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Research Article

Dual Contraceptive Utilization and Associated Factors among Human Immunodeficiency Virus (HIV) Positive Women Attending Anti Retro Viral Therapy (ART) Clinic in Hossana Hospital, Southern Ethiopia

Markos Selamu Jifar[1]*, Tilahun Beyene Handiso[1]*, Temesgen Debero Mare[1] and Shabeza Aliye Ibrahim[2]

[1]*Department of Public health (MPH), Health office, Hossana, Ethiopia; Epidemiology, Institute of Health, Jimma University, Ethiopia*

[2]*Department of Statistic, Wachemo University, Ethiopia*

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***Corresponding author**

Tilahun Beyene Handiso, Markos Selamu Jifar, Department of Epidemiology, Institute of Health, Jimma University, Ethiopia,
Tel: +251916356889, +251916696915;
Email: tilahunbeyene44@gmail.com, marksena15@gmail.com

Keywords Dual contraceptive; Human immune deficiency virus; Hossana hospital

Abbreviations AIDS: Acquired Immune Deficiency Syndrome; AOR: Adjusted Odds Ratio; ART: Anti Retroviral Therapy; ARV: Anti Retroviral Therapy; CD4: Cluster of differentiation / Cell differentiation; CPR: Contraceptive Prevalence Rate; CSA: Central Statistical Agency; EDHS: Ethiopian Demographic and Health Survey; HAART: Highly Active Antiretroviral Therapy; HAPCO: HIV/AIDS Prevention and Control Office; HIV: Human Immune Deficiency Virus; IUD: Intrauterine Device; MOH: Ministry of Health; PMTCT: Prevention of Mother to Child HIV Transmission; REC: Research & Ethical Committee; SPSS: Statistical Package for Social Science; STI: Sexually Transmitted Infection; UNAID: United Nations Program on IV/AIDS; WHO: World Health Organization; PCA: principal component analysis

Abstract

Background: Dual protection is a strategy that prevents both unwanted pregnancy and sexually transmitted infections, including human immune deficiency virus. Also antiretroviral treatment has contributed a lot in decline of human immune deficiency virus related morbidity and mortality but a little of it is known in our country.

Objectives: To assess dual contraceptive utilization and associated factors among pre-ART and ART women living with human immune deficiency virus.

Methods: Facility based cross-sectional study was conducted. Data were collected through interview using structured questionnaires. Participants were selected by using simple random sampling technique from patient registration book. Bivariate and multivariable analysis was performed using logistic regression on SPSS version 20.0. Adjusted odds ratio with 95%CI was used.

Results: The prevalence of dual contraceptive utilization of women living with human immune deficiency virus in the Hospital was 28.3% (95% CI: 23.8, 33.7) and significantly associated with receiving follow up counseling (AOR: 6.05; 95% CI: 2.46, 14.83), starting ART(AOR: 0.21; CI: 0.07, 0.64), had no child (AOR: 0.19; 95% CI: 0.06, 0.57), supporting to use (AOR: 6.36; 95% CI: 2.49, 16.28).

Conclusions: Dual contraception utilization was less than one-third and having no child; receiving follow up counseling in the last 3 months; starting antiretroviral treatment; supporting to use were significantly associated with dual contraceptive utilization. It needs governmental and non-governmental organizations, other professionals and researchers involvement to improve dual contraceptive utilization.

Introduction

Dual contraceptive utilization: refers to the use of a barrier contraceptive (i.e., condoms), which can reduce transmission of many STIs, plus another effective family planning method that can prevent pregnancy as recommended by the World Health Organization(WHO) (e.g., hormonal methods, intrauterine devices, hormonal pills) [1]. The co-occurrence of HIV and unintended pregnancy has prompted a relatively recent body of work on dual protection, the simultaneous protection against STIs and unintended pregnancy [2]. Some studies that have considered the benefits of dual protection for people living with HIV show that dual protection can be an effective strategy to prevent HIV transmission to partners and to promote safe childbearing; but little of it is known in our country [3,4]. Worldwide, HIV is the leading cause of death for women of childbearing age, and up to 64% of all pregnancies are unintended [5,6].

In Sub-Saharan Africa (SSA), region where reproductive age women account for the majority of people living with HIV, unintended pregnancies were estimated to account for 14-58 % of all Pregnancies [7].

Increase of Contraceptive Prevalence Rate (CPR) in sub-Saharan Africa with corresponding reduction in primary HIV infections and unintended pregnancies in HIV infected women has potential to decrease the proportion of infants infected with HIV by 35-55%. The provision of appropriate contraceptive information, counseling services will play a significant role in reducing the burden of HIV/AIDS in Africa. The dual contraceptive utilization practice should form the cornerstone of reproductive health care [8].

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According to the national fact sheet 2010 from Acquired Immune Deficiency Syndrome (AIDS) in Ethiopia, the adult HIV prevalence is 2.4% and adult HIV incidence is 0.26 and total HIV positive population was 1,216,908 [9,10]. Presence of ART can live longer women infected with HIV and if they don't practice safe sex, they will put others at risk of new HIV infection and other STIs [10].

Ethiopia is one of the countries' most severely hit by the HIV epidemic. The dominant heterosexual transmission, the vertical virus transmission from mother to child accounts for more than 90% of HIV/AIDS infection [11]. The correct and consistent use of contraceptive methods is important to prevent unintended pregnancies and transmission of Sexually Transmitted Infections (STIs) [12]. The World Health Organization (WHO) recommends that women living with HIV use dual contraceptive methods or dual protection to prevent unintended pregnancies and STIs [13]. In some cases, women living with HIV continued to have unprotected sex with their partner, even though they were aware of the risk of infecting their partner, rather than begin using condoms, and have their partner discover their HIV-positive status. The burden of unintended pregnancy and STIs was greater among younger and economically disadvantaged men and women [14].

There were few studies done on dual contraceptive utilization among HIV positive reproductive age women in Ethiopia [15].

Methods and Materials

Study area and study period

The study was conducted among ART & pre-ART user in Hossana Hospital, Hadiya zone, South Nation Nationalities and Peoples Regional State(SNNPR), Southern Ethiopia; which is located 232km far from south of Addis Ababa, the capital city of Ethiopia and 174 km far from north of Hawassa, capital city of SNNPR. ART clinic provides free services for patients for routine testing and counseling services, comprehensive HIV/AIDS prevention, treatment and care interventions. According to institutional report the number of people living with HIV ever enrolled ART/Pre-ART was 3,155 on chronic care registration log book among those currently active on ART and Pre-ART are 966 and 386 respectively while 692 HIV positive reproductive age women. The study was conducted from to March 12 to April 13, 2016.

Facility based cross-sectional study was conducted.

Study population

Selected HIV positive reproductive aged women (18 to 49 years) included in the study.

Inclusion criteria

HIV positive reproductive aged women attend chronic HIV/AIDS care clinic HIV positive reproductive aged women at least one visit attended before this study.

Exclusion criteria

Unable to communicate verbally/seriously ill at time of data collection.

Pregnant women at the time of data collection.

Sample size and sampling technique/sampling procedure

The required sample size was calculated using a single population proportion formula as follows

$$n = (Z\alpha\backslash 2)^2 P(1-p)/ d^2$$

Where: n = sample required; Zα\2 = the critical values at 95% confidence level of certainty =1.96; P = 19.8% (Proportion from previous study; q = 1 – P; d= margin of error = 5%. After adjustment for non-response 10%; the total sample size required 269.

For the second objective the required sample size was calculated by using Epi-Info soft ware version 7.0. The variables associated with dual contraceptive utilization: residence (27.9%), CD4 count (29.6%), counseling about family planning (10.1%)with confidence interval 95%, power 80% assumption; Ratio (No of outcome in unexposed: No of outcome exposed). Sample size was calculated for the second objective from previous study [16]. The second objective calculated sample size was 252, 62 and 253 respectively, but 269 maximum sample size was taken.

Sampling Procedure /techniques

Computer generated simple random sampling technique using Excel sheet to select study respondents by using their ART & Pre-ART HIMS registration numbers. During the one -month study period; 258 HIV positive women were recruited from sample frame. Respondents, who were not obtained at appointment date, were revisited the whole data collection period. The HIV positive women visit the Hospital at least once in a month. During one month data collection period, there was possible condition to get the study participants.

Data collection procedures

Study Variables

Dependent variable: Dual contraceptive utilization.

Independent Variables: Socio-demographic characteristics (age, educational status, place of residence, ethnicity, religion, occupation, wealth index).

Service related factors (counseling about contraceptive use, accessibility of FP services, and duration of ART/pre ART, discussion with their partner & knowledge of contraceptive use).

Knowledge scores: based on the type of skewness**,** majority of participants are at the right/left end of the curve.

Individual factors: CD4 count, side effects.

Social and cultural factors: religious influence, peer support, partner support.

Reproductive factors: living children, fertility desire.

Sexual related factors: regular partner, multiple sexual partners, duration stayed with partner.

Data collection tool: Structured questionnaire was used to collect data which were adapted from different relevant literatures and modified to the local context. The questionnaire was designed to obtain information on study variables (dependent and independent

Variables). The questionnaire was prepared in English and translated to Amharic & local language (Hadiyigna) and back retranslated to English to check its consistency. Translator to Amharic and back translated to English by independent translators to keep the consistency of the questionnaires.

Data collectors: Data were collected by three diploma nurses who were recruited from Hossana health center & one supervisor degree holder nurse from Nigist Ellen Mohammed Memorial Hospital. Data were collected by face to face interview using structured Amharic and local language (Hadiyigna) questionnaires.

Data quality assurance/control

To ensure data quality, data collectors and supervisor were trained by the principal investigator for two days on purpose of the study, on data collection tools, research ethical issues & confidentiality prior to data collection. Pre-test was done on 5% of the sample of HIV positive women in Homacho district Hospital to identify any inconsistency, skips patterns and acceptability of questionnaire, and then necessary corrections was made before the actual data collection. Supervisor closely followed the data collection throughout the data collection period along with the principal investigator. After data collection, each questionnaire was checked for completeness and code was given before data entry. The data were cleaned and carefully entered into Epidata version 3.1 & exported to SPSS version 20.0 for analysis.

Data processing and analysis

Descriptive statistics was done to describe the data. Bivariate and multivariable analysis was performed using logistic regression on SPSS version 20.0 software in order to determine factors associated with dual contraceptive utilization with statistical significant level of $p<0.05$ and CI of 95%. Independent variables with p-value of less than 0.25 was candidate variables to multivariable logistic regression

Table 1: Socio demographic characteristics and dual contraceptive utilization in Hosanna, Ethiopia, 2016 (n=258).

Variables	Categories	Frequency N (%)	dual contraceptive utilization		COR (95%CI)	p-value
			Yes (%)	No (%)		
Age group	18-29	63(24.4%)	17(27.0%)	46(73.0%	0.93(0.48, 1.84)	0.865**
	30-39	135(52.3%)	38(28.1%)	97(71.9%)	1.00	1.00
	40-49	60(23.3%)	18(30.0%)	42(70.0%)	1.09(0.56, 2.13)	0.792**
Ethnicity of mother	Hadiya	136(52.7%)	40(29.4%)	96(70.6%)	1.00	1.00
	Amhara	34(13.2%)	11(32.4%)	23(67.6%)	1.14(0.51, 2.57)	0.74**
	Gurage	32(12.4%)	10(31.2%)	22(68.8%)	1.09(0.47, 251)	0.84**
	Kambata	29(11.2%)	6(20.7%)	23(79.3%)	0.63(0.24, 1.65)	0.34**
	Silte	27(10.5%)	6(22.2%)	21(77.8%)	0.68(0.26, 1.83)	0.45**
Religion	Protestants	87(33.7%)	23(26.4%)	64(73.6%)	1.00	1.00
	Orthodox	72(27.9%)	24(33.3%)	48(66.7%)	1.39(0.70, 2.75)	0.34**
	Muslim	58(22.5%)	12(20.7%)	46(79.3%)	0.73(0.33, 1.60)	0.43**
	Catholic	20(7.8%)	6(30.0%)	14(70.0%)	1.19(0.41 ,3.47)	0.75**
	Adventist	21(8.1%)	8(38.1%)	13(61.9%)	1.71(0.63, 4.66)	0.29**
Educational status	cannot read write	53(20.5%)	17(32.1%)	36(67.9%)	1.16(0.55, 2.45)	0.695
	can read &write	45(17.4%)	7(15.6%)	38(84.4%)	0.45(0.18, 1.15)	0.097
	Primary	83(32.2%)	24(28.9%)	59(71.1%)	1.00	1.00*
	Secondary	55(21.3%)	14(25.5%)	41(74.5%)	0.84(0.39, 1.81)	0.656
	college & above	22(8.5%)	11(50.0%)	11(50.0%	2.46(0.94, 6.43)	0.067
Occupation	Merchant	90(34.9%)	24(26.7%)	66(73.3%)	1.00	1.00*
	Housewife	75(29.1%)	18(24.0%)	57(76.0%)	0.86(0.43, 1.76)	0.695
	Employer	33(12.8%)	16(48.5%)	17(51.5%)	2.58(1.13, 5.92)	0.024
	daily laborer	33(12.8%)	7(21.2%)	26(78.8%)	0.74(0.28, 1.93)	0.538
	Students	27(10.5%)	8(29.6%)	19(70.4%)	1.15(0.44, 2.99)	0.762
Residence	Urban	197(76.4%)	58(29.4%)	139(70.6%)	1.00	1.00
	Rural	61(23.6%)	15(24.6%)	46(75.4%)	0.78(0.40, 1.51)	0.46**
Wealth index	Poorest	52(20.2%)	15(28.8%)	37(71.2%)	0.66(0.29-1.47)	0.308
	Poor	48(18.6%)	13(27.1%)	35(72.9%)	0.60(0.26-1.39)	0.234
	Medium	55(21.3%)	21(38.2%)	34(61.8%)	1.00	1.00*
	Rich	51(19.8%)	15(29.4%)	36(70.6%)	0.67(0.30-1.52)	0.342
	Richest	52(20.2%)	9(17.3%)	43(82.7%)	0.34(0.14-0.83)	0.19

for controlling the possible effect of confounders and finally the variables which has significant association with dual contraceptive utilization was identified on the basis of Adjusted Odds Ratios (AOR), with corresponding 95% CI were used to quantify the degrees of association between independent variables& dual contraceptive utilization. Goodness of fit of the final model was checked using Hosmer & Lemeshow test considering good fit at P-value=0.065.

Multicollinearity among independently associated variables was checked using Variance Inflator Factor (VIF), standard error) and correlation coefficient.

The Bartlett test of sphericity is statistically significant at $p<0.05$ conducted on analysis. The Kaiser-Meyer-Olkin (KMO) Measure Of Sampling Adequacy (MSA) greater than 0.5 for individual as well as the full set of items was used to check the appropriateness of the PCA [17]. Internal consistency of PCA was checked.

Operational definition & terms

Dual contraceptive utilization: In this study it refers to the HIV positive women who used two methods of contraception simultaneously, a barrier method (male/female condom use in every sexual encounter in the last six months preceding the study) & other modern/hormonal/ contraceptive methods.

Accessibility of family planning service: It refers to the distance from client's residence to the health institution took 5km or ≤30 minutes walking time considered as accessible [18].

Knowledge of contraceptive use: In this study refers to from total of five dichotomized questions, 0 for incorrect answer and 1 for correct answer about contraceptive use, women who answered median score& above, considered as good knowledge and below median score considered as poor knowledge.

Pregnant woman: Refers to woman who reported she was pregnant or her husband who reported his wife pregnant.

Reproductive aged women: In this study refers HIV positive women whose age 18-49 years attend chronic HIV/AIDS care clinic.

Table 2: Dual contraceptive utilization by HIV positive women on ART & follow up care in Ethiopia in 2016(n=258).

variables	Categories	N (%)
Dual contraceptive utilization	Yes	73(28.3%)
	No	185(71.7%)
Contraceptive types user(n=73)	Injectable with Condom	60(23.3%)
	Pills with Condom	7(2.7%)
	IUCD with Condom	6(2.3%)
Reason for condom/ contraceptive use(n=185)	Fear of STI	94(36.4%)
	to prevent pregnancy	52 (20.2%)
	professionals advice	18(7.0%)
	my partner HIV(-ve)	11(4.3%)
	to reduce viral loads	10(3.9%)
Reason not using contraceptive use(n=45)	want a child	30(11.6%)
	fear of side effects	27(10.5%)
	lack of knowledge	13(5.0%)

Key 1=reference; ** p >0.25(not significant).

Table 3: Sexual & Reproductive related factors of participants and dual contraceptive utilization in Hosanna, Ethiopia, 2016 (n=258).

Variables	Categories	Frequency N (%)	dual contraceptive utilization		COR(95%CI)	p-value
			Yes, N (%)	No, N (%)		
Age at marriage	<18 years	76(29.5%)	27(35.5%)	49(64.5%)	1.63(0.91,2.90)	0.097
	>18 years	182(70.5%)	46(25.3%)	136(74.7%	1.00	1.00*
living children (n=189)	one child	77(29.8%)	25(32.5%)	52(67.5%)	1.00	1.00*
	2-4	73(28.3%)	26(35.6%)	47(64.4%)	1.15(0.58, 2.26)	0.68**
	>4	39(15.1%)	10(25.6%)	29(74.4%)	0.72(0.30, 1.69)	0.45**
desire to have a child in future	Yes	105(40.7%)	29(27.6%)	76(72.4%)	0.94(0.54, 1.64)	0.84**
	No	153(59.3%)	44(28.8%)	109(71.2%)	1.00	1.00*
partner desire to have child in future	Yes	116(45.0%)	32(27.6%)	84(72.6%)	0.94(0.54, 1.62)	0.82**
	No	142(55.0%)	41(28.9%)	101(71.1%)	1.00	1.00*
have had child	Yes	190(73.6%)	61(32.1%)	129(67.9%)	1.00	1.00*
	No	68(26.7%)	12(17.6%)	56(82.4%)	0.45(0.23, 0.91)	0.025
Sex with whom (n=242)	Husband	219(84.9%)	71(32.4%)	148(67.6%)	1.00	1.00*
	multi sexual	23(8.9%)	2(8.7%)	21(91.3%)	0.19(0.05, 0.87)	0.032
Stayed with your partner's	≤4 years	109(42.2%)	30(27.5%)	79(72.5%)	1.00	1.00*
	5-9years	78(30.2%)	22(28.2%	56(71.8%)	1.03(0.54, 1.98)	0.92**
	10-14yea	41(15.9%)	14(34.1%)	27(65.9%)	1.36(0.63, 2.95)	0.43**
	>15 years	30(11.6%)	7(23.3%)	23(76.7%)	0.80(0.31, 2.06)	0.65**

Key 1=reference; ** p >0.25 (not significant).

Result

Socio demographic characteristics of the study participants

A total of 269 HIV positive women, overall response rate of 258 (95.9%) were included in this study. The non-response rate was due to 5 refusals, 4 discarded due to incomplete data, 2 unable to get in follow up.

Regarding Socio demographic characteristics more than half (52.3%) of the participants were in age group of 30-39 years. Hadiya account 52.7%, protestant 33.7%, nearly one-third of the participants completed primary education, 34.9% merchants, urban residents were 76.4% and 21.3% of the participants were in medium wealth index (Table 1).

Dual Contraceptive utilization

The use of dual contraceptive utilization of HIV positive women in NEMMH was 73(28.3%). This means 28.3% of the study participants used condom and other method of contraceptive simultaneously (Table 2).

Table 4: Service related factors & dual contraceptive utilization in Hosanna, Ethiopia, 2016 (n=258).

Variables	Categories	Frequency N (%)	Dual contraceptive utilization		COR(95%CI)	p-value
			Yes, N (%)	No, N (%)		
Receiving counseling last 3months	Yes	121(46.9%)	60(49.6%)	61(50.4%)	9.38(4.78,18.39)	0.00
	No	137(53.1%)	13(9.5%)	124(90.5%)	1.00	1.00*
discuss their partner	Yes	155(60.1%)	56(36.1%)	99(63.9%)	1.00	1.00
	No	103(39.9%)	17(16.5%)	86(83.5%)	0.35(0.19, 0.65)	0.001
Decision decided (n=155)	my decision	54(20.9%)	17(31.5%)	37(68.5%)	1.00	1.00*
	my partner	48(18.6%)	15(31.2%)	33(68.8%)	0.99(0.43, 2.28)	0.98
	Join	53(20.5%)	24(45.3%)	29(54.7%)	1.80(0.82, 3.96)	0.14
Recent CD4 count	<250 cells/dl	29(11.2%)	4(13.8%)	25(86.2%)	0.47(0.15, 1.46)	0.193
	250 -350 cells/dl	28(10.9%)	7(25.0%)	21(75.0%)	0.98(0.37, 2.55)	0.959
	350- 500 cells/dl	106(41.1%)	27(25.5%)	79(74.5%)	1.00	1.00*
	>500cells/dl	95(36.8%)	35(36.8%)	60(63.2%)	1.71(0.93, 3.12)	0.083
Partner HIV status result (n=241)	positive	190(73.6%)	58(30.5%)	132(69.5%)	1.00	1.00*
	negative	51(19.8%)	12(23.5%)	39(76.5%)	0.70(0.34, 1.43)	0.33**
Starting ART drug	Yes	191(74.0%)	50(26.2%)	141(73.8%)	0.67(0.37, 1.23)	0.204
	No	67(26.0%)	23(34.3%)	44(65.7%)	1.00	1.00
how long since started ART (n=191)	< 12 months	9(3.5%)	2(22.2%)	7(77.5%)	0.85(0.16, 4.31)	0.84**
	12-24 months	67(26.0%)	19(28.4%)	48(71.6%)	1.17(0.59, 2.31)	0.64**
	>24 months	115(44.6%)	29(25.2%)	86(74.8%)	1.00	1.00*
how long since started pre-ART (n=67)	< 12 months	19(7.4%)	6(31.6%)	13(68.4%)	0.93(0.25, 3.34)	0.903**
	12-24 months	23(8.9%)	8(34.8%)	15(65.2%)	1.06(0.32, 3.56)	0.917**
	>24 months	24(9.3%)	8(33.3%)	16(66.7%)	1.00	1.00
Health status after started ART	Improved	191(74.0%)	60(31.4%)	131(68.6%)	1.00	1.00*
	Same	40(15.5%)	9(22.5%)	31(77.5%)	0.63(0.28, 1.41)	0.266
	Worsen	27(10.5%)	4(14.8%)	23(85.2%)	0.38(0.13, 1.14)	0.086
time clients to arrive institution	≤ 30 minutes	207(80.2%)	58(28.0%)	149(72.0%)	1.00	1.00*
	>30 minutes	51(19.8%)	15(29.4%)	36(70.6%)	1.07(0.54, 2.10)	0.84**
Knowledge status	poor Knowledge	89(34.5%)	11(12.4%)	78(87.6%)	0.24(0.12, 0.49)	0.00
	good Knowledge	169(65.5%)	62(36.7%)	107(63.3%)	1.00	1.00*
receive support from others	Yes	108(41.9%)	53(49.1%)	55(50.9%)	6.26(3.4,11.45)	0.00
	No	150(58.1%)	20(13.3%)	130(86.6%)	1.00	1.00*
support from whom(n=108)	Husband	56(21.7%)	25(44.6%)	31(55.4%)	1.00	1.00
	Friends	52(20.2%)	28(53.8%)	24(46.2%)	1.45(0.67, 3.08)	0.34**

Key 1= reference; ** p >0.25 (not significant).

Table 5: Independent variables significantly associated with dual Contraceptive utilization in 2016 (n=258).

Variable	categories	dual contraceptive utilization		COR(95%CI)	AOR(95%CI)
		Yes, N (%)	No, N (%)		
having child	Yes	61(32.1%)	129(67.9%)	1.00	1.00
	No	12(17.6%)	56(82.4%)	0.45(0.23, 0.91)	0.19(0.06, 0.57)*
received counseling in the last 3 months	Yes	60(49.6%)	61(50.4%)	9.38(4.78, 18.39)	6.05(2.46, 14.83)*
	No	13(9.5%)	124(90.5%)	1.00	1.00
starting ART drug	Yes	50(26.2%)	141(73.8%)	0.67(0.37, 1.23)	0.21(0.07, 0.64)*
	No	23(34.3%)	44(65.7%)	1.00	1.00
Supported to use dual contraceptive methods	Yes	53(49.1%)	55(50.9%)	6.26(3.42, 11.45)	6.36(2.49, 16.28)*
	No	20(13.3%)	130(86.6%)	1.00	1.00

1= reference group; * =significantly associated factors.

Sexual and reproductive related factors & dual contraceptive utilization by HIV positive women on ART and follow up care

Out of the respondents (93.4%) had sexual intercourse within last six months: among those (84.9%) had sex with regular partner and (8.9%) were had multiple sexual partners (Table 3).

Service related factors & socio-cultural factors and use dual contraceptive utilization on ART and follow up care

Concerning about time to reach health institution (80.2%) was reported that it takes ≤ 30 minutes to reach the health institution from their residence. The majority of respondents (95.0%) were reported that services utilized in the health institution. The majority (93.4%) of respondents there is no cultural practice in their community that prevents from dual contraceptive utilization (Table 4).

Factors independently associated with dual contraceptive utilization

In multivariable analysis the following factors were independent predictors of dual contraceptive utilization with p-value <0.05, in this study variables associated with dual contraceptive use: have had child, receiving follow up counseling in the last 3 months, starting ART drug and supporting to use dual contraceptive methods. The participants who had no child less likely to utilized dual contraceptive utilization as compared to have had living children with (AOR: 0.19; CI: 0.06, 0.57) & Participants who receiving follow up counseling in the last three months more likely use dual contraceptive methods than those who did not receive follow up counseling in the last three months with (AOR: 6.05; CI: 2.46, 14.83). With regarding to start ARV therapy, starting ART treatment less likely to utilized dual contraceptive methods as compared to did not start ART treatment with (AOR: 0.21; CI: 0.07, 0.64). Supporting to use dual contraceptive utilization more likely to use dual contraceptive utilization than those who did not receive support to use dual contraceptive utilization with (AOR: 6.36; CI: 2.49, 16.28) (Table 5).

Discussion and conclusion

This study attempted to assess dual contraceptive utilization and associated factors among HIV positive reproductive age women. This study revealed that, the use of dual contraceptive utilization of HIV positive women in NEMMH was 28.3% (95% CI: 23.8-33.7%). This implies that less than one-third of the study participants used condom and other contraceptive method simultaneously, which is important in preventing pregnancy and STIs including viral load. This finding of the study showed that the participants reported using dual-contraceptive utilization, and this figure is high when compared to the cross sectional study conducted in Gebretsadik Shawo Hospital on HIV-positive women which is (19.8%) [16]. Reasons for this variation might be due to study setting, age group & time of contraceptive utilization. But, similar with study conducted in Fitch Hospital Oromia region on people living with HIV finding showed that (32%) [19]. And also, study conducted in western Ethiopia on modern contraceptive utilization among reproductive age group female attend ART clinic finding showed that (30%) use dual contraceptive utilization [20].

Factor like have had no child, receiving follow up counseling in the last 3 months, starting ART drug & supporting to use dual contraceptive utilization were significantly associated with dual contraceptive utilization.

In this study HIV positive women who had no living children were 81% less likely to utilized dual contraceptive utilization as compared to who have had living children with (AOR: 0.19; 95% CI: 0.06, 0.57), this finding was similar with study conducted in Fitch Hospital Oromia region on people living with HIV [19].

According this study HIV positive women who receiving follow up counseling in the last three months six times more likely use dual contraceptive than those who did not receive follow up counseling in the last three months with (AOR: 6.05; 95% CI: 2.46, 14.83). This finding was similar with finding from the cross sectional study done in Gebretsadik Shawo Hospital, Ethiopia [16].

Regarding to ARV therapy, those who starting ART treatment were less likely to utilized dual contraceptive methods as compared to who did not start ART treatment with (AOR: 0.21; 95% CI: 0.07, 0.64). This finding was similar with study done gimbie town, western Ethiopia on modern contraceptive utilization among female attend ART clinics [20]. Reasons for non uses of dual contraceptives might be fear of contraception related complication with ART drugs.

Study participants who supporting to use dual contraceptive were 6.36 times more likely to use dual contraceptive than those who did not support to use dual contraceptive (AOR: 6.36; 95% CI: 2.49, 16.28). This finding similar with study finding from the cross sectional study done in Gebretsadik Shawo Hospital, Ethiopia on HIV

positive women [16]. Also, this finding similar with study conducted in Uganda on utilization of family planning services among HIV positive women [21].

According to study conducted in Gebretsadik Shawo Hospital, Bonga, SNNPR, Ethiopia educational status, occupational status, decision with their partners, recent CD4 count, were the significantly associated. But these variables were not significant in this study. Possible reasons for this variation might be due to age group, geographical variations, economic status & patient status /stages/.

Even if study conducted on facility based primary data were used. A set of reliability and validation rules were applied. This study had a few limitations: Cause and effect relation not assured. Dual contraceptive utilization & wealth index were assessed based on self-reported information which is subjected to socially desirability bias and recall bias.

Conclusion

In this study level of dual contraceptive utilization was low. Factors likes have had child, receiving follow up counseling in the last 3 months, starting ART treatment & supporting to use contraceptive were significantly associated with dual contraceptive utilization.

Modern contraceptive method use other than condoms was low (no one use permanent, implant).

Recommendation

Health professionals working in ART clinics should consider and plan to increases number of dual contraceptive users among HIV positive women in NEMMH.

It needs intervention by involving woreda, zonal health office, NEMMH & other concerned stakeholders towards the increment of coverage of family planning in the NEMMH for HIV positive women.

For researchers: Further studies should be conducted in the hospital and outside the hospital setup overcome limitations in this study.

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Declaration

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Ethical approval: Ethical clearance & official letter approved from College of Jimma University School of public health & Health Research Ethical committee (REC). Written consent was obtained from medical director of NEMMH. Verbal informed consent for participation obtained from each study participant. The confidentiality of clients' information was ensured, as names or any identifiers of study participants were not be included in the data sheet. The discussions between the data collectors and the respondents were taken place privately and individually. All individuals and institutions mentioned in this study are asked and they were agreed.

References

1. Wilson TE, Walter E, Fernandez I, Ethier K. Perinatal Guidelines Evaluation Project. Dual contraceptive method use for pregnancy and disease prevention among HIV-infected and HIV-uninfected women: the importance of an event-level focus for promoting safer sexual behaviors. Pub Med Epub. 2003; 30: 809-812.
2. Berer M. Dual protection: more needed than practiced or understood. Reproductive Health Matters. 2006; 14: 162-170.
3. K Ngure, R Heffron, N Mugo, E Irungu, C Celum, et al. Successful increase in contraceptive uptake among Kenyan HIV-1-serodiscordant couples enrolled in an HIV-1 prevention trial. AIDS. 2009; 23: 89-95.
4. Heffron R, E Were, C Celum, Muqo N, Nqure K, et al. A prospective study of contraceptive use among African women in HIV-1 serodiscordant partnerships. Sex Transm Dis. 2010; 37: 621-628.
5. Global Report, UNAIDS, Geneva, Switzerland, report on the Global AIDS Epidemic. Tech. Rep. 2011
6. Singh S, Sedgh G, Hussain R. Unintended pregnancy: worldwide levels, trends, and outcomes. Stud Fam Plann. 2010; 41: 241-250.
7. Reynolds HW, Wilcher R, Cates W. Contraception to prevent HIV-positive births: current contribution and potential cost savings in PEPFAR countries. Sex Transm Infect. 2008; 84: 49-53.
8. Barbara N, Sandra C, Christopher G, Jaya E, J Li. Family planning among people living with HIV in post-conflict Northern Uganda: A mixed methods study. 2011; 5: 1-12.
9. Yusuf A. Institutional responses and the people living with HIV/AIDS in Nigeria: the gaps in sustainable prevention, mitigation, care and support. Eur J Soc Sci. 2010; 17: 453-470.
10. Center, N.f.A.R. accessed on July 7, 2011. Available from: AIDS Resource Center, 2011.
11. Federal Ministry of Health Guidelines for Prevention of Mother-to-Child Transmission of HIV in Ethiopia. 2011: 1-224.
12. Frost JJ. Factors associated with contraceptive choice and inconsistent method use, United States, 2004. Perspect Sex Reprod Health. 2008; 40: 94-104.
13. Warangkana Munsakul, Rangsima L, Boonchai K, Anuvat R, Supannee J, et al. Dual contraceptive method use and pregnancy intention among people living with HIV receiving HIV care at six hospitals in Thailand. Reprod Health. 2016; 13: 8.
14. Atlanta G, USA, CDC. Sexually Transmitted Disease Surveillance 2009, Centers for Disease Control and Prevention. 2010.
15. Myer L, Mathews C, Little F, Dual method use in South Africa. Internet Fam Plann Perspect. 2002; 28: 119-121.
16. Meseret W M, et al. Dual-Contraceptive Method Utilization and Associated Factors among HIV Positive Women Attending Art Clinic in Gebretsadik Shawo Hospital, SNNPR, South West Ethiopia. Women's Health Care. 2015; 4: 6.
17. Dingeta T, Assefa N, Nega A. Patterns of sexual risk behavior among undergraduate university students in Ethiopia: a cross-sectional study. Pan Afr Med J. 2012; 12: 82-86.
18. Hasan A. Patient satisfaction with Maternal and Child Health services among mothers attending the Maternal and Child Health Training Institute In Dhaka, Bangladesh. MAHIDOL. satisfaction with Maternal and Child Health, 2007; 1-66.
19. Abdissa D. Dual Contraceptive Utilization and Associated Factors among People Living with HIV Attending ART Clinic in Fitche Hospital, Ethiopia. Health, Medicine and Nursing. 2015; 20: 25-33.

20. Addisu P, Ewenat G, Gezahegn T, and Fekede A. Modern contraceptive utilization among female ART attendees in health facilities of Gimbie town, West Ethiopia. Reprod Health. 2014; 11: 30.

21. Joseph E J. utilization of family planning services among sexually active people living with hiv/aids in taso tororo. 2010; 11-75.