Neglected Tropical Diseases (NTD) service availability at health facilities in Ethiopia: Evidence from 2014 Ethiopian service provision assessment

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Abstract

Background: Neglected tropical diseases (NTDs) are a group of infections which are especially endemic in low-income populations in developing regions of Africa, Asia, and the Americas. In sub-Saharan Africa, the impact of these diseases as a group is comparable to malaria and tuberculosis. The diseases recognized as neglected tropical diseases by the World Health Organization (WHO) are: Chagas disease, Cysticercosis and taeniasis, Dengue fever, Dracunculiasis, Echinococcosis, Human African trypanosomiasis, Leishmaniasis, Leprosy, Lymphatic filariasis, Onchocerciasis, Rabies, Schistosomiasis, Soil-transmitted helminthiasis, Trachoma, and Yaws. Most of these diseases are either preventable through mass drug administration (MDA) and proper hygiene and sanitation, or treatable through systematic case finding and management. This study was conducted with the aim of assessing the availability of services for neglected tropical diseases management at health facilities in Ethiopia.

Method: The assessment is part of the 2014 Ethiopian Service Provision Assessment Plus (ESPA+) Survey. A total of 873 health facilities were assessed for this analysis. All Hospitals, selected health centre, and private clinics were assessed if they provide services for Neglected Tropical Diseases.

Result: More than half of all health facilities offer services for both soil transmitted helminthes (64 percent), and services for trachoma (60 percent). About four of every ten health facilities offer services for schistosomiasis. On the other hand, services for onchocerciasis, leishmanianis and lymphatic filariases were available in less than a third of all health facilities (27%, 25% and 24%, respectively).

Conclusion and recommendation: Even though, the availability of service for neglected tropical disease in health facilities is relatively good in general, there should be equitable distribution of neglected tropical disease service provision among regions. And private facilities should give emphasis for the provision of these services. [*Ethiop. J. Health Dev.* 2017;31(Special Issue):378-383]

Key words: Service Availability, NTDs, SPA+, Ethiopia.

Background

The neglected tropical diseases (NTDs) are a group of infections which are especially endemic in low-income populations in developing regions of Africa, Asia, and the Americas. Different organizations define the set of diseases differently. In sub-Saharan Africa, the impact of these diseases as a group is comparable to malaria and tuberculosis (1). The diseases recognized as neglected tropical diseases by the World Health Organization (WHO) are: Chagas disease, Cysticercosis and taeniasis, Dengue fever, Dracunculiasis, Echinococcosis, Human African trypanosomiasis, Leishmaniasis, Leprosy, Lymphatic filariasis, Onchocerciasis, Rabies, Schistosomiasis, Soil-transmitted helminthiasis, Trachoma, and Yaws (2). Neglected Tropical Diseases (such as Onchocerciasis, Lymphatic Filariassis, Schistosomiasis, Soil transmitted helminthes, Trachoma, Drancunculiasis, Podoconiosis, and Leishmaniasis are a group of chronic parasitic diseases and related conditions that represent the most common illnesses of the world's poorest people (4). In Ethiopia, most of the NTDs in the WHO list are present, except for probably dengue fever, Chagas disease and yaws(1). Although comprehensive, systematic and integrated responses are lacking, control programs for individual NTDs such as onchocerciasis, and trachoma exist at national scale. According to HSDP IV annual performance report 2013, Ethiopia included Neglected Tropical Diseases (NTD), including dracunculiasis, onchocerciasis, lymphatic filariasis, leishmaniasis, schistosomiasis, soil transmitted helminths, trachoma, and podoconiosis in the multi-year National Master Plan for the Control/Elimination/Eradication of NTDS . Most of these diseases are either preventable through mass drug administration (MDA) and proper hygiene and sanitation, or treatable through systematic case finding and management (3).

Ethiopia stands out for having the largest number of Neglected Tropical Disease cases following Nigeria and the Democratic Republic of Congo. Ethiopia is estimated to have the highest burden of trachoma, podoconiosis and cutaneous leishmaniasis in sub-Saharan Africa (SSA), the second highest burden in terms of ascariasis, leprosy and visceral leishmaniasis, and the third highest burden of hookworm. Infections such as schistosomiasis, trichuriasis, lymphatic filariasis and rabies are also common. A third of Ethiopians are infected with ascariasis, one quarter is infected with trichuriasis and one in eight Ethiopians lives with hookworm or is infected with trachoma (5).

In order to mitigate the burden of Neglected Tropical Diseases in Ethiopia, a National Symposium on NTDs was held in Addis Ababa in the period 12-14 June 2013, under the theme: "End the neglect, integrate, scale up and sustain", with the participation of over

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400 representatives of relevant line ministries and government agencies, RHBs, research institutions, nongovernmental organizations, and development partners. During the symposium, a platform was established for knowledge sharing and documentation of best practices in Neglected Tropical Diseases, and the National NTD Master Plan was launched (3). Therefore; this survey was aimed to assess health facilities for the availability of services for neglected tropical diseases management.

Method

Study setting: The Ethiopian health sector has introduced a three-tier health care delivery system: level one is a Woreda/District health system comprised of a primary hospital, health centres and their satellite Health Posts connected to each other by a referral system (6). A total of 23,144 functional and formal sector health facilities are available in Ethiopia which included: 214 hospitals, 3,317 health centres, 15, 525 health posts, and 4,088 private clinics (categorized under higher, medium and lower clinics). Information on Neglected Tropical Diseases was collected from a representative sample of health facilities (hospitals, health centres and private clinics) managed by the government, non-governmental organizations (NGOs), and private for-profit organizations across the country. This study was approved by the scientific and ethical review office of the Ethiopian public health institute (EPHI). The survey was conducted from 10 March to 25 July 2014. Copies of letter of approval from EPHI's Scientific and Ethical Review Offices (SERO) was presented to regional health bureaus.

Study Design: This study is a cross-sectional study, which combine MEASURE DHS SPA, World Health Organization's Service Availability and Readiness Assessment (SARA) and the World Bank's Service Delivery Indicator (SDI) tools.

Data Source: The data used in this study came from the 2014 Ethiopian service provision assessment Plus Survey (SPA+). The sample for the survey was a stratified random sample designed to provide representative results for Ethiopia, for different facility types and different management authorities, and for each of the 11 regions of the country. The sample size determination has been achieved by controlling the survey precision at region level and by facility type at national level.

A list of 23,102 formal sector health facilities in Ethiopia was obtained from the Federal Ministry of Health. The list included: 202 hospitals, 3,292 health centres, 15, 618 health posts, and 3,990 private clinics (higher clinics, Medium clinics and lower clinics). These facilities were managed by the following authorities: the government, other governmental (military, prison, federal police), private for profit, and nongovernmental organization (NGOs (mission/faith based, non-profit)). Health posts were excluded for this manuscript; since health posts were not assessed for these services and they are not expected give these services. Because of their importance and their limited numbers, all hospitals were included in the survey and allowing for inclusion of newly identified hospital in the survey. A representative sample of health centres and clinics were selected and included in the survey. The sample includes all hospitals, sample of health centres, and private clinics. The data are nationally and sub-nationally representative and internationally comparable. There were a total of 873 health facilities included in this analysis.

Data collection instrument: To achieve the objectives of the assessment and to capture information from the different categories, a facility inventory questionnaire was used to obtain information on service availability of the priority Neglected Tropical Di*sease services.*

Data Collection Approaches: After preparation of definitive questionnaires in English, the questionnaires were translated into three major languages: Amharigna, Oromiffa, and Tigrigna. English and Amharigna translation of the inventory questionnaire were loaded onto tablet computers, which were used during interviews to ask questions and also record responses (computer assisted personal interviewing–CAPI).

Training and Data Collection: The questionnaires were pretested to detect any possible problems in the flow of the questionnaires, gauge the length of time required for interviews, as well as any problems in the translations. The pretest also helped to detect any problems with the data entry program.

Health providers (nurses, nurse midwives, and clinicians) were trained in the application of survey instruments and computer programmes. The training included classroom lectures and discussion, practical demonstrations, mock interviews, role plays, and field practices. The participants were also given daily homework to conduct mock interviews among themselves using the survey tools. The first two weeks of training were dedicated exclusively to training interviewers on use of paper questionnaires, and also to field practice. The three days of field practice was to ensure that the participants understood the content of the (paper) questionnaires, as well as how to organise themselves once in a health facility.

During the third week of training, participants were first introduced to tablet computers, and then transitioned to the use of the tablet computers for data collection (CAPI) and for data entry and editing (CAFE); this was done using completed paper questionnaires from the facilities visited during the pre-test. During the fourth week, participants practiced all questionnaire types and CAPI/CAFE approaches in teams and in pairs.

Following the training, 36 teams were formed, each consisting of a team leader, interviewers, and a driver. Main data collection took place from March 10, 2014, to July 25, 2014. The team leader had responsibility of checking all questionnaires before leaving the facility. Each team was given a list of facility to visit, list of facilities name, type, and location. On average, the data

collection took two days per facility. Each interviewer ensures that the respondent for each component of the facility inventory is the most knowledgeable person for the particular service or system being assessed. Informed consent is obtained from the person in charge in the facility for inventory questionnaire and from providers for provider interview.

Data management and analysis: Data were cleaned by checking of range, structure and selected set of checks for internal consistency. All data editing programs were conducted using CSPro software. Different relevant issues related with the survey were considered during the management and analysis of the data. Descriptive analysis was performed using CSPro tabulation. Several conventions were observed during analysis. Unless otherwise indicated, only those items observed by the interviewers themselves to be available.

Results

Availability of services for neglected tropical diseases: The result included findings on neglected tropical diseases for a total of 873 health facilities (214 Hospitals, randomly selected 292 health centres, and 367 clinics) all over the country. Over half (51%) of all the health facilities in this analyses were public, and 45 % were private for-profit health facilities. (Table1).

Table 1: **Total number of health facilities assessed by type of facilities**

Facility type	Total facility	Managing Authority			
		Public	Other governmental	Private for profit	NGO
Referral hospital	32	31	0	0	1
General hospital	130	71	1	51	7
Primary hospital	52	44	1	4	3
Health center	292	290	0	0	2
Higher clinic	57	0	0	55	2
Medium clinic	132	0	4	121	7
Lower clinic	178	1	3	165	9
National	873	437	9	396	31

Services were deemed to be available when the providers in the facility diagnose, prescribe treatment for, or manage patients with neglected tropical disease. In general, about more than half of all health facilities offer services for both soil transmitted helminthes (64 percent), and services for trachoma (60 percent). Among all hospitals, nearly about nine of every ten facilities have services for soil transmitted helminthes, and trachoma (Table 2). Over all, about four of every ten health facilities offer services for schistosomiasis, and the availability of services for onchocerciasis, leishmanianis, and lymphatic filariases were 27 percent, 25 percent, and 24 percent respectively. Services of dranculosis, and podoconiosis were the least frequent available with only 16 percent, and 12 percents respectively, of all health facilities. Over all, Services for all neglected tropical disease (NTDs) are more likely available in hospitals compared with other facility types, and Government facilities are more likely to provide these services compared with other managing authorities. Among regions, in Gambella and Afar regions, the availability of services for NTD is less likely available than other regions. However, even though Gambella region is among the regions with high NTD burden, the availability of NTD service is lesser (less than 8 percent for all NTD disease) in this region compared with other all regions (Table 2).

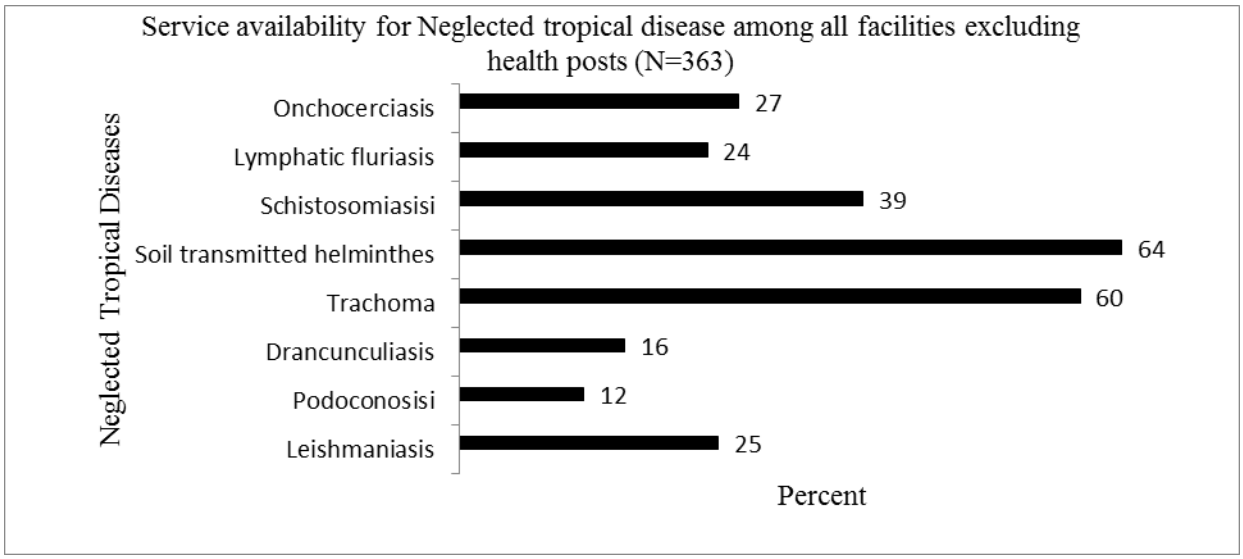

Figure 1: **Availability of services for Neglected tropical diseases among facilities excluding health posts, ESPA+ 2014.**

Table 2: **Service availability for neglected tropical diseases among all facilities, excluding health posts, the percentages of health facilities offering services for neglected tropical diseases, by background characteristics, Ethiopia SPA+ 2014 (Five diseases)**

Background characteristics	Percentage of facilities offering services for neglected tropical diseases:				
	Onchocerciasis[1]	Lymphatic filuriases[2]	Schistosomiasis[3]	Soil transmitted helminthes[4]	Trachoma[5]
Facility type					
Referral Hospital	63	72	84	91	84
General Hospital	61	61	79	88	79
Primary Hospital	56	54	87	92	88
Health Center	35	29	48	75	74
Higher Clinic	39	39	64	75	69
Medium Clinic	32	34	61	78	72
Lower Clinic	8	9	12	39	32
Managing authority					
Government/ public	36	31	49	76	75
Other governmental (military, prison, federal police)	8	6	11	50	94
Private for profit	16	18	28	51	43
NGO (mission/ faith-based, nonprofit)	41	24	40	70	58
Region					
Tigray	30	31	57	68	66
Afar	8	6	20	52	24
Amhara	23	18	46	72	71
Oromia	32	31	39	59	58
Somali	25	16	28	51	48
Benishangul Gumuz	60	46	51	57	60
SNNP	20	18	24	66	54
Gambella	5	3	3	8	6
Harari	54	49	83	89	77
Addis Ababa	31	29	52	70	63
Dire Dawa	68	68	78	80	82
Urban/rural					
Urban	26	27	45	67	59
Rural	27	23	35	62	61
Total	27	24	39	64	60

Table 2: **Service availability for neglected tropical diseases among all facilities, excluding health posts, the percentages of health facilities offering services for neglected tropical diseases, by background characteristics, Ethiopia SPA+ 2014 (Four diseases)**

Background characteristics	Percentage of facilities offering services for neglected tropical diseases:			
	Dracun-culiasis[6]	Podo-coniosis[7]	Leishma-niasis[8]	Number of facilities
Facility type				
Referral Hospital	53	53	81	2
General Hospital	44	44	68	7
Primary Hospital	40	40	60	3
Health Center	22	14	31	182
Higher Clinic	28	20	44	13
Medium Clinic	17	16	26	37
Lower Clinic	3	2	9	119
Managing authority				
Government/ public	23	16	33	190
Other governmental (military, prison, federal police)	6	6	6	2
Private for profit	9	8	16	163
NGO (mission/ faith-based, nonprofit)	15	4	35	8
Region				
Tigray	22	20	35	22
Afar	2	2	5	5
Amhara	11	10	30	87
Oromia	22	12	25	116
Somali	25	10	31	8
Benishangul Gumuz	37	39	43	4
SNNP	9	7	16	80
Gambella	6	0	2	6
Harari	40	29	57	2
Addis Ababa	19	17	27	31
Dire Dawa	56	38	64	3
Urban/rural				
Urban	17	13	26	149
Rural	16	11	24	214
Total	16	12	25	363

[1]Providers in the facility diagnose, prescribe treatment for, or manage patients with onchocerciasis.
[2]Providers in the facility diagnose, prescribe treatment for, or manage patients with lymphatic filariasis.
[3]Providers in the facility diagnose, prescribe treatment for, or manage patients with schistosomiasis.
[4]Providers in the facility diagnose, prescribe treatment for, or manage patients with soil transmitted helminthes.
[5]Providers in the facility diagnose, prescribe treatment for, or manage patients with trachoma.
[6]Providers in the facility diagnose, prescribe treatment for, or manage patients with dracunculiasis.
[7]Providers in the facility diagnose, prescribe treatment for, or manage patients with podoconiosis.
[8]Providers in the facility diagnose, prescribe treatment for, or manage patients with leishmaniasis.

Discussion

Neglected Tropical Diseases (NTDs) are significant public health problems in Ethiopia. Ethiopia stands out for having the largest number of neglected tropical disease cases following Nigeria and the Democratic Republic of Congo. Ethiopia stands out for having the largest number of Neglected Tropical Disease cases following Nigeria and the Democratic Republic of Congo. Ethiopia is estimated to have the highest burden of trachoma, podoconiosis and cutaneous leishmaniasis in sub-Saharan Africa (SSA), the second highest burden in terms of ascariasis, leprosy and visceral leishmaniasis, and the third highest burden of hookworm. Infections such as schistosomiasis, trichuriasis, lymphatic filariasis and rabies are also common. A third of Ethiopians are infected with ascariasis, one quarter is infected with trichuriasis and one in eight Ethiopians lives with hookworm or is infected with trachoma (5).

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Services were deemed to be available when the providers in the facility diagnose, prescribe treatment, or manage patients with each specific neglected tropical disease (NTDs). The study examined the availability of neglected tropical disease (NTDs) service in Ethiopia. At national level, in general about more than half of all health facilities offer services for both soil transmitted helminthes (64 percent), and services for trachoma (60 percent). Over all, Government facilities are more likely to provide these services compared with other managing authorities. There is also regional discrepancy in neglected tropical disease service availability. In Gambella and Afar regions, the availability of services for neglected tropical disease is less likely available than other regions. However, the demand for neglected tropical disease service is higher in Gambella region because of its high neglected tropical disease burden, the availability of neglected tropical disease service is lesser (less than 8 percent for all neglected tropical disease) in this region compared with other all regions.

Conclusion*:*

In conclusion, even though the availability of service for neglected tropical disease in health facilities is relatively good in general, there should be equitable distribution of neglected tropical disease services provision among regions. And private facilities should give emphasis for the provision of these services.

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Conflict of interests

The corresponding authordeclare that there is no financial or non-financial competing interest.

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