Integration of Family Planning Services With HIV Treatment for Women of Reproductive Age Living With HIV Attending ART in Special Zone of Oromia Regional State, Ethiopia

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Research

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Abstract

**Background:** In settings where HIV prevalence is high, management of sexual and reproductive health is critical to reducing HIV transmission and maternal mortality. Integration of family planning with HIV services is appropriate model for HIV therapy, HIV prevention and care with family planning services in a resource limiting area like Ethiopia. The aims of the study were to determine the status of integration of family planning services with HIV treatment for women of reproductive age in Oromia, Ethiopia.

**Methods:** A Health facility based cross-sectional study design was conducted with quantitative data collection approach was used to collect data from women living with HIV attending ART clinics in special zone of surrounding Finfinne, Oromia Region in five health centres. Simple random sampling computer-generated sample was used to select 654 respondents. The returned questionnaires were checked for completeness, cleaned manually, coded and entered into EPI INFO 7.1.6 version. These were then transferred to statistical Package for Social Sciences 23.0 for further analysis. Bivariate and multivariable logistic regressions analysis was used to identify factors associated with integration family planning with HIV services with the significant association at adjusted odds ratio (AOR) with 95% confidence interval (CI) to controlled effects of possible confounders from final model.

**Result:** After discarded 16 spoiled questionnaires, the completed response rate of this study was 97.6% (654/670). There were 654 respondents whose ages ranged between 18 and 49 years. The mean age of the respondents was 31.86 years with a SD of ±6.0 years. Most of the respondents in the sample were in the age group 26-35 (n=374, 57%), and only 96 (14.7%) were in the age group 18-25. This study determined the overall integration FP-HIV services were 55.8% among reproductive age women living with HIV in Oromia regional state of special zone health centres.

Almost all respondents (n=635, 97.1%) preferred integrated sexual reproductive health and HIV services at the same facility, from the same providers, and 622 (95%) were very or mostly satisfied with the utilisation of integrated family planning/HIV services.

**Conclusion:** The identified factors that affected the integration of family planning with HIV services were educational and occupational status, residence, discussion of family planning with healthcare providers, fertility desire and CD4 counts. Therefore, Ministry of health should engage women in the planning, implementation and evaluation of the integrated family planning/HIV services.

**Plain English Summary**

In settings where HIV prevalence is high, management of sexual and reproductive health is critical to reducing HIV transmission and maternal mortality. Integration of family planning with HIV services is appropriate model for HIV therapy, HIV prevention and care.

Data collection approach was used to collect data from women living with HIV attending ART clinics in special zone of Finfinne, Oromia Region. Simple random sampling computer-generated sample used to
select 654 respondents. The returned questionnaires were checked for completeness, cleaned manually and coded. The study looked at factors associated with integration family planning with HIV services. It found a significant association at adjusted odds ratio (AOR).

Integration of family planning with HIV services is appropriate model for HIV therapy, HIV prevention and care with family planning services in a resource limiting area like Ethiopia. This study determined the overall integration FP-HIV services were 55.8% among reproductive age women living with HIV in Oromia regional state of special zone health centres. Almost all respondents (n=635, 97.1%) preferred integrated sexual reproductive health and HIV services at the same facility, from the same providers.

Overall, the integration of family planning/HIV services was relatively moderate among women of reproductive age living with HIV. The identified factors that affected the integration were educational and occupational status, residence and fertility desire.

Family planning services with ART and PMTCT have a great contribution in achieving the end of new pediatric HIV infection. A shift in how ART/PMTCT programmes are conceptualized, implemented and evaluated is needed to better address the family needs of HIV-infected women. Ministry of health should engage women in the planning, implementation and evaluation of the integrated family planning/HIV services.

**Introduction**

The integration of ‘family planning with human immune-deficiency virus’(HIV) services to promote contraceptive use among “women living with HIV” has emerged as a rich ground for research. Integrating family planning and HIV is a process that occurs at different levels of the health care system such as national, regional and at the health facility in relation to key healthcare functions such as governance, financing, planning, service delivery, monitoring, evaluation and demand generation (Atun, Lazarus, Van Damme & Coker 2010:i1-i3).

According to Sustainable Development Goals (SDGs) recommendations, member countries should ensure universal access to sexual and reproductive healthcare services, including family planning, information and education, and the integration of reproductive health into national strategies and programmes by the end of 2030 (SDGs 2015:9–10). According to a study by Kendall and Danel (2014:48060), integration of health service delivery is key to addressing improvements in MNCH services and HIV care and treatment in sub-Saharan African countries. Public health programmes emphasise that the integration of family planning services with HIV treatment to increases dual contraceptive methods’ utilisation will ensure protection from both unintended pregnancy and STIs, including HIV/AIDS (Pack, Stanton & Cottrell 2011:2)

**Statements of the problems**
In 2012 it was estimated that in sub-Saharan Africa, 53 million women who wanted to avoid pregnancy were not using any family planning method (Darroch & Singh 2013:1756). Thus, the unmet need for contraception among women living with HIV in sub-Saharan Africa is high, with 66–92% of women reporting not wanting another child (now or ever), but only 20–43% of them using contraception (Sarnquist, Rahangdale & Maldonado 2013:160–168). The prevalence of unmet needs for family planning thus remains unacceptably high among women in sub-Saharan Africa, including those living with HIV, even if they are involved in HIV treatment programmes (Darroch & Singh 2013:1760; Sarnquist et al 2013:160–168).

Meeting the unmet needs for family planning in sub-Saharan Africa could make an important contribution to improving maternal health through early studies or initiatives. In 2008, the estimated maternal mortality ratio in sub-Saharan Africa was 596 per 100,000 live births, the contraceptive prevalence was 22%, and the proportion of maternal deaths averted by contraceptive use was estimated at 32%. In contrast, among low-and-middle-income countries as a group, the maternal mortality ratio was 273, the contraceptive prevalence was 63%, and 44% of maternal deaths were estimated to be averted by family planning use (Ahmed, Li, Liu & Tsui 2012:111–125).

Programmes that have succeeded in promoting condom use and providing HIV prevention and treatment services in this region have largely missed the opportunity to address the contraceptive needs of the key populations they serve. Therefore, the research statement for this study is “What is status of family planning services with HIV treatment integration for women of reproductive age living with HIV attending healthcare facilities in Oromia Region, Ethiopia?”

**Methods And Materials**

**Research Setting and design**

This study was conducted in the Oromia Region surroundings of Finfinne Oromia, Ethiopia. Currently, the health system of the zone consists of two hospitals under construction, and 27 health centres with 98% potential health service coverage. There were different governmental and non-governmental organisations working on HIV/AIDS in the zone. There were 13 health centres which have been providing ART and family planning services in the zone, of which five were randomly selected as the study setting. The total number of people living with HIV enrolled at ART clinics in the zone was 9421, of which 2380 were women of reproductive age, and of these, 1557 were from five randomly selected health centres (Office Finfinne Special Zone 2018:6). The target population was HIV-positive women of reproductive age who had attended ART follow-up services for at least six months from randomly selected healthcare facilities in Oromia Region, Ethiopia. The accessible sample was 1557 eligible women of reproductive age living with HIV attending ART clinics in public health centres.

A Health facility based cross-sectional study design was conducted with quantitative data collection approach was used to collect data from women living with HIV attending ART clinics
Sample size determination

The sample size was determined through a single population proportion formula by using a case study found in integrated sites in Ethiopia, where 40% of women were family planning users (P) (Scholl & Cothran 2011:9). By considering the design effect of 2, with correction formula since the total population was less than 10 000 (2380) and with a 5% non-response rate considered, the final sample size was 670 women living with HIV.

Sampling procedure

All hospitals and health centres found in the Special Zone of Oromia Region that provide ART services were identified and randomly selected by computer-generated methods to be included in the study. A list of all women living with HIV from each facility, aged between 18 years and 49 years of age, was randomly created. Study sites were prepared and entered into SPSS version 23 by using their pre-ART registration numbers from the health management information system (HMIS) database. A simple random sampling technique by computer-generated samples was utilised at each health centre to select 670 study respondents. The number of study respondents was allocated proportionally for the five health centres, based on their total number of ART clients.

Data collection

The questionnaire used for data collection was initially prepared in English, and translated to Afan Oromo, and back to English for language experts to confirm its consistency. Finally, the corrected Afan Oromo version was used to collect the data from women living with HIV attending ART clinics. The questions included in the questionnaire were adapted and prepared by reviewing different related literature and variables identified to be measured. Training was given for data collectors and supervisors by the primary researcher for two days. Data collectors cross-checked the pre-ART card numbers of women living with HIV who came to the ART clinic with sampled card numbers daily. Five trained data collectors collected data from women of reproductive age. The completed questionnaires were collected and checked daily for consistency and completeness by supervisors and the primary researcher. Data were collected using a pre-tested structured Afan Oromo version of the questionnaire. A pre-test of the questionnaire was done on 5% of the women living with HIV at Ambo health centre, to identify any ambiguity, to confirm consistency in the questionnaire, to determine acceptability, and to make necessary corrections one week before the actual data collection process. The respondents were guided through a questionnaire and chart abstraction conducted at their health facility by trained data collectors.

Data management and analysis

The returned questionnaires were checked for completeness, cleaned manually, coded and entered into EPI INFO 7.1.6 version and then transferred to SPSS version 23 for further analysis. Frequencies, percentages, mean and standard deviation (SD) were used to summarise descriptive statistics of the data and text. Moreover, tables and graphs will be used for data presentation. Bivariate analysis was used primarily to check which variables have an individual association with the dependent variable. Variables
which were found to have an association with the dependent variables were then entered into multiple logistic regressions to control the possible effect of confounders. Finally, the variables which have significant association were identified on the basis of AOR, with a 95% CI and p-value to fit into the final regression model.

**Result**

**Response rate**

The response rate is the number of participants who completed a questionnaire, after discarded 16 spoiled questionnaires the complete response rate of this study was 654/670 (97.6%) which reflects the quality of training provided to interviewers, their understanding and the daily supervision by the principal investigator.

There were 654 respondents whose ages ranged between 18 and 49 years. The mean age of the respondents was 31.86 years with a SD of ± 6.0 years. Most of the respondents in the sample were in the age group 26–35 (n = 374, 57%), and only 96 (14.7%) were in the age group 18–25. Of the 14.7%, 4 (0.6%) were younger than 20 years, as reflected in Table 1. Significant proportion of respondents (n = 577, 88.2%) were aged 20–39, and only 4 (0.6%) were younger than 20 years old (see described in Table 1).
Table 1
Demographic and socioeconomic characteristics of respondents in Oromia Region, Ethiopia 2018 (N = 654)

| Demographic and Social Characteristics | Category | Frequency (%) | Cumulative (%) |
|----------------------------------------|----------|---------------|----------------|
| Age in year (n = 654) Mean (SD): 31.86 (± 6.0) | 18–25 | 96 (14.7) | 14.7 |
| | 26–35 | 374 (57.2) | 71.9 |
| | 36–49 | 184 (28.1) | 100.0 |
| Ethnic group | Oromo | 460 (70.3) | 70.3 |
| | Amhara | 155 (23.7) | 94.0 |
| | Tigre | 10 (1.5) | 95.6 |
| | Gurage | 26 (4.0) | 99.5 |
| | Others (Wolayita, sidama) | 3 (0.5) | 100.0 |
| Highest level of education | Never been School | 245 (37.5) | 37.5 |
| | Primary | 284 (43.4) | 80.9 |
| | Secondary | 106 (16.2) | 97.1 |
| | College/University | 19 (2.9) | 100.0 |
| Marital status | Married | 528 (80.7) | 80.7 |
| | Cohabit/living together | 51 (7.8) | 88.5 |
| | Divorced/separated | 46 (7.0) | 95.6 |
| | Widowed | 22 (3.4) | 98.9 |
| | Single | 7 (1.1) | 100.0 |
| Religious affiliation | Orthodox | 474 (72.5) | 72.5 |
| | Protestant | 131 (20.0) | 92.5 |
| | Muslim | 42 (6.4) | 98.9 |
| | Catholic | 7 (1.1) | 100.0 |
| Family monthly income (1$ = 27.84Birr) | <= 800 Ethiopia Birr | 166 (25.4) | 25.4 |
| | 801–1200 Ethiopia Birr | 191 (29.2) | 54.6 |
| | 1201–1800 Ethiopia Birr | 136 (20.8) | 75.4 |
| | 1801 + Ethiopia Birr | 161 (24.6) | 100.0 |
Table 1 presented the education status of the respondents which revealed that the literacy rate was 409 (62.5%), whereas 245 (37.5%) women had never been to school. Of the 62.5% who had attended school, 284 (43.4%) had primary education and 19 (2.9%) respondents had tertiary education. In terms of religious affiliation, 474 (72.5%) respondents belonged to the orthodox denomination, 7 (1.1%) were Catholic, while 131 (20%) were Protestants and 42 (6.4%) were Muslims. The majority (n = 409, 62.5%) of the respondents had at least attended school from primary level to college/university level, and the least represented were 19 (2.9%) who had attained tertiary level education in the form of attending a college or university.

Of the 609 (93.1%) employed respondents, 256 (39.1%) were housewives. These were followed by 239 (36.5%) who were in the private or merchant sector, 55 (8.4%) were self-employed in agriculture on their farms, and only 59 (9.0%) were working for the public service sector. The family's monthly income distribution among the respondents was assessed, and it was found that on average, the income was 1398.18 Ethiopian Birr (50$), and ranged from 100 to 5000. More than 357 (54.6%) respondents were earning less than 1201 Ethiopian birr (1$ = 27.84Birr).

With regard to the residential area, the majority of the respondents (n = 518, 79.2%), resided in urban areas, and 136 (20.8%) lived in the rural area. The socioeconomic characteristics of the respondents as summarised in Table 1 are not different from the socioeconomic profile of Ethiopia. For example, in the general population of the same region, Christian denominations dominate and represent 65% of the population, and the largest ethnic group is Oromo, followed by Amhara which represent 64% of the population (CSA 2016:33). The results are also similar in terms of the proportion of women who are currently married or living together with a partner (65%) in the general population (CSA 2016:34).

### Integrating family planning with HIV services

On assessing the level of integrated family planning with HIV services in the ART clinics, this study found that the ART providers provided a contraceptive method mix in ART clinics, of which 93.7% were
condoms, 90.2% were injectable and 82.3% were oral contraceptives as chosen methods available during the study period. Therefore, the family planning/HIV services were integrated with the ART clinics of Oromia Region and specifically focused on offering counselling on available family planning services to providing injectable contraceptive methods, pills, and condoms in the ART clinics. The integrated family planning/HIV services also referred women of reproductive age for consultation on available long-acting and permanent family planning methods within the same facility.

Of the total number of respondents, 355 (54.3%) were in receipt of family planning counselling on available contraceptive methods by trained health professionals in the waiting room. Moreover, 548 (83.8%) had attended family planning health education sessions in service settings offering ART, PMTCT, STI, VCT and tuberculosis services. Of the total number of women of reproductive age living with HIV, 506 (77.4%) had received family planning counselling on the efficacy of each method, its side effects and method mix available in addition to ART services. Based on the counselling mentioned, a notable number of women living with HIV were referred for consultation at the family planning unit within the same facility on available long-acting and permanent contraceptive methods. The study revealed that 450 (68.8%) were referred for implants, 401 (61.3%) for an IUD, and 190 (29.1%) for tubal ligation. The study further revealed that 548 (83.8%) women living with HIV had received dual protection information during counselling, of which 337 (51.5%) accepted dual method contraceptives from ART providers to prevent both unintended pregnancy and HIV transmission.

Table 3 depicts that 422 (64.5%) women living with HIV who were attending ART were screened, counselled and provided with injectable contraceptives, and 151 (23.1%) received an implant during their ART drug refilling at the clinic.

Of the respondents, 616 (94.2%) mentioned that service providers were knowledgeable and comfortable in providing integrated family planning/HIV counselling, and 537 (82.1%) stated that service providers were knowledgeable and comfortable providing integrated family planning/HIV services. Table 2.
## Table 2
Integration of family planning/HIV services of health Centres in Oromia Region, Ethiopia 2018

| Level of integration of family planning/HIV services                                            | Categories | Frequency (%) |
|-------------------------------------------------------------------------------------------------|------------|---------------|
| Receipt of family planning counselling in the waiting room                                      | Yes        | 355(54.3)     |
|                                                                                                | No         | 299(45.7)     |
| Choice of contraceptive methods in need of available methods                                    | Yes        | 590(90.2)     |
|                                                                                                | No         | 64(9.8)       |
|                                                                                                | Injectable | 613(93.7)     |
|                                                                                                | Condoms    | 41(6.3)       |
|                                                                                                | Oral contraceptives | 538(82.3)     |
| Referral of clients for consultation of on available long-acting and permanent methods         | Implants   | 450(68.8)     |
|                                                                                                | Intrauterine device (IUD) | 401(61.3)     |
|                                                                                                | Tubal ligation | 190(29.1)     |
|                                                                                                | Vasectomy  | 167(25.5)     |
| Counselling about each method efficacy, side effects and available contraception mix in addition to ART services | Yes        | 506(77.4)     |
|                                                                                                | No         | 148(22.6)     |
| Attended family planning health education sessions in service settings offering ART, PMTCT, STI, VCT and tuberculosis services | Yes        | 249(38.1)     |
|                                                                                                | No         | 405(61.9)     |
| Information provided on dual protection during ART drug refill in the ART room                 | Yes        | 548(83.8)     |
|                                                                                                | No         | 106(16.2)     |
| Dual method contraceptive provided for prevention of both unintended pregnancy and HIV transmission | Yes        | 337(51.5)     |
|                                                                                                | No         | 211(32.3)     |
| Screening, counselling and provided injectable family planning in the ART room                 | Yes        | 422(64.5)     |
|                                                                                                | No         | 232(35.5)     |
| Screening, counselling and provided implant for clients in the ART room                        | Yes        | 151(23.1)     |
|                                                                                                | No         | 503(76.9)     |
| provided instructions of IUD or implant, including recommended date of removal provided        | Yes        | 412(63.0)     |
|                                                                                                | No         | 242(37.0)     |
| Counselling offered for informed decision-making and consent for permanent methods            | Yes        | 524(80.1)     |
|                                                                                                | No         | 130(19.9)     |
| Level of integration of family planning/HIV services | Categories | Frequency (%) |
|----------------------------------------------------|------------|---------------|
| Service providers knowledgeable and comfortable with providing integrated family planning/HIV counselling | Yes        | 616(94.2)    |
|                                                     | No         | 38(5.8)      |
| Service providers knowledgeable and comfortable with providing integrated family planning/HIV services | Yes        | 537(82.1)    |
|                                                     | No         | 117(17.9)    |

The ten measurement variables related to integrate family planning/HIV services were analysed through SPSS under data transform count occurrence of value in terms of the respondents who answered “yes” to the integration of family planning/HIV services. Based on the analysis, the overall integration of family planning/HIV services were reported by 365 (55.8%) of 654 respondents, which ranges from 51.8–59.5% with 95%CI based on 1000 bootstrap samples (Fig. 1).

Figure 2 reveals that as integrated family planning/HIV services increased, the number of modern contraceptive utilisers also increased. It was discovered that 325 (50%) current family planning users were using integrated family planning/HIV services versus 40 (6.1%) who were not using integrated services (Fig. 2).

This study determined that the integration of family planning with HIV services ranged from counselling on family planning in the ART room, to the provision of injectable contraceptive methods. Moreover, it also entailed patients being referred to a family planning unit in the same facility for long-acting and permanent contraceptive methods. An exit interview was conducted to determine the level of satisfaction on the utilisation of integrated services, as briefly exhibited in Fig. 3. The exit interview results revealed that more than 622 (95%) respondents are very or mostly satisfied with the utilisation of integrated family planning/HIV services.

In this study almost all respondents (n = 635, 97.1%) preferred integrated sexual reproductive health and HIV services at the same facility, from the same providers, and 622 (95%) were very or mostly satisfied with the utilisation of integrated family planning/HIV services.

**Factors associated with the integration of family planning/HIV services**

Bivariate analysis was used primarily to check which variables had an individual association with the dependent variable. Variables which were found to have an association with the dependent variables were then entered into the multiple logistic regressions to control the possible effect of confounders. In this analysis, the outcome variables, integrated family planning/HIV services, were dichotomised with “1” being integrated and “0” not integrated. Two different models were employed to investigate the factors predicting integration of family planning/HIV services. Accordingly, the Hosmer-Lemeshow Test(HL) for
the two models showed chi-square p-values > 0.05, which proved the goodness-of-fit of the applied models for this study at $p = 0.56$ for the integrated family planning/HIV services model.

The estimates of the crude and adjusted odds ratio (AOR) were fairly similar and this showed that the variables used for adjustment were not confounding variables (Hamilton 2012:6). Variables which had significant association were identified on the basis of an AOR with 95%CI and p-value to fit into the final regression model as evidenced in Table 3. The table presents the outcomes of the bivariate analysis to determine factors associated with the integration of family planning/HIV services.

Table 3 depicts variables associated with the integration of family planning/HIV services by multivariable logistic regression. The variables which had significant association were identified on the basis of AOR, with 95%CI and p-value to fit into the final regression model as evidenced in Table 3 which presents factors associated with the integration of family planning/HIV services.
Table 3
Factors associated with Integration of family planning/HIV services at multivariable logistic regression (AOR, 95% CI) in Oromia, Ethiopia 2018

| Factors associated with Integration of family planning/HIV services | Integration of family planning/HIV services | P-value | AOR (95% CI) |
|---------------------------------------------------------------|--------------------------------------------|---------|--------------|
|                                                               | Yes                                        | No      |               |
| Attended school: Yes                                          | 272 (41.6)                                 | 137 (20.9) | 0.019    | 1.73 (1.09– 2.73)* |
| No                                                            | 93 (14.2)                                  | 152 (5.7) | 1.00       |               |
| Occupational : Gov't                                         | 46 (7.0)                                   | 13 (2.0)  | 0.004     | 5.16 (1.67– 15.94)** |
| Merchant/private work                                        | 156 (23.9)                                 | 83 (12.7) | 0.019     | 2.79 (1.18– 6.58)* |
| Housewife                                                    | 125 (19.1)                                 | 131 (20.0) | 0.520    | 1.31 (0.57– 3.00) |
| Farmer                                                       | 16 (2.4)                                   | 39 (6.0)  | 0.705     | 1.23 (0.419– 3.62) |
| Unemployed                                                   | 22 (3.4)                                   | 23 (3.5)  | 1.00      |               |
| Residence: Urban                                             | 325 (49.7)                                 | 193 (29.5) | 0.001    | 2.61 (1.47– 4.62)*** |
| Rural                                                        | 40 (6.1)                                   | 96 (14.7) | 1.00      |               |
| Discussed with healthcare provider                           | Yes                                        | 344 (52.6) | 199 (30.4) | 0.000    | 5.83 (3.07– 11.06)*** |
| No                                                           | 21 (3.2)                                   | 90 (13.8) | 1.00      |               |
| Fertility desire                                             | Yes                                        | 212 (32.4) | 112 (17.1) | 1.00     |               |
| No                                                           | 153 (23.4)                                 | 177 (27.1) | 0.009    | 1.804 (1.156– 2.82)*** |
| Family planning Counselling                                  | Yes                                        | 291 (44.5) | 64 (9.8)   | 0.000    | 14.69 (9.36– 23.1)*** |
| No                                                           | 74 (11.3)                                  | 225 (34.4) | 1.00     |               |
| Recent CD4 cells/ml³ count                                    | <=350 cells/ml³                             | 72 (11.0)  | 92 (14.1) | 1.00     |               |
|                                                               | 351 to 500 cells/ml³                       | 95 (14.1)  | 65 (9.9)  | 0.137   | 1.57 (0.867– 2.83) |
|                                                               | >=501 cells/ml³                            | 198 (30.3) | 132 (20.2) | 0.023   | 1.82 (1.087– 3.047)* |

Keynote: ***p < 0.001, **p < 0.01, *p < 0.05 CI = confidence interval, AOR = adjusted
Table 3 shows the final regression model which indicates that N = 654 (p < 0.019), attended school (AOR 1.73, 95% CI; 1.09–2.73, p = 0.004), had an occupational status with the government (AOR 5.16, 95% CI; 1.67–15.94 and p < 0.019), merchant/private work (AOR 2.79, 95% CI; 1.18–6.58) compared to those who were unemployed (P < 0.001), in urban residence (AOR 2.61, 95% CI; 1.47–4.62, p < 0.000), discussed family planning with a healthcare provider (AOR 5.83, 95% CI; 3.07–11.06, p < 0.009), had fertility desire (AOR 1.804, 95% CI; 1.156–2.82, p < 0.000), were counselled on family planning (AOR 14.69, 95% CI; 9.36–23.07, p < 0.023) had a recent CD4cells/ml³ of 501 and above (AOR 1.82, 95% CI; 1.087–3.047). These factors were independently associated with increased integration of family planning/HIV services.

Discussion

Integration of family planning services with HIV treatment in Oromia

The study conducted by Bradley et al (2008:62) on VCT and family planning service integration in Ethiopia showed that counsellors jointly offered HIV and family planning services with many repeat family planning clients. These health facilities attracted both standard MNCH clients (Bradley et al 2008:64). On the integration of family planning services with HIV and related factors among those who came for VCT, the study established that the services offered were limited to information sharing on family planning methods and ARTs as well as referrals only.

The study by Bradley et al (2008) could not establish any integration of family planning services with HIV and related factors (family planning-HIV integration services) in Ethiopia in general, nor in Oromia in particular. This thesis gives a more comprehensive representation of the integration of family planning services with HIV services and its relationship with other selected factors in Oromia, hence determining the level of integration with sexual reproductive health, family planning, PMTC and ART services. The integration includes a combination of training offered to service providers, supervision and services provided by healthcare providers.

As far as the integration of family planning and HIV services is concerned, the study revealed that the ART clinics provided both ART drugs and contraceptive methods in ART clinics, of which 93.7% were condoms, 90.2% were injectable, and 82.3% were oral contraceptives as chosen methods available during the study period. These findings were supported by a systematic review by O’Reilly et al (2013:935), who claim that concerted efforts on the provision of information and support for family planning use, coupled with ready access to a wide range of contraceptive methods, seemed to be most effective in increasing family planning utilisation.

The proportion of contraceptive information that was provided and utilisation of the ART clinics was higher in this study, compared to a study conducted in Ghana. That study reported that 74% of women...
living with HIV had received information on contraception, 42.6% of participants and/or their partners were using a contraceptive method, and 79.6% used condoms (Laryea et al 2014:26). The differences may be due to sociodemographic factors and the different healthcare systems in the two countries. For example, the training modules of family planning and HIV services were integrated in Ethiopia in line with an emphasis at the global level on SDGs. These strongly recommend the integration of sexual reproductive health services with HIV services (WHO 2016:8). One can conclude that the integration of family planning/HIV services in Oromia Region, Ethiopia is more comprehensive as it ranged from counselling on available family planning services to the provision of injectable contraceptive methods, oral contraceptive pills, and condoms in the ART clinics. Integration also includes referring women of reproductive age for consultation on available long-acting and permanent methods on family planning within the same facility.

As mentioned, this study showed that 93.7% of respondents used condoms, 90.2% injectable, and 82.3% oral contraceptives. Moreover, 54.3% received family planning counselling on available methods. The contraceptive methods were provided by trained health professionals in the waiting room. A further revelation in this study is that 77.4% of respondents received family planning counselling about the efficacy of each method and the clients were referred to a family planning unit within the same facility for consultation on available long-acting and permanent methods, of which 88.8% received an implant, 61.3% IUDs and 29.1% tubal ligation.

This study’s findings are similar to those of the study conducted in Lusaka by Hancock et al (2016:392) which revealed that 80% of respondents accessed family planning services in ART clinics, and 99% reported having used modern contraception, of which 60% used condoms, 15% injectable contraception, and 11% oral contraceptive pills. This result indicates that healthcare providers should offer a standardised family planning/HIV service on all the components of essential sexual reproductive health services with routine ART drug refilling and therapy in public health facilities before they are appointed for HIV services alone (Church & Mayhew 2009:171).

This study identified that 50% of current family planning users used integrated family planning/HIV services versus 6.1% who did not use integrated services. Further, 48.3% of those who had their need for family planning met were using integrated family planning/HIV services versus 32.7% who were not using integrated services. These findings were supported by a previous study conducted in Kenya which showed that 73% of women were more likely to use family planning if it was offered at the HIV clinic, and 45% reported to be using a barrier or natural method currently (Newmann et al 2013:e21). Therefore, the integrated family planning/HIV services in the ART clinics of Oromia Region, Ethiopia, should include counselling on available family planning services such as injectable contraceptive methods, pills, and condoms in the ART clinics. Moreover, women of reproductive age should be referred to the family planning room within the same facility for consultation on available long-acting and permanent contraceptive methods.
Factors affecting the integration of family planning services with HIV services

This study identified educational status, occupational status, residence, discussions with healthcare providers regarding family planning, fertility desire, having received counselling on family planning and recent CD4 cells/ml\(^3\) as factors which increase the necessity for integrated family planning/HIV services. These findings are in line with previous studies conducted in Rakai by Brahmbhatt et al. (2014:208) and a study conducted in Zambia by Hancock et al. (2016:392). Thus, it is critical to consider these identified factors for the implementation of integrated family planning/HIV services for women of reproductive age living with HIV attending ART/PMTC follow-up programmes.

A previous study by Newmann et al. (2013:e16) identified factors that contributed to minimal integrated services as changes in contraceptive use and perception of others as being infertile, while this study did not support this finding. This may be due to the fact that in this study almost all (97.1\%) respondents preferred integrated sexual reproductive health and HIV services at the same facility or site. Additionally, almost all respondents, that is, 96.9\%, preferred to receive sexual reproductive health with HIV services from the same providers. Another possible explanation may due to the fact that more than 95\% of respondents were satisfied with the utilisation of integrated family planning/HIV services, which was confirmed during an exit interview at the time of the study.

Conclusion

This study established that, overall; the integration of family planning/HIV services was relatively moderate among women of reproductive age living with HIV. The identified factors that affected the integration of family planning with HIV services were educational and occupational status, residence, discussion of family planning with healthcare providers, fertility desire and CD4 counts. Therefore, this study identified factors affecting the integration of family planning and HIV services, from independent variables (sociodemographic, sexual reproductive, HIV therapy and chronic care, and health facility and services providers).

Recommendation

- Engage women in the planning, implementation and evaluation of the integrated family planning/HIV services to empower them to decide on their choices regarding family planning/HIV services.
- Promote the integrated family planning/HIV services using the mass media with local context in different languages.
- Develop and distribute tailored IEC/BCC materials (posters, leaflets, flyers, brochures, magazines) related to integrated family planning and HIV service to the community by using local languages for women of reproductive age and people living with HIV.
FMOH and other stakeholders should renovate and equip health facilities with trained, motivated, respectful, caring, and compassionate healthcare providers to offer integrated reproductive health services – including family planning/HIV services – at single visit based on their needs.

Healthcare providers (nurses, health officers, midwives and physicians) should strengthen the provision of comprehensive health education throughout the sexual reproductive health services – including family planning and chronic care for HIV – in the waiting room area to increase awareness on the integrated people-centred family planning/HIV services in Oromia Region health care facilities.

Provide quality counselling to improve the knowledge of reproductive-aged and empowered women by service providers on the integrated family planning/HIV services.

The integration of family planning services with ART and PMTCT have a great contribution in achieving the end of new paediatric HIV infection. It is recognised in relevant policy statements, yet few PMTCT programmes have increased access to contraception for HIV-infected women and couples who do not wish to become pregnant.

A shift in how ART/PMTCT programmes are conceptualised, implemented and evaluated is needed to better address the family needs of HIV-infected women and accelerate progress towards ending new paediatric HIV infection.

Abbreviations

AIDS Acquired Immune Deficiency Syndrome
ART Antiretroviral Therapy
AOR Adjusted Odd Ratio
CSA Central Statistical Agency
CI Confidence Interval
COR Crude Odd Ratio
EDHS Ethiopian Demographic Health Survey
FHI Family Health International
FMOH Federal Ministry of Health
HIV Human Immuno-deficiency Virus
IUDs Intra Uterine Devices
OR Odds Ratio
ORHB Oromia Regional Health Bureau
Declarations

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Ethics approval and consent to participate

The rights of the institution were protected by obtained ethical clearance (Ref.No HSHDC/710/2017) from the Research and Ethics Committee of the Department of Health Studies at the UNISA. Informed consent from each study participant was obtained after the nature of the study was fully explained in their local languages as it was attached in the questionnaire. The respondents’ right to refuse or withdraw from the study at any stage was respected. Information collected from respondents was kept confidential, and the collected information was stored in a locked space, in a file without the name of the study respondent (anonymously), but codes were assigned for each respondent and have not been disclosed to others except the principal investigators. Scientific integrity was ensured by avoiding plagiarism, being honest in reporting on the findings, and accurately citing all consulted sources.

Consent to publish

Not applicable

Availability of data and materials
Datasets used in the current study are available from the corresponding author upon reasonable request.

**Competing interests**

Authors declared that they have no competing interest

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**Authors' contributions**

DBD, conceptualized the study, designed the study instrument, secured study funds, conducted data analysis and wrote the first draft and subsequent drafts of the manuscript as principal investigator. DBD and RMP take part in designing the study tool, coordinated data collection and supervision, participated in data analysis and revised subsequent drafts. All authors read and approved the final manuscript.

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