

# Competency of Level-4 Health Extension Workers to provide Long Acting Reversible Contraceptives: A task shifting initiative in Ethiopia

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## Research article

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# Abstract

**Background :** The Ethiopian health system has been facing challenge to meet the growing desire for family planning service. Shortage of trained service providers at a primary care setting is one of the reasons for unmet need to access Long-Acting Reversible Contraceptives (LARCs). To investigate feasibility of task shifting of providing LARCs, community health extension workers (CHEWs) were trained in four Regions of Ethiopia on how to insert and remove contraceptive of implant and Intrauterine Contraceptive Device (IUCD). Therefore, this study is aimed at assessing the knowledge, attitude and skill of the trained health extension workers to provide LARC.

**Methods :** A cross sectional study was employed from April to May 2017 in four feasibility study regions of Ethiopia, namely; Amhara, Oromia, Tigray, and Southern Nation, Nationalities and Peoples Region (SNNPR). Data were collected from 66 health extensions who give the service of 402 IUCD and 793 implants. The collected quantitative data were analyzed using statistical package for social science (SPSS) version 25.0 for window.

**Results :** Nearly two-third (62.7%) of L4HEWs had good level of knowledge of counseling for LARC. Using anatomical model L4HEWs completely performed all steps for around 58.5% Implanon, 30.6% Jadelle and 22% IUCD insertions.

**Conclusions :** With adequate training and supportive supervision, L4HEWs can provide high-quality implant insertions. The IUCD insertion and removal needs careful consideration. Despite the possibility of improving uptake of LARC services by training more L4HEWs, there is a need to improve the skill of IUCD insertion and removal before scale up the intended task sharing.

## Background

Ethiopia is the second most populous and tenth biggest country in Africa [1]. According to the 2016 Ethiopian Demographic and Health Survey (EDHS), the estimated total population is 102 million, with 80.2% living in rural parts [2]. Maternal Mortality Rate in 2016 was 412 /100,000 live births and under 5 child mortality was 67/1000 live births [2]. From 2000 to 2016, lower fertility rates and increased family planning utilization was documented in Ethiopia [2–4]. The total fertility rate was reduced from 5.5 in 2000 to 4.6 in 2016 with significant regional variability. More than a quarter of the pregnancies which resulted in the last delivery were unintended [2].

Modern contraceptive prevalence rate (CPR) was 6% in 2000 and 35% in 2016 resulting in a 33% absolute increase over the course of 16 years and the TFR was declined only by 2% [2–4]. The Ethiopian health system has been facing challenges to meet increasing desire for family planning [5–7]. In 2016, unmet need for family planning was 22%, of which 9% was for limiting and 13% was for spacing birth [2]. The groups with high unmet need are: Adolescents aged 15–19 years and rural residents at 18.7 and 29.8 respectively [2, 8]. Post-partum women are also among groups with high unmet need. Looking at prospective unmet need (defined as whether women would like another child within the next two years),

among Ethiopian women 0–2 years postpartum (n = 4,453), 94% did not wish another pregnancy at the time of the survey. Yet only 19% were using modern method of contraceptives resulting in a prospective unmet need of 74% among postpartum women [2].

Among family planning methods, long-acting reversible contraceptives (LARCs), consisting of intrauterine devices (IUDs) and implants are more effective and convenient for user, and their efficacy is not dependent on user adherence [3, 5, 9–12]. Reversibility of these methods also make them suitable for a vast number of women who have not completed their families [2, 12].

However, despite the many advantages of LARCs, contraceptive implants, which are among the most effective LARCs, make up a very small proportion of the Ethiopia's contraceptive use [13]. In Ethiopia, the most preferred method in the past 15-years was injectable contraceptive method (Depo-Provera) that accounts for 23% [6, 14], while LARC has been showing very limited increment, until the last DHS, where it has reached 7.9% [2]. The main reason for low-coverage of LARC is inaccessibility of the service in rural areas and lack of trained service provider [15, 16]. In a facility survey [17], 84% of health posts were providing 3 or more methods; 88% of health centers and 95% of hospitals were providing 5 or more methods.

The government of Ethiopia has advanced family planning (FP) as one strategy to improve maternal and child health and to bring about overall development [18]. Accordingly, programs are being implemented to increase access to and demand for quality FP services through expansion of the contraceptive method mix—emphasizing on long-acting methods at lower-level service delivery points. Using the Health Extension Program (HEP) as a platform, the government began expanding FP options in 2009 with sub-dermal insertion of Implanon by HEWs. In 2010, the FMOH launched its initiative to revitalize the use of the IUCD by training clinical providers at health centers and hospitals, which is still continuing. The FMOH has now started an initiative to bring LAFP closer to remote and rural communities *by training Level 4 HEWs on the insertion and removal of IUCD and implants to be performed at the Health Post level (henceforth 'LAFP through L4HEWs')*. To be successful, this initiative needs to go hand-in-hand with high quality training and follow-up of Level 4 HEWs. Therefore, this study aims to assess the knowledge, attitude and skill of L4HEWs who are trained and deployed for this purpose.

## Methods

### Overview of the pilot intervention

Ethiopia has a decentralized three-tier system of primary, secondary and tertiary care. The lowest level of referral system is the primary healthcare unit, which is composed of five satellite health posts, one health center and one primary hospital. Health centers and primary hospitals are staffed by around 53 persons to provide preventive, curative, inpatient and ambulatory services, and emergency surgical services, including caesarean section and blood transfusion. General hospitals are staffed by around 234 persons to provide inpatient and ambulatory services. The specialized hospital is staffed by around 440

professionals to serve as a referral center for the general hospitals and provides inpatient services. The Health Extension Programme is a flagship programme of the Ministry of health which serves as the primary vehicle for implementation of community-centered essential health care packages.

This intervention package was developed with set of objectives and was introduced in 66 health posts of the country. The pilot health posts were purposively selected for intervention in the first round from four regions, namely, SNNPR, Tigray, Amhara and Oromia regional states. The intervention included training of L4HEW to provide long acting family planning which includes implants and IUCD insertion and removal. The training was designed to provide participants with the latest technical skill about long acting family planning methods. It was 11-day block at a designated training site and consists of theoretical session, skill demonstration and practice on real clients. Training in the first 6 days was in the classroom and the next 5 days was in selected clinical practicum sites. Training emphasized on doing, not just knowing, and used competency-based learning process and evaluation of performance. Only those who meet the minimum requirements during the assessment including fulfilling the >60% score for written post-training exam and ensuring practical skills and exposure during practicum, were allowed to provide the services.

Sixty six L4HEW were trained from the four regions. The trainings were held in four different sites. Those who fulfilled the minimum requirement are assigned to the 66 health posts selected for the pilot phase. This study was conducted from April– May, 2017 eight months since the program was introduced to the 66 Health posts (20 in Tigray, 14 in Amhara, 13 in Oromia and 19 in SNNPR). Within these 8 months; there were more than 402 mothers who received IUCD and more than 793 women who received implant including more than 89 removals of implants from L4HEW, with varying numbers of clients getting the services from these health posts.

## **Study design and data collection method**

A cross-section design was used to collect the quantitative and qualitative data using self-administered and semi structured questionnaire and direct observation by structured checklists. The Direct service provision observation focused on observing the process of counseling and insertion/removal procedural skills using checklist while L4HEWs were providing the service to clients or using anatomical model when clients were not available during the data collection. Qualitative data were also collected using in-depth interview with L4HEWs targeting level of training, method of delivery and challenges of service delivery. Data collection was facilitated by nurses and midwives who received already certified LARC providers and trained on the study methodology and the method of interviewing, observation, and documentation skills, as well as on ethics in health research.

## **Data Analysis**

The data was cleaned, coded, and computerized using Epi Info version 7.1. Quality of data entry was ascertained assigning the statistician to monitor the data entry clerks. Computerized data was exported

to SPSS version 21.0 for analysis. Overall knowledge level was measured using 22 questions composed of counseling, method choice, complication and side effects, of which those who scored at least 50% (22) was considered as having good knowledge while those scored less than 50% was considered as having insufficient knowledge to provide the service. On the other hand, knowledge level on counseling was measured using 8 questions, of which those who scored at least 50% (8) was considered as having good knowledge while those scored less than 50% was considered as having poor knowledge of counseling for LARC. Besides, knowledge level on method choice was measured using 9 questions, of which those who scored at least 50% (9) was considered as having good knowledge while those scored less than 50% was considered as having poor knowledge. Knowledge level on side effect and complication was measured using 5 questions, of which those who scored at least 50% (5) was considered as having good knowledge while those scored less than 50% was considered as having poor knowledge.

## **Result**

### **Background characteristics of L4HEWs**

A total of 51 L4HEWs (i.e., 10 from Amhara, 10 from Oromia, 14 from Tigray, 17 from SNNPR) were included in the study. The remaining (4 from Amhara, 3 from Oromia, 6 from Tigray and 2 from SNNPR) were not interviewed for various reasons (migration to another area, maternity leave, study leave, and termination of their job).

### **Number of clients served by L4HEWs**

After receiving the training, 85.2% of L4HEWs inserted at least 10 implanon and 25.6% inserted at least 10 IUCD. More than one-fourth (27.7%) removed implanon and 4.3% removed IUCD. While regarding to jadelle 15.2% inserted and 6.6% removed.

### **Knowledge Level of L4HEWs**

More than three-fifth (58.8%) of L4HEWs have good level of knowledge about LARC. Nearly two-third (62.7%) of L4HEWs has good knowledge of counseling for LARC. While above half (52.9%) of L4HEWs have good level of knowledge of selecting appropriate method for the client. Moreover, slightly above half (51.0%) of L4HEWs have good knowledge on LARC side effects and complications.

### **Attitude of L4HEWs towards LARC through L4HEWs**

Most (84.4%) of the L4HEWs (84.4%) disagree with the idea that, contraceptive information should only be available to married women in Ethiopia. Almost two-third (35.3%) agree that “a woman needs to have her husband’s or partner’s approval for contraception services”. Nearly one-fourth (23.5%) of them prefer to give short acting (OCP or injectable) to women more than giving LARC. Only one-tenth (9.8%) disagree

that L4HEW can improve the overall LARC service provision. Similarly, 9.8% of them agree that LARC should be given only by reproductive nurses and mid-wives. While only 5.9% of them agree that LARC should not be given in a HP [Table 1].

## **Self-perceived competency towards LARC service provision**

Fifteen percent of the L4HEWs believe that they are not competent in counseling of clients about family planning. Regarding insertion, 19.1%, 19.1%, and 6.4%, are not competent in inserting implanon, jadelle and IUCD, respectively. Similarly, 25.5%, and 12.8% believe that they are not competent in removing implants and IUCD, respectively [Table 2].

## **Competency on counseling**

Based on the trained supervisor evaluation using structured observation checklist, (96.0% of L4HEWs had completely performed greeting and client respect as per minimum required standard. Similarly, majority (82.0%) of them completely assured confidentiality and privacy of the client although 18.0% need improvement. Regarding, confidentiality and privacy assurance 14% of them either not did or did incorrectly while the other one-fifth (22.0%) needs improvement in doing it. Majority (70.0%) of them asked their clients reasons for visit and explore for previous knowledge or use of family planning method completely. While 22.0% needs improvement and the remaining 8.0% not did at all. On the other hand, nearly half (46.0%) never explore the social context and relationship or did it incorrectly. Two-fifth (42.0%), and 32.0% did not explore about sexuality, and STI and HIV history respectively.

## **Competency score of L4HEWs**

Of the 41 L4HEWs observed for implanon insertion, 26.8% are 100% competent in implant insertion, 8.3% are 100% competent in insertion of jadelle and 2.0% are 100% competent in insertion of IUCD. On the other hand 4.2% and 12.5% were 100% competent in removing implants and IUCD, respectively [Table 3].

## **Discussion**

This study assessed the knowledge, attitude, and competency of L4HEWs in provision of implanon and IUCD in Ethiopia. The findings are in agreement with previous studies conducted in Ethiopia and Nigeria; two-third of L4HEWs have good level of knowledge on LARC provision and more than 50% of them have good level of counseling knowledge for LARC, selecting appropriate method for the client, and on LARC side effects and complications. As the program is at a pilot stage, the theoretical knowledge of L4HEWs to provide LARC, both implanon and IUCD is good. A study done in Nigeria indicated community health extension workers (CHEWs) have good level of knowledge in providing implanon which improve coverage of LARC. The five year Integrated Family Health Program (IFHP) in Ethiopia also showed the health

extension workers have a great role in strengthening maternal and child health, family planning (FP), and reproductive health services.

Family planning is cheap and cost-effective intervention to improve maternal and child health. However, health workforce shortages and deterring policies on the roles of mid- and lower-level health professionals limit access to effective long term contraceptive methods. Expanding the provision of contraceptive methods to lower-level health workers can significantly improve access to contraception for all individuals and couples. In 2012, the WHO published a recommendation of optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting. Nevertheless, the knowledge, attitude and competency of lower-level health workers need to be evaluated before putting in to policy.

Service providers' attitude is essential to scale-up the initiative. In the current study a very large proportion of L4HEWs agree that they can improve the LARC services while a very small fraction prefer to give short acting (OCP or injectable) to women than LARC. Less than 10% agree that LARC should be given by reproductive nurses and midwives only and very large proportion disagree that LARC should not be given in a HP. These findings indicate that lower-level health professionals have good readiness and motivation to provide LARC services as long as effective training is given. This is in a agreement with the study conducted in Nigeria and reported that CHEWs have good level of satisfaction on provision of implanon [19].

This study provides evidence in support of the potential to replicate task shifting of LARC to L4HEWs in Ethiopia especially implanon and jadelel insertion. However, the replication of IUCD insertion and removal needs careful consideration of capacity building and supportive supervision. Although the number of implant and IUCD insertions and removals per health facility was relatively low in this pilot program, the experience gained is important to work with the community and to increase demand for LARC services.

Such an expansion of trained providers with increased client demand is likely to speed up the trend of declining Total Fertility Rate (TFR) in Ethiopia and in other low income countries. Evidence of increased demand for services will be a strong advocacy tool to policy makers for assigning and training additional service providers to the family planning clinics. With increasing popularity of LARCs, the study suggests that providing LARC services via task shifting might be a good way to meet family planning needs.

## Limitations

To our knowledge, this is the first study that trained L4HEWs in insertion and removal of both implants and IUCD in Ethiopia. However, the study is not without limitations. First, although the results of the study may be used to inform interventions in selected pilot areas, generalizing findings and recommendations to other areas of Ethiopia should be done with caution. Second, the L4HEWs were aware of being observed which as a potential to increase the likelihood of Hawthorne effect. Participants could change their usual approach in service provision. Third, most of the observation of implant and IUCD insertion

and removal was performed on anatomical model. This has a potential of boosting their confidence as the mistake would not have larger harm.

## Conclusion

With adequate training and supportive supervision, L4HEWs can provide high-quality implant insertions. However, the IUCD insertion and removal needs careful consideration before scaling up of the task shifting. Despite challenge from the community, L4HEWs enjoyed learning new skills and applying them in their daily work. It is possible to improve uptake of LARC services by training more L4HEWs in implant and IUCD insertion and by introducing additional community outreach to generate demand for services. Investing in supportive supervision, use of a standards-based supervisory checklist, and refreshment training will help ensure sustainability of the task shifting intervention.

## Abbreviations

CHEW: community health extension workers

FP: Family planning

Integrated Family Health Program (IFHP)

IUCD: Intrauterine Contraceptive Device

L4HEW: Level IV Health Extension Workers

LARC: Long-Acting Reversible Contraception

SNNPR: South Nations Nationality Peoples Region

TFR: Total Fertility Rate

WHO: World Health Organization

## Declarations

### ***Ethics approval and consent to participate***

The study was ethically approved by institutional review board of Ethiopian Public Health Institute. Permission for data collection was assured from the Regional Health Bureau and District/Woreda health offices. Furthermore, study participants were informed about the study, and reassured about their right to refuse to participate. From each study participants written consent were obtained prior to each interview. Names and other personal information of respondents were not recorded. Any information was/will be

kept confidential and only used for this research. During data collection privacy of respondents were kept and it is free to withdrawal from the interviewed at any time.

## ***Consent to publish***

Not applicable.

## ***Availability of data and material***

The datasets used and analyzed during the study were available from the corresponding author on reasonable request.

## ***Competing interests***

The authors declare that they have no financial and non-financial competing interests.

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## ***Authors' contributions***

AT conceived and designed the study, and analyzed the data. HY, GM and TG contributed to the data collection, processing and analysis of the study. The manuscript was prepared by all authors. All authors read and approved the final manuscript.

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## Tables

*Table 1: Attitude of L4HEWs towards family planning and LARC provision through L4HEWs*

Questions	Disagree n(%)	Neutral n(%)	Agree n(%)
Contraceptive information in Ethiopia should only be available to married women	43(84.4)	1(2.0)	6(11.7)
A woman needs to have her husband's or partner's approval before receiving contraception services	24(47.1)	8(15.7)	18(35.3)
Unmarried couples seeking contraceptive services are irresponsible	35(68.7)	3(5.9)	12(23.5)
I prefer to give short acting (OCP or injectable) to women	39(76.5)	5(9.8)	12(23.5)
It is very involving and time consuming to provide LARC	33(64.7)	5(9.8)	12(23.5)
Placing L4HEW in HP can improve the LARC services	5(9.8)	1(2.0)	44(86.3)
LARC should only be given by RN and MW	43(84.3)	2(3.9)	5(9.8)
LARC should not be given in a HP	46(90.2)	1(2.0)	3(5.9)

*Table 2: Self-perceived competency of L4HEWs towards LARC service provision*

Services	Can't reflect n(%)	Not competent n(%)	Somewhat competent n(%)	Competent n(%)	Highly competent n(%)
Counseling contraception	2(4.3)	7(14.9)	9(19.1)	16(34.0)	13(27.7)
Inserting Implanon	2(4.3)	9(19.1)	5(10.6)	17(36.2)	14(29.8)
Inserting Jadelle	0	9(19.1)	16(34.0)	12(25.5)	8(17.0)
Inserting IUCDs	0	3(6.4)	16(34.0)	20(42.6)	7(14.9)
Removing Implants	0	12(25.5)	11(23.4)	13(27.7)	11(23.4)
Removing IUCDs	3(6.4)	6(12.8)	15(31.9)	12(25.5)	11(23.4)
Giving Injectable	2(4.3)	12(25.5)	2(4.3)	4(8.5)	26(55.3)
Giving OCPs	0	13(27.7)	2(4.3)	6(12.8)	26(55.3)
Giving/Demonstrating condoms	0	13(27.7)	4(8.5)	5(10.6)	25(53.2)

*Table 3: competency score of L4HEWs*

Skill	100% competent n(%)	75% to 100% n(%)	<75% n(%)
Skill before service	1(2.0)	10(20.0)	39(78.0)
Skill of jadelle insertion	3(8.3)	20(55.6)	13(36.1)
Skill of implant removal	2(4.2)	28(58.3)	18(37.5)
Skill of implant insertion	11(26.8)	22(53.7)	8(19.5)
Skill of IUCD insertion	1(2.0)	23(46.9)	25(51.0)
Skill of IUCD removal	6(12.5)	19(39.6)	23(47.9)