WINSOME PUBLISHING LLC
ISSN:3064-7096
Maternity and Reproductive Health Sciences

OPEN ACCESS RESEARCH ARTICLE

Male Partner Involvement on Prevention of Mother to Child Transmission of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care at Nifas Silk Lafto Subcity Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C

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Received date: Jan 29,2024: **Accepted date:** Feb 09,2024: **Publisheddate:** Feb 13,2024

Citation: Enyew Belay Getahun (2024), Male Partner Involvement on Prevention of Mother to Child Transmission of HIV and Associated Factors Among Pregnant Mothers Attending Antenatal Care at Nifas Silk Lafto Subcity Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C, **Maternity and Reproductive Health Sciences (MRHS)** 1(1), **DOI:** 10.1875/mrhs.2024/002

Abstract:

Background: -Human immunodeficiency virus (HIV) is a virus that weakens the immune system of an individual exposing the body to several opportunistic infections. Although the main mode of HIV transmission is through unprotected sexual intercourse, a significant number of vertical transmissions also occur from other to child. However, few studies are done on the involvement of Knowledge, attitude and practice of male engagement in Ethiopia, and no study done particularly in the study area

Objective: - To assess Male Partner Involvement on Prevention of Mother to Child Transmission of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care at Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C

Methods and materials: Facility based cross sectional study was conducted from June 1 to June 30 2023, in Nifas silk Lafto sub city Addis Ababa. The data was extracted from 122 Study participants. Descriptive statistics such as frequency, proportion was used to describe the study population. A multivariate logistic regression analysis was carried out to identify independent predictors of Knowledge, attitude and practice of male engagement on prevention of mother to child transmission on HIV and associated factors among pregnant women attending antenatal clinic in Nifas silk and variables with a p-value <0.05 was considered to be statistically significant

Conclusion and recommendation: This study focused on the assessment of male partner involvement on prevention of mother to child transmission of HIV and associated factors among pregnant mothers attending antenatal care at Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia. In this study the overall male partner involvement is high. Those factors like having those participants who had good attitude, participants who have three or less children, partners who are Live together and those who has good knowledge, decreasing number of children by using family planning, Awareness creation on the advantages of male involvement for PMTCT, Live together with partner, Increasing the knowledge of is recommended.

Key Word: Male Partner, Prevention, Transmission, HIV, Pregnant Mothers, Antenatal Care

1. Introduction

Human immunodeficiency virus (HIV) is a virus that weakens the immune system of an individual exposing the body to several opportunistic infections[1].

Globally an estimated 1.3 million women and girls living with HIV become pregnant each year. Due to absence of male engagement in ANC the rate of HIV transmission from a mother living with HIV to her child during pregnancy labor, delivery or breast feeding ranges from 15 to 45 % (Antenatal care (ANC) denotes to the regular medical and nursing care recommended for women during pregnancy[2] . According to 2016 ANC model, the World Health Organization (WHO) recommends a minimum of eight contacts during the antenatal period with vital health systems interference proposed to boost the application and excellence of gynecological care for the women. Fruitful application of the prenatal care package needs contribution of male partners in addition to the females.[3]. Women currently represent the population with the fastest increase in HIV infection rates; in the hardest hit countries of Sub-Saharan Africa, more than 60% of all new HIV infections are occurring in women, infants, and young children[4] .1,400 children under the age of 15 are infected with HIV every day[3] . - In 2015 alone, an estimated 540 000 children were newly infected with HIV, with approximately 90% of these infections occurring in sub-Saharan Africa. Without appropriate care and treatment, more than 50% of newly infected children will die before their second birthday[5] .In Africa, the focus of the epidemic has historically been on women and children [6].

Women are considered to be particularly vulnerable to HIV infection in this setting because of biological factors, their reduced sexual autonomy, and men's sexual power and privilege over them[7] . This understanding has led HIV/ AIDS public health prevention and treatment campaigns to focus on women and children in this setting. As a result, men have received considerably less attention in the epidemic[5] .and receive less targeted HIV prevention and treatment programs [8]. Targeting men in prevention and treatment, however, may have a large impact on mortality, new infections, and the economic impact of HIV/AIDS in Africa. In the wake of the HPTN 052 trial results, demonstrating 96% (95% confidence interval, 73%–99%) efficacy of prevention in discordant couples with earlier ART treatment initiation, engaging greater numbers of men with HIV in treatment could have important prevention benefits for women and girls, and for primary prevention of vertical transmission[9]

Mother-to-Child Transmission (MTCT) - MTCT can occur during pregnancy, birth or through breastfeeding. - As a mode of transmission, MTCT accounts for more than 10% of all new HIV infections globally. - Over 90% of new infections in infants and young children occur through MTCT[10] . Therefore, engagement of male in Anti natal care for PMTC is promote the program to achieve the goal. In the absence of interventions, the risk of MTCT is 20-45%, with the highest rates in populations with prolonged breastfeeding[11]. The risk of MTCT can be reduced to less than 2% with a package of evidence-based interventions including ARV prophylaxis and treatments combined with elective Caesarean section and avoidance of breastfeeding. - Infant feeding patterns are a very important determinant of MTCT[12] . For others using replacement feeding there is obviously no transmission through breastfeeding [13].

In Ethiopia, 13,008 children are infected with HIV annually and evidence shows that most common transmission is via MTCT. So, malepartner contribution is a critical element to enhance PMTCT service [15]. The significant problem encountered in this issue is that, screening pregnant mother only isn't enough to prevent mother to child transmission of HIV. Male partner involvement is neglected in many health facilities and continued to be one of the potential programgaps adversely affecting PMTCT services uptake [16, 17].

To our knowledge, there is a limited scientific data with regards to male partner involvement on prevention of mother to child transmission of HIV and associated factors in such a purely pastoralistareas of Ethiopia. Therefore, the aim of this study was to assess male partner involvement on prevention of mother to child transmission ofHIV and associated factors among mothers attending Antenatal/ prevention of mother to child transmission [18-20].

The aim route of HIV transmission includes sexual contact, blood contact and other to child transmission (MTCT)[14]. MTCT of HIV remains a major public health problem worldwide and it is the most common mode of transmission in children under the age of 15 years, which is vertically transmitted from HIV positive pregnant women to her unborn baby[15].

The prevention of MTCT plans major role in limiting the number of children being infected by HIV without any intervention, 20-45% of infants would be infected, 5-10% during pregnancy, 10-20% during delivery and 5-20% through breast feeding. By implementing PMTCT program, the overall risk can be less than 2% [10].

The risk of acquiring the virus from an infected mother to her baby without any intervention ranges from 15 to 25% in developed countries and 30 to 40% in developing ones which is largely due to breast feeding (BF) practice[16].This figure can be significantly reduced by the use of prevention of PMTCT (PMTCT)services. For instance, use of prophylactic Anti retro viral drug (ARVD) decrease the risk <5%[17].

Great focus on creating awareness and enhancing engagement of male in PMTCT practice as it has great importance particularly in the reduction of childhood and maternal morbidity and mortality which in turn has enormous impacts on socioeconomic development of the country. Capital town like Addis Ababa has issues unaddressed on engagement of male in Anti natal care of PMTCT and has limited research finding conducted before[17]. In this study attention was given to the knowledge, attitude and practice of the community to identify the practical data engagement of male in Antenatal to PMTCT focusing at Nifas silk lafto sub city public health center.

1.3 Significance of the Study

In order to implement the PMTCT strategies in a way that can achieve the desired goal, awareness, attitude of male involvement in ANC of PMTCT and its prevention is essential.

The study will directly benefit the community using N/S/L/S/C health center in different ways. The first and permanent benefit to the community was identify the gaps in terms of Male partner engagement on prevention of mother to child transition on HIV and associated factors among pregnant women attending ante natal care clinic at Nifa silk lafto sub city public health facilities by propose appropriate recommendation for that gaps. In addition to this the

study will identify gaps related to facility and equipment's that can help to provide service at the health center. This study provides significant and practical information regarding PMTCT of HIV and its prevention.

The findings of this study was valuable in designing appropriate PMTCT strategies and it can also be used as a baseline data for concerned bodies working on PMTCT.

2. Literature Review

More than 70% of over 42 million people living with HIV/AIDS (PLWH) worldwide live in sub-Saharan Africa. Of this 17 million are women and 2.5 million are children under the age of 15 years[26]. AIDS has now become the leading cause of death in these countries, and it has further worsened the morbidity and mortality of infants and children [2].

Rate of HIV transmission have varied in different parts of the world, as 12 to 30% in United States and Europe, 25-52% in Africa, Haiti And in Ethiopia it ranges from 29-47% [5] .

The rate of transmission of HIV from pregnant women with HIV to their infants has decreased to less than 1% in industrialized countries through the use of ART drugs for the prevention of vertical transmission combined with elective caesarian section replacement feeding from birth. The decline is associated with reduction in the prevalence of HIV among women attending ANC as a result of intensive HIV preventive effort [26] Despite this success, access to PMTCT service remain unsatisfactory low in any countries (around 2% of the women in the world who quality to PMTCT services are able to access it) this is either they do not know their HIV status or because PMTCT interventions are not available to the[27]

2.1 Knowledge of male engagement in the PMTCT of HIV Antenatal Care

A survey was done in 2019 among pregnant women attending a rural ANC clinics in southern India to investigate HIV related KAP towards infant feeding practice & perceived benefit risks of HIV testing of the total 202 women, 189 Women (94%) had heard of HIV /AIDS&60% of the relatively good knowledge regarding risk factors for HIV transmission however 48% do not know there are means to prevent HIV transmission[27].

In a study conducted on ANC clients of primary health centers in Nigeria, 53.1% have heard about PTCT, 90.7% of respondents agreed on importance of knowing HIV status during pregnancy and 53.3% of respondents have heard about PMTCT of HIV could be prevented by giving ART to infected others[28].

A study conducted in Ghana, revealed, majority of the others agreed that the virus could be transmitted during pregnancy (49%), delivery (91%)and breast feeding(86%).about 40% of participants indicated that PMTCT could not be prevented and another 14% didn't know curtail PMTCT of HIV[26]. Another study in Zimbabwe, among 186 women attending ANC, only 23%consented to VCT a similar result was observed in Botswana [28].

In a study conducted in South Africa 98.5% of the respondents have heard about HIV/AIDS among the 90% were able to mention at least one correct route of transmission. Unsafe sexual practice was the most common Mode of transmission mentioned. Most of the respondents believed that a baby can get HIV from an infected other. Pregnancy was the most frequently mentioned route of PMTCT (40%), fewer than (27%) mentioned BF as a means of transmission only fewer (7%) mentioned that transmission could occur during child birth and delivery. When they were asked whether HIV positive women should BF her baby more than half (68%) said NO. 52% of the respondents reported that they had introduced other ilk before one month and most (82%) reported that they had stopped BF exclusively before their infants were 3 months of age[28].

In Addis Ababa a study done at some where heath center 95.9% of respondents had heard about HIV/AIDS of which about 90.3% mentioned the main routes of transmission and 82.9% knew that PMTCT of HIV is preventable while 49.4% did not know. Only 48.7% knew the protective effect of prophylactic ARV drugs, 41.6% knew that abstinence's from breast feeding can prevent PMTCT and 5.6% knew elective cesarean section (c/s) as a preventive method. 86.6% of the others knew what VCT meant and 79.9% of the have positive attitude towards VCT [29].

A health facility based cross sectional study done on pregnant other attending ANC in Araba inch around 80 % of all others were aware of the potential transmission of HIV infection, of these 213 (55%) thought that there is 100% risk of transmission of every conception. Out of all others interviewed 424 (91%) agreed that HIV is not transmitted by other to child physical contact and 419(86.5%) have the knowledge that HIV is transmitted through breast-feeding .But, the use of ARV drugs in PMTCT was not known to 386 (80%) of the others[30].

A cross-sectional study done in Jimma in 2020 indicated that 38.8% had sufficient knowledge about PMTCT and PMTCT of HIV (41.8%) , and 84% of the others visited health institutions for ANC out of who 35.7% used VCT service during their last pregnancy[31].

A study conducted in wolaita zone , more than the one third of respondents (37.6%) did not know what measures an HIV positive pregnant other could take to avoid PMTCT of HIV: 37.1% said that she could take ART 53.9 % by avoiding breast-feeding and 5.6 % mentioned safe delivery service as a means of PMTCT [32].

In Gambella town, only 4,555 of the participants did not have heard about HIV/AIDS. The commonly reported mode of transmission where unprotected sex (79.8%) and unsafe blood transmission (64.2%) and less than 1% reported that they know MTCT HIV[33]

2.2. Attitude and Practice towards ANC among PMTCT

Good attitude about PMTCT programs is significant for men's involvement; men need information about reproductive health issues and their possible role in these services and how they can access them[34]. It is obvious that males at least need to be aware of ANC/PMTCT programs and their existence if they are expected to participate in these programs[35]. Studies conducted in Rwanda, revealed that, low male participation has been found to be attributed to inadequate information for male on PMTCT as they depend on second handed information from their wives which tends to be inadequate most of the time[36]

2.3. Factors Associated with Male Engagement

2.3.1 Socio Demographic

Association between Socio demographic Characteristics, Reproductive history, associated factors and Practice on Prevention of MTCT of HIV As shown that age, distance from town, educational status, marital status, occupation and family income has strong relation with transmission of HIV from other to child[1]. Religion and ethnics group has also no relation to transmission of

HIV from other to child. Regarding to the reproductive characteristics of women related to their PMTCT practice, percentage analysis was done and has reveal that women with multiple sexual partners were more vulnerable to HIV and were careless to attend ANC as no one will support the or take care of to attend at ANC[6]. Among the reproductive characteristics, women whose husband/partner has testing of HIV during ANC follow up and place of last delivery being institution have lesser vulnerability to HIV. However, parity, gr avidity and number of alive children were found have no relation with practice of prevention of other to child transmission of HIV/AIDS[1].

As head of most family structures, men play a proactive role in guaranteeing happiness of hopeful women. World over, there has been a steady move to more male involvement in pregnancy and childbirth especially in western countries[37]

Male envelopment is predictable at exciting men in all-purpose to support women's care from pregnancy to childbirth, and throughout the postnatal period. The possibility of utilizing maternal care services is higher when they are attended for the appointments by their husbands[37].

Internationally, low male involvement in maternal health care services remains a problem to healthcare providers and policy makers. Since the Cairo International Conference on Population and Development, and the Beijing World Conference for Women, a lot of

Emphasis has been to encourage male involvement in reproductive health including maternal

Health [38]. At the 1994 ICPD in Cairo the participating nations (179 nations) agreed On the action plan, which stated that "Changes in both men's and women's knowledge, Attitudes and behavior are necessary conditions for achieving a harmonious partnership Between men and women on issues of sexuality and reproductive health[4].

2.3.2 Economic factors financial constraints

Financial constraints of clients and health facilities have been identified as impacting health services uptake and male participation[6].

A Ugandan study reported that some health providers charged extra beyond the official ANC fees to bridge their own financial gaps while other authors have identified low health providers' salaries as limiting factors for male involvement[39].

A qualitative study conducted in western Kenya by Recce found that the distance that the male partners have to travel to the clinics for participating in the education, blood tests and 15 counseling, the costs of the transport to the clinics and the amount of time per appointment at the clinic were identified as barriers to male involvement. Access or logistical challenges on the part of men prevented them from participating in ANC[19].

According study reported in Uganda that harsh, critical language directed at Ugandan women from skilled health professionals was a barrier to male participation. Harsh treatment of men by health providers discouraged them from returning or participating in antenatal activities. Furthermore, some providers did not allow men access to clinic settings. Men mentioned the negative attitudes of staff members: "Staff members' lack of common courtesy, their "rough handling" of pregnant women and health-care workers not allowing men to enter the antenatal clinic with their partners" [39]. In fact, men experienced healthcare workers who were reluctant to encourage male attendance in antenatal care at all, felt unwelcome and disrespected and thought it was clear that services were designed without taking their particular needs into consideration. The charging of unofficial user fees was another barrier cited, the lack of integration of services was mentioned as discouraging men from getting tested, since they felt they would be "exposed" through special clinics or opening hours [40]

3. OBJECTIVES

3.1. General objective

- To assess Partner Involvement On Prevention Of Mother To Child Transmission Of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C

3.2 . Specific objectives

To determine Partner Involvement On Prevention Of Mother To Child Transmission Of HIV Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C

To identify Associated Factors of Partner Involvement On Prevention Of Mother To Child Transmission Of HIV Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C

4. Methodology

4.1. Study Area and Period

The study was conducted in Nifas silk Lafto sub city from June15 to 30/2023, Nifas silk Lafto is one of the eleven sub cities in Addis Ababa city administration. It covers an area of 5876.02 hectare. It situated in the south western part of Addis Ababa, bounded from south by Oromia special zone from North West by Kolfe keranio, from east by Bole and Akaki kality and from north by Lideta and Kirkos at present, the sub city divided into 12 woreda

And regarding to the topography Nifas silk Lafto sub city is characterized by moderately steep type of topography with noticeable elevation difference and steep land scape around river gorges. Generally speaking in the sub city, the altitude range from 2074 to 2485 meters above sea level which has a range of 411 meter and Nifas silk Lafto sub city is characterized by moderately steep type of topography with noticeable elevation difference and steep land scape around river gorges. Generally speaking in the sub city, the altitude range from 2074 to 2485 meters above sea level which has a range of 411 meter

In Nifas silk there are 8 health centers according the Nifas silk Lafto sub city office of the total population in 2023 is expected to be 393027 of which 204374 is female and 188652 are males who can child bearing age group between (15_49) among this 21823 are on ANC and In Nifas Silk Lafto Sub City, 303 mothers on ART are on ANC follow-up; among them, 34 are found in woreda 01 health centres, 55 are found in woreda 02 health centres, 24 of which are found in woreda 5 health centres, and 20 are found in woreda 6 health centres. 47 ART patients on ANC are in word's 9 health centres; 19 are found in word's 10 health centres. In word's 11 health centres, there are 47 HIV clients on ANC.

4.2 Study design

An institutional based cross-sectional study design was conducted.

4.3 Source population

All pregnant mothers who was registered for ANC/PMTCT follow up in health facilities PMTCT services

4.4 Study population

All randomly selected pregnant mothers who are attending ANC/PMTCT in Nifas Silk Lafto sub-city health facilities during data collection period was the study population.

4.5 Inclusion and Exclusion criteria

4.5.1 Inclusion criteria:

All pregnant mothers who was registered for ANC/PMTCT follow up in health facilities PMTCT services was included

4.5.2. Exclusion criteria:

Those who are seriously ill was excluded

4.6 Sample size determination

To get the maximum sample size, previous proportion Male partner involvement on Antenatal care/Prevention of Mother to Child transmission (PMTCT) of HIV in Fentale district, Eastern Ethiopia was 14.0%. Therefore, the required sample size of the study was determined by single population proportion formula as the following.

$$n = \frac{(Z\alpha|2)^2 \times p(1-p)}{d^2}$$

Where;

n= sample size required

Z= standard normal distribution taken as 1.96 at 95% confidence level

P= 50% proportion

d= margin of error taken as 5%

$$n = \frac{(1.96)^2 \times 0.14(1-0.14)}{(0.05)^2}$$

n=185

After adding10% non-response rate total sample size was **204**

We use correction formula since the total population is less than 10000.

$$Nf = \frac{n}{1+n/N}$$

Nf=122

4.7 Sampling procedure

In Nifas Silk Sub city, there are 8 health facilities. Nifas Silk Lafto Sub city Office estimates that in 2023, 21823 people was receiving ANC; of these, 303 mothers was receiving ART and ANC follow-up among, woreda 01 health centers, woreda 02 health centers, woreda 5 health centers, and woreda 6 health centers. Four health centers was randomly selected, then sample was drawn from W1HC, W2HC, W5H and W11HC then sample was purposely collected from all male engagement partner in the W1HC, W2HC, W5H and W11HC till the desired sample size was reached.

4.8 Data collection procedures

The data collectors were given training prior to data collection. Data collectors will undergo one-day training on data collection. Two diploma midwives and one health officer staff was involved in data collection; with a supervisor checking the completeness, accuracy, and appropriateness of the data collected every day then the data collectors was supervised on the objectives, benefits of the study, individual's right, informed consent and techniques of the interview.

Data was collected by face-to-face interview using a structured and per-tested questionnaire Structured questionnaire interview formed from validated questionnaires and adapted to local context for the study purposes which is first prepared in English and translated to Amharic then Amharic back to English again to check for its consistency. The interview is conducted after clients got the ANC service and each client interviewed privately and assured on the confidentiality of the interview.

The filled questioners will collected and checked for consistency every day by the investigator.

4.9 Operational definitions

Knowledge: The result for this section was categorized as inadequate knowledgeif the respondents answer below and equal to 5 correct answer for thequestions asked under this section (number of ANC visit, type of ANC visit and mode of MTCT of HIV) and adequate knowledge if the respondents answer correctly for the similar question asked.

4.8 Study variables

4.8.1 Dependent variables

- Male partner involvement on PMTCT

4.8.2 Independent variables:

- Sociology-demographic factors (age, marital status, ethnic group, religion, occupation, educational status, income).

Independent variables for this study was age of mothers and their male partner, Educational status of mothers and their male partner, family income, residence of mother and their male partner, religion, occupation, marital status, previous experience of information sharingabout sexual and reproductive issues, previous knowledge of Male partner about their wife HIV sero status, partner informed about the availability of VCT in the ANC, Couples HIV sero status, cultural issues with regards to accompanying pregnant mother at ANC and Fear of being identified to undergo HCT at ANC clinic with partner.

Male partner involvement: The result was put as good male involvement if there are more than the mean score and categorized as poor male involvement, if there are less than the mean score. All questionshave an equal weight of score. For all items, a score of 1 is given for "Yes" responses for positive answer and 0 (zero) for "No" or "Uncertain" responses for negative.

Male partner support on ANC/PMTCT: The result for this section was put as adequate support if the mothergot two or more supportfrom her male partner listed in the questionnaire and inadequate support if she got less than two or no support from her male partner through-out her pregnancy period[9]..

4.10 Data quality control

Reliability and validity of the study was tested with pretest taking 5% of the source population. This can help to arrange and made adjustment to properly use the tools and increase reliability and validity. Trained Data collectors will deployed with close technical assistance and follow up so that they can conduct and fill all necessary data based on questionnaire distributed.

4.11 Data processing and analysis

First the collected data was checked for incompletion and misfiled. Then the data was cleaned and stored for consistency and entered in to Epinfo version 7.1, and then it was exported to statistical package for social sciences (SPSS) version 26.0 software for analysis. Descriptive statistics like frequency, proportion, mean, and standard deviation was computed to describe study variables in relation to the population. Logistic regression (bivariate and multivariate) was used to determine the effect of independent variables on the outcome variables. Variables found to have a P-value<0.05 in the binary logistic regression was entered/exported into multivariate analysis to identify their independent effects and then strength of association was declared at P value<0.02. Then after, the final results was presented as odds ratio (AOR). Finally, results was compiled and presented using texts, tables, graphs and pie-charts.

4.12 Ethical consideration

Ethical clearance was obtained from Ayer Tena University College departments of public health ethical review board give ethical letter and Permission obtained from N/S/L/S/C health center head followed by Addis Ababa Public health and emergency management directorate.. The purpose of the study was explained for the study participants and written consent was read for each respondent to obtain their agreement. To maintain confidentiality of the subjects' names was not been registered on questionnaire.

Good attitude: those study participants who scored point's equal to and more than the mean score out of the attitude questions [9, 11].

Poor attitude: those study participants who scored points less than the mean score [9, 11].

Good attitude: those study participants who scored points equal to and more than the mean [9, 11].

Poor practice: those study population who scored points less that mean score of practical questions [9, 11].

4.13 Dissemination of the Result

Results of the study disseminated to Ayer Tena Health College departments of public health, N/S/L/S/C health bureau and finally were submitted to Addis Ababa Public health and emergency management directorate.

5. Result

5.1. Socio-Demographic Characteristics of Study Participants

Out of 122 study participant 121 respondents participated in this study making a response rate of 99.18%. The mean age of post-abortion clients participated in the study is 31.10 years with the S.D of ±7.519 years. About 35.5% of the respondents were aged above 35 years. About 82(67.8%) of the study participants have number of children less than or equal to three. Of those participants about 43(35.5%) of respondents have an income of between 1001 up to 3000 Ethiopian birr per month as shown in table 1 below

variables		Frequency	Percent
Age	20-24 years	24	19.8
	25-29 years	35	28.9
	30-34 years	19	15.7
	35 and above years	43	35.5
Marital status	Divorced	14	11.6
	Engaged/ promised for marriage	4	3.3
	Married/ Living together	53	43.8
	Never married	41	33.9
	Widowed	9	7.4
Number of children	≤3 children	82	67.8

	4-7 children	31	25.6
	>7 children	8	6.6
Occupation	Student	23	19.0
	Formal Employment	28	23.2
	Household Work /Housewife	15	12.4
	Self-employment	23	19.0
	Other	22	18.1
	Do not work	10	8.3
Male partner educational states	Not able to read and write	22	18.2
	Able to read and write	60	49.6
	Primary	15	12.4
	Secondary	15	12.4
	Tertiary and above	9	7.4
Family income per month	≤1000ETB	26	21.5
	1001-3000ETB	43	35.5
	3001-5000ETB	24	19.8
	>5001ETB	28	23.1

Table 1: Socio-Demographic Characteristics of Partner Involvement On Prevention Of Mother To Child Transmission Of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C

5.2. Knowledge about Male engagement in ANC of PMTCT of HIV related characteristics of the study participants

Majority of the study participants are multigravida 87(71.9%). About 76(62.8%) of the study participants have good knowledge. Most participants of the study 74(61.2%) have experience of parity in health facilities as shown in the table 2.

variables		**Frequency**	**Percent**
Gravidity	Primigravida	34	28.1
	Multigravida	87	71.9
Parity/institutionally in the previous time	Less than or equal to two	74	61.2
	Greater than two	47	38.8
Recommended Frequency (number) of ANC visit	Twice	11	9.1
	Three times	35	28.9
	Four times	31	25.6
	Eight times	31	24.0
	I don't know	29	12.4

Listed at least four different types of services providedfor pregnant mothers in ANC clinic	Yes listed	110	90.9
	No yet	11	9.1
HIV transmit from mother to child	Yes	106	87.6
	No	15	12.4
Who should go for HCT ANC/PMTCT	Pregnant mother only	56	46.3
	Pregnant mother and her male partner	48	39.7
	I don't know	17	14.0
Transmission of HIV from mother to child can be prevented	Yes	106	87.6
	No	15	12.4

Table 2:knowledge of Partner Involvement On Prevention Of Mother To Child Transmission Of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C

5.3. Perception of pregnant mothers about their male partner involvement in ANC/PMTCT

Regarding the attitude about 67(55.4%) of the study participants have good attitude while 54(44.6%) of the study participants have poor attitude towards male involvement of ante natal care follow ups of RVI pregnant mothers. About sixty nine (57.0%) of the study participants thought that their male partner was wasting time that they could have use for their normal job when they accompanied them during ANC/PMTCT follow-up. On the other hand 73(60.3%) of the study participants think HIV positive women should have a baby as shown in the table 3

.

Variable		Number	Percent
Accompanying their wives during ANC/PMTCT is considered as wasting timethat he could have use for his normal work	Agree	69	57
	Disagree	52	43
Pregnant women can undergo HCT in ANC/PMTCT without permission of hermale partner	Agree	65	53.7
	Disagree	56	46.3
Both pregnant mother and her male partner should undergo HCT in ANC/PMTCT together	Agree	72	59.5
	Disagree	49	40.5
Male partners should accompany their wives during ANC/PMTC	Agree	84	69.4
	Disagree	37	30.6
Do you think HIV positive women should have a baby?	Agree	73	60.3
	Disagree	48	39.7
Do you belief ART importance	Agree	91	75.2
	Disagree	30	24.8
Breast feeding is nutritionally complete	Agree	79	65.3
	Disagree	42	34.7

Table 3: Perception of Partner Involvement On Prevention Of Mother To Child Transmission Of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia,

5.4. Male partner involvement in ANC/PMTCT

Six variables were used to calculate the degree of male partners' engagement in PMTCT. Most participants 102 (84.3%) had an experience of sharing information about sexual and reproductive health like mother to child HIV transmission. And also about 89(72.3%) Couple have Joint plan to visit ANC/PMTCT. All Male partner knew his wife sero status 121(100%) (as shown in the table 4**)**

Variable		Number	Percent
Had an experience of sharing information about sexual and reproductive health like mother to child HIV transmission	Yes	102	84.3
	No	19	15.7
Couple have Joint plan to visit ANC/PMTCT	Yes	88	72.7
	No	33	27.3
Male partner accompanied their wife at ANC/PMTCT	Yes	89	73.6
	No	32	26.4
Male partners counseled and tested for HIV in ANC/MPTCT	Yes	84	69.4
	No	37	30.6
Male partner knew his wife sero status	Yes	121	100
	No	0	0
Got support from her male partner (at least two different kind of supports)	Yes	86	71.1
	No	35	28.9

Table 4: Male partner involvements of Partner On Prevention Of Mother To Child Transmission Of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, 2023

The overall male partner involvement is 85(70.2) (95% CI 66.8 - 74.9) (as shown in figure 3).

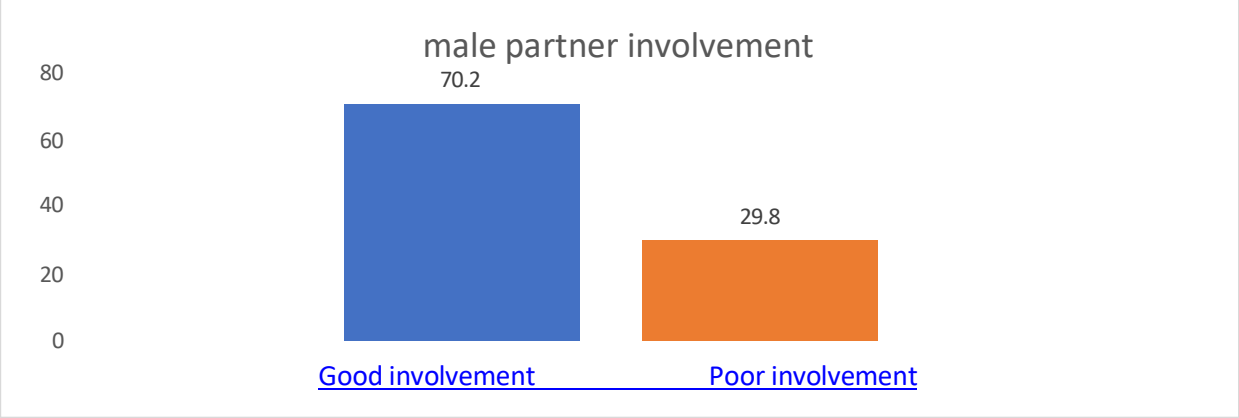

Figure 1: Male partner involvements of Partner On Prevention Of Mother To Child Transmission Of HIV And Associated Factors Among Pregnant Mothers Attending Antenatal Care At Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, 2023

5.5. Bivariate and multivariate analysis of Factors associated with male partner involvement

In this study bivariate analysis, having good attitude (COR= 1.011, CI =1.006-3.888), having number of children less than 3 COR=1.383: CI=1.263-7.855), living together with partner/husbands (COR= 2.203: CI=1.804-5.933), are significant and exported into multivariate analysis in order to control confounders whereas, being multiparous, family income and occupation of the mother/wife not significant with the male partner involvement in PMTCT.

In multivariate analysis, those predictors which showed statistical significance in bivariate analysis and p value less than 0.2 were used to run multivariate analysis. In multivariate analysis, those participants who had good attitude about male partner involvement in PMTCT follow up is about 5 times more involved (AOR= 4.884: CI=2.860-6.898) than with their counter parts. Those participants who have three or less children have about 3.5 times (AOR=3.500: CI=1.265-9.682) more involved in PMTCT follow up as compared to those who have more than three children. Those partners who are Live together are about three times (AOR= 3.029: CI=2.406-9.133) more involved as compared to their counter parts. Regarding the participants knowledge those who has good knowledge is about 2 times more 1.75(1.142-4.608) involved as compared to those who has poor knowledge (as shown in table 5).

Variable		Male partner involvement on PMTCT		95% CI		P-value
		Good involvement	Poor involvement	COR	AOR	
Attitude	Good attitude	38	16	1.011(1.006-3.888) *	4.884(2.860-6.898) **	0.000
	Poor attitude	47	20	1.00	1.00	
Number of children	≤3	61	21	1.383(1.263-7.855)	3.500(1.265-9.682) **	0.016
	4- 7	21	10	4.841(1.064 – 8.787)*	2.010(1.960-6.754)	
	>7	3	5	1.00	1.00	
Male partner Educational states	Not able to read and write	16	6	1.642(0.723-3.731)	6.441(1.921-21.598)	
	Able to read and write	44	16	2.346(1.221-4.508) *	3.216(1.073-9.643) **	
	Primary	9	6	3.453(1.856-7.282)	4.535(2.534-10.424)	
	Secondary	10	5	5.642(2.424-9.535)	4.517(1.921-8.506)	
	Tertiary and above	6	3	1.00	1.00	
Live together with partner	Yes	26	6	2.203(1.804-5.933) *	3.029(2.406-9.133) **	0.000
	No	59	30	1.00	1.00	
Knowledge	Good knowledge	52	24	1.269(1.560-2.878) *	1.75(1.142-4.608) **	0.009
	Poor knowledge	33	12	1.00	1.00	

NB: P-value <0.05**, P-value <0.02* statistically significant

Table 5: Bivariate and multivariate analysis of Factors associated with Male partner involvements On Prevention of Mother to Child Transmission of HIV and Associated Factors among Pregnant Mothers Attending Antenatal Care at Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, 2023

6. Discussion

This study focused on the assessment of male partner involvement on prevention of mother to child transmission of HIV and associated factors among pregnant mothers attending antenatal care at Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia, 2023 G.C. In this study the overall male partner involvement is 85(70.2) (95% CI 66.8 - 74.9). Those factors like having those participants who had good attitude, participants who have three or less children, partners who are Live together and those who has good knowledge

The results of this study are more significant than those of studies done in Uganda [9] and Kenya [21, 22], where the percentage of men engaging in ANC/PMTCT was, respectively, 16%, 15%, and 15%. It is not supported by a study conducted in Mekele, Northern Ethiopia, which discovered that 20% of male partners engaged in ANC/PMTCT programs [6]. The participants in this study came from pastoralist rural areas, which may explain the contradiction between it with the earlier quoted study, which was conducted in a big town (Mekele). This variation may be brought on by variations in population and demographics.

The finding of this study declares that those participants who had good attitude about male partner involvement in PMTCT follow up is about 5 times more involved (AOR= 4.884: CI=2.860-6.898) than with their counter parts. Regarding attitudes towards male involvement in antenatal care follow-ups of RVI expectant women, 67 (55.4%) of survey participants reported good attitudes, while 54 (44.6%) reported poor attitudes. A research on ANC patients at primary health centres in Nigeria found that 53.1% had heard about PTCT, 90.7% felt that it was important to know one's HIV status while pregnant, and 53.3% had heard that PMTCT of HIV might be avoided by administering ART to others who were infected[28]. Which is higher than the finding of this study this difference may be due to the difference in their experience of time.

Regarding the knowledge about 76(62.8%) of the study participants have good knowledge about male partner involvement on PMTCT. those who has good knowledge is about 2 times more 1.75(1.142-4.608) involved as compared to those who has poor knowledge. A cross-sectional study done in Jimma in 2020 indicated that 38.8% had sufficient knowledge about PMTCT and PMTCT of HIV (41.8%) , and 84% of the others visited health institutions for ANC out of who 35.7% used VCT service during their last pregnancy[31]. This may be the difference in the population academic difference

The finding of this study is also higher than the finding of the findings ducted in wolaita zone , more than the one third of respondents (37.6%) did not know what measures an HIV positive pregnant other could take to avoid PMTCT of HIV: 37.1% said that she could take ART 53.9 % by avoiding breast-feeding and 5.6 % mentioned safe delivery service as a means of PMTCT [32].

In addition, those participants who have three or less children have about 3.5 times (AOR=3.500: CI=1.265-9.682) more involved in PMTCT follow up as compared to those who have more than three children. Those partners who are Live together are about three times (AOR= 3.029: CI=2.406-9.133) more involved as compared to their counter parts.

7. Strength and Limitations

Strength of the study

- This is one of the rare studies that only polled pregnant HIV-positive women to assess the degree of male partners' involvement in PMTCT in the study area.

- **Limitation of the study**

- It cannot establish cause and effect relationships. Self-reported questionnaire may be leads to social bias. Qualitative study will be recommended in the future researcher.

8. Conclusions

This study focused on the assessment of male partner involvement on prevention of mother to child transmission of HIV and associated factors among pregnant mothers attending antenatal care at Nifas silk Lafto Sub city Public Health Facilities, Addis Ababa, Ethiopia. In this study the overall male partner involvement is high. Those factors like having those participants who had good attitude, participants who have three or less children, partners who are Live together and those who has good knowledge

9. Recommendations

To Nifas silk Lafto Sub city Public Health Facilities

- Monitoring for awareness creation on male involvement to shift the attitude of the study participants.

- Decreasing number of children by using family planning is recommended

To health facilities and individuals

- Awareness creation on the advantages of male involvement for PMTCT should be recommended

- Live together with partner should be recommended

- Increasing the knowledge of is recommended

Acronyms

AIDS	Acquired Immune- Deficiency syndrome
ANC	Antenatal Care
ART	Anti-Retroviral Therapy
ARV	Anti-Retroviral
ARVDs	Anti-Retroviral Drugs
EBF	Exclusive Breast Feeding
HAART	Highly Active Anti-Retroviral Therapy
HIV	Human immune-deficiency Virus

KAP	Knowledge, Attitude and Practice
MTCT	Mother to Child Transmission
PMTCT	Prevention of mother to Child Transmission
VCT	Voluntary Counseling and Testing

Consent for Publication

Not applicable

Consent for Publication

Not applicable

Acknowledgements

I would like to thank Mr. Getahun Zelalem Ayalew, Mr. Semagn Belay Getahun & Engineer Kebede Nigisti Mekonnen for their constant input during the development of this research thesis. And our heartfelt thanks and appreciation also goes to the study participants involved in this study, to my family and friends who provide with helpful information and essential materials during this thesis preparation **10.**

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