

Understanding HIV Positive Women's Experiences with Antenatal Care in Rural Maputo Province, Mozambique

Carlos Eduardo Cuinhane^{1,2}, Gily Coene³, Kristien Roelens⁴ and Christophe Vanroelen⁵

¹Department of Sociology, Eduardo Mondlane University, Maputo, Mozambique

²Vrije Universiteit Brussel (Brussels University), RHEA, Centre for Research in Gender, Diversity and Intersectionality, Brussels, Belgium

³Department of Philosophy and Ethics, Vrije Universiteit Brussel (Brussels University), RHEA, Centre for Research in Gender and Diversity, Brussels, Belgium

⁴Department of Obstetrics & Gynaecology, Faculty of Medicine & Health Sciences, Ghent University, Ghent University Hospital, Belgium

⁵Department of Sociology, Vrije Universiteit Brussel (Brussels University), Brussels, Belgium

*Corresponding author: Carlos Eduardo Cuinhane, Vrije Universiteit Brussel (Brussels University), RHEA - Centre for Research in Gender, Diversity and Intersectionality, Brussels, Belgium, Tel: (+258) 824080890; Fax: (+258) 21485402; E-mail: c.cuinhane@hotmail.com

Received date: July 20, 2016; Accepted date: Aug 22, 2016; Published date: Sep 02, 2016

Copyright: © 2016 Cuinhane CE, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Introduction: Motherhood among women living with HIV/AIDS is considered perilous in most of the countries of Sub-Saharan Africa.

Objectives: To analyse women's compliance to biomedical norms recommended to reduce the risk of mother-to-child transmission of HIV during pregnancy and childbirth in the rural province of Maputo.

Methodology: A qualitative study was performed, consisting of in-depth interviews and focus group discussions with women who had become mothers, in-depth interviews with community health workers and semi-structured interviews with mother and child health nurses. We used Bourdieu's theory of practice as a guiding framework to analyse the data.

Results: Our findings showed that participants complied with some recommended biomedical norms to reduce the risk of mother-to-child transmission of HIV, such as subsequent antenatal visits, adherence to antiretroviral therapy and childbirth at the health facility. However, they did not comply with the timing of the first antenatal care, use of modern health care system to treat illness episodes and use of condom during pregnancy.

Conclusion: The study results suggest that compliance to the recommended prevention of mother-to-child transmission is the result of complex interactions in which participants rely on knowledge and resources within both the family and community and the modern health care system. Awareness among health care workers of pregnant women's perspectives as well as an adequate education about the timing of the first antenatal care and the benefits of antenatal care in both the health facility and community could thus enable to improve prevention of mother-to-child transmission of HIV.

Keywords: Antenatal care; Experience of pregnancy; HIV positive women; Mozambique

Introduction

The journey to motherhood among pregnant women living with HIV/AIDS is considered perilous in most of the countries of Sub-Saharan Africa. Carrying a pregnancy implies to follow biomedical norms recommended by campaigns on prevention of mother-to-child transmission (PMTCT) of HIV. These recommendations consist of attending first antenatal care from the first trimester of the pregnancy [1], as well as adherence and compliance to antiretroviral therapy (ARTs) to prevent transmission of HIV during the pregnancy, as recommended by the World Health Organization [2] and the Ministry of Health of Mozambique [3,4]. Moreover, women are recommended to give childbirth at a health facility, to adhere to ARTs for the newborn, to practise exclusive breastfeeding in the first six months of life [2,5] and to adhere to lifelong ARTs for their own health [6]. However,

HIV infected women also face stigma and discrimination in their communities, contributing to a limited or lack of access to adequate health services and stress [7].

Several studies [8,9] reported that mother-to-child transmission (MTCT) of HIV occurs during pregnancy, labour and breastfeeding. When HIV pregnant women follow the prescribed PMTCT, the transmission is almost eliminated [10]. However, lack of coverage and follow-up of antenatal care (ANC) influence the effectiveness of PMTCT in developing countries [11]. Moreover, this process requires early adherence and compliance to several biomedical norms that are often conflicting with social norms at community level.

ANC plays a critical role in the health of pregnant women regardless of their HIV status. It is a key entry point to receive preventive health services such as nutritional support, prevention and treatment of several diseases (malaria, tuberculosis, tetanus, toxic immunization) [1]. Moreover, women receive counselling about postpartum care for themselves and their new-born and child spacing. Among women

living with HIV, ANC enables access to ARTs to early prevent MTCT [12,13], counselling about benefits of giving birth at a health facility, safe practices of breastfeeding and early postnatal care [2].

Most African Sub-Saharan countries, including Mozambique, have adopted WHO [1] guidelines that recommend at least 4 visits of ANC for women whose pregnancy is progressing normally, with the first visit in the first trimester (before 12 weeks of pregnancy). Similarly, Mozambique is implementing an "Opt out" HIV testing model and "B + " approach for pregnant women since 2013 [14]. The Opt-out HIV testing model consists of counselling and testing all pregnant women and their male partners, whilst the B+ approach comprises of providing triple ARTs to all HIV-infected pregnant women, starting as early as 14 weeks of gestation and continuing into lifelong therapy [2].

In Mozambique many women do a HIV test for the first time at ANC. When they are diagnosed HIV positive, they start ARTs immediately and are integrated in a "One-stop" model treatment at the maternity clinic. This model consists of offering both mother and child health HIV service in the same room during pregnancy and breastfeeding [3]. Late ANC may result in high risk of MTCT of HIV, estimated at 10-25% between 14-36 weeks of pregnancy and 25-50% during the last month of pregnancy [15].

Most pregnant women still do not meet a minimal of 4 ANC visits, and not all women attending the 4 ANC visits give birth in a health facility. In Sub-Saharan Africa, in 2014, only 49% of women reported at least four ANC visits and only 52% of childbirths were attended by skilled health personnel [16]. In 2011, the Demographic Health Survey (DHS) at a national level showed that in Mozambique, 91% of women attended at least one ANC, 51% attended 4 ANC visits, and 55% gave birth at a health facility [17]. Likewise, the rate of MTCT in Sub-Saharan Africa was 14% in 2014; while Mozambique reported 9% of MTCT of HIV, despite providing ARTs to 91% of pregnant women living with HIV [7].

Adherence to ANC has been burdened by structural barriers, such as lower maternal education and cultural factors like the perception of a pregnancy as a healthy physical state. Therefore, some women visit health professionals when they perceive a threat to their well-being. Also the belief that pregnancy disclosure could lead to spiritual complications constitutes a barrier [18]. Other structural barriers comprise of difficulties to reach a health facility, long waiting times at the health facility [19] and lack of knowledge of the HIV status [20]. A lack of uptake of HIV tests and ARTs adherence during pregnancy are associated with the lack of ability to pay for the transport costs from the place of residence to the health facility, non-disclosure of the HIV status to the client's sexual partner [21], lack of education [22], emotional stress and side effects of ARTs [23].

Although the aforementioned studies highlight important issues on ANC and PMTCT, there is a paucity of research about practices and compliance of biomedical norms during pregnancy and childbirth of women living with HIV. Therefore, the objective of this study was to analyse women's compliance to biomedical norms in order to reduce the risk of MTCT of HIV during pregnancy and childbirth. Understanding how women perceive and practise PMTCT is important to improve maternal and child health care and to reduce the risk of mother-to-child transmission of HIV during pregnancy and childbirth.

Studies on adherence to ANC have been dominated by structural approaches [24,25] and behavioural approaches [26]. The former emphasizes the material, economic and social conditions to explain

individual actions, while the latter stresses individual attitudes and decision-making processes. To overcome this dichotomy, we used the theory of Pierre Bourdieu, and in particular his Theory of Practice, as an explanatory framework for this study [27]. This framework enabled us to understand the inherent complexities of the participant's experiences and practices with regard to attending antenatal care and childbirth at a health facility.

Bourdieu's theory conceptualizes the relationship between social structures and individual agency and thus helps to understand why persons act in a certain – predictable although not completely determined – way. According to Bourdieu, persons belong to one or more fields or structured social spaces that are governed by historically developed rules and norms about how to act and interact. Throughout different socialisation processes, people develop a habitus or an embodied disposition to perceive, think, feel, speak, evaluate and act in a certain way [27]. In contrast to structuralist approaches, Bourdieu does not assume that norms and rules simply impose themselves on individuals. Rather, they are used and applied strategically to advance one's interests or to obtain a better position, taking into account the requirements of the specific circumstances. Depending on the amount and use of relevant resources, one can have more or less possibilities to act. These resources – Bourdieu uses the term capital – are not only economical, but can also include the language that one speaks, the educational qualifications that one has, the network of social relations one can rely on, knowledge and experience learned from different social contexts [28]. In this regard, Bourdieu distinguishes between economic, cultural, social and symbolic forms of capital.

From Bourdieu's theory we can consider the health care system and the family/community as historically relative autonomy developed social fields. The family/community, particularly in rural areas, is still largely structured by traditional or cultural values, norms, ways of knowing and doing whilst the health care system relies on biomedical norms, scientific standards and procedures. In both fields, there are different assumptions about what to know, and how to behave. Through attending ANC, pregnant women move between these two fields, and respond to the – often conflicting – demands or logics of these fields. Thus, Bourdieu's framework enabled to explain how pregnant women accessed and used different resources throughout pregnancy and childbirth and how such access influenced the use of biomedical norms.

Method

Study design and study sites

This qualitative study was conducted in Namaacha and Manhiça rural districts of the Maputo province, located in the south of Mozambique. Namaacha district had a population of 51,257 in 2015 [29] and 10 health facilities. Manhiça district had about 263,736 inhabitants [29] and 14 health facilities and one rural hospital. These study sites were relevant for this study because they have the highest prevalence of HIV/AIDS in the country, accounting for 26% of all pregnant women living with HIV [30].

Recruitment of participants and data collection

The recruitment and interviews of the study participants took place between January and March 2015 in six health facilities that implement a PMTCT of HIV program. Three health facilities were selected in each district, out of which one was located at the head quarter and two in

the neighbourhood. The district headquarter is relatively urbanized, whilst the neighbourhood has more rural characteristics. These discrepancies were taken into account for the purpose of the analysis.

The study applied purposive sampling to assess 59 HIV positive women who had given birth and were breastfeeding (25 in Namaacha district and 34 in Manhiça district). These participants were important to assess the trajectory's experience of women from early pregnancy to childbirth. To select the participants, the main researcher approached all mothers at a postnatal visit in a child at risk clinic (CRC); and those who agreed to participate were interviewed. A total of 59 in-depth interviews and 5 focus group discussion (FGDs) (three in Manhiça district and two in Namaacha district) with HIV positive women, and 6 semi-structured interviews with maternal and child health (MCH) nurses were performed. Moreover, 6 in-depth interviews with community health workers (CHWs) were carried out. Each FGD had between 6-10 participants. Both individual in-depth interviews and FGDs were conducted in Portuguese – the national language – for those who could read and write it and in local vernacular language (Rhonga) for those who could not understand Portuguese.

We used in-depth interviews to collect information about practices and experiences of pregnancy care and childbirth among HIV positive women. In addition, the FGDs assessed different experiences about pregnancy care. The semi-structured interviews with MCH nurses gathered information about women's adherence to ANC as well about the compliance to biomedical norms among MCH nurses, whose role is, among other activities, to advise pregnant women about safe pregnancy care practices and the management of ARTs. The in-depth interviews with CHWs assessed the mechanisms used to mobilize and enhance the relationship between pregnant women and health care providers.

Procedures

The study obtained ethical clearance from the Faculty of Medicine of Eduardo Mondlane University and Maputo Central Hospital Bioethics committee. Verbal information about the objective of the study was provided, and a written consent was presented to each participant to make an informed choice on whether or not to participate in the study. All participants read and signed the informed consent forms. Those who could not read and sign, choose someone of their trust to translate the information into the local language and to sign on their behalf. Three sociologists participated in the data collection: one male main researcher (the first author) and two female assistant researchers, who were trained on the objectives of the study and data collection instruments. The main researcher coordinated the field work, interviewed the participants and moderated the FGDs.

Data analysis

A thematic analysis approach was applied to obtain the key themes emerging from the data. The analysis involved five stages. First, interviews were transcribed and then translated from Portuguese to English. Second, each transcription was read more than once, and initial codes were generated. Third, the codes were used to identify and search different themes across the data. Fourth, the identified themes were revised according to the research objectives, and final themes were defined. Codes and themes emerging from the data set were discussed and approved by all researchers involved in this study. The last stage of thematic analysis consisted of producing a report of the research outcomes. Moreover, a statistic package for Social Sciences

(SPSS, version 23) was used to analyse quantitative data emerging from the data set.

Results

Characteristics of study participants

The demographic characteristics of the study participants are displayed in Table 1. The majority of participants were between 18-34 years, married or living with a partner. Some participants lacked formal education. Most participants were farmers and economically dependent of their partners, and had more than one child.

Characteristics of participants	Manhiça (n=34)	Namaacha (n=25)	Total
Age range			
18-24	14	10	24
25-34	17	11	28
35-39	3	4	7
Educational Level			
None	10	4	14
Less than primary education (1-6 years)	8	6	14
Primary education completed or more (7-9 years)	15	12	27
Secondary education completed (12 years)	1	3	4
Marital Status			
Single	5	7	12
Married/Living with a partner	27	17	44
Divorced/Widow	2	1	3
Number of Children			
1-2	20	14	34
3-4	11	7	18
5-6	3	4	7
Occupation			
Factor worker	0	1	1
Farmer	24	19	43
Housemaid	2	1	3
Own business/sale	6	1	7
Student	2	1	3
Teacher	0	2	2

Table 1: Demographic participants of the study participants.

Moreover, nearly all participants were members of Protestant church, whilst others were members of Catholic and Muslim. Findings of this study comprise four key themes: 1) knowledge of HIV positive status, 2) timing of the first ANC visit, 3) pregnancy care after the first

ANC and 4) childbirth practices. In each theme, participants reported different experiences which enabled to analyse their compliance to biomedical norms.

Knowledge of HIV positive status

Figure 1 shows the distribution of participants regarding knowledge of their HIV positive status prior to the first ANC. The majority of participants of both study sites knew their HIV positive status at the first ANC visit. Almost all participants, including those who already knew their HIV positive status, reported that they were tested for HIV at the first ANC. Only one participant was not tested because she disclosed her HIV positive status and was taking ARTs. According to MCH nurses, HIV test should not be repeated to confirm HIV positivity; but, some women do not disclose their positive status at the ANC, and therefore, they are tested as if it were the first time.

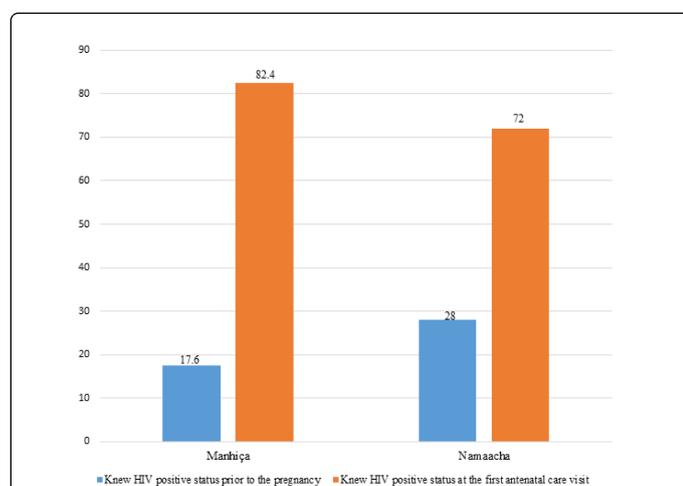


Figure 1: Distribution of participants regarding knowledge of HIV status prior to pregnancy.

The timing of the first ANC visit

This theme comprises four subthemes: the first explores how women self-diagnosed pregnancy, the second describes social norms that women followed before the first ANC, the third presents the reasons that women reported for booking the first ANC and the fourth shows ANC visits throughout pregnancy.

Self-diagnosis of pregnancy

Participants used different ways to self-diagnose their pregnancy prior to ANC. Most participants used biological signs of the body, such as lack of menstruation after one month or two months, tiredness and weakness of the body. Other signs like changing in dietary preferences (lack of appetite, and choice of food) and perception of illness episodes, such as a headache, seasickness and vomiting were also used. These signs were learned from books for those who could read and from the health facility for those who had experience of motherhood. Some participants also learned to diagnose their pregnancy from school, whilst others used knowledge learned from parents and peers. The majority of participants suggested that one can recognise a pregnancy as early as 2 weeks and between one and two months.

However, few participants used pharmaceutical tests and blood tests at the health facility to confirm the pregnancy.

Consulting a church pastor or witchdoctor before the first ANC visit

All participants said that a health facility was the only place to get advice and care for pregnancy after diagnosing the pregnancy. However, few participants sought other complementary sources of healing such as church pastors and witchdoctors prior to the ANC. Participants who consulted pastors perceived illness episodes and they sought treatment and protection for pregnancy. Some participants reported that they did not use such practices in previous pregnancies because they did not experience illness episodes, while others said that it was a common practice. Participants sought a witchdoctor because they wanted to inform their ancestors that they were pregnant, and ask for their spiritual protection. These participants said they engaged in the same practice that they usually do during pregnancy, as one of the participants explained:

"I went to a witchdoctor to inform the ancestors that I am pregnant. The ancestors protect the baby and me and they also ensure a safe childbirth. I always proceed the same way whenever I am pregnant. I did the same in my previous pregnancies?" (37 years, 5 children, Manhica).

Reasons for timing the first ANC

Most participants attended the first ANC when they perceived illness episodes, and were seeking care for themselves. These participants used previous knowledge learned from MCH nurses to know that pregnant women were only recommended to take medication from a health facility. This knowledge enabled participants to seek the first ANC between 8 and 12 weeks of gestational age. Moreover, some participants who knew their HIV positive status prior to pregnancy also attended the first ANC between 8-12 weeks because their partners, who were also HIV positive, and MCH nurses advised them. However, other participants in the same situation attended the first ANC at 16 weeks. Most of these participants perceived that their babies were not at risk because they were already taking ARTs before the pregnancy. They also reported knowing that HIV positive women had to take ARTs to prevent MTCT of HIV and book ANC at 12 weeks.

Attendance to the first ANC between 13-24 weeks was also motivated by a perception of illness episodes, such as feeling unwell, headache and malaria; the need to confirm if they were pregnant, advice from their partners, mothers and peers. Some participants recognized that it was too late to attend the first ANC at 16 weeks, but they could not attend earlier due to work obligation, lived far from the health facility and others were living in South Africa. Participants explained that when they were in South Africa with their partners, they were afraid to book their first ANC because they were undocumented migrants. However, some participants reported that MCH nurses had advised them to attend the first ANC when the gestational age was before 20 weeks or when the belly was visible, as illustrated by a narrative of one of the participants:

"I attended the first ANC when my belly was visible because when I went to health facility for the first time the gestational age was one month and 2 weeks [6 weeks], and MCH nurses sent me back. I wanted treatment because I knew I was HIV positive, but they told me that the belly was not visible. They advised me to attend the ANC when

the belly was visible. (...) I waited until the belly was visible, and I went back to the health facility at four months [16 weeks]" (20 years, 1 child, Namaacha).

Participants explained that late ANC attendance (25-36 weeks) was due to lack of knowledge about their HIV positive status, lack of money for transport and lack of information about the recommended time for the first ANC. Some participants with unknown HIV status prior to the pregnancy reported that they would have attended the first ANC earlier if they had known they were HIV positive prior to the pregnancy. Moreover, other participants delayed the first ANC because they were "feeling lazy" and "did not want to get tired to go to the

health facility". Participants in the FGDs reported that MCH nurses advised to attend the first ANC at 12 weeks of the gestational age. They also said that MCH nurses only get angry with pregnant women if they attend ANC after 20 weeks. Indeed, there is a difference in terms of advises the MCH nurses give to women. Some MCH nurses confirmed advising women to attend the first ANC at 20 weeks and others at 12 weeks. Nevertheless, MCH nurses reported that some women on ARTs still continue attending the first ANC at 28 weeks.

ANC visits throughout pregnancy

Characteristics of participants	Number of weeks at the first ANC					
	Manhiça (n=34)			Namaacha (n=25)		
	1-12	13-24	25-36	1-12	13-24	25-36
Age range						
18-24	5	8	1	2	6	2
25-34	3	13	1	5	5	1
35-39	2	1	0	0	4	0
Educational Level						
None	3	7	0	1	1	2
Less than primary education (1-6 years)	1	6	1	1	5	0
Primary education completed or more (7-9 years)	6	8	1	4	7	1
Secondary education completed (12 years)	0	1	0	1	2	0
Marital Status						
Single	1	3	1	1	4	2
Married/Living with a partner	9	17	1	6	10	1
Divorced/Widow	0	2	0	0	1	0
Number of Children						
1-2	8	11	1	5	7	2
3-4	1	10	0	1	5	1
5-6	1	1	1	1	3	0
Occupation						
Factor worker	0	0	0	0	1	0
Farmer	7	15	2	7	9	3
Housemaid	0	2	0	0	1	0
Own business/sale	2	4	0	0	1	0
Student	1	1	0	0	1	0
Teacher	0	0	0	0	2	0

Table 2: Gestational age of pregnancy at the first ANC visit.

Table 2 presents the gestational age of the participants at the first ANC according to their social characteristics. The earliest gestational

age at the first ANC was 8 weeks and the latest was 28 weeks. Most participants attended the first ANC between 13-24 weeks, regardless of

place of residence, their age, level of education, marital status, number of children and occupation. Those participants who consulted a church pastor or witchdoctor attended the first ANC between 16-24 weeks, and other started at 8 weeks.

Knowledge of HIV positive status and gestational age of pregnancy

Figure 2 shows the distribution of gestational age at the first antenatal care visit among participants in relation to knowledge of HIV positive status prior to pregnancy. Most participants who knew their HIV positive status prior to the pregnancy attended their first ANC between 13 and 24 weeks, while a few attended the first ANC between 1 and 12 weeks of gestational age.

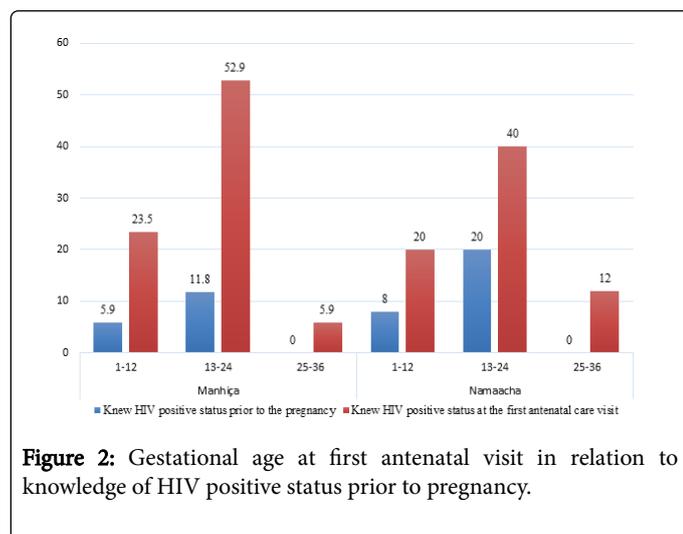


Figure 2: Gestational age at first antenatal visit in relation to knowledge of HIV positive status prior to pregnancy.

Number of ANC visits throughout pregnancy

Table 3 shows the number of ANC visits throughout pregnancy according to the social characteristics of participants. All participants attended at least two ANC visits. Most participants attended 4 ANC and more, regardless their age, level of education, marital status, number of children and occupation.

Characteristics of participants	Number of ANC visits during pregnancy			
	Manhiça (n=34)		Namaacha (n=25)	
	2-3	4 and more	2-3	4 and more
Age range				
18-24	3	11	3	7
25-34	3	14	2	9
35-39	0	3	2	2
Educational Level				
None	0	10	2	2
Less than primary education (1-6 years)	3	5	3	3

Primary education completed or more (7-9 years)	3	12	2	10
Secondary education completed (12 years)	0	1	0	3
Marital Status				
Single	1	4	4	3
Married/Living with a partner	4	23	3	14
Divorced/Widow	1	1	0	1
Number of Children				
1-2	2	18	3	11
3-4	3	8	3	4
5-6	1	2	1	3
Occupation				
Factor worker	0	0	0	1
Farmer	4	20	7	12
Housemaid	1	1	0	1
Own business/sale	1	5	0	1
Student	0	2	0	1
Teacher	0	0	0	2

Table 3: Number of ANC visits throughout pregnancy.

Number of ANC visits throughout pregnancy and knowledge of HIV positive status

Figure 3 presents the number of ANC visits throughout pregnancy according to knowledge of HIV positive status of the participants. Almost all participants who knew their HIV positive prior to the pregnancy attended 4 and more ANC visits. Nevertheless, most participants who knew their HIV positive status at the first ANC also attended 4 and more ANC visits. All participants said ANC enabled to check the position of the foetus, their weight, access to tablets and ARTs for the mother and prevent MTCT and treat illnesses. However, participants reported participating in almost all ANC visits to avoid reprimands from MCH nurses during childbirth at the health facility. In their experience and perceptions, women who do not frequently attend ANC suffer because MCH nurses do not treat them adequately during childbirth.

Practices of pregnancy care

This section describes women's practices regarding disclosure of HIV status to the partner for women who knew their HIV positive status for the first time at the ANC, adherence to ARTs, use of condom and management of illness episodes during pregnancy.

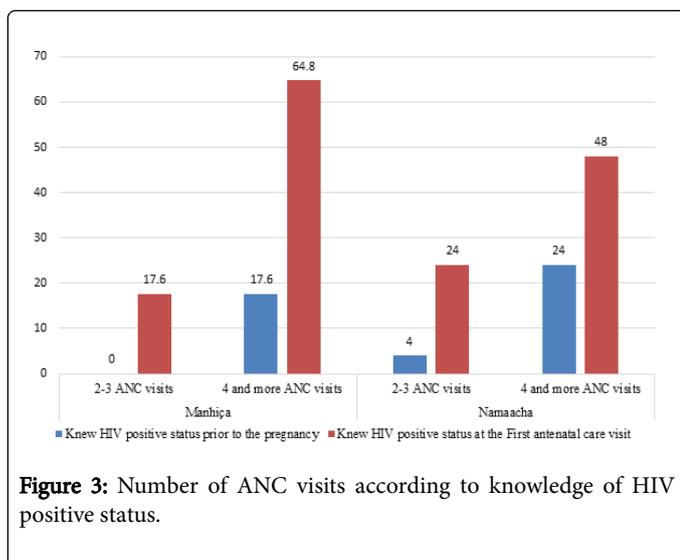


Figure 3: Number of ANC visits according to knowledge of HIV positive status.

Disclosure of HIV status to the partner

Few participants disclosed their HIV positive status to their partners after HIV diagnosis. In most cases their partners already knew their HIV status prior to the pregnancy. In other cases they accepted the invitation letter from the health facility and went to do HIV test together. Of those that did not inform their partners, they said that they were not yet psychologically prepared to disclose their HIV positive status to their partners, while other feared stigma and discrimination, and therefore preferred their husband to find out themselves. Participants reported giving the letters of invitation from the health facility to their partners, but most of them said they were not able to go to the health facility due to work obligations.

MCH nurses reported that participants' partners rarely went to the health facility when they were invited because they already knew they would be HIV-tested. However, they said that they advise the pregnant women to take ARTs regardless of disclosure of their HIV positive status to their partners. Community health workers (CHWs) also said that there was lack of male participation because some already knew their HIV positive status, but did not yet disclose to their partners, while others were married and impregnated their neighbours; and therefore, they do not accept to accompany pregnant women to the health facility.

Adherence to ART during ANC

All participants said that they received ARTs at the maternity clinic and they reported complying mostly to prevent HIV transmission to the baby and for their own health. Moreover, participants reported that it was mandatory to take ARTs to prevent HIV infection to the baby. MCH nurses said that most women complied with ART during pregnancy because they were afraid their baby would be born HIV-infected. CHWs also helped women to comply with ARTs and emphasized the need to protect the baby. Participants who did not disclose their HIV positive status could take ARTs without problem because they told their partners that those medicines were prescribed for the safety of the baby during pregnancy and breastfeeding.

Use of condom during pregnancy

Few participants used a condom during pregnancy. Participants reported that they were not using a condom because their partners were absent during pregnancy, while others said that it was difficult because they had not disclosed their HIV status to their partners. Some participants who had disclosed HIV status said their partner accepted to use a condom during the pregnancy to protect the baby.

Management of illness during pregnancy

A considerable number of participants reported illness episodes during pregnancy. The most common illnesses were constipation, fever, cough, headache, feet pain, stomach-ache, body pain, malaria, dizziness, vomiting, diarrhoea and wounds in the vagina. Participants associated these illnesses with pregnancy and HIV. Some participants sought the health care to treat illnesses; few pursued praying with the church pastors, whilst some used traditional remedies to treat toothache and vomiting. In addition, some participants (suffering from feet pain, stomach-ache, headache, pain of the body and nausea) did not seek any treatment because they perceived these illness episodes as normal for pregnant women. The majority of participants said that they decided themselves to treat the illness, while few were advised by their partners or mothers-in-law.

Some participants reported seeking other sources of healing, such as church pastors, expecting them to pray for them whenever an illness episode was perceived, and prior to childbirth. The pastor's prayers were believed to help to prevent and treat evil spirits that could cause problems to pregnant women and during childbirth.

Illness episodes were associated with the sex of the baby. Participants perceived a baby boy pregnancy as a risk pregnancy compared to a baby girl pregnancy. They said that when a woman is pregnant of a baby boy, she is more vulnerable to get sick throughout pregnancy than when she is pregnant of a baby girl. Participants reported seeking for a church pastor to prevent the perceived risk of pregnancy.

Practices and experience on childbirth

The majority of participants reported to have given birth at the health facility. Participants said that they gave birth at the health facility because it was "good" and "secure for the baby" and because they "trusted" the health providers to protect the baby and themselves. Moreover, participants reported that it was recommended to give birth at the facility to prevent HIV transmission to the baby, and because the baby had to take syrup after the childbirth. Few participants, who gave birth at home, reported failure to give birth at the health facility because they lived far, and there was no transport to take them when the labour started. Participants said their mother helped to give birth at home, and suddenly went to the health facility. Most of the participants said that they decided themselves upon the place to give birth, and all said they were advised by MCH nurses to give birth at the health facility. Few participants said the decision of the birthplace was given by partners, mothers and grandmothers.

Discussion

The study suggests that women's compliance to biomedical norms during pregnancy and childbirth was influenced by the availability and access to multiple resources, such as knowledge and experience of pregnancy care and access to modern health care system and

traditional health care. Thus, participants' practices reflected their knowledge and experiences, and seemed to respond the demand of both the modern health care system and the family and community norms. Findings of the study showed that participants used knowledge acquired from the modern health care system, school and from socialisation in the family and community to early diagnose their pregnancy. However, most participants attended the first ANC visit (between 13 and 24 weeks) out of the period recommended by WHO and the Ministry of Health in Mozambique. Similar findings have been documented in South Africa [31], Ethiopia [32] and Uganda [33].

Late attendance to the first ANC seems to be influenced by the way the biomedical norms are transmitted and perceived: some MCH nurses advised pregnant women to attend the first ANC when the belly was visible or at 20 weeks of the gestational age, whilst participants perceived that MCH nurses reprimanded them if they attended the first ANC visit after this period. Moreover, social norms, such as consulting a church pastor or witchdoctor for spiritual protection prior to the ANC, as well as seeking modern health care when an illness episode was perceived seemed to contribute to the late ANC. Other factors that influenced late first ANC were: work obligations hampering an appointment, migration, lack of knowledge of the HIV positive status, lack of knowledge about the recommended time for the first ANC, lack of money for transport, and the perception of the ANC as an exhausting process. Early ANC was associated with availability and access to resources, such as health facility to treat the perceived symptoms of illness, advice from the partners who knew their HIV positive status and advice of MCH nurses on timing of the first ANC. This result is in line with previous studies in Sub-Saharan Africa [18].

The findings showed that despite late first ANC attendance, participants complied with the follow-up visits and ART adherence, as it has been documented across Sub-Saharan Africa [34-36]. The engagement into these practices might have been influenced by the need to protect the baby against HIV and the preparedness for childbirth. Women perceived that when they do not miss ANC, they are likely less reprimanded at the health facility during childbirth. Furthermore, participants received ART monthly from the MCH clinic to prevent MTCT and for their own health. The majority of participants gave birth at the health facility following MCH nurse advice, the need to prevent MTCT of HIV and a perception of benefits for the mother and the baby. This result is consistent to other studies that suggested that the choice to give birth at the facility is related to potential health benefits for the mother and the baby and the perception of good care from the providers [37,38]. However, like in most Sub-Saharan Africa countries [39,40], participants did not use a condom throughout the pregnancy and did not disclose their HIV positive status to their partners due to fear of stigma and discrimination. Moreover, some participants followed social norms, such as consulting a church pastor or a witchdoctor to treat the illness episodes during pregnancy. Similar practice was also reported in the central region of Mozambique [41]. These practices seem to be influenced by social norms about how to act and interact during pregnancy.

Limitation

This study is subject to methodological limitations. First, the reports of ANC were retrospective, and problems of recall may have affected consistency of women's narratives in terms of practices engaged during pregnancy. Second, the study did not access other HIV positive women who probably did not attend CRC and therefore it was not possible to

document reasons for not attending the ANC or use of the health facility.

Conclusion

The study showed that the participants accessed and used different resources that influenced compliance to biomedical norms during ANC and childbirth. Participants relied on their knowledge and experience about pregnancy care, advice of the family, MCH nurses and support of CHWs, and other forms of healing (church pastors and witchdoctors) acquired in multiple interactions in the family and community and modern health system. Participants followed some biomedical norms to prevent MTCT of HIV, such as subsequent ANC visits, compliance to ARTs and childbirth at the health facility, obeying the logic of the modern health system. However, most participants did not comply with the recommended time for the first ANC because of work obligations, lack of money for transport, migration, erroneous advice of MCH nurses, lack of knowledge of the HIV positive status and about the recommended time for the first ANC, and social norms. Moreover, the majority of participants did not use a condom throughout pregnancy and some participants used other forms of healing to address illness episodes rather than the modern health system; following thus the logic of their family and community.

The study suggests that there is a need for an adequate health education for both women and men about HIV and reproductive health in the family and community and at the health facilities, emphasizing the benefits of antenatal care to both the baby and the couple. In addition, more ethnographic studies are needed to access the motivations of women who do not use the health facility during ANC and childbirth.

Acknowledgement

This study was funded by a project grant from the Desafio, Development Program in Reproductive Health; HIV/AIDS and Family Matters; Eduardo Mondlane University, Mozambique and Flemish Interuniversity Council (VLIR).

References

1. WHO (2002) WHO Antenatal Care Randomized Trial: Manual for the implementation of the new model. Geneva: WHO.
2. WHO (2013) Consolidated guidelines on the use of antiretroviral drugs for the treating and preventing HIV infection. Recommendations for a public health approach. Geneva: WHO.
3. MISAU (2011) Plano Nacional de eliminação da transmissão vertical do HIV (2012-2015). Maputo: MISAU.
4. MISAU (2014) Prevenção da transmissão vertical do HIV. Manual do bolso. Maputo: MISAU.
5. Kellerman SE, Ahmad S, Feeley-Summer T, Jay J, Kim M, et al. (2013) Beyond prevention of mother-to-child transmission: keeping HIV-exposed and HIV-positive child health and alive. *AIDS* 27: S225-S233.
6. WHO (2015) Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV. Geneva: WHO.
7. UNAIDS (2015) 2015 Progress Report on the Global Plan. Geneva: Joint United Nations Programme on HIV/AIDS.
8. Bertolli J, St Louis ME, Simonds RJ, Nieburg P, Kamenga M, et al. (1996) Estimating the time of mother-to-child transmission of human immunodeficiency virus in a breast-feeding population in Kinshasa, Zaire. *J Infect Dis* 174: 722-726.
9. Kourtis AP, Jamieson DJ, De Vincenzi I, Taylor A, Thigpen M, et al. (2007) Prevention of human immunodeficiency virus-1 transmission to

- the infant through breastfeeding: new developments. *AJOG* 197:S113-S122.
10. WHO (2006) Antiretroviral drugs for treatment pregnant women and preventing HIV infection in Infants: Towards universal access. Recommendations for public health approach. Geneva: WHO.
 11. Gimbel S, Voss J, Mercer MA, Zierler B, Gloyde S, et al. (2014) The prevention of mother-to-child transmission of HIV cascade analysis tool: supporting health Managers to improve facility-level service delivery. *BMC Res notes* 7: 743.
 12. de Vincenzi (2011) Triple antiretroviral compared with zidovudine and single-dose nevirapine prophylaxis during pregnancy and breastfeeding for prevention of mother-to-child transmission of HIV-1 (Kesho Bora study): a randomised controlled trial. *Lancet Infect Dis* 11: 171-180.
 13. Mandelbrot L, Tubiana R, Le Chenadec J, Dollfus C, Faye A, et al. (2015) No perinatal HIV-1 Transmission from women with effective antiretroviral therapy starting before pregnancy. *Clin Infect Dis* 61: 1715-1725.
 14. MISAU (2015) Relatório anual das actividades relacionadas ao HIV/ SIDA. Maputo: MISAU.
 15. de Cock KM, Fowler MG, Mercier E, de Vincenzi I, Saba J, et al. (2000) Prevention of mother-to-child HIV transmission in poor resource countries. *JAMA* 283: 1175-1182.
 16. UN (2014) Relatório de situação de 2014 sobre a saúde maternal e neonatal e infantil. Ethiopia: União Africana.
 17. INE, MISAU (2013) Inquérito Demográfico e de Saúde 2011. Maputo: MISAU.
 18. Finlayson K, Downe S (2013) Why do women not use antenatal services in low-and-middle income countries? A meta-synthesis of qualitative studies. *PLoS Med* 10: e1001373.
 19. Deressa W, Same A, Asefa A, Teshome G, Enquessellie F (2014) Utilization of PMTCT and associated factors among pregnant women attending antenatal clinics in Addis Ababa, Ethiopia. *BMC Pregnancy and Childbirth* 14: 328.
 20. Gill MM, Machekeano R, Isavwa A, Ahmisbwe A, Oyeibanji O, et al. (2015) The association between HIV status and antenatal care attendance among pregnant women in rural hospital in Lesotho. *J Acquir Immune Defic Syndr* 68: e33-e38.
 21. Gunn JKL, Asaolu IO, Center KI, Gibson SJ, Whitman P, et al. (2016) Antenatal care and uptake of HIV test among pregnant women in Sub-Saharan Africa: a cross-sectional study. *J Int AIDS Soc* 19: 20605.
 22. El-Khatib Z, Ekstrom AM, Coovadia A, Abrams EJ, Petzold M, et al. (2011) Adherence and virologic suppression during the 24 weeks on antiretroviral therapy among women in Johannesburg, South Africa- a prospective cohort study. *BMC Public Health* 11: 88.
 23. Nachega JB, Uthman OA, Anderson J, Peltzer K, Wampold S, et al. (2012) Adherence to antiretroviral therapy during and after pregnancy in low-income, middle-income, and high-income countries: a systematic review and meta-analysis. *AIDS* 26: 2030-2052.
 24. Backett EM, Davies AM, Petros-Barvazian A (1984) The risk approach in health care. With special reference to maternal and child health, including family planning. Geneva: World Health Organization.
 25. Gerein N, Mayhew S, Lubben M (2003) A framework for a new approach to antenatal care. *International Journal of Gynecology and Obstetrics* 80: 175-182.
 26. Andersen RM (1995) Revising the behavioural model and access to medical care: Does it matter? *J Health Soc Behav* 36: 1-10.
 27. Bourdieu P (1977) Outline of a theory of practice. USA: Cambridge University Press.
 28. Bourdieu P (1986) The forms of Capital. In Richardson, J. Handbook of Theory and Research for the Sociology of Education. New York: Greenwood 241-258.
 29. INE (2010) Projeções anuais da população total, urbana e rural dos distritos da província de Maputo 2007-2040. Maputo: Instituto Nacional de Estatística.
 30. INS, INE, ICF (2010) Inquérito Nacional de Prevalência, Riscos comportamentais e Informação sobre o HIV e SIDA em Moçambique 2009. Maputo: MISAU.
 31. Clouse K, Pettifor A, Shearer K, Maskew M, Bassett J, et al. (2013) Loss to follow-up before and after delivery among women testing HIV positive during pregnancy in Johannesburg, South Africa. *Trop Int Health* 18: 451-460.
 32. Gebremeskel F, Dibaba Y, Admassu B (2015) Timing of first antenatal care attendance and associated factors among pregnant women in Arba Minch Town and Arba Minch District, Gamo Goza Zone, South Ethiopia. *Journal of Environmental and Public Health*.
 33. Kisuule I, Kaye DK, Najjuka F, Ssematimba SK, Arinda A, et al. (2013) Timing and reasons for coming late for the first antenatal care visit by pregnant women at Mulago Hospital, Kampala, Uganda. *BMC Pregnancy Childbirth* 13: 121.
 34. Gupta S, Yamada G, Mpembeni R, Frumence G, Callaghan-Karou JA, et al. (2014) Factors associated with four or more antenatal care visits and its decline among pregnant women in Tanzania between 1999 and 2010. *PLoS ONE* 9: e101893.
 35. Berhan Y, Berhan A (2014) Antenatal care as means of increasing birth in the health facility and reducing maternal mortality: a systematic review. *Ethiop J Health Sci* 24: 93-104.
 36. Ebuy H, Yebyo H, Alemayehu M (2015) Levels of adherence and predictors of adherence to Option B+ PMTCT Programme in Tigre, Northern Ethiopia. *Int J Infect Dis* 33: 123-129.
 37. Bhattacharyya S, Srivastava A, Roy R, Avan BI (2016) Factors influencing women's preferences for health facility deliveries in Jharkhand State, India: a cross sectional analysis. *BMC Pregnancy and childbirth* 16: 50.
 38. Schnack A, Rempis E, Decker S, Braun V, Rubaihayo J, et al. (2016) Prevention of mother-to-child transmission in HIV in Option B+ era: Uptake and adherence during pregnancy in Western Uganda. *AIDS Patient Care and STDs* 30.
 39. Kharsany ABM, Karim QA (2016) HIV infection and AIDS in Sub-Saharan Africa: Current status, challenges and opportunities. *The Open AIDS Journal* 10: 34-48.
 40. Egbe TO, Tazinya RA, Halle-Ekane GE, Egbe E, Achidi EA (2016) Estimating HIV incidence during pregnancy and knowledge of prevention of mother-to-child transmission with an ad hoc analysis of potential cofactors. *Journal of Pregnancy*.
 41. Chapman R (2010) Family Secrets. Risking Reproduction in Central Mozambique. Nashville: Vanderbilt University Press.