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Research Article

Dual Contraceptive Utilization and Associated Factors among People Living with HIV Attending ART Clinic in Fitche Hospital, Ethiopia

Dereje Bayissa Demissie[1]*, Teka Girma[1] and Gizachew Abdissa[2]

[1]*Department of Nursing, Ambo University, Ethiopia*
[2]*Department of midwifery, Ambo University, Ethiopia*

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***Corresponding author**

Dereje Bayissa Demissie, Department of Nursing, Ambo University, Ethiopia; Email: derebayu@gmail.com

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Abbreviations AIDS: Acquired Immunodeficiency Syndrome; ART: Anti Retroviral Therapy; AOR: Adjusted Odd Ratio; COR: Crude Odd Ratio; HAART: Highly Active Anti Retroviral Therapy; EDHS: Ethiopian Demographic and Health Survey; FMOH: Federal Ministry of Health; HIV: Human Immunodeficiency Virus; MTCT: Mother-To-Child Transmission; PMTCT: Prevention of Mother To Child Transmission; PLHIV: People Living with HIV; SPSS: Statistical Package for Social Sciences; SSA: Sub Saran African; WHO: World Health Organization

Abstract

Background: HIV/AIDS continues to have disastrous medical, economic, social, and physical impacts on individuals, their communities and the nations of the world. Sub-Saharan Africa is at the epicenter of the epidemic and continues to carry the full brunt of its health and socioeconomic impact. Dual protection is a strategy that prevents both unwanted pregnancy and Sexually Transmitted Infections (STIs), including HIV, is emerging as an important preventive approach in reproductive health. Evidence relating to dual contraceptive utilization and reproductive intentions among PLHIV is rare, despite the fact that more than 80% of PLHIV are of reproductive age. The aim of the study was to determine dual contraceptive utilization and associated factors among PLHIV attending ART clinic in Fitche Hospital.

Methods: A facility based cross-sectional study design with both quantitative and qualitative data collection methods was employed from February 21st-April 20th, 2013. The study participants were selected by using simple random sampling technique. A pre-tested structured questionnaire was used to collect data. Both bivariate and multivariate logistic regressions were used to identify associated factors.

Result: The prevalence of dual contraceptive utilization of PLHIV in Fitche Hospital was 81 (32%) with 95% CI of (26.4% -38.2%) had dual contraceptives users by themselves or their partners. With regarding to married/cohabited partner's HIV status 143 (70.4%) were HIV-Positive (concordant) and 60 (29.6%) were Negative (discordant).

This study identified that factors found to be associated with dual contraceptive utilization were: Age at first marriage < 18 years (Early marriage) [AOR = 3.44, 95% CI: 1.27- 9.29)], had more than 4 biological living children [AOR =10.24, 95% CI: 1.29- 81.06)], faced pregnancy since HIV diagnosis [AOR =2.05, 95% CI: 1.78- 5.46)], had no fertility desire [AOR = 8.58, 95% CI: 3.42- 21.52)] and had sexual practiced with Husband/wife [AOR =4.9, 95% CI: 1.59- 15.07)] were some of the factors significantly associated with dual contraceptive utilization.

Conclusion: The prevalence of dual contraceptive utilization of PLHIV in Fitche Hospital was 81 (32%). In this study: Age at first marriage, biological living children, pregnancy since HIV diagnosis, fertility desire and sexual practiced were demonstrated significantly associated with dual contraceptive utilizations among PLHIV, therefore, these factors should be emphatically considered during PLHIV's reproductive health program development.

Introduction

HIV/AIDS continues to have disastrous medical, economic, social, and physical impacts on individuals, their communities and the nations of the world [1]. Sub-Saharan Africa is at the epicenter of the epidemic and continues to carry the full brunt of its health and socioeconomic impact. And, Ethiopia is among the countries most affected by the HIV epidemic [2]. Despite that many people living with HIV in the country, ART enables them a return to normal life including a resumption of sexual activity and desire for children.

Unless appropriate care taken in sexual activity and desire to have children, it also means for HIV infected women that the chances of transmitting the infection to their children and to their partner are higher considering the high population momentum. Therefore, one pillars of the WHO global effort to prevent Mother-To-Child HIV Transmission (MTCT) is the prevention of unwanted pregnancies in HIV-infected women [3].

In many areas of the world where HIV prevalence is high, rates of unintended pregnancy and unsafe abortion have also been shown to be high. Of all pregnancies worldwide in 2008, 41% were reported as unintended or unplanned and approximately 50% of these ended in abortion [4]. To address these problems family planning is the best solution. It helps HIV positive women to prevent unintended pregnancy, avoid stress of pregnancy and also plan desired pregnancy while minimization of transmission risk.

Dual protection, defined as any strategy that prevents both unwanted pregnancy and Sexually Transmitted Infections (STI's), including HIV, is emerging as an important preventive approach in reproductive health [1]. It may include various combinations of pregnancy and STI prevention, such as the use of condoms with hormonal contraceptives, or it may consist of other risk reduction behaviors such as non-penetrative sex or abstinence.

Because the contraceptive methods most effective in preventing pregnancy and those most protective against Sexually Transmitted Diseases (STD's), including HIV, are not the same, experts in reproductive health care now recommend that couples who wish to minimize both risks use two methods-an effective non barrier contraceptive such as the pill or the IUD and a barrier method, usually the condom [2]. The decision by a couple to use contraceptives for both purposes necessarily involves both partners, since most methods that are highly effective against pregnancy are female-controlled and the method most commonly used against STD infection is male-controlled.

Ethiopia is the third most populated country in Africa, with a projected population of 77.1 million people for July 2007, a number that increases by almost 2 million people a year [5]. Even if measures slow the rate of growth, the prospect is that Ethiopia's population will reach 100 million over the next 15 years [6,7]. According to the Ethiopian Demographic and Health Survey 2005, 16.2% of births in Ethiopia are not wanted, while 18.7% of births are mistimed [3]. Ethiopia is also seriously affected by HIV/AIDS, and is estimated to have the sixth highest number of infections in the world [8]. In Ethiopia, over 90% of adult cases of HIV are attributable to heterosexual activity [8]. Dual protection is the prevention of two unplanned and undesirable outcomes–unintended pregnancy and HIV infection, and may be achieved through the use of contraception in a long term mutual monogamous relationship or the use of a condom plus another non-barrier contraceptive method or the use of a condom alone (including during pregnancy) or Abstinence or avoidance of all types of penetrative sex [4].

Methods

Study setting

The study was conducted from February 21st to April 20th of 2013, in Fitche Hospital ART clinic which is found in Fitche town, North Shoa Zone, Oromiya Regional State in Ethiopia and 115 Kilo meters North of Capital city of Addis Ababa. According to the national population and housing census of 2007/08 of Ethiopia, the projected population of the zone for 2013 was estimated to be 1,388,617 and from those 6,951,87 (50.06%) were males. The zone has 2 hospitals, 48 health centers and 268 functioning health posts with estimated potential health service coverage of 91.6%. The total numbers Reproductive ages on HAART and Pre-ART in North Shoa Zone was 8821. Fitche Hospital provides different services like Outpatient department, Inpatient department, Maternal Neonatal Child Health and Pre-ART and ART services by different disciplines. The total numbers of reproductive age PLHIV in Fitche Hospital was 2131 (from those 1211 on ART and 920 Pre- ART respectively).

Study design

A facility based cross-sectional study design with both quantitative and qualitative data collection methods was conducted in ART clinic of Fitche Hospital. The study inclusion criteria were having attended for at least three months, availability of HIV sero-status results, HIV positive diagnosis and reproductive age, 18 to 49 years of age for women and 18 years and above for men. Sampling procedure and sample size determination. For the quantitative study sample size was determined by using single population proportion formula by considering 50% proportion of fertility desire among PLHIV with 95% confidence interval and 5% marginal error. Since the total numbers of patients enrolled to ART clinic at Fitche Hospital were 2131, Population correction formula was used. By considering 10% non-response rate, the final sample size was 357.

A list of all women of reproductive age (18-49 years), and 18 years and above for men who are living with HIV were selected and entered into computer SPSS window 16.0 version from HIMS data base. Computer generated simple random sampling technique was employed to select study respondents by using their Pre-ART card number. During the one -month study period, 340 PLHIV's were recruited into the study by randomly selection.

For qualitative study; all mother support group (four from four mothers) and all peer educators (six from six peer educators) were recruited purposively based on their duration of follow up greater than 10 years and they are expert patient of PLHIV who are working in the hospital.

Data collection procedures

Data were collected by face to face interview by using structured, pre-tested Amharic and Afan Oromo version questionnaire. The questionnaires were initially prepared in English and translated to Afan Oromo and Amharic and back to English by language experts and researchers to keep the consistency of the questionnaires. Two well trained diploma nurses who are working in the ART clinic had collected data and one BSC Nurse had supervised during data collection period. Data collectors had cross checked Pre-ART card numbers of all clients who came to ART clinic with sampled card numbers daily. The filled questionnaires were checked for consistencies and completeness daily by supervisor and principal investigators on the spot. Pre-test of the questionnaire were done on 5% of the sample of PLHIV in Kuyu Hospital which is nearby to Fitche town, to identify any ambiguity, consistency and acceptability of questionnaire, and then necessary corrections were made before the actual data collection.

Qualitative data was collected by ART focal person through in-depth interview by using semi-structured interview guide and conducted in separate room. Voice recorder and field-notes were used to capture the information obtained from the in-depth interview.

Data processing and analysis

After data collection, each questionnaire was checked for completeness and code was given before data entry. Data was entered, sorted, edited and cleaned for missed values. Data were analyzed by using SPSS version 16.0 statistical packages and presented by frequencies and percentages for categorical variables and means and standard deviations for numerical variables. Bivariate analysis was conducted primarily to check the variables which had an association with the dependent variable individually. Variables associated with the dependent variables at p value <0.2 were then entered in to multiple

Table 1: Socio-demographic characteristics of 340 PLHIV attending ART clinic in Fitche Hospital, Ethiopia.

Socio-demographic variables	Categories	Frequency(n)	Percent (%)
Sex (n = 340)	Male	126	37.1
	Female	214	62.9
Age(n = 340)	18-29 years	85	25.0
	30-39years	144	42.4
	> 40+ years	111	32.6
Ethnicity (n = 340)	Oromo	265	77.9
	Amhara	73	21.5
	Others	2	0.6
Religion (n = 340)	Orthodox	325	95.6
	Protestant	13	3.8
	Muslim	2	0.6
Occupation (n =340)	Daily labor	78	22.9
	Merchant	77	22.6
	Gov't employed	43	12.6
	House wife	65	19.1
	Farmer	57	16.8
	Unemployment	20	5.9
Level of school (n =340)	Illiterate	132	38.8
	Primary and secondary (1–8)	118	34.7
	High school and preparatory school(9–12)	66	19.4
	College and above	24	7.1
Marital status (n = 340)	Married	195	79.1
	Single	19	8.8
	Windowed	56	12.1
	Divorced/separated	70	20.5
Family Income (n =340)	<=350 birr	94	27.6
	351-500 birr	81	23.8
	501-999 birr	105	30.9
	> = 1000birr	60	17.6
Residence (n = 340)	Urban area	271	79.7
	Rural area	69	20.3

Key: others (Tigrie & Agnuwak).

logistic regression for controlling the possible effect of confounders and finally the variables which had significant association with dual contraceptive utilization were identified on the basis of adjusted odds ratios (AOR), with 95% CI and p-value (<0.05) to fit into the final regression model. The results were presented using tables, figures and narratives.

Qualitative data

To add an in-depth of information on dual contraceptive utilization that could not be captured by quantitative methods alone. Data captured using tape records was translated word by word into English language and color coded, organized and summarized manually under the main thematic area and presented the result by extracted concepts from main themes.

Operational definition

Dual protection is the prevention of two unplanned and undesirable outcomes–unintended pregnancy and HIV infection, and may be achieved through the use of contraception in a long term mutual monogamous relationship or the use of a condom plus another non-barrier contraceptive method or the use of a condom alone (including during pregnancy) or Abstinence or avoidance of all types of penetrative sex.

Ethical consideration

Ethical clearance letter was initially obtained from Jimma University College of Public Health and Medical Sciences Ethical Committee. Then written consent was secured from Fitche hospital and permission was secured. Verbal informed consent for participation and audio recording of the discussions was obtained from each participant and the collected data were stored in a file, without the name of study participant and password protection of soft copy data and use of key and lock for hard copy data was employed to guarantee confidentiality.

Result

Socio demographic characteristics

Of 357 sampled PLHIV's, data were collected from 340 which give a response rate of 95.2%. Among study participants majority 214 (62.9%) were females, 144 (42.4%) were between the age 30–39 years and range from 18–70 years for males and 18–49 years for females with a mean age of 36.2 ± 9.2 years.

The study participant's partners mean age of 36.552 ± 8.74 years, range from 17-60 years old and with regards of their educational status 85 (41.9%) were illiterates and 118 (58.1%) have had education level from primary to college and above. The Study participants partner's occupational status 67 (33.0%) were housewife and 42 (20.7%) were daily labour.

Concerning ethnicity, majority of the respondents 265 (77.9%) were Oromo and 325 (95.6%) of the respondents were Orthodox in religion. With regard to educational status, 132 (38.8%) were illiterate and 184 (54.1%) were attended primary to secondary school. Concerning occupational status 78 (22.9%) were daily labor and family monthly income distribution of respondents, 94 (27.6%) had an income less than equal to ≤350 birr per month with average monthly income was735.9 ± 631.48 standard deviation Ethiopian birr(1USD =18.42Birr) (Table 1).

Sexual activity and contraceptive use information of PLHIV

The majority of respondents 234 (68.8%) were sexually active. Of which 203 (86.76%) had sex with regular partner (husband/wife) and 31 (13.24%) were had multiple sexual partners.

Of total respondents about 203 (59.7%) were married/cohabited partners of which 37 (18.2%), 54 (26.6%), 42 (20.7%) and 70 (34.5%) had less than 4years, 5 to 9 years, 10-14years and greater than 15 years marital length respectively (table 2).

With regarding to married/cohabited partner's HIV status from total who have had partners 203 about 143 (70.4%) were HIV-Positive (concordant) and of which 100 (70.0%) were on ART and 60 (29.6%) were Negative (discordant). This finding is supported by most of in-depth interview discussants, for instance: as one 36 years Woman discussant explained: "I have three children, me and the smallest are on ART but my husband is negative. Now I feel very sorry for the suffering of my baby hence I do not repeat the same in by bearing positive child." From the total study participants about 87 (25.6%) of them were changed their sexual partner since HIV diagnosis. Out of 340 PLHIV interviewed 254 (74.7%) were used modern contraceptives by themselves or their partners of which the majority of them 169 (66.5%) were used condom and 120 (71.0%) were used always. Level of dual contraceptive utilization among PLHIV's was determined, out of total contraceptive users (254) about 81 (32%) with 95% CI of (26.4% -38.2%) had dual contraceptives users by themselves or their partners of which majority, 73(90.1%) were used Depo-Provera in addition to condom. The main reason mentioned for use of condom,

Table 2: Sexual Activity and contraceptive use information of PLHIV attending ART clinic in Fitche Hospital, North Shoa Zone, Ethiopia.

Variables		Frequency(n)	Percent (%)
Sexual active in the last six months		**n=340**	
	Yes	**234**	**68.8**
	No	**106**	**31.2**
Sex with whom?		**n= 234**	
	Regular partner(husband/ housewife)	187	79.9
	Not regular partners(multiple sexual partners)	47	20.1
Married/cohabited partners		**n=340**	
	Yes	203	59.7
	No	137	40.3
Duration stayed with partner?		**n=203**	
	≤4 years	37	18.2
	5-9 years	54	26.6
	10-14 years	42	20.7
	≥15 years	70	34.5
change your partner since HIV diagnosis		**n=340**	
	Yes	87	25.6
	No	253	74.4
Number of sexual partner?		**n=234**	
	One	207	88.5
	Two	18	7.7
	three and mother than three	9	3.8
used modern contraceptives by themselves or their partners		**n=340**	
	Yes	254	74.7
	No	86	25.3
Condom use?		**n = 254**	
	Yes	169	66.5
	No	85	33.5
dual contraceptives users by themselves or their partners		**n=254**	
	Yes	81	32
	No	173	68

115 (33.8%) were reported that for dual protection (pregnancy/STI/HIV), 35(10.3%) to protect a negative partner, 15 (4.4%) fear of re-infection with new stain of HIV and 4 (1.2%) advised by health professionals. Whereas for those not used condom the main reasons mentioned were partner objection, feeling it was not comfortable and desired to conceived which account 59 (17.4%), 25 (7.4%) & 24 (7.1%) respectively.

Reproductive history of PLHIV

From a total interviewed PLHIV majority 290 (85.3%) had living children of which 59.4% had 1-3children and 25.9% have had more than 4 children whereas only 50 (14.7%) have had no biological living children and ranges from zero to 12 living biological children. The majority of in-depth interview discussants supported this finding, for instance: as one 30 years female discussant stated: "I want to give birth because my husband strongly desire to have children to replace ourselves, so I have to get pregnant after one year. I stayed with my husband for 6 six years without having a child and marriage without children is meaningless and does not long last.

From those who had biological children 24 (8.3%) PLWHA's children were previously died related to HIV/AIDS or others diseases after learnt their or their partners' sero status.

On the other hands about 58 (17.1%) have had non biological children of which 48 (82.8%) have one and the rest 10 (17.2%) have more than two non-biological children ranges from 1 to 4 children respectively. From the total interviewed PLHIV about 83 (24.4%) had at least one pregnancy by themselves or their partners post-HIV diagnosis of which 62.7% was planned.

Table 3: Reproductive history of PLHIV attending ART clinic at Fitche Hospital in Ethiopia

Variables	Frequency(n)		Percent (%)
Number of living children		**n = 340)**	
	No living child	50	14.7
	1 to 3 children	202	59.4
	≥ 4 children	88	25.9
Did you have fertility desire		**N = 340**	
	Yes	133	39.1
	No	207	60.9
Take action to become pregnant /your partner's?		**n = 340**	
	Yes	35	10.3%
	No	305	89.7%
What kinds of action did you take?		35	
	stop take contraceptive methods	17	48.6%
	discussed fertility intentions with caregivers	11	31.4%)
	approach to their partner	7	20.0%
Reason for their current fertility desire		**n = 133**	
	Want at least one child	49	36.8
	I did not have desired number	51	38.3
	To strengthen marriage	4	3.0
	Perceived efficacy of ART/PMTCT	27	20.3
	To replace died baby before	2	1.5
Discuss dual contraceptive benefit with health profession		**n = 340**	
	yes	137	40.3
	No	203	59.7
Pregnant or their partner pregnancy since HIV-Dx?		**n= 340**	
	Yes	83	24.4
	No	257	75.6
Intentional pregnancy?		**n=83**	
	Yes	52	62.7
	No	31	37.3
Outcome of pregnancy?		**n = 83**	
	Alive birth	55	66.3
	Still birth	6	7.2
	Abortion	12	14.5
	Currently pregnant	10	12.0

Table 4: Factors associated with dual contraceptive utilization among PLHIV attending ART clinic in Fitche Hospital, Ethiopia.

variables	Dual contraceptive use(n = (n=254)		P. Value	COR (95% CI)	p-value	AOR (95% CI)
	Yes (%)	No (%)				
Age at first marriage						
< 18 year Early marriage	58 (23.9)	133 (45.9)	0.021	2.11 (1.12, 3.97)**	0.015	3.44 (1.27- 9.29)
>18 year	25 (10.3)	27 (11.1)	1.00	1.00	1.00	
Number of living children						
have no living child	17 (6.7)	23 (9.1)	1.00	1.00	1.00	
have 1 to 3 children	47 (18.5)	94 (37.0)	0.130	1.65 (0.86, 3.14)	0.48	1.4 (0.53- 3.80)
have ≥4 children	17 (6.7)	56 (22.0)	0.035	2.43 (1.06, 5.58)**	0.028	10.24 (1.29- 81.06)
pregnancy since HIV diagnosis						
Yes	52 (20.5)	29 (11.4)	0.027	1.92 (1.07, 3.41)	0.014	2.05 (1.78- 5.46)
No	134 (52.8)	39 (15.4)	1.00	1.00		
Have fertility desire						
Yes	25 (9.8)	131 (51.6)	1.00	1.00	1.00	
No	56 (22.0)	42 (16.5)	0.000	6.99 (3.89, 12.55)***	0.000	8.58(3.42- 21.52)
Sex with whom						
Husband/wife	7 (31.0)	115 (50.2)	0.018	2.70 (1.19, 6.15)**	0.006	4.90 (1.59- 15.07)
Multiple sexual partner	10 (4.4)	33 (14.4)	1.00		1.00	

Note: ***p < 0.001, **p < 0.05.

The outcomes of these pregnancies were 66.3% live birth, 14.5% abortion, 7.25% still birth and 12.0% currently pregnant (during study period).

Of the total respondents 35 (10.3%) were taken action to been pregnant or their partners of which 17 (48.6%) were stopped taken contraceptive methods. Out of the total study participants only 137 (40.3%) were discussed about dual contraceptive benefit with health profession and others reproductive health needs with health professionals during follow up care.

(Table 3) factors found significantly predictive of dual contraceptive utilization for PLHIV's were: Age at first marriage <18 year (Early marriage) was 3.44 times [AOR, (95% CI), 3.44 (1.27-9.29)] more likely to had used dual contraceptive methods as compared to >18 year. PLHIV's who had more than 4 biological living children were 10.24 times [AOR, (95% CI), 10.24 (1.29- 81.06)] more likely to had used dual contraceptive methods as compared to had no biological living children's PLHIV's.

PLHIV's who faced pregnancy by themselv es or their partners since HIV diagnosis were 2.05 times [AOR, (95% CI), 2.05 (1.78-5.46)] more likely to had used dual contraceptive methods as compared to not faced pregnancy since HIV diagnosis.

PLHIV's had no fertility desire were 8.58 times [AOR, (95% CI), 8.58 (3.42-21.52)] more likely to utilized dual contraceptive methods as compared to have fertility desire.

PLHIV's had sexual practiced with Husband/wife was 4.9times [AOR, (95% CI), 4.9 (1.59-15.07)] more likely to had used dual contraceptive methods as compared to with multiple sexual partners.

Discussion

Current study findings of modern contraceptive utilization revealed that, out of 340 People Living with HIV interviewed 254 (74.7%) were used modern contraceptives by themselves or their partners of which the majority of them, this result higher when compared to study conducted in Gimbi Town which was 56% [9]. This difference may be due to the government's extensive effort to promote modern contraceptive utilization by using mass media and health extension workers to prevent most unwanted pregnancy. Majority of them 169 (66.5%) were used condom and 120 (71.0%) were used always.

The level of dual contraceptive utilization among PLHIV's was determined, out of total contraceptive users, about 81 (32%) with 95% CI of (26.4%-38.2%) had dual contraceptives users. This figure is high when compared to study conducted in South Africa [11]. This discrepancy may be due to around 40.3% PLHIV's were discussed about dual contraceptive benefit with health profession and others reproductive health needs with health professionals during follow up care. This study finding identified that the main reason mentioned for use of condom, 115 (33.8%) were reported that for dual protection (pregnancy/STI/HIV), 35 (10.3%) to protect a negative partner, 15 (4.4%) fear of re-infection with new stain of HIV and 4 (1.2%) advised by health professionals. In this case even though their intension seems different most of them were utilized dual protection consistently. A closer look at our data reveals a pattern in which condom use consistency is greatest among women who use a long-term contraceptive method (sterilization, IUD, and hormonal injection) followed by women who use contraceptive methods that require daily attention (contraceptive pill) [11].

In this study found that PLHIV's who had more than 4 biological living children were 10.24 times [AOR, (95% CI), 10.24 (1.29-81.06)] more likely to utilized dual contraceptive methods as compared to had no biological living children's PLHIV's, this finding was similar to the study conducted in west Ethiopia, having information on modern contraception is positively associated with modern contraceptive use with (AOR=6.3, 95% CI (1.67, 24.1)) and respondents who have family size ≤4 were 50% less contraceptive users than those who have family size >4(AOR=0.51, 95% CI (0.27, 0.96) [8]. But according to study conducted in Tigray region was educational status, sex and occupation were the associated variables.

This may be due to relatively PLHIV who have already achieved, or are closer to achieving, their desired family size utilize dual contraceptive methods to prevent unwanted pregnancy and vertical transmission.

This study showed that, PLHIV's had no fertility desire were 8.58 times [AOR, (95% CI), 8.58 (3.42-21.52)] more likely to had used dual contraceptive methods as compared to have fertility desire. This might be due to having HIV is a burden and to prevent further deterioration of her immunity by unwanted pregnancy and desired child might have a chance of infection with a virus so it is better to

use dual contraception. These indicate that the need for reproductive health services of PLHIV's in HIV care settings were need more comprehensive care by integrated with family planning services in order to prevent unwanted pregnancy for those who are not intended to have child among these populations.

Remarkably, the individuals who had regular sexual intercourse were more likely to use dual contraceptive; PLHIV's had sexual practiced with Husband/wife was 4.9 times more likely to had used dual contraceptive methods as compared to with multiple sexual partners. This is in line with findings from Uganda where FP use was significantly higher with being married [13]. Based on the Health Belief Model, when people perceive themselves at risk of having an infection; they are more likely to adopt certain behaviors to avoid the risk [16]. The current findings might be due to higher number of PLHIVs attended discussion about benefits of dual contraceptive utilization with health professionals during ART follow up. This could explain in part why the more married were found to have used dual methods in this study.

And also this study finding is in contrary with findings from others studies where Family Planning use was significantly less with being married, married individuals tend to not use FP whilst having sex with their partners, perceiving a lower risk. The individuals who were married were less likely to use FP than single/widowed individuals. This implies that single/windowed was more sexually active and using FP than married respondents. Single/widowed PLHIV may feel that they are at risk of transmitting HIV virus to their casual sex partner. This should be viewed as important, as this will increase risk of HIV transmission to non-infected partners and super-infection among the PLHIV population [14,15]. Further studies should focus on the specific reason for such lower use of dual contraception among multiple sexual partners. On this research by considering the main strength of this research lies in its computer generated random sampling strategy for data collection, and the fact that used qualitative method to supplement the result and also to explore factors that are not addressed by quantitative survey. A set of reliability and validation rules were applied and all associated factors were taken after indication of significance in the "goodness of fit" for the models.

Even though this study also had a few limitations: This study was facility-based among PLHIV's that results were not generalizable to the general population in the community and cause and effect relation was not assured because of cross-section study design.

Conclusion

The prevalence of dual contraceptive utilization of PLHIV in Fitche Hospital was 81 (32%). In this study: Age at first marriage, biological living children, pregnancy since HIV diagnosis, fertility desire and sexual practiced were demonstrated significantly associated with dual contraceptive utilizations among PLHIV, therefore, these factors should be emphatically considered during PLHIV's reproductive health program development. Therefore, Policy makers and Ministry of Health would better to consider and plan to increases number of dual contraceptive users among PLHIV's population.

Policy makers and health planners would better give greater attention for integration of dual contraceptive family planning methods with ART clinics.

Health professionals working in ART clinics would be better to give greater emphases to address PLHIV's dual contraceptive utilization in more comprehensive manner with ART treatments for those have no fertility desire to prevent unwanted pregnancy, MTCT and partners infection/re-infection with new strain including STI's.

Author's contributions

DBD: conceptualized the study, designed the study instrument and conducted the data analysis and wrote the first draft and final draft of the manuscript. All co-authors: TG and GA participated in data analysis, revised subsequent drafts of the paper and involve in critical review of the manuscript. All authors read and approved the final manuscript.

References

1. UNAIDS. WHO Global Summary of AIDS Epidemic Report. Geneva: WHO. 2007; 23-25.
2. Federal Democratic Republic of Ethiopia. Country Progress Report on HIV/AIDS Response. Addis Ababa: HIV/AIDS Prevention & Control Office (HAPCO). 2012.
3. King R, Khana K, Nakayiwa S, Katuntu D, Homsy J, Lindkvist P, et al: Pregnancy comes accidentally - like it did with me: reproductive decisions among women on ART and their partners in rural Uganda. BMC Public Health. 2011; 11.
4. Orner PJ, Bruyn M, Barbosa RM, Boonstra H, Gatsi-Mallet J, Cooper DD: Access to safe abortion: building choices for women living with HIV and AIDS. J Int AIDS Soc 2011; 14: 1-9.
5. Woodsong C, HP Koo. Two good reasons: women's and men's perspectives on dual contraceptive use. Social Science and Medicine. 1999; 49: 567-580.
6. W Cates Jr, K M Stone. Family Planning, Sexually Transmitted Diseases and Contraceptive Choice: A Literature Update-Part I. Family Planning Perspectives. 1992; 24: 75-84.
7. W Cates Jr, K M Stone. Family Planning, SexuallyTransmitted Diseases and Contraceptive Choice: A LiteratureUpdate-Part II. Family Planning Perspectives, 1992; 24: 122-128.
8. Central Statistical Agency, ICF International Calverton. Ethiopia Demographic and Health Survey 2011.Addis Ababa: Central Statistical Agency, Maryland: ICF International Calverton. 2012.
9. Addisu Polisi, Ewenat Gebrehanna, Gezahegn Tesfaye, Fekede Asefa. Modern contraceptive utilization among female ART attendees in health facilities of Gimbie town, West Ethiopia. Reproductive Health. 2014; 11: 30.
10. Yemane Berhane, Haftu Barhe, Gerezgihar Buruh Abera, Hailemariam Berhe. Utilization of Modern Contraceptives among HIV Positive Reproductive Age Women in Tigray, Ethiopia: A Cross Sectional Study. Hindawi Publishing Corporation. 2013.
11. L Seutlwadi, K Peltzer. The use of dual or two methods for pregnancy and HIV prevention amongst 18–24-year-olds in a cross-sectional study conducted in South Africa. Contraception. 2013; 782-789.
12. Tsigemariam T, Gail Davey. Which factors influence North Ethiopian adults use of dual protection from unintended pregnancy and HIV/AIDS? Ethiop J Health Dev. 2008; 22.
13. Nattabi B, Li J, Thompson SC, Orach CG, Earnest J. Family planning among people living with HIV in post-conflict Northern Uganda: A mixed methods study. Confl Health. 2011; 5:18
14. Smith DM, Richman DD, Little SJ. HIV super infection. J Infect Dis. 2005; 438-444.
15. Smith DM, Wong JK, Hightower GK, Ignacio CC, Koelsch KK, et al. HIV drug resistance acquired through super infection. AIDS. 2005; 1251-1256.
16. Soto Mas F, Lacoste Marin JA, Papenfuss RL, Gutierrez Leon A. The health belief model. A theoretical approach to the prevention of AIDS. Rev EspSaludPublica. 1997; 335-341.