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Factors Influencing Male Involvement in the Prevention of Mother-to-Child Transmission of HIV: The Missing Component in Test and Start in Kumba Health District

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Abstract

Prevention of Mother to child Transmission (PMTCT) programs has been proven to be effective in reducing the risk of HIV transmission from mother to child. Men participation in PMTCT programs is likely to increase women's uptake of PMTCT services. Unfortunately, men involvement in this intervention has been very minimal. Thus, identifying the factors that influences male involvement in the PMTCT programs is imperative. The study was a hospital and community base quantitative cross-sectional survey of 200 pregnant women attending antenatal clinic ANC/PMTCT clinic and 200 men in the Kumba Health District community using structured questionnaire. Ethical clearance was obtained from Faculty of health sciences University of Buea. Each health area in the district represented a stratum. Women were sampled at the clinics and men in the community. Written consent was obtained from all participants. Data was analyzed using SPSS version 26 at 95% confident interval and P<0.05 for statistical significance. Result. 52(13%) of male respondents had attended PMTCT services in the district with their partners which is far below the 80% standard set by the ministry of Public Health of Cameroon. Of the 200 male respondents 94(47%) had heard about PMTCT programs (p=0.001). Knowledge on HIV transmission through breast feeding (P=0.001) were highly significant, likewise level of education (P=0.003) and employment of participants (P=0.001). Despite the successful implementation of the Test and START in Kumba Health District, eliminating MTCT of HIV remains a major challenge.

Keywords. *ANC, ARV, HIV, Male Involvement, MTCT, PMTCT.*

Introduction

The global HIV/AIDS epidemic is manifested by patterns of transmission that are as diverse as the communities burdened by the virus. However, HIV/AIDS is often referred to as one monotone epidemic that is not reflective of the diversity of cultures, infrastructure capabilities and national responses and priorities [1]. HIV transmission is mainly heterosexual in nature and has some disproportionate impacts on reproductive-age women, sexually active men, and children [1]. Prevalence rates for HIV vary substantially by country and region. These regional variations highlight the importance of HIV prevention, care, and treatment programs that are molded to community needs and values and do not solely reflect theoretical dogmas associated with HIV/AIDS programming [2].

Tremendous progress against HIV/AIDS over the last 15 years have inspired a global commitment to end the epidemic by 2030 [1]. Cameroon's HIV/AIDS epidemic is mixed,

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generalized, and concentrated. Adult HIV prevalence in the general population has fallen consistently (7.7% in 1999 to 2.7% in 2020) [3-4]. Women have almost twice the HIV prevalence as men (5.6% vs. 2.9%), due to women's natural greater vulnerability to infection [4].

An estimated 660,000 people are living with HIV in Cameroon (1.8% of the world's burden). HIV prevalence among adults (15 - 49 years) is 4.8%. A total of 48,000 new infections and 34,000 deaths from AIDS are estimated each year [4].

An estimated 66% of pregnant women in need of antiretroviral treatment for the prevention of mother-to-child transmission were receiving treatment [4-5] while more than 54,976 children were living with HIV in the country [1, 4]. More efforts are needed to reduce the HIV prevalence in women by involving male partners in the PMTCT program. Cameroon's mother to child HIV transmission rate is 6.1% at 6 weeks and 25% by 18 months, contributing roughly 7,300 of 9,500 newly infected children annually [4], [6]. Approximately 319,000 children were infected with and/or affected by HIV, representing about 25% of total orphan and vulnerable children (OVC) in Cameroon [4].

General objective**.** To determine the community perceptions towards the involvement of males in the PMTCT programs in Kumba Health District. Specific objectives**:** To determine the role and level of male's involvement in PMTCT programs as perceived by men in the community. To determine men role in PMTCT as perceived by pregnant women attending antenatal clinic (ANC) and those attending IWC clinics with their children, and PMTCT service providers. To determine the factors that influences the involvement of males in the PMTCT program in Kumba Health District.

Problem Statement

In Cameroon, the Ministry of Public Health policy advocates for HIV counseling and testing of male partners in PMTCT settings [7]. Despite this policy, the proportion of male partners who attended antenatal care (ANC) clinics and were tested for HIV in these settings still remains very low at 1.6% far below the 80% target stipulated by the ministry of public health [7]. Such low male partner involvement at ANC, is thought to contribute to poor PMTCT uptake. In spite of the low male involvement, data on the beliefs, needs, priorities, and roles of males in the PMTCT programs are limited and not fully documented. This paucity of information limits the development of appropriate strategies that may enhance male involvement in PMTCT programs, with a potential to increase the safety of both their female spouses and their unborn babies [8].

The Kumba Health District recorded fewer males attending ANC with their pregnant spouse since 2000, although the PMTCT coverage has been reported to be above 90%, as most pregnant women who attend ANC in the District accept counselling and testing for HIV during ANC clinics sessions due to provider-initiated counseling and testing services [8].

Male partner involvement in PMTCT will improve on the elimination of new HIV infections among children and substantially reduce AIDS-related maternal deaths [2]. This will prevent mother to child transmission of HIV during pregnancy, labour and delivery, during breastfeeding [9] and encouraged early infant diagnoses, ART initiation to HIV positive pregnant women, their partners and children and prophylaxis to HIV exposed infant [3].

Limitation

1. Men were hardly seen at home thus, working late in the evening to administer questionnaires was a challenge.
2. Non-disclosure of HIV status by some pregnant women was a limitation of reaching the men.

Materials and Methods

Study Area

This study was conducted in the Kumba Health District in the Southwest region of Cameroon. It is the largest health district in the region with a population of over 314,352 inhabitants. It is situated at the center of the Southwest region and is border in the north by Konye Health District, in the east by Tombel Health District, in the south by Muyuka Health District, in the southwest by Mbonge Health District, in the west by Ekondo Titi Health District and in the northwest by Mundemba Health District.

Study Design

This study employed a quantitative research design that was composed of a community base and a hospital base cross-sectional study to investigate the level of male involvement and factors influencing their involvement in the PMTCT programs. Given the exploratory nature of the study, a convenience sample was recruited for the study for male participants as they were available. A time limited sampling technique was used to select participants. Eligible participants for each component of the study were identified with the assistance of health care providers, peer educators and community relays agents.

Statistical Analysis

The research instrument for the study was a standardized structured questionnaire. The questionnaire consisted of open and close-ended questions. SPSS version 26 was used for data analysis. Coding of the variables was the major data analysis activity that took place after completion of the data collection process. Cross tabulation of variables whereby frequencies of the various variables were computed and presented as numbers and percentages. Bivariate analysis with Pearson chi-squared statistics test and p-value < 0.05 at 95% confidence interval to determine any associations between the independent variables and the main outcome variables of interest which was male involvement in the PMTCT program.

Results

Socio-Economic Factors and Demographic Characteristics

During the study, 200 males and 200 female respondents were interviewed. The age range for men was 21 to 55 years with mean age of 37(S.D = 6.87), while that of the women was 17 to 47 years with mean age of 27(SD = 5.76).

Men who had experience PMTCT services were found more in the 30-39 age group while more female become pregnant at the 20-29 age group. Age showed no statistical significance with male involvement in PMTCT (P>0.05). However, the study found a negative correlation between age and male involvement at the 0.05 significant level (P< 0.03) (Table 1). Older men were less likely to accompany the spouse to ANC clinic but are more likely for both partners to disclose their HIV results than the younger couples (Figure 1).

Table 1. Socio-demographic Characteristic of Participants

Variable		**Total**	**Male**	**Female**	χ^2	**P**
		Nº (%)	**Nº (%)**	**Nº (%)**		
Age Range	Less than 20	29(7.25)	2(1)	27(13.5)	-	-
	20-29	141(35.25)	31(15.5)	110(55)	**5.733**	**0.220**
(Years)	30-39	159(39.75)	102(51)	57(28.5)		
	40-49	64(16)	58(29)	6(3)		
	50-59	7(1.75)	7(3.5)	0		
	Total	**400(100)**	**200(100)**	**200(100)**	-	-

	Wife	249(62.25)	128(64)	121(60.5)	**2.341**	**0.505**
Relationship Status	Girl Friend living together	70(17.5)	35(17.5)	35(17.5)		
	Girl Friend not living together	80(20)	37(18.5)	43(21.5)		
	Divorce	1(0.25)	0	1(0.5)		
	Total	**400(100)**	**200(100)**	**200(100)**	-	-
	Less than 2	96(24)	33(16.5)	63(31.5)	**6.30**	**0.178**
Duration in Relationship	2-6	177(44.25)	94(47)	83(41)		
(Years)	7-11	90(22.5)	47(23.5)	43(21.5)		
	12-16	23(5.75)	16(8)	7(3.5)		
	Greater than 16	14(3.5)	10(5)	4(2)		
	Total	**400(100)**	**200(100)**	**200(100)**	-	-
	No formal education	5(1.25)	2(1)	3(1.5)	**16.215**	**0.003**
Level of Education	Vocational Training	27(6.75)	11(5,5)	16(8)		
	Primary	91(22.75)	47(23.5)	44(22)		
	Secondary	237(59.25)	118(59)	119(59.5)		
	Tertiary	40(10)	22(11)	18(9)		
	Total	**400(100)**	**200(100)**	**200(100)**	-	-
Employment Status	Part time	42(10.5)	28(14)	14(7)	**13.867**	**0.001**
	Full time	84(21)	52(26)	32(16)		
	Not employed	274(68.5)	120(60)	154(77)		
	Total	**400(100)**	**200(100)**	**200(100)**	-	-

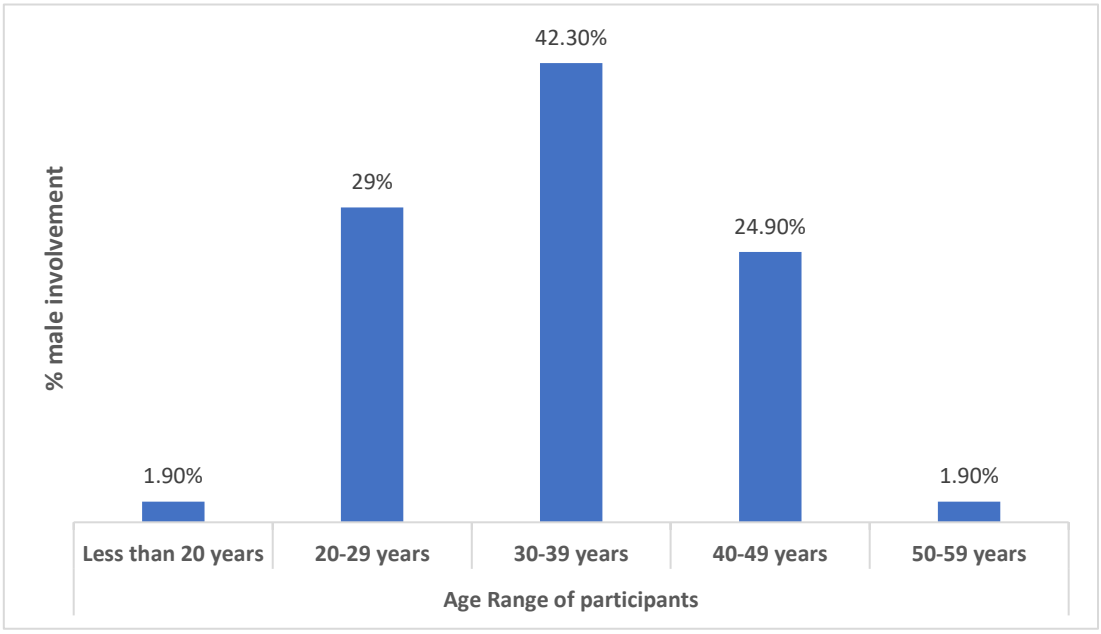

Figure 1. Male Involvement Vs Age Range of participants

Relationship status was not statistically significant with male involvement in PMTCT (P= 0.505). Discussing HIV counseling and testing in young relations was seen as a sign of infidelity. Education was statistically significant (P<0.003) with male involvement. Therefore, the level of education influences male involvement in PMTCT. The higher the education level of men the more they are expose to information on HIV/AID. High unemployment rate (P<.001) was seen among female respondents. Thus, showing a high dependency of the female for economic survival (Table 1).

Knowledge and Awareness of the PMTCT Programme

The findings revealed that 180(90%) of male and 169(84%) of female had knowledge that a woman can be infected with HIV while pregnant as compared to 10(5%) for male and 19(9.5%) females who had no knowledge (Table 2). This means that majority of the male partners have knowledge that a woman can be infected with HIV while pregnant. The study also revealed that some pregnant women though attending ANC clinic 19(9.5%) did not have any knowledge about a pregnant woman acquiring HIV during pregnancy.

172(86%) of male 173(86.5%) of female had knowledge that an HIV positive pregnant woman can transmit the HIV virus to her unborn baby during pregnancy or delivery. This shows a high level of awareness among the male partners on MTCT but only 97(48.5%) of male respondents and 155(77.5%) females knew that an HIV infected woman can transmit the HIV virus to the baby during breastfeeding, this implies lack of awareness of HIV transmission through breastfeeding which may lead to men not supporting their female partners to adhere to safe infant feeding options to prevent HIV infection from mother-to-child. Knowledge on breastfeeding was statistical significance (P < 0.001) with male involvement and correlated at 0.01 significant level (P < 0.001) (Table 2).

The study established that 94(47%) male and 159(79.5%) female respondents had heard about PMTCT, while 106(53%) males and 41(20.5%) females had never heard of PMTCT. This implies that due to lack of knowledge the males will find no reason to accompany their wife to PMTCT/ANC clinic (Table 2).

Table 2. Response on Knowledge and Awareness

Statement	Response	Male		Female	χ^2	**P**
		Total	Nº (%)	Nº (%)		
Can a woman acquire HIV during Pregnancy?	Yes	349(87.25)	180(90)	169(84.5)	3.802	0.149
	No	22(5.5)	10(5)	12(6)		
	I don't know	29(7.25)	10(5)	19(9.5)		
	Total	**400(100)**	**200(100)**	**200(100)**		
Can HIV+ mother transmit HIV during pregnancy/delivery?	Yes	345(86.25)	172(86)	173(86.5)	2.013	0.365
	No	36(9)	14(7)	22(11)		
	I don't know	19(4.75)	14(7)	5(2.5)		
	Total	**400(100)**	**200(100)**	**200(100)**		
Can HIV be transmitted during breastfeeding	Yes	252(63)	97(48.5)	155(77.5)	14.815	0.001
	No	76(19)	52(26)	24(12)		
	I don't know	72(18)	51(25.5)	21(10.5)		
	Total	**400(100)**	**200(100)**	**200(100)**		
Correlation is significant at the 0.01 level (2-tailed) with MI						
Does ART reduce MTCT	Yes	288(72)	141(70.5)	148(74)	5.771	0.056
	No	18(10.5)	18(9.5)	24(12)		

	I don't know	63(15.75)	40(20)	23(14)		
	Total	**400(100)**	**200(100)**	**200(100)**		
Correlation is significant at the 0.05 level (2-tailed) with MI						
Does Caesarean Section reduce MTCT	yes	126(31.5)	43(21.5)	83(41.5)	3.427	0.18
	No	123(30.75)	68(34)	55(27.5)		
	I don't know	151(37.75)	89(44.5)	62(31)		
	Total	**400(100)**	**200(100)**	**200(100)**		
Have you heard about PMTCT	Yes	253(63.25)	94(47)	159(79.5)	11.738	0.001
	No	147(36.75)	106(53)	41(20.5)		
	Total	**400(100)**	**200(100)**	**200(100)**		
Correlation is significant at the 0.01 level (2-tailed)						

Beliefs and Attitudes about the PMTCT

The study established that 108(54%) of male and 163(81.5%) of females agreed, 2(1%) males and 6(3%) females neither agree nor disagree while 90(45%) males and 31(15.5%) females disagree that a pregnant woman should not be tested without the permission of the partner (Table 3). This shows a strong disagreement among the male respondents that a pregnant woman should be tested without the permission of her partner while there is a strong agreement in the female respondents that a pregnant woman can be tested for HIV without the permission of her partner. This disparity in ideas may be due to lack of communication among spouses.

The study found out that 120(60%) male and 149(74.5%) females agreed that a man should accompany his spouse to the ANC / PMTCT clinic. With 72(36%) of men disagreeing to this concept means a high level of disagreement and indecision by the men. This does not support efforts to strengthen male involvement in the PMTCT and may require innovative strategies to overcome the reluctance. A greater proportion of male 108(54%) agreed that a man who accompany his spouse to ANC/PMTCT clinic is bewitched or control by his wife. These negative beliefs will not encourage male involvement in PMTCT. In the order hand female respondents had a contrary view to that of the male. These opposing views leads to poor communication which hinder male involvement in the PMTCT program.

125(62.5%) males and 165(82.5%) females agreed that HIV testing at the PMTCT site should be done as couple. This means that most of the males and females do subscribe to the idea of couple counselling and testing at the PMTCT sites (Table 3). 125(62.5%) of male and 137(68.5%) females agreed that a woman should initiate condom use to her partner (Table 3). This indicates the indecision on the issue of condom use.

Table 3. Reasons why Men do not Accompany their Partners to ANC Clinic

Statement	Response	Total	Male	Female	χ^2	P
			Nº (%)	Nº (%)		
A pregnant woman can be tested for HIV without the permission of her partner	Agree	271(67.75)	108(54)	163(81.5)	2.204	0.332
	Undecided	8(2)	2(1)	6(3)		
	Disagree	121(30.25)	90(45)	31(15.5)		
	Total	400(100)	200(100)	200(100)		
A man should accompany his partner to PMTCT clinic	Agree	269(74)	120(60)	149(74.5)	3.892	0.143
	Undecided	16(4)	8(4)	8(4)		
	Disagree	115(28.75)	72(36)	43(21.5)		

	Total	400(100)	200(100)	200(100)		
A man who accompanies his pregnant wife to PMTCT clinic is being control by his wife	Agree	154(38.5)	108(54)	46(23)	1.380	0.501
	Undecided	21(5.25)	5(2.5)	16(8)		
	Disagree	225(56.25)	87(43.5)	138(69)		
	Total	400(100)	200(100)	200(100)		
It is not necessary for a man to discuss HIV testing with his pregnant wife	Agree	213(53.25)	114(57)	99(49.5)	0.730	0.694
	Undecided	13(3.25)	1(0.5)	12(6)		
	Disagree	174(43.5)	85(42.5)	89(44.5)		
	Total	400(100)	200100)	200(100)		
A man and partner should undergo HIV testing together	Agree	290(72.5)	(125)62.5	165(82.5)	0.064	0.984
	Undecided	8(2)	5(2.5)	3(1.5)		
	Disagree	102(25.5)	70(35)	32(16)		
	Total	400(100)	200(100)	200(100)		
A woman should initiate condom to her partner	Agree	262(65.5)	125(62.5)	137(68.5)	1.814	0.404
	Undecided	14(3.5)	5(2.5)	9(4.5)		
	Disagree	124(31)	70(35)	54(27)		
	Total	400(100)	200(100)	200(100)		
ANC/PMTCT services are for women and children only	Agree	182(45.5)	90(45)	92(46)	5.259	0.072
	Undecided	11(2.75)	3(1.5)	8(4)		
	Disagree	207(51.75)	107(53.3)	100(50)		
	Total	400(100)	200(100)	200(100)		
A pregnant woman tested HIV+ is unfaithful to her partner	Agree	161(40.25)	98(49)	63(31.5)	4.890	0.087
	Undecided	17(4.25)	7(3.5)	10(5)		
	Disagree	222(55.5)	95(47.5)	127(63.5)		
	Total	400(100)	200(100)	200(100)		

164(82%) of men and 184(92%) of female reported that they have never accompanied their spouse to ANC clinic (Table 4). This show a big gap to be closed in order to reduce MTCT.

Table 4. Accompanying Partner to ANC Clinic

Statement	Response	Total	Male	Female
			Nº (%)	Nº (%)
Accompany partner to ANC	Yes	52(13)	36(18)	16(8)
	No	348(87)	164(82)	184(92)
Total		400(100)	200(100)	200(100)

Reasons for Non-involvement of Male Partners in PMTCT

The study established that 53(32.5%) of male respondents who have not accompanied their partners to PMTCT clinics and 47(25.5%) of female respondents whose male partners has not accompanied them to ANC said cultural reasons was the main factor that influences their non-involvement (Table 5). They feel society would not approve of such behaviour. This may imply that they are still living in an outdated era that may not facilitate HIV prevention.

Fear of the unknown was indicated as one of the reasons for non-involvement in the PMTCT program as 136(83%) male and 146(79.3%) female respondents indicated fear of being tested HIV positive as barrier for male involvement in

the program (Table 5). These findings may mean that men do not weigh the risk between HIV infection and HIV testing.

Employment and Lack of time was expressed by 156(95%) male and 174(94.5%) female respondents as factors that hinder male involvement in the PMTCT program (Table 5). Male attitude and lack of knowledge was also factors that are barriers to male involvement in the PMTCT program.

Table 5. Factors Influencing Male Involvement

Reasons for not accompanying partner	Response	Total	Male	Female	χ^2	P
		Nº (%)	Nº (%)	Nº (%)		
Cultural issues	Yes	100(28.7)	53(32.3)	47(25.5)	10.778	0.005
	No	248(71.3)	111(67.7)	137(74.5)		
	Total	348(100)	164(100)	184(100)		
Fear	Yes	282(81)	136(83)	146(79.3)	9.562	0.008
	No	66(19)	28(17)	38(20.7)		
	Total	348(100)	164(100)	184(100)		
Employment	Yes	58(16.7)	22(13.4)	36(19.6)	11.196	0.004
	No	290(83.3)	142(86.6)	148(80.4)		
	Total	348(100)	164(100)	184(100)		
Lack of time	Yes	330(94.8)	156(95)	174(94.6)	8.896	0.012
	No	18(5.2)	8(5)	10(5.4)		
	Total	348(100)	164(100)	184(100)		
Attitude	Yes	20(5.7)	20(12.2)	81(44)	51.340	0.001
	No	144(94.3)	144(87.8)	103(56)		
	Total	348(100)	164(100)	184(100)		
Lack of knowledge	Yes	319(91.7)	156(95)	163(88.6)	13.673	0.001
	No	29(8.2)	8(5)	21(11.4)		
	Total	348(100)	164(100)	184(100)		
Distance from facility	Yes	76(21.8)	56(34)	20(10.9)	36.274	0.001
	No	272(78.2)	108(66)	164(89.1)		
	Total	348 (100)	164(100)	184(100)		
All the above variables were negatively correlated at 0.01 significant level with MI						

Disclosure

Disclosure of partner HIV result was found to be a factor that influences male involvement in the PMTCT programs. Since pregnant women can attend ANC clinics where HIV testing is routine through Provider initiated counseling and testing (PITC) services, female disclosure of HIV result to their partners will encourage male involvement in the programs. 43(40%) of males and 60(30.6%) of females who had undergone HIV testing services were yet to disclose their HIV status to their partners. Most of these were people with HIV positive results while those with HIV negative result easily share their status with their partners (Table 6).

Table 6. Disclosure of HIV Status to Partner

Statement	Response	Total	Male	Female	χ^2	P
			N° (%)	N° (%)		
Have discussed HIV testing with partner	Yes	241(60.25)	74(37)	167(83.5)	20.475	0.001
	No	159(39.75)	126(63)	33(16.5)		
	Total	400(100)	200(100)	200(100)		
Correlation is significant at 0.01 level (2-tailed)						
Discussed ways of preventing HIV with Partner	Yes	179(58.9)	59(29.5)	120(60)	24.287	0.001
	No	125(41.1)	49(70.5)	76(40)		
	Total	304(100)	108(100)	196(100)		
Correlation is significant at 0.01 level (2-tailed)						
Disclosure of HIV status	Yes	201(66.1)	65(60)	136(69.4)	22.269	0.001
	No	103(33.9)	43(40)	60(30.6)		
	Total	304(100)	108(100)	196(100)		
Correlation is significant at 0.01 level (2-tailed) with MI						

Discussion

Demographic and Socio-economic Factors

The study indicated that men experienced PMTCT services within the age range 30-39 years (when their partners become pregnant), while most women become pregnant and enrolled in ANC clinic at the age range 20-29 years. Age was not statistically significant with male involvement and therefore does not influence male involvement in PMTCT. This finding is consistent with studies in Zimbabwe, Tanzania, Ethiopia, and Nigeria [10-13]. However, this finding is contrary to Nkuoh's in Cameroon finding which give age as being significant to male involvement in PMTCT [14].

The study indicated statistically significant with the following demographic variables, level of education, employment status and source of employment with male involvement. These agree with findings of other studies conducted in Zambia, Malawi, and Uganda [15-17] that found association between male involvement and educational level. The findings of all these studies revealed that men with higher level of education are twice more likely to get involved in the PMTCT programs than their counterparts with lesser education level. The educated ones are found to be exposed to technology like the Internet and media that are changing their perceptions positively. Employment status and source of employment was also in agreement with studies conducted in Ethiopia, Zambia and Cameroon [15, 18-19]. These studies reported that self-employed men, businessmen and farmers are less likely to get involved in the PMTCT than civil service workers and employed men in the private sectors are four times more likely to get involved in the PMTCT programs than their unemployed counterparts.

It is interesting to note that this study did not find any association between male involvement and residence, contrary to the studies in Ethiopia and Zambia which revealed that residents of rural areas have lower access to all forms of media than their urban counterparts [20].

Knowledge and Awareness of Male Partners on the PMTCT

Knowledge and awareness about the PMTCT programs are important components for men to be involved in the PMTCT programs as lack of adequate knowledge about the programs may hinder men from taking effective action to reduce MTCT. Men need information about the PMTCT programs and their possible role in these services and how they can access it [21].

The study established that most of the male respondents had little knowledge about the PMTCT programs and few did not know that an HIV infected pregnant woman can transmit the HIV virus to her unborn child during pregnancy and delivery. This is consistent with studies conducted by Nyondo [9] in Malawi and studies in Tanzania and Malawi [22-23] but contrary to Matongo [15] founding in Uganda. Knowing the importance of the PMTCT services to the lives of their partners and unborn child will encourage the men to be involve in these services. Men in the study were found not to be aware of the importance of PMTCT services to their families. These findings correlate with a study conducted in Rundu, North-East Namibia and other studies conducted in other sub-Sahara African countries such as Zambia, Malawi, Kenya, Uganda, Ethiopia, and Cameroon [7, 24-26]. Well-informed men are likely to participate positively in the decision making for the wellbeing of their families and will be more motivated to undergo HIV testing and are more likely to adopt low-risk behaviour and increase mutual support.

Beliefs and Attitudes about the PMTCT Program

Beliefs and attitudes are determinant factors in male involvement in health programs. Findings from this study revealed that most of the respondents did believe that a man should accompany his pregnant partner for ANC/PMTCT services. This is not done since men perceive their partners as a burden and their demand for accompaniment to seek health services as an infringement of their rights and a lack of respect for them. Fear of accusation of infidelity and being control be their partners were also some of the beliefs and attitudes that stopped men from accompanying their partners to ANC clinics. This agrees with Morfaw [24] presentation at the African forum in Uganda.

The study found out that half of the male respondents believed that the HIV status of their female partners indirectly confirmed their HIV status. This finding may have indirectly acted as a factor that hindered male involvement in ANC/PMTCT services. This finding concurs with a study conducted in South Africa, Ethiopia, and Tanzania [28-30] which concluded that men belief that HIV test results of a partners is a proxy to their HIV status. The studies confirmed men belief that antenatal care services are programmatically a woman's domain and exclusively for women and that only weak men, controlled by the partners, visit such clinics. These findings correlated with studies conducted in Uganda, South Africa, Malawi, Ethiopia, and Tanzania [20, 24, 28, 31, 32].

Cultural and Distance to Health Facility

All cultures have values that give meaning and provide guidance to humans as they interact with the social world. These values and beliefs influence men and women living in the same community about what are considered appropriate behaviours. The issue of being seen in the company of a pregnant woman in the health facility is against some cultures. In the study, some men believed cultural barriers hinder men non-involvement in PMTCT services.

This finding was consistent with those in Kenya and Malawi [22, 32-33] which reported that the perception of male gender inequality is a barrier to male involvement in PMTCT. Distance to health facilities and poverty was also a contributing factor to non-involvement in the PMTCT program. The study agrees with findings in Malawi, South Africa and Zambia [22, 34].

Projections for Further Research

There is a need to do comprehensive research on male involvement, looking at different settings to compare disparities in the private and public health facilities. There is also a need to do an in-depth assessment of women's experiences and disclosure to their partners when tested HIV-positive at the ANC. Another possible research area is the impact of religious on male involvement in the PMTCT programs.

Equation

Sample Size Determination

Since the proportion of men and women with appropriate knowledge of PMTCT in the district was not known; by default, a 50% proportion was considered. A representative sample for proportion was computed using Cochran equation [83].

$$n = \frac{Z^2 P\ (1-P)}{d^2}\ [35]$$

Where n = sample size

Z = standard normal variant (1.96) at 95% confidence interval.

P = a rough approximation to the proportion (50%) = 0.5.

d= sampling error that can be tolerated (5%) = 0.05.

$$n = \frac{(1.96)^2(0.5)(1-0.5)}{(0.05)^2} = 385\ Participants$$

Conclusion

The importance of male involvement in the PMTCT programs, in a developing country such as Cameroon, cannot be overemphasized. The poor male involvement in the PMTCT of 13%, which was documented in this study among male partners in the district, indicates the need for strategies to be designed to address the situation. The study concluded that male partners are not aware of the importance of the PMTCT programs, hence their knowledge on how HIV is transmitted to the baby during pregnancy, labour and delivery is also limited. Poor male involvement in the PMTCT programs in the district is associated with education level, source of employment, lack of knowledge and awareness, as well as negative beliefs and attitudes by male partners about the PMTCT programs. This study also identified specific areas for intervention and calls for the involvement of other stakeholders, for the successful outcome of the PMTCT programs in the district. Men are decision makers in many societies and families in sub-Saharan Africa, they make important decisions that affect the health of their family members positively or negatively. Lack of male involvement implies low uptake of PMTCT interventions and increase in mother-to-child transmission of HIV. Therefore, the need for innovative strategies that do not only consider male partners as mere supporters of women at PMTCT facilities but rather as active participants. Such strategies should also incorporate ways of changing the mind set of men perceiving motherhood and the PMTCT as women's domain but rather as a collective responsibility.

Conflict of Interest

The author declares that there is no conflict of interest.

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