

Proceedings of 9th Multi-Disciplinary Seminar



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Proceedings of the 9th Multi-Disciplinary Seminar

**Research and Knowledge Management Office
St. Mary's University**

August 2017
SMU-Multipurpose Hall
Addis Ababa

Dual Contraceptive Use and Associated Factors among HIV Positive Women on Art Follow up In Mekelle Town Tigray, Ethiopia

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Abstract

Introduction: Dual contraceptive use is the most important family planning utilization among HIV positive women worldwide. Globally, there are an estimated 34 million people living with HIV/AIDS more than 2 million HIV-positive women fall pregnant each year. The majorities (67.1%) are in Sub-Saharan Africa (25). Effective contraception method with consistent condom use has been advocated to reduce the risk of unplanned pregnancy, HIV infection, STI and MTCT of HIV by preventing unwanted pregnancies.

Objective: To assess dual contraceptive use and associated factors among sexually active HIV positive reproductive age women who are on ART in Mekelle town Northern Ethiopia.

Methods: Institution based cross-sectional study was under taken from March to May 2014 among HIV positive reproductive age women who are on ART in Mekelle town.

Result: The prevalence of dual contraceptive use was found to be 233 (45.2%). The likelihood of dual contraceptive use among married individuals was 40% less likely to use dual contraceptive than single (COR= 0.604 95% CI (0.29, 1.275)). Urban resident is 35% more likely to use dual contraceptive than Rural with (AOR=0.751 95% CI (0.456, 1.236)) partner communication about dual contraceptive use and risk sexual behavior and was found to be positively associated with dual contraceptive use with (AOR=0.58 95% CI (0.40, 0.85)) and (AOR=0.33 95 CI (0.14, 0.74)) respectively

Conclusion and Recommendation:

This study had demonstrated that dual contraceptive utilization is low in Ethiopia. This study shows the prevalence of dual contraceptive was low. The age of the mother, sexual behavior and partner communication had positive association with dual contraceptive use. Education about dual contraceptive use, risky sexual behavior, condom use is advisable to increase the prevalence dual contraceptive use. Strengthening dual contraceptive utilization and studies are recommended.

Key words: dual contraceptive use, partner communication and risk sexual behavior

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1. Introduction

Dual contraceptive use is the most important family planning utilization among HIV positive women worldwide. Globally, there are an estimated 34 million people living with HIV/AIDS more than 2 million HIV-positive women fall pregnant each year. The majorities (67.1%) are in Sub-Saharan Africa (25). Effective contraception method with consistent condom use has been advocated to reduce the risk of unplanned pregnancy, HIV infection, STI and MTCT of HIV by preventing unwanted pregnancies. In recent times the use of contraception has been identified as a potent instrument in the control of HIV/AIDS in women and children.

According to UNAIDS, 2009 over 50% of the infected adults were women who acquired the infection. Study published in March 2010 gave a population estimate that all women in the US who use one highly effective contraceptive method added a second one, such as a condom, then approximately 80% of unintended pregnancies and abortions among these women could be prevented. It would result in an annual reduction of 786,000 unintended pregnancies and nearly 152,000 abortions [6]. It is estimated that HIV positive pregnant women are at 1.5-2 times greater risk of maternal mortality [7].

Dual Protection has been advocated as strategy for the reduction of the risks of unplanned pregnancy, horizontal transmission of HIV to a non-infected partner, transmission of resistant virus to a partner with HIV infection, and the risk of acquisition of other STIs. Ethiopia is one of the countries' most severely hit by the HIV epidemic. Besides the dominant heterosexual transmission, the vertical virus transmission from mother to child accounts for more than 90% of paediatric HIV/AIDS infection.

1.1 Statement of the Problem

HIV positive women are an issue of public health importance because of poor maternal outcomes and paediatric HIV infections. The low use of modern FP choices other than condoms among HIV positive women's contributes to increase unintended pregnancy, abortion and poor maternal health outcome [\(1-3\)](#).

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PMTCT and ART services are rising from time to time. However, the intervention is not enough to prevent HIV transmission. The prevalence of contraceptive utilization is low and there are factors that influence met need for family planning. Family planning counseling is given to all sexually active HIV positive women to increase family planning utilization but modern FP use other than condoms is still low [\(4, 5\)](#).

Contraceptive practices among women of childbearing age living with HIV show a (generally) low level of usage, particularly in Africa. Most children with HIV were infected by mother-to-child transmission (MTCT) of the virus. Most methods of contraception can be used by women who are HIV-positive, and correct and consistent use of condoms can prevent pregnancies and STI. When both partners are living with HIV, possible re-infection with HIV has to be considered, these issues may be perceived differently depending on factors such as living in a resource-poor country with limited access to both antiretroviral therapy and STI diagnosis and treatment and the level of condom use [\(6, 7\)](#).

There has been encouraging progress in providing antiretroviral treatment for people living with HIV and AIDS. However, the continuum of care that would integrate primary and secondary prevention is still far from being implemented everywhere, and access to HIV treatment is still limited. In addition, people living with HIV have diverse reproductive health needs, and unmet need for family planning services has often been greatest in countries with high HIV prevalence [\(8, 9\)](#).

1.2 Conceptual Frame Work

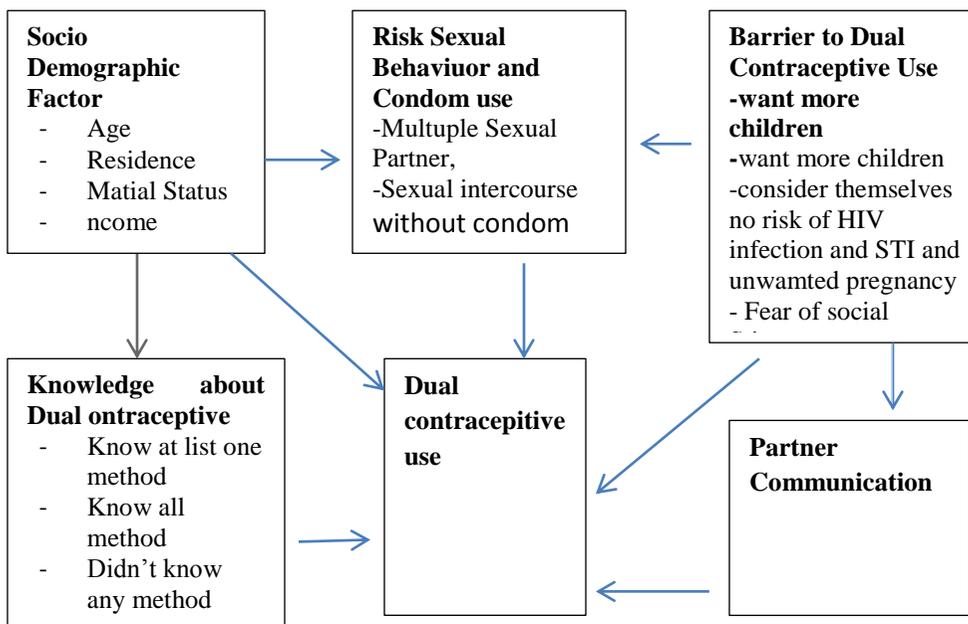


Figure 1: Conceptual framework for dual contraceptive use and associated factor among HIV positive reproductive age women who are on ART.

1.3 Justification of the Study

HIV positive women and men should be empowered to take informed choices relating to their reproductive lives, free of coercion. Their specific health condition and their socio-economic situation may render them vulnerable in this regard, however, which makes support for their reproductive rights a priority.

Counseling about HIV prevention and contraception should be provided to all women and girls, especially those who are sexually active. This should be provided by health workers at sexual and reproductive health clinics, by trainers in sexuality education programmes, and by HIV-related health service providers. Information and support from peers through peer outreach programmes should complement messages from health workers about dual protection. Peer counsellors can also promote male responsibility and engagement on condom use. To promote integration of FP services in HIV/AIDS prevention, care and treatment services and to generate

information and formulation of evidence based decisions by program managers to strengthen FP services. To identify factors that influence the choices of contraceptive methods that PLHIV women clients of the hospital by identification of those factors that will help in better approach to HIV prevention and family planning services, reduce the risk of PLHIV women infecting, unwanted pregnancy, STI and reduce mother to child transmission of HIV.

2. Objective

2.1 General Objectives

To assess dual contraceptive use and associated factors among HIV positive reproductive age women in Mekelle town, ART health institutions, Tigray, Ethiopia.

2.2 Specific Objective

To determine the prevalence of dual contraceptive use among HIV positive reproductive age women on ART, in Mekelle town.

To identify factors associated with dual contraceptive use among HIV positive reproductive age women on ART, in Mekelle town.

3. Methods

3.1 Study Design

Institution based cross-sectional study.

3.2 Study Area and Period

The study was conducted in Mekelle town which is found around 780 KM away north from Addis Ababa the capital city of Ethiopia. The total population of the town is estimated to 350,000 and these female and male are 176,750 (50.5%) and 173,250 (49.5%) respectively. The estimated reproductive age group was 68,250 (19.5%) from those reproductive age groups are 7973 and 4902 are females. Concerning the health infrastructure, there are 1 Zonal hospital, 1 referral Hospital and 9 health center. This project was conducted from March to May, 2014.

3.3 Source Population

All sexually active HIV positive reproductive aged women in Mekelle town, ART health institutions.

3.4 Study Population

All sexually active HIV positive women who come to ART clinic for follow up at the time of data collection in Mekelle town Tigray, Ethiopia.

3.5 Sample Size Determination

In this study, sample size is calculated using single population proportion formula by Taking prevalence of consistence use of dual contraceptive (27%) in British Columbia Canada (23). This study assumes 27% prevalence to obtain the sample size at 95 % CI and a maximum discrepancy of 4% marginal error between the sample and the underlying population. Thus HIV positive reproductive age women will be the required number in the study. The single population proportion formula to determine the sample size is below.

$$\begin{aligned}n &= (za/2)^2 p (1-p)/d^2 \\ &= (1.96)^2 \times 0.27(0.73) (0.04)^2 \\ &= 473\end{aligned}$$

n = the required sample size

P = the assumed proportion of fertility intention

Z= the standard score corresponding to a 95% confidence interval **d** = the allowable margin of error

For possible none response rate during the survey, the final sample size is increased by 10% to $n = 473 + 10\%$ which is $47 = 473 + 47 = 520$

The required sample size with 10% non-response rate is **520**

3.6 Sampling Procedure

Systematic sampling technique was utilized for HIV positive mothers. According to the information which was taken from ART center every 3 interval of the woman who comes to ART clinic for follow up at the time of data collection was taken in to sample by using systematic random sampling. All of the 6 ART health institutions are selected for the actual sample size. The sample size was distributed to each health institutions which has ART clinic using systematic random sampling. Finally the required sample size was overcome.

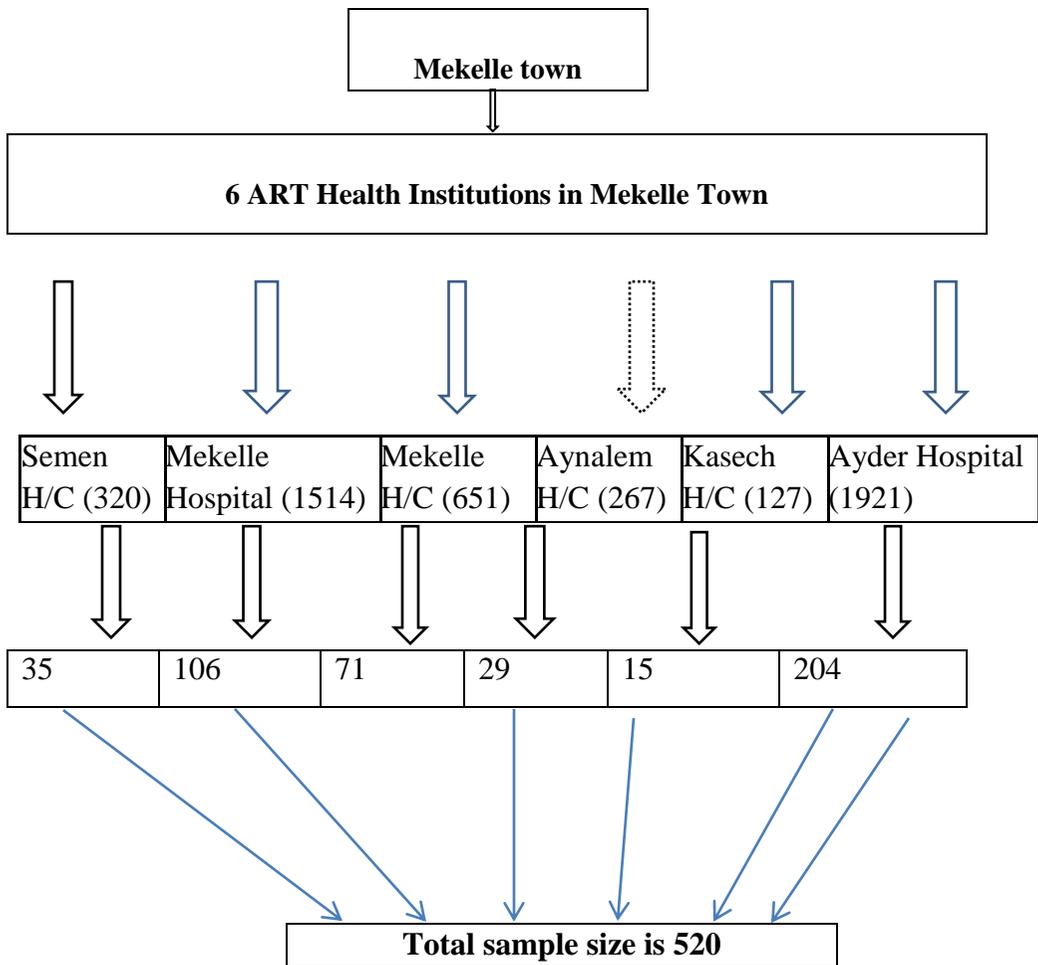


Fig.2: Schematic Presentation of Sampling Procedure on Dual Contraceptive Use and Associated Factor among HIV Positive Reproductive Age Groups in Mekelle Town Health Institutions.

3.7 Study Variables

3.7.1 Outcome (dependent variable)

- Dual contraceptive use

3.7.2 Explanatory (Independent variable)

- Socio demographic variable
- Risk Sexual behavior and condom use
- Partner communication

- Knowledge about dual contraceptive

3.8.Operational Definitions

Dual contraceptive use: Utilization of any hormonal or permanent modern contraceptive method along with consistence use of male or female condom and or effective and consistent use of condom.

Modern methods: Includes: Pills, IUD, Injectable Implants, Male & female condom (excluding lactational amenorrhea, rhythm, and withdrawal)

Health institution

Hospitals and health centers give ART services

Consistent condom use: use of male or female condom during every sexual intercourse.

Knowledge about dual contraceptive

From the following 4 criteria's if they answer 2 and above they are knowledgeable about dual contraceptive If they answer <2 not knowledgeable.

1. It prevent from new HIV infection
2. It prevent from HIV transmission
3. It prevent from unwanted pregnancy
4. It prevent from STI

Inclusion criteria

All sexually active HIV positive reproductive age women on ART and FP who came to ART clinic for follow up at the time of data collection was included in the study.

Willingness to provide informed consent

Exclusion criteria

HIV positive reproductive age women who are seriously ill were excluded from the study.

HIV positive pregnant women who are on ART

3.9 Data Collection Procedures

Semi structured interview questionnaire was prepared based on the reviewed literatures. The questionnaire was prepared in English and then translated into Tigrigna and back translated to English to maintain consistency. Four Diploma holder data collector nurses, , supervised by one master in epidemiology and biostatics, were recruited and trained for one day on the techniques of interview and data collection methodology. The data collection

tool was pre-tested in similar nearby ART health center in order to sort out language barriers and contextual differences.

3.10 Quality Assurance

The questionnaire was pre-tested in the nearby health center (Roman at Health Center) on 5% of participants. Questionnaire was checked for completeness daily by immediate supervisors. After checking the data collection tools for consistency and completeness, the supervisors submitted the filled questionnaire to the principal investigator to be rechecked to the quality of data.

3.11 Data Processing and Analysis

Data was coded manually, entered and cleaned using EPI-INFO version **3.5.1** and exported to SPSS version **20** for descriptive and inferential analyses. Frequencies and cross tabulations were used to check for missed values and variables. The identified errors were corrected after revising the original questionnaires. Frequencies, proportions and measures of central tendency and measures of variation were used to describe the study subjects. Bivariate and multivariate analysis were performed to identify dual contraceptive use and associated factor and to control confounding. Variables having p value up to 0.2 in the bivariate analysis were taken in to – Multivariate analysis. The necessary assumption of the logistic model was checked using Homer and Leme show method. The result was presented using crude odds ratio (COR), adjusted odds ratio (AOR) and confidence intervals (95%). In Multivariate analysis, $P < 0.05$ was considered as a level of significance.

4. Ethical Consideration

Ethical approval was obtained from Institutional Review Board (IRB) of Health Science Department of Sheba University College. Public Health Permission was secured from the Tigray Regional Health Bureau, and from Mekelle Zonal Health Administration, Data collectors took informed verbal consent from the study participants. Each respondent was informed about the objective of the study and their right to withdraw from the activity at any time was ensured.

5. Result:

The study included 516 (99.4%) individuals, among these 4 (0.6%) did not respond to the questionnaire. As a result, four questionnaires were found to

be incomplete and excluded from the analysis and registered as non-response.

5.1 Socio Demographic Variables

The study was conducted on 516 individuals. Out of these, 443 (85.9%) were urban people. Out of 516 respondents, 106 (20.5%) were single whereas 230 (44.6%) were married and the remaining 180 (34.8%) were divorced or widowed and separated. Among the total study subjects 84 (16.3%) were between the age group of 15-24 years while 249 (48.3%) were between 25-33 years whereas 129 (25%) were between 34-41 years and the remaining 54 (10.5%) were 42 and above. Among the total study subjects 400 (77.5 %) were Orthodox Christian, while 54 (10.5 %) were Muslims, whereas 39 (7.6%) were Protestants and the Remaining 23 (4.5) were Catholic followers (table 1).

The distribution of maternal educational and occupational status from the total study subjects 101 (19.6%), were illiterate. And 236 (45.7%) completed primary school while 95(18.5%), 54 (8.7%) were high school educated the remaining 84 (16.3%) were higher education learned. In case of maternal occupation 198 (38.4%) were house wife, 95 (18.4%) merchants and 62 (12%) were employed and the remaining 161 (31.2%) were unemployed, daily laborer, farmer and others (table 1).

In case of average monthly income 119 (23.1) had income of less than 500 Birr, 220 (42.6%), n Earned between 500-1000 Birr, 34 (6.6%) had income between 1001-1500 Birr and the remaining 58 (11.2%) of respondents gained 1501 Birr or more per month (table 1). Among the study participants 111 (21.5%) had 1-2 family size, 121 (23.4%) had 3-4 members, 122 (23.6%) had 5-6 family members. and the remaining 162 (31.4%) had 7 or more family size (table 1).

Table 1: Socio Demographics Characteristics of the Respondents in Mekelle Town Northern Ethiopia 2014.

Variable	Frequency	Percentage (%)
Age of the mother (n=520)		
15-24	84	16.3
25-33	249	48.3
34-41	129	25
42 and above	54	10.5
Marital status (n=516)		
	165	

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Single	106	20.5
Married	230	44.6
Divorced/widowed and separated	180	34.8
Resident (n=516)		
Urban	443	85.9
Rural	73	14.1
Family size (n=516) (n=520)		
1-2	111	21.5
3-4	121	23.4
5 and above	284	55
Maternal educational status (n=516)		
No educated	101	19.6
Primary school (1-8)	236	45.7
Secondary school (9-12)	95	18.4
Higher educated (diploma and above)	84	16.3
Maternal occupational status (n=516)		
House wife	198	38.4
Employee	62	12
unemployed	6	1.2
Daily laborer, farmer, Merchant and others	250	48.4

5.2 Knowledge towards Dual Contraceptive

Out of the total 516 study subjects 489 (94.4%) had information about dual contraceptive and the rest 27 (5.4%) didn't have any information about dual contraceptive. From the total study subjects who had information about dual contraceptive use 34 (6.6%) of got the information from social media while 368 (71.3%) learned from health professional and the remaining 46 (8.9) obtained from academic education, peers and others (table 2).

From the total study subjects who knew the importance of dual contraceptive 304 (67.9%) of the study participants said that contraceptive could be used to prevent HIV infection, HIV transmission, unwanted pregnancy and STI while 42 (9.4% said only to prevent HIV transmission and the remaining 102 (22.5%) said to prevent unwanted pregnancy, STI and others (Table 2).

Table 2: Knowledge towards Dual Contraceptive Use of the Respondents in Mekelle Town Northern Ethiopia 2014.

Variable	Frequency	Percentage (%)
Information of dual contraceptive (n=516)		
Have information	489	94.4
Didn't have information	27	5.4
Source of information (n=516)		
From social media	34	6.6
From health professional	368	71.3
From academic education, peer and others	46	8.9
Important of dual contraceptive use (n=448)		
To prevent HIV infection, transmission, unwanted pregnancy and STI	304	67.9
To prevent HIV transmission	42	9.4
To prevent unwanted pregnancy, STI and others	102	22.7

5.3 Current Dual Contraceptive Use

Out of the total study subjects 233, (45.2%) were used to taking dual contraceptive. Out of these 143 (61.4%) were using Injectable and condom while 36 (15.5%) were using IUCD and condom and the remaining 54 (23.1%) were taking pill and condom, Implant and condom, sterilization and condom, and others (table 4). From the total 283 were non dual contraceptive users. Their reasons for not using dual contraceptive were varied: 91 (32.2%) didn't want to have more children, 80 (28.3%) were not willing to use any contraceptive while 61 (21.5%) of them believed they didn't have any risk of having unwanted pregnancy and fear of STI, and the remaining 51 (18%) lacked access to condom, or they had fear of social stigma and for some other reasons (table 3).

Out of the total 516 study participants 347 (67.2%) decided to use dual contraceptive in the future and one hundred minty seven (56.8%) wanted to take injection and condom, whereas 78 (22.5%) intended to use sterilization and condom, 21 (12.4%) chose to take IUCD and condom and the remaining 47 (27.8%) preferred to use pill and condom, implant + condom and others in the future (table 3). From the total 169 respondents who were not willing to use dual contraceptive in the future their reasons were that 64 (37.9%) wanted to have more children, 37 (21.9%) were not willing to use dual

contraceptive in the future while 21 (12.4%) of them believed there would be no risk of unwanted pregnancy and STI.

Table 3: Current Dual Contraceptive Use and Future Need of the Respondents in Mekelle Town Northern Ethiopia 2014

Variables	Frequency	Percentage (%)
Current dual contraceptive use (n=516)		
Dual Contraceptive user	233	45.2
Not user	283	54.8
Type of dual contraceptive current use (n=233)		
Injectable + condom	143	61.4
IUCD + condom	36	15.5
Pill, Implant, sterilization + condom and others	54	23.1
Reason why didn't use dual contraceptive (n=283)		
Want to more children's	91	32.2
Spouse not willing to use any contraceptive	80	28.3
They believed no risk of unwanted PR and STI	61	21.5
Loss of sexual satisfaction, fear of social stigma and others	51	18
Intended to use dual contraceptive use for future (n=516)		
Yes	347	67.2
No	169	32.8
Type of dual contraceptive want to use for the Future (n=347)		
Injectable + condom	197	56.8
IUCD + condom	32	9.2
Sterilization + condom	78	22.5
Pill, Implant+ condom and others	40	11.5
Why didn't want use dual contraceptive for future (n=169)		
Want to more children's	64	37.9
Spouse not willing to use dual contraceptive	37	21.9
They believed no risk of unwanted PR and STI	21	12.4
Loss of sexual satisfaction, fear of social stigma and others	47	27.8

5.4 Partner Communication

Out of the total 516 study participants 216 (41.9%) were able to communicate with their partner about dual contraceptive while 300 (58.1%) were not able to communicate with their partner. From those 216 who had discussions with their partners about dual contraceptive used dual

contraceptive. And out of these 163 (75.4%) use it to prevent HIV transmission, HIV infection, and unwanted pregnancy and STI. 17 (7.9%) use dual contraceptive to prevent HIV transmission, and the remaining 36 (16.7%) used to prevent HIV infection, STI and unwanted pregnancy (table 4).

Out of the 300 study participants didn't communicate with their partner about taking dual contraceptive because 191 (63.7) were not willing to use dual contraceptive while 15 (5%) were didn't want to have more children's and the remaining 94 (31.3%) didn't give an intention to it or they didn't have knowledge about the use of dual contraceptive and others (table 4).

Table 4: partner communication about dual contraceptive of the respondents in Mekelle town northern Ethiopia 2014.

Variable	Frequency	Percentage (%)
Partner communication (n=516)		
Were able to communicate with their partner	216	41.9
Not able to communicate with their partner	300	58.1
Reason why didn't communicate with their partner		
Spouse not willing to communicate	191	63.4
Want to more children	15	5
Didn't give an intention, I didn't have partner and others	94	31.3

5.5 Risky Sexual Behavior and Condom Use

Out of the total 520 study subjects 131 (25.4%) had sexual partner during their life. 385 (74.6%) didn't have sexual affairs with their partner. From those who had sexual affairs with their partners, 14 (10.7%) had sex one time with partner during their life while 31 (26.7) had sex 2-3 times with their partners during their life time, while the remaining 86 (65.6) had sex more than three times with their sexual partner during their life (table 5).

From the total 131 study subjects who had sexual partner during their life time 93(71%) were using condom at the time of sexual intercourse and the remaining 38 (29%) were not using condom. When we come to the importance of condom use from those 93 respondents who used condom at the time of sexual intercourse 66 (70%) used condom to prevent HIV transmission, infection, unwanted pregnancy, and STI while 16 (17.2%) said to prevent only HIV transmission and the remaining 11 (11.8%) used it to prevent HIV infection, unwanted pregnancy, and STI (table 5).

Out of the total, 38 study subjects who didn't use condom at the time sexual intercourse, 8 (21.1%) said they were not willing to use condom, 7 (18.4%) feared of social stigma while 5 (13.2%) thought it would reduce their sexual satisfaction and the remaining 18 (47.4%) lacked access to it and because of some other reasons (table 5).

Table 5: Risk Sexual Behavior and Condom Use of the Respondents in Mekelle Town Northern Ethiopia 2014

Variable	Frequency	Percentage (%)
Sexual behavior (n=516)		
Had sexual partner during their life	131	25.4
Had no sexual partner during their life	385	74.6
Frequency of sexual partner (131)		
< two times	14	10.7
Two - three times	31	26.7
More than three times		
Condom use during sexual practice (131)	86	65.7
Yes	93	71
No	38	29
Importance of condom use (93)		
to prevent HIV transmission, infection, unwanted pregnancy and STI	66	70
To prevent HIV transmission	16	17.2
To prevent HIV transmission unwanted pregnancy and STI	11	11.8
The reason why didn't use condom (38)		
Spouse not willing to use condom	8	21
fear of social stigma	7	18.4
Loss of sexual satisfaction	5	13.2
Lack of access condom and others	18	47.4

6. Factors Associated with Dual Contraceptive Use

6.1 Socio- Demographic Factors Associated with Dual Contraceptive Use

Bivariate analysis shows that there was statistically significant association between dual contraceptive use and age of the mothers. Mothers who were 42 years old or older were almost two times less likely to use dual contraceptive than women whose age was between 15-24 years with (COR= 1.686 95% CI (1.024, 2.775). This study also shows that there was an association between dual contraceptive use and area of residence. According

to the findings, those 25% who were living in urban areas were more likely to use dual contraceptive than women living in rural areas (table 6).

In multivariate analysis, there was statistically significant association between dual contraceptive use and age of the mother. Even though crude analysis shows that there was significant relationship between dual contraceptive use and age of the mother after adjusting for other variables the probability of taking contraceptive for age group of 15-24 years was nearly 43% less likely to use dual contraceptive than those women who are 42 years of old or more. With (AOR=0.57 95% CI (0.34, 0.97) and those whose age was between 35-42 were 66% less likely to use dual contraceptive than those who were 42 years old or more with (AOR= 0.34 95% CI (0.15, 0.75)) (table 6).

Residents of the mothers was also significantly associated with dual contraceptive use The probability of using dual contraceptive among individuals who were living in urban area was 25% more than rural residents with (AOR=0.751 95% CI (0.456, 1.236)) compared to individuals whose residence was rural (table6).

In multivariate analysis there was a strong association between dual contraceptive use and marital status of the mothers. The probability using dual contraceptive among married women was 40% less when compared to women who were single (AOR=0.604 5% CI (0.29, 1.275) and family size also have a significance association with dual contraceptive use. The possibility of using dual contraceptive among women who had 3-4 family size was fund to be 54% less than those women who had five or more family size with (AOR= 0.60 95% CI (0.29, 1.275)) table 6).

Table 6: Socio-Demographic Characteristics Associated with Dual Contraceptive Use among HIV Positive Reproductive Age Group on ART in Mekelle Town 2014

Variable	Dual contraceptive use		Odds Ratio	
	Yes (%)	No (%)		
Age				
15-24 years	47	37	1.686 (1.024, . 2.775)*	
5-34 years	107	142	1.290 (0.743, 0. 2.241)	
35- 42 years	64	65	3.303 (1.584, 6.887)*	0.34 (0.15, 0.75)*
>= 42	15	39	1.00	
Marital status				
Married	48	58	0.604 (0.29, 1.275)*	
Divorced	111	119	0.536 (0.268, 1.071)	3.28 (1.06, 10.14)*
Widowed	60	78	0.650 (0.32, 1.341)	
Single	14	28	1.00	
Residence				
Rural	196	247	0.751 (0.456, 1.236)*	
Urban	37	35	1.0	
Family size				
<= 2	49	62	1.27 (0.76, 2.120)*	
3-4	40	81	2.025 (1.205, 3.403)*	0.46, (0.26, 0.80)*
>=5	61	61	1.00	
Communication				
Communicate	216	41.9	1.700 (1.194, . 2.420)*	0.58 (0.40, 0.85)*
No communicate	300	58.1	1.00	
sexual behavior				
Yes	131	25.4	1.92 (1.29, 2.87)*	0.33 (0.14, 0.74)*
No	385	74.6	1.00	

7. Discussion

This study shows the prevalence of dual contraceptive use among HIV positive women is better than the general population. But, according the WHO PMCT guidelines the prevalence of dual contraceptive is found to be low because WHO PMTCT guideline recommended that all HIV positive women should use dual contraceptive. The main reasons for non uses of dual contraception were partner rejections (spouse not willing to use dual protection) followed by the desire to have more children and the fear of complication of contraception. Most of the current dual contraceptive users get family planning service in ART clinic during the ART follow up.

In this study, the current prevalence of dual contraceptive use is 233 (45.2%) which

is much higher than the prevalence of similar study conducted in Adwa northern Ethiopia community which was 13.8% and in Addis Ababa it was 13.3% (18, 19). This might be to different barriers like loss of sexual satisfaction, fear of stigma, discrimination and lack of knowledge about the importance of dual contraceptive in the community and among households.

This study shows that there is a strong association between the age of the mothers and dual contraceptive utilization. As the age increases the prevalence of dual contraceptive decreases this might be due to cultural and religious influence. This generation is more educated than the old generation. As a result, this generation has more awareness about dual contraceptive than the old generation. As the number of house hold increases from time to time the use of dual contraceptive increases so, that there is a significant association between dual contraceptive and family size. This might be due to the desire for having more children decreases from time for they have enough children. This conclusion is similar to the study conducted in Aduwa, Malawi and Uganda (11, 4, 5) respectively.

This study also shows that the prevalence of dual contraceptive use among married is less than those who are single. This is also similar to the study conducted in South Africa, Namibia and Nekemt (12, 7, and 8). This is due the fact that most of the time those who are married discuss with their partner about the need of dual contraceptive. However, those who are single may have the desire to have more children.

This study shows that the main source of information about the use of dual contraceptive was from health professionals. This might be due to the fact that health professional perceives health education as a true source of information and they are responsible to disseminate it among the community. And the other reason may be fear of stigma and discrimination. If they ask their peers and friends, it may be frustrating for them (24). Having information on the use of dual contraceptive was found to be significant predictor of dual contraceptive utilization Compared with other sources.

The prevalence of dual contraceptive use is higher when we compare with similar study conducted in Canada which was 27% (23). However, it is lower than study conducted in South Africa KwaZulu-Natal Hospital which was found to be 50% (12).

In this study more than 94% of the respondent was Knowledgeable about dual contraceptive but it is much higher than the study conducted in Adwa north Ethiopia which was 61.2%. This might be due to the expansion of health education by different social media and effort of health professional. This is consistent with

study conducted in Gimbie town, West Ethiopia. More than 68% of the respondents know the importance of dual contraceptive. This is due to the advice health professionals and the social media and academical education. This is again similar to the study conducted in South Africa and Uganda (11, 23).

This study reveals that, 216 (41.9%), of the respondent communicated with their partner about the use of dual contraceptive. This is lower than and inconsistent with the study conducted in Adwa north Ethiopia Gimbie town, West Ethiopia (11, 24). This difference might be due to the fact that partners are not willing to discuss about dual contraception because of their desire to have more children. They do not give much attention to communicate about contraceptive with their partners because of their fear of social stigma and discrimination. Also this study shows that there is a strong association between dual contraceptive utilization and partner communication about the importance dual contraceptive utilization

In this study 131 (25.4%) of the respondents had sexual intercourse out their partner. This might increase the risk of HIV transmission and STI. Out of those who had sexual intercourse out of their partner, 29 % were not using condom during sexual intercourse. As a result, we can conclude that there is a significant association between risk sexual behavior and dual contraceptive utilization. This might be due to lose of sexual satisfaction and they believe they are already exposed by HIV so, they don't have any risk of unwanted pregnancy, transmission of HIV, STI and others sexual transmitted diseases.

8. Limitation of the Study

The possible limitation of this study is, the fact that it related to the cross-sectional design which h simultaneously evaluate variables of the effect of interest and their associated factors, should be emphasized.

Another limitation of this study is the small sample size and instruments used. They were not validated for the sampled population.

9. Conclusion

Although contraceptive use among HIV positive women is better than the general population, the prevalence of dual contraceptive were found to be low. The main reasons for non-use of dual contraceptives were partner reject ion of using contraceptives (spouse not willing to use dual protection) followed by the desire to have more children and fear of social stigma. Most of the current dual contraceptive users get family planning service from ART clinic. The prevalence of dual contraceptive use among sexually active HIV positive reproductive age women who were on ART follow up in Mekelle town has been found to be 45.2%.

The prevalence was higher when we compare it with the study conducted in North Ethiopia Adwa which was 13.8%. Therefore, this study has demonstrated that the problem of dual contraceptive the major public health problem in Mekelle town since national PMTCT guideline recommend for all HIV positive women to use dual contraceptive. However, health education and promotion is required to increase dual contraceptive utilization.

10. Recommendation

To policy makers:

Governmental agencies should be urged to develop national and regional policies on prevalence of dual contraceptive utilization among HIV positive women as part of health policy and integrated dual contraceptive utilization. The ART follow up should be implemented for prevention of HIV transmission, prevention of unwanted pregnancy and STI. Integrating dual contraceptive use into the existing primary health care delivery system is beneficial and coordinating these efforts with good referral system and follow up services in community and institution level. There is also a need to establish screening programme at the primary health care level for those come with chronic illness and other related condition.

To the Concerned Tigray Regional Health Bureau and Mekelle Town Health Office

Establishment of IEC programmes about the factors associated with dual contraceptive utilization which will create awareness in the community by expanding integrated family planning utilization with ART services.

Health professionals should teach the importance of dual contraceptive utilization to avoid barriers for having dual method in all sexually active HIV positive women and in the community to increase the prevalence of dual contraceptive utilization and awareness by involving HIV positive women who are volunteer to give health education.

There is a need to train health care providers about dual contraceptive utilization by using training manuals to increase dual contraceptive utilization in the community.

The government should be encourage women to communicate with their partner about dual contraceptive by giving capacity building and training for HIV positive partners and their families in order to increase dual contraceptive utilization among individuals and communities.

To the community at large:

The stigma and discrimination against HIV positive women should be avoided.

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Raising creating awareness related to HIV transmission, prevention of unwanted pregnancy and STI in the community is very important.

There is a need, in collaboration with government and nongovernmental organization and community leaders together with women development army and community mobilizes, to strengthen social support groups strengthen social support groups at the community and family level which protect them from stigma and discrimination.

To researchers:

Similar institution based qualitative studies, related to dual contraceptive utilization, should be advocated specific to target groups to establish the determinant and barriers of dual contraceptive utilization.

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