

Knowledge and coverage of Prevention of Mother to Child Transmission (PMTCT) in Eritrea.

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Abstract

Objective: To explore the level of knowledge on prevention of mother to child transmission of HIV in both men 15-54 years and women 15-49 years of age.

Methods: A community-based survey was conducted in October-November 2005 in 45 sub zones of Eritrea. Data were collected using the Lot Quality Assurance Sampling (LQAS) method.

Results: Although 81.8% of men 15-54 and 75.5% of women 15-49 years of age know that HIV can be transmitted from mother to the child, only 33.7 % of men and 26% of women know that the risk of transmission can be reduced. The result varies across zones and various socio-demographic characteristics.

Conclusion: Although there is high awareness on the risk of HIV transmission from the mother to the child, the knowledge that the risk can be reduced is very low and extensive education for both men and women is recommended.

Key words: PMTCT, LQAS

Introduction:

The HAMSET (HIV/AIDS, Malaria, STIs and TB) control project, which is a five-year health project of the Government of Eritrea, was launched in 2001. The objective of the project was to reduce the morbidity and mortality of the Eritrean population due to the above mentioned diseases through an increase in utilization of quality, effective and efficient health services for HAMSET prevention, diagnosis and treatment, supported by health practices¹. The project was completed in March 2006.

One of the main activities of the project was to conduct various Information, Education and Communication (IEC) and Behavioural Change Communication (BCC) Strategy activities on prevention of HIV to various population sub groups. Prevention of transmission of HIV from mother to the child was also one of the primary activities of the project. As an evaluation for the HAMSET project, a nation-wide assessment of the knowledge, practices and coverage (KPC) of adult men and women was conducted on various HIV issues such as voluntary counseling and testing (VCT), prevention of mother to child transmission (PMTCT), care and STI health seeking behaviour. This paper will focus on PMTCT.

According the global estimates of HIV and AIDS as of end of 2003 the number of children under 15 living with HIV was 2.1 million. In 2003 there were 630,000 new HIV infections and 490,000 deaths in children under 15 years old². According to the 2003 round of HIV surveillance in antenatal attendants conducted by the National AIDS & Tuberculosis Control Division (MOH) the national HIV prevalence was 2.4 %³. The global estimated percentage of infants born to HIV infected mothers in 2005 was 26 %⁴. In Eritrea with the estimated number of 120,000 live births and using the global estimates of HIV vertical transmission of 26% the number of infants expected to be born infected with HIV every year are about 750 infants. The mother to child transmission can be reduced by 37-50% using short course antiretrovirals

⁵ and optimizing obstetrics practices⁶. In order to use such preventive measures knowledge of women and men on these aspects is of paramount importance.

In order to assess the knowledge level of the different population groups the Lot Quality Assurance Sampling (LQAS) methodology was used. The LQAS method was developed in the 1920s as an industrial quality control method to assess batch production of goods⁷. In the last few years it was applied to assess health programs. So far it was applied to assess health programs such as immunization coverage, women's health issues such as family planning, oral rehydration therapy use and disease incidence⁷. To apply LQAS in health programs, the program catchment's area was divided into supervision areas of varying sizes, from each of which a random sample of 19 respondents were selected. In the case of Eritrea supervision area (SA) corresponds to a sub zone. A sub zone is an administrative area that is comprised of 2-10 kebabis and in return kebabis are formed by a group of villages. In Eritrea there are 57 sub zones.

Methods:

A nation wide community based survey was conducted in October to November 2005 among women 15-49 years, men 15-54 years of age and two other population groups using the Lot Quality Assurance Sampling (LQAS) methodology.

The survey took place in all six zones and 45 sub zones of the country. Due to varying size of the population in each sub zone, probability sample proportional to the population size (PPS) was used to select these 45 sub zones. Based on the total population of each Kebabi, 19 respondents from every population group were randomly selected for each sub zone (Table 1).

Table 1: Sampled subzones, LQAS survey, 2005

Zone	Sampled Sub zones	C o m p l e t e d questionnaires
Maakel	6	114
Northern Red Sea	9	170
Southern Red Sea	4	76
Debub	9	171
Anseba	8	152
Gash Barka	9	171
TOTAL	45	854

Separate structured questionnaires with similar questions were used to collect information from each of the two target groups: women 15-49 years and men 15-54 years. The questionnaires were prepared in English and then translated into Tigrinya and back translated into English for verification. The questionnaires were pre-tested in villages outside the selected sites. A total of 854 women and equal number of men were interviewed with 99.9% response rate.

The data collected was first analyzed manually and later data entry and analysis was performed using the software CPro 3.0 and SPSS respectively by CTMRE Consultancy Service.

Results

Socio-demographic characteristics: Of the total 1707 the respondents were evenly distributed by gender with 50% women and the rest men. The distribution in the different age groups and zones is almost proportional. There is marked difference in the proportion of marital status and education. In this study 73.9% of the respondents were married while 20.5% were single/never married. The rest were divorced, separated or widowed. In the education level 41% were illiterate, 1.5% with higher education while the rest had elementary and secondary education (Table 2).

Respondents were asked if HIV can be transmitted from mother to the child. Those who answered yes to the question were again asked when the virus is transmitted from mother to the child and if the risk of transmission can be reduced (Tables 3 and 4).

Knowledge by sex: The majority of men (81.8%) and women (75.5 %) know the answer to the general question that asks whether HIV can be transmitted from the mother to the child. Even though they knew that HIV could be transmitted from mother to the child their response to the timing of transmission varied (Table 3).

Timing of transmission: On timing of transmission 48%, 52.6% and 63.8% of men know that HIV transmission was during pregnancy, delivery and breast feeding respectively while in women the proportion was 48.8%, 41.9% and 65.7% respectively. The knowledge of HIV transmission during breast feeding was higher in both sexes when compared with transmission during pregnancy and delivery. On average one out of ten men and one out of fifteen women did not know when HIV was transmitted to the child.

Knowledge by Zone: As shown in table 4, 91.2%, 75% and 63.2% of women of child bearing age in zones Debub, Anseba and Southern Red Sea Zone respectively knew about maternal HIV transmission. Similarly in men 94% from Debub, 80.9% from Anseba and 70.6% from Northern Red Sea Zone knew about the transmission. The findings in this survey showed that coverage of knowledge was higher in Debub followed by Maakel in both men and women. Relatively the lowest knowledge coverage was noticed for women in Gash Barka Zone and for men in Northern Red Sea Zone.

Knowledge by age group: The majority of men (89%) in the age group 30-34 knew about HIV transmission followed by the age group 35-39 (85.7%) and 25-29(84.8%). On the other hand more women in the age group 45-49(84.8%) knew about mother to child transmission followed by the age group 25-29 (77.7%) and 15-19 (74.6%). It was noted that in men as the age increased knowledge decreased while for women the reverse is true. Higher knowledge in women of old age might be helpful when young mothers request the advice of their seniors for any decision they took regarding counseling, testing and feeding options.

Knowledge by marital status: The majority of married men (80.1%) and women (75.6%) knew about HIV transmission.

Table 2: Socio-demographic profile of Respondents, 2005, Eritrea

	Male	Female	Total
Zone			
Gash Barka	171(50.0)	171(50.0)	342(20.0)
Anseba	152(50.0)	152(50.0)	304(17.8)
Debub	171(50.0)	171(50.0)	342(20.0)
Maakel	114(50.0)	114(50.0)	228(13.3)
Northern Red Sea	170(50.0)	170(50.0)	340(19.9)
Southern Red Sea	76(50.0)	76(50.0)	152(8.9)
Age group			
15-19	176(56.8)	134(43.2)	310(18.2)
20-24	81(34.3)	155(65.7)	236(13.9)
25-29	79(32.2)	166(67.8)	245(14.4)
30-34	73(30.9)	163(69.1)	236(13.9)
35-39	98(43.0)	130(57.0)	228(13.4)
40-44	116(63.7)	66(36.3)	182(10.7)
45-49	109(76.8)	33(23.2)	142(8.4)
50-54	121(100.0)	0	121(7.1)
Marital status			
Married	569(45.1)	693(54.9)	1262(73.9)
Single/never married	266(76.0)	84(24.0)	350(20.5)
Divorced	10(20.4)	39(79.6)	49(2.9)
Widowed	3(10.0)	27(90.0)	30(1.8)
Separated	5(31.3)	11(68.8)	16(0.9)
Education level			
No formal school	272(38.9)	428(61.1)	700(41.0)
Primary/elementary	271(50.7)	263(49.3)	534(31.3)
Middle	136(62.4)	82(37.6)	218(12.8)
Secondary	153(66.5)	77(33.5)	230(13.5)
Higher	21(84.0)	4(16.0)	25(1.5)

Note: Figures in parenthesis are percentages

Table 3: Percent distribution of women and men who know MTCT¹, timing of transmission and risk reduction, 2005

Sex	Know Mother to child transmission	Know that HIV can be transmitted during:	Know about MTCT risk reduction	Total					
		95% CI	Number	Pregnancy	Delivery	Breast-feeding	Do n't know		
Women	75.8	72.6-78.4	647	48.8	41.9	65.7	9.4	26.1	85.4
Men	81.8	79.4-84.5	698	48.0	52.6	63.8	6.3	33.7	85.3

Knowledge by education level: Education level was important factor in determining knowledge of people on different subjects. In this survey majority of women and men respondents who completed primary and secondary education knew about maternal HIV transmission when compared with people who do not have formal education. In this study it was noted that as the level of education increases the level of knowledge also increased.

Knowledge of mother to child transmission risk reduction: According to the result in table 4, only one in three (33.7%) of the men and one in four (26.5%) of women know that the risk of HIV transmission to the unborn child could have been reduced. The low knowledge level of risk reduction was similar in all the age groups and the various education levels.

Table 4: Percent distribution of women 15-49 and men 15-54 who know MTCT and MTCT risk reduction, 2005, Eritrea

BACKGROUND	Know mother to child transmission		Know about MTCT risk reduction	
	Women	Men	Women	Men
ZONE				
Gash Barka	69	79.5	17.5	33.1
Anseba	75	80.9	21.1	26.8
Debub	91.2	94.2	31.4	37.3
Maekel	86.8	83.3	46.5	52.6
Northern Red Sea	64.7	70.6	17.3	26.7
Southern Red Sea	63.2	84.2	20.8	23.4
AGE GROUP				
15-19	74.6	84.1	27	35.1
20-24	80	85.2	28.8	36.2
25-29	77.7	84.8	26.9	44.8
30-34	73.6	89	25.8	33.8

35-39	70.8	85.7	23.9	39.3
40-44	71.2	75.9	21.3	23.9
45-49	84.8	78.9	14.3	26.7
50-49		75.2		30.8
MARITAL STATUS				
Married	75.6	80.1	25.5	32
Widowed	70.4	100	15.8	0
Divorced	71.8	60	25	16.7
Separated	81.8	80	33.3	50
Single/never married	77.4	86.1	33.3	37.6
LEVEL OF EDUCATION				
No formal school	65	69.1	16.1	14.9
Primary/elementary	84.4	85.6	23.4	29.3
Middle	87.8	85.3	43.8	44
Secondary	90.9	93.5	52.9	53.1
Higher	75	90.5	100	63.2

Discussion:

This community based study demonstrated that knowledge on the risk of HIV transmission from mother to the unborn child was indeed very high in both men and women. This confirmed the findings of Eritrean Demographic and Health Survey (DHS) of 2005 that showed high knowledge of mother to child transmission among women of child bearing age⁸. A similar study that was conducted in Uganda⁹ using similar methodology demonstrated similar findings of higher knowledge on MTCT among men and women. This high knowledge will enable men to practice safe sex practices in order to prevent HIV from passing to the unborn child.

HIV is transmitted from mother to the unborn child before, during and after delivery⁸ with different rates depending on the specific interventions available. Knowledge of the timing of pregnancy is helpful in executing the necessary prevention activities. In this study even though both sexes have high knowledge on the general MTCT, the knowledge of timing was low for transmission during pregnancy and labour. Out of the total male respondents about 50% knew that HIV can be transmitted during pregnancy, delivery and by breast feeding. The rate was also low for women about 50% of whom knew about transmission during pregnancy and labour with slightly higher rate during breast feeding.

This low rate of knowledge for timing of transmission meant fewer women would have been able to access services for the secondary prevention of HIV transmission that were available for them at health facilities. The options that were available include short course antiretroviral therapy and safe intra-partum delivery procedures. In addition low level knowledge of the men meant the husbands might not have supported their women to take the necessary measures such as VCT during pregnancy and delivery by skilled attendants at health facility.

The better rate of knowledge for the transmission of HIV during breast feeding was helpful when consulting

HIV positive mothers on the feeding options available for them that included either exclusive breast feeding for the first six months or formula feeding based on the acceptability, affordability, feasibility, availability and sustainability (AAFAS) principle. Similar improved knowledge of husbands might have been helpful for the men to support their women when deciding the right feeding option for their children.

Having knowledge on the transmission and its timing did not guarantee that the women and their husbands would have accessed the services available for them. Unless women and their husbands know that the risk of HIV transmission to the child could have reduced by different interventions they might not have gone to health services either to know their status or receive available services. This study demonstrated that just a third of the men and a quarter of the women knew that the risk of MTCT could have been reduced. This could be the main reason that few mothers of children aged 0-11 months accessed the health facilities for voluntary counseling and testing (LQAS Study, 2005, Unpublished data). In the same study only 12 % of mothers of children 0-11 months who attended ANC services were tested for HIV. This low result could be due to either inadequate knowledge of the mothers on the possibility of transmission reduction or unavailability of the services to the pregnant mothers. The same study demonstrated that very less than one fifth of ANC attendants of mothers of children 0-11 months were counseled during their visit to take an HIV test for PMTCT purposes.

Conclusion:

This study has demonstrated that there was high level of knowledge on mother to child transmission of HIV through out the country and across various population groups and education levels. On the other hand it also revealed the existing knowledge gap in the possibility of the risk reduction. In order to prevent the devastating effect of maternal HIV transmission strong and extensive IEC and BCC activities are needed to both men and women.

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