successes and challenges toward universal coverage for primary healthcare services". *Globalization and Health* 15 (2019): 24.
12. Molla S., *et al*. "Women's satisfaction with their urban health extension program and associated factors in Gondar administrative city, northwest Ethiopia: a community-based cross-sectional study". *BMJ Open* 10 (2020): e039390.

13. Tefera W., *et al*. "illness recognition, home care and for care seeking for sick infants less than two months in shebedino district, sidama zone, Ethiopia". *Ethiopian Medical Journal* 52 (2014): 17-161.

14. Baseline evaluation of Maternal and Child Health services in selected 25 weredas Addis Ababa, Ethiopia Health and Nutrition Research Institute (2014).

15. Rapid Assesment of Determinants, Factors and opportunities to Early Pregnancy Identification, Focused Antenatal care, Skill birth Attendance and Post natal service utilization in Gurage and sidama zone of SNNP, Addis Ababa, Save the children (2015).

16. Warren C. "Care of the new born community perception and health seeking behavior". *The Ethiopian Journal of Health Development* 24.1 (2010): 110-114.

17. Shaw B., *et al*. "Access to integrated community case management of childhood illness in rural Ethiopia a qualitative study of the perspectives and experiences of care giver". *Health Policy and Planning* (2015).

18. Prevalence of childhood illness and mothers care seeking behavior in Bahir dar Ethiopia, A descriptive community cross sectional study Bahir dar, Bahir dar University Ethiopia (2013).

19. Desta FA., *et al*. "Identifying gaps in the practices of rural health extension workers in Ethiopia: A task analysis study". *BMC Health Services Research* (2017): 839.

20. Fassil Shiferaw., *et al*. "Non-communicable Diseases in Ethiopia: Disease burden, gaps in health care delivery and strategic directions". *Ethiopian Journal of Health Development* (2020).

21. Tamirat Gizaw Kasahun Girma Tareke Getahun Zebre. Implementation, Experience, and Challenges of Urban Health Extension Program in Addis Ababa: A Case study from Ethiopia (2010).

22. Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. WHO (2010).

23. Tirhas T Berehe., *et al*. "Assessment of clients satisfaction with outpatient services at Yekatit 12 Hospital Medical College, Addis Ababa, Ethiopia". *BMC Research Notes* 11 (2018): 507.

24. Samson Menigesha., *et al*. "Patient Satisfaction and associated factors with outpatient medical services in rural primary health care facilities, illubabor zone, Oromiya region" South West Ethiopia". *International Journal of Current Research* 7.9 (2015): 20245-20251.

25. Mukundiyukuri JP., *et al*. "Availability, Costs and Stock-Outs of Essential NCD Drugs in Three Rural Rwandan Districts". *Annals of Global Health* 86.1 (2020): 1-15.

26. Damen Hailemariam., *et al*. "Ethiopia's urban primary health care reform: Practices, lessons, and the way forward Ethiop". *Journal of Health Development* 32.1 (2018).

27. JA Spoelstra., *et al*. "Initiation of glucose-lowering therapy in Type 2 diabetes mellitus patients in general practice © 2004 Diabetes UK". *Diabetic Medicine* 21 (2004): 896-900.

28. Henok Biresaw., *et al*. "Patient satisfaction towards health care services provided in Ethiopian health institutions: a systematic review and meta-analysis Health Services Insights Health Services Insights Volume 14: 1–12 © The Author(s) (2021).

29. Haftom Desta., *et al*. "Assessment of patients' satisfaction and associated factors among outpatients received mental health services at public hospitals of Mekelle Town, northern Ethiopia". *International Journal of Mental Health Systems* 12 (2018): 38.

30. Abiyot Wolie Asres., *et al*. "Assessment of patient satisfaction and associated factors in an outpatient department at Dangila primary hospital, Awi zone, Northwest Ethiopia, 2018, Global Security: Health". *Science and Policy* 5.1 (2020): 57-64.

31. Ayranci E and Atalay N. "Demographic Determinants of Patient Satisfaction: A Study in a Turkish Context". *International Journal of Academic Research in Business and Social Sciences* 9.6 (2019): 837-847.

32. Majed A Bajaba. "Demographic determinants of patient satisfaction among hypertensive and patients with diabetes in primary health care centers, Jeddah". *International Journal of Medical Science and Public Health* 5.11 (2016).

33. CA Kalungia., *et al*. "Availability of Essential Antihypertensive and Antidiabetic Medicines in Public Health Facilities in Lusaka District". *Zambia Medical Journal of Zambia* 44.3 (2017): 140-148.

34. Rossi P., *et al*. "Measuring and monitoring program outcomes". Evaluation: a systematic approach 7th edition Thousand Oaks, CA: Sage (2004): 203-232.

35. Gebremedhin T., *et al*. "Process evaluation of the community-based newborn care program implementation in Geze Gofa district, south Ethiopia: a case study evaluation design". *BMC Pregnancy and Childbirth* 19.1 (3019): 492.

36. Framework Guide for the Second Generation Health Extension Program. Addis Ababa: Federal Ministry of Health (2014).

37. Gebremeskel Mulatu., *et al*. Compliance with Guideline of Hypertension Management Among Health Practitioners in Illubabor and Buno Bedelle Zones, South West Ethiopia (2020).

38. Hassan Imam., *et al*. "Evaluation of time delay between discovery of a high blood pressure in a health screening survey and hypertension diagnosis ISSN: (Print) (Online)". *Journal Homepage* (2022).

39. Simone Schweda., *et al.* "Implementation and evaluation of an individualized physical exercise promotion program in people with manifested risk factors for multi morbidity (MultiPill-Exercise): a study protocol for a pragmatic randomized controlled trial". *BMC Public Health* 22 (2022): 1174.

40. Implementation of increased physical therapy intensity for improving walking after stroke: Walk 'n Watch protocol for a multi-site stepped-wedge cluster randomized controlled trial". *International Journal of Stroke* (2022): 17474930221129982.

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