

Considering childbearing in the age of highly active antiretroviral therapy (HAART): Views of HIV-positive couples

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Abstract

Objectives: Based on a qualitative study conducted in Bulawayo, Zimbabwe, this article examines how the availability of HAART since April 2004 may impact the views and choices of HIV-positive couples on childbearing.

Methods: In-depth interviews were conducted with 15 couples where at least one partner was HIV positive. All respondents were of reproductive age and had or were confronting reproductive and sexual decision-making.

Results: HAART seems to have had a profound impact on the subject of childbearing among those who still desire to have children. Where hitherto individuals had only a desire for a child many are now, as a result of the availability of HAART, actively planning to have one. HAART has not only transformed their physical state but it has also transformed mostly what had been desire into intention. The impact, however, has not been uniform. Some respondents still desired to have a child but were not yet convinced about the efficacy of HAART in preventing vertical transmission. Some respondents felt that HAART may have a negative impact on the foetus and as such were against childbearing by HIV-positive people. No respondent indicated that their desire or intention to have a child had been extinguished by the advent of HAART.

Conclusion: Based on the findings of the study, HAART seems to have had a differential but nonetheless significant role in the reproductive plans of HIV-positive couples. The study also notes that there is a need to make available complete and unbiased information on HAART, mother-to-child transmission risk (MTCT) and pregnancy to HIV-positive couples so as to enable them to make informed decisions.

Keywords: Childbearing, HAART, reproductive choices, HIV/AIDS, health professionals, MTCT.

Résumé

Fondé sur une étude qualitative menée à Bulawayo, au Zimbabwe, cet article examine comment la disponibilité de HAART depuis avril 2004 pourrait avoir influencé les opinions et les choix de couples séropositifs dans leur rapport à la maternité.

Des entretiens approfondis ont été menés avec 15 couples où au moins un partenaire était séropositif. Toutes les personnes concernées étaient en âge de procréer et s'étaient ou étaient sur le point de se trouver confrontés à des décisions relatives à des questions de procréation et de sexualité.

HAART semble avoir eut une influence profonde sur la manière d'aborder la maternité parmi ceux qui désiraient encore avoir des enfants. Alors que jusqu'alors, des individus n'avaient eu que le désir d'avoir un enfant, à présent, du fait de la disponibilité de HAART, plusieurs d'entre eux ont décidé activement d'en avoir un.

HAART a non seulement transformé leur état physique, mais plus encore, a transformé ce qui était désir en intention. L'effet néanmoins n'a pas été uniforme. Certains participants désiraient toujours faire un enfant mais n'étaient pas convaincus de l'efficacité de HAART quant à la prévention de la transmission verticale. Certains des participants sentaient que HAART pourrait avoir un effet négatif sur le foetus et dans ce cas étaient contre la maternité pour les personnes séropositives. Aucun des participants n'a indiqué que leur désir ou intention de faire un enfant avait été éteint par l'avènement de HAART.

Sur la base des conclusions de la recherche, HAART semble avoir joué un rôle différentiel mais néanmoins considérable dans le cadre de plans en matière de procréation des couples séropositifs. L'étude fait aussi remarquer qu'il est nécessaire de rendre disponibles des informations compréhensives et impartiales sur HAART, sur le risque de transmission de la mère à l'enfant (TME) et sur la grossesse aux couples séropositifs afin de leur donner la capacité de prendre des décisions averties.

Mots clés: Maternité, HAART, choix de procréation, VIH/SIDA, professionnels de la santé, TME.

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Introduction and background

The advent of highly active antiretroviral therapy (HAART) has drastically altered the prognosis of HIV/AIDS. From being a fatal condition over the medium- to long-term, it is now a chronic but manageable condition. The result has been that people with HIV can now live longer, healthier lives unpunctuated by frequent opportunistic infections. Studies indicate that HAART can effectively control viral replication and reduce the risk of vertical as well as horizontal transmission. Advances in HAART, combined with specific obstetric procedures, have enabled those HIV-positive people who would like children to have them with a very low risk of transmitting the virus to their infants. An improved outlook on health and life expectancy was bound to have an impact on the reproductive plans of people with HIV/AIDS.

This article is based on a study of couples with HIV/AIDS carried out in the city of Bulawayo between February and May 2005. The study sample consisted of 15 couples, 13 of whom were sero-concordant while 2 couples were sero-discordant. From the results of the study, 3 identifiable groups emerged with regard to the issue of HAART, MTCT, and reproduction. There were those who intended to have children as a result of diminished chances of MTCT and the good health afforded by HAART (positive outlook). Another group encompassed those who desired to have children in the future but were still concerned about the effectiveness of HAART and nevirapine in lowering the chances of MTCT and reducing the negative impact of pregnancy on their health (unsure outlook). Then there were those who, though conceding the effectiveness of HAART in improving the health of HIV-infected people, felt that the risk of MTCT was still high and that HAART may have a negative impact on the foetus. These argued against HIV-positive people having children (negative outlook). Most of the respondents who had a negative outlook already had their desired number of children and as such had no desire or intention to conceive in the future. As a result this article focuses on those who had a desire to have a child or children since they were the ones who were likely to consider the impact of HAART on their reproductive choices.

The negative impact of HIV/AIDS on fertility has been well documented (Sharma *et al.*, 2006; Ntozi, 2002; Zaba & Gregson, 1998). HIV/AIDS generally lowers the fertility rate of those infected. Although high rates of desire to have children (ranging between 26% and 30% among HIV-positive people) have been documented, the actual fertility rate remained as low as 5% before and soon after the advent of HAART (Klein *et al.*, 2003; Sauer & Chang, 2002; Chen *et al.*, 2001; van Deventer *et al.*, 1998). This indicated the importance of HIV/AIDS in HIV-positive people's

consideration of whether to carry their desire through. It is also notable that historically the medical community has considered HIV a serious barrier to reproduction and has advised and counselled HIV-positive people accordingly (Al-Khan *et al.*, 2003). This view in the medical fraternity was not limited to the West. In Zimbabwe the majority of health professionals still advise HIV-positive people that it is in their best interests to consider not having children in the future. There was, and in some instances there still is, a regard of HIV as a death sentence in the medical fraternity (Reis *et al.*, 2005). As a result of the risks and their own conceptualisation of the disease, some HIV-positive people are anti-conception; others are pro-conception while others are undecided.

With the advent of HAART and its increased uptake both in the developed and developing world there was bound to be an impact both on fertility and reproductive plans of HIV-positive people. Studies that have been carried out in this area so far indicate a positive impact of HAART on fertility. Sharma *et al.* (2006) investigated the relationship between HIV infection and childbearing before and after the availability of highly active antiretroviral therapy among HIV-positive and HIV-negative women. They found that among HIV-infected women, the HAART era live birth rate was 150% higher than in the pre-HAART era versus a 5% increase among HIV-uninfected women in the same period. In a study to explore pregnancy outcome in HIV-1-positive and HIV-negative women under the era of HAART, Boer *et al.*, (2007) found that MTCT was 0% among HIV-positive women irrespective of mode of delivery. In a separate study Castro *et al.* (2007) indicated that there has been a rapid increase in pregnancies in HIV-positive women since the introduction of HAART in Cuba. Thus it seems HAART has not only altered the clinical course of HIV but has also had an impact on the reproductive views and choices of people with HIV/AIDS.

Noting that most of the studies on the impact of HAART on reproductive and sexual issues have been carried out in the developed world where the therapy has been available for years (Semprini & Simona, 2004; Thornton *et al.*, 2004), this paper examines the emerging scenario in Zimbabwe. It advances and explores the idea that the improvement in health and reproduction prognosis which is associated with the use of HAART plays a significant role in shaping the reproductive views of HIV-positive couples studied.

Methods

Study design

Between February and May 2005, the researcher conducted in-depth interviews with HIV-positive heterosexual couples

Table 1. Main characteristics of the HIV-positive sample

Couples/Sex	Age	Relationship status	Level of education (Years in education)	No. of children	No. of pregnancies	Children in current relationship	HIV status Year known	On ARVs?	Desires to have children	Intends to have children	Employment
C1	F	36 Single; in a relationship	Secondary (11 yrs)	1	1	0	HIV-positive May 2004	Yes: Nov. 2004	Yes	No	Unemployed
	M	33 Single; in a relationship	Secondary (11 yrs)	0	NA	0	HIV-positive Dec. 2004	Yes: Feb. 2005	Yes	Yes	Self-employed
C2	F	42 Married	Tertiary	1	2	0	HIV-positive 1986	Yes	No	No	Peer counsellor
	M	45 Married	Secondary (9 yrs)	4	NA	0	HIV-negative	NA	No	No	Musician
C3	F	42 Married	Primary (7 yrs)	3	3	2	HIV-positive 2004	No	No	No	Unemployed
	M	43 Married	Secondary (11 yrs)	2	NA	2	HIV-positive 2002	No	No	No	Pensioner
C4	F	39 Widowed; in a relationship	Secondary (11 yrs)	3	3	0	HIV-positive Aug. 2004	No	Yes	Yes	Unemployed
	M	40 Widowed; in a relationship	Secondary (11 yrs)	3	NA	0	HIV-positive Sept. 2004	No	No	No	Self-employed
C5	F	26 Single; in a relationship	Tertiary (did not complete degree studies)	0	1	0	HIV-positive 2003	Yes	Yes	Yes	Unemployed
	M	36 Married	Secondary (11 yrs)	1	NA	0	HIV-positive 1996	Yes	Yes	Yes	Self-employed
C6	F	43 Widowed; in a relationship	Primary (7 yrs)	4	4	0	HIV-positive Mar. 2001	Yes Aug. 2004	No	No	Self-employed
	M	38 Widowed; in a relationship	Secondary (11 yrs)	3	NA	0	HIV-positive 2001	Yes	No	No	Security guard
C7	F	36 Widowed; in a relationship	Secondary (11 yrs)	2	-	0	HIV-positive 2003	No	Yes	No	Unemployed
	M	42 Widowed; in a relationship	Secondary (9 yrs)	3	NA	0	HIV-positive 2001	Yes	Yes	No	Security guard
C8	F	30 Married	Secondary (11 yrs)	4	4	4	HIV-positive 2002	Yes 2004	No	No	Unemployed
	M	36 Married	Secondary (11 yrs)	4	NA	4	HIV-positive 2003	Yes	No	No	Self-employed
C9	F	28 Single; in a relationship	Secondary (10 yrs)	1	1	0	HIV-positive 2000	Yes	Yes	No	Unemployed
	M	30 Single; in a relationship	Secondary (11 yrs)	0	NA	0	HIV-negative	NA	Yes	Yes	Factory worker
C10	F	43 Married	Primary (7 yrs)	4	4	4	HIV-positive 2001	Yes	No	No	Community worker
	M	48 Married	Primary (7 yrs)	4	NA	4	HIV-positive 2005	No	No	No	Tailor
C11	F	32 Widowed; in a relationship	Secondary (11 yrs)	3	5	0	HIV-positive 1999	Yes 2004	Yes	No	Self-employed
	M	39 Widowed; in a relationship	Secondary (9 yrs)	4	NA	0	HIV-positive Aug. 2004	Yes Nov. 2004	Yes	No	Self-employed

Table 1. Continued

Couples/Sex	Age	Relationship status	Level of education (Years in education)	No. of children	No. of pregnancies	Children in current relationship	HIV status Year known	On ARVs?	Desires to have children	Intends to have children	Employment
C12	F	36	Single; in a relationship	Secondary (11 yrs)	1	0	HIV-positive Dec. 2002	Yes	Yes	Yes	Peer counsellor
	M	38	Divorced; in a relationship	Secondary (11 yrs)	3	0	HIV-positive 2003	Yes	Yes	Yes	Security guard, part-time peer counsellor
C13	F	34	Married	Primary (7 yrs)	3	2	HIV-positive Jan. 2004	Yes	Yes	No	Unemployed
	M	30	Married	Secondary (11 yrs)	2	2	HIV-positive Oct. 2003	Yes	Yes	No	Security guard
C14	F	24	Single; in a relationship	Secondary (11 yrs)	0	0	HIV-positive Jan. 2004	No	Yes	No	Self-employed
	M	29	Single; in a relationship	Secondary (11 yrs)	0	0	HIV-positive Dec. 2003	No	Yes	Yes	Unemployed
C15	F	35	Married	Primary (7 yrs)	1	0	HIV-positive Feb. 2005	No	Yes	No	Self-employed
	M	30	Married	Secondary (9 yrs)	1	0	HIV-positive Mar. 2005	No	Yes	No	Self-employed

in Bulawayo, Zimbabwe. The sample consisted of 13 sero-concordant couples and 2 sero-discordant couples. The age of the sample ranged from 24 to 48 years, with the median age being 36. Most of the people interviewed had some secondary education, with 6 having completed only primary education (Grade 7). The study was conducted in an urban setting, in the high-density suburbs of Bulawayo, where the respondents lived. In terms of socio-cultural status the respondents fell mainly in the low-income bracket with 11 unemployed, 10 informally employed and 9 formally employed in low-paying jobs. Their income ranged between Z\$500 000 (US\$50) to Z\$1.5m (US\$150) a month at the time the research was conducted. The main characteristics of the study sample are summarised in Table 1.

Informed consent was obtained from every participant before the interview was conducted. The consent form, which every participant and the researcher signed, explained the purpose and procedure of the study as well as the rights of the participant. Permission to tape-record the interview was sought from the participants and there was no instance in which it was refused. The participants were made aware of their right not to answer any question that they did not want to. It was also within their rights to discontinue the interview when they decided that they no longer wanted to carry on and they were informed of this. For confidentiality reasons the respondents' names were not used in the study report.

The man and woman in a couple were interviewed separately in a bid to elicit their individual views and to minimise gender and partner bias, since in the presence of a man or men some women may not find it possible to express themselves openly, and vice versa. The interviews were conducted in places chosen by the couples. Couples were eligible to participate if both or one of them was HIV-positive, they were in an intimate relationship, had disclosed their HIV-positive status to each other and if they were confronting, will be confronting or had confronted reproductive decision-making and able to complete the interview in Ndebele, Shona or English.

Two strategies were used to recruit respondents. One was to recruit willing participants from support groups and opportunistic infections clinics through distributing recruitment flyers and the other was snowball sampling. Snowballing was used in this study as it offers better chances of accessing hard to reach and stigmatised groups like HIV-positive people. Usually in a 'closed group' a link exists between the initial sample and others in the same

target population, allowing a series of referrals to be made within a circle of acquaintance (Berg, 1988). The initial couples who came forward after administering the recruitment flyer were asked after the completion of the interviews if they knew another couple or couples that would be willing to participate in the study. In this way the researcher moved from one couple to the next and managed to access most of the respondents in this study that would otherwise have been missed. However, the main problem with this method was the production of a somewhat homogeneous and atypical sample which was not representative of all HIV-positive couples in Bulawayo, since referrals were dependent on the social networks of the respondents first accessed. Due to the selection bias which produced a particular group of respondents with close inter-relationships the results of this study are not generalisable. However, though claims to generalisability cannot be made based on this sample, the results reveal a number of important issues in relation to reproduction among HIV-positive couples.

Data analysis

Data were analysed using a grounded theory approach, based on a process that helps researchers to 'discover' categories, themes and patterns that emerge from the data. Taped interviews were transcribed in the original language and then translated into English. Transcribed interviews were then content analysed to identify patterns and themes concerning reproduction among HIV-positive people. The strategies used in the data analysis were a systematic review and a thoughtful reading of interview data, coding, memo writing; categorising and sorting for patterns and the construction of the story told.

Results

Fifteen couples were interviewed. Nineteen respondents indicated that they still desired to have a child. These can be divided into two groups, i.e. those with a desire but no intention to have a child in the immediate future and those who intend to have a child in the immediate future. There were also some respondents who felt that instead of having a positive impact prophylactic drugs would have a harmful effect on the foetus while some respondents expressed no opinion on this issue.

Reasons for desiring children

There were a number of reasons that these couples and individuals cited as motivations behind their desire to have children. The most common one was the importance attached to motherhood/fatherhood especially among those without children. Couple 5 Female (C5F), Couple 14 Male (C14M), Couple 9 Male (C9M) and Couple 1 Male (C1M) all wanted to have children because they did not have any and they felt it was an

important milestone in life socially and personally for one to be a parent. As Oyewumi (2000) notes, '...the position as "mother" is a position of power in African contexts with motherhood being the preferred and cherished self identity of many African women'. The same can also be said about fatherhood. C4F and C5M also pointed to the need to have another child as they had not had their desired number of children. The need to have a child of a particular sex, especially a boy, was cited as another reason. Couple 12 pointed out that they did not live with their children, either because they were grown up (C12F) or they were not in their custody (C12M). Couples such as these where both or one of the partners had a child/children from a previous relationship wanted to have a child in their current relationship either to 'strengthen their relationship', for 'companionship' or to 'fulfil the desires of their partner'. There is a complex interplay of socio-cultural and economic forces behind these couples' or individuals' desire to have children. The reasons cited above are the ones which the respondents cited as the more immediate ones. Over and above these considerations, the availability of HAART and the impact it has had on their health seems to have been the overriding factor in their quest to have children.

Desire but no intention to have a child

Eleven of the respondents fell within this group. A number of reasons were proffered for this stance but the main one related to their uncertainty over the efficacy of HAART in mitigating the risk of vertical transmission. Most of the respondents were terrified of transmitting the virus to their unborn child. These were some of their responses.

'I desire to have a child but not now...maybe when I have seen how these tablets (ARVs) work, how much they protect. Some are saying you can have a child – there is nevirapine but others are saying it's not 100% effective, some [children] can be positive some negative. I am afraid of having a positive child. ...if a drug that guarantees that my child will be negative is found then I will throw aside the condoms and rush to have one.' (C14F)

'I wish to have a child but am afraid because it is not easy to have a positive child... The pain of seeing one's child suffer illness, discrimination and stigma and know that you are the one who caused it is unpalatable.' (C7F)

'...what if that child is not fully protected and becomes infected; we already have our (economic) difficulties and then we add another, how big a yoke will that be on us?' (C11M)

'We are told that an HIV-positive person can have a child if she takes the tablets (nevirapine) to protect the child so that it comes out okay, without being infected – but it is difficult

to say let me try it because it's not yet clear that here is a child who is a result of it...to say here is a child who is 10 years old, born of HIV-positive parents...' (C11M)

'HAART has not had a child yet.' (C13M)

Most respondents in this group were concerned that HAART was a relatively new form of therapy whose effectiveness and usefulness in mitigating vertical transmission and adverse effects of pregnancy had not been proven. As a result, though they desired to have children, they would wait until such a time that the effectiveness of this therapy in reproduction had been proven.

There was also concern among this group about the impact of pregnancy on the health of the woman. Most felt that pregnancy would have a negative impact on the health of the woman and as such were reluctant to fulfil their desires. These were some of their responses concerning the issue of pregnancy.

'I am concerned mainly about my immune system...' (C1F)

'I am concerned about the health of my partner...' (C7M)

'I feel afraid of getting pregnant since some say if an HIV-positive person becomes pregnant that will be the end of them.' (C13F)

According to the information they have, pregnancy is seen as a risk to their health as it lowers their CD4 cell count. It also poses a risk of re-infection as for most couples in the study the only way of getting pregnant or having a child was through unprotected sexual intercourse. Advanced technologies like in vitro fertilisation (IVF) were beyond the reach of many. It is important to note, however, that recent research has found no significant relationship between pregnancy and AIDS progression (Tai *et al.*, 2006).

From desire to intention

The perceived efficacy of HAART in limiting vertical transmission and any negative impacts of pregnancy on the health of the woman seems to have been the main factor influencing the intentions of those couples who wanted to conceive. Most of the respondents who intended to have children were already on HAART. Only two had not yet started therapy as a result of their high CD4 lymphocyte cell counts. Respondents in this group (8/30) indicated that the impact of HAART on their health or the observed impact of the therapy on others had played a pivotal role in their intention to have a child. Commenting on their health since they commenced HAART between April and May 2004 C12M said:

'...we are now strong since we are on ARVs; we are strong, we can feel that we are now strong. You know, for me there came a time when I had told myself that I would no longer have sex due to sickness. But with ARVs, I felt that I needed somebody. That is nature; I cannot run away from it.'

C5F had this to say:

'I had all these opportunistic infections now and again but now I wonder where all that disappeared to. Even my face was no longer smooth. I have an oily skin; if I have a face wash after 10 minutes my skin will be oily but during those days when I had a face wash my face remained scaly as if I had dandruff on the face. I am light in complexion as you can see but during those days I would look at myself in the mirror and stare in disbelief. But since I began ARVs I am back to my normal self.'

Nearly all those on ARVs had similar stories of rising from their death beds to lead almost normal healthy lives with some, like C12M, going back to work. C14M, who was not on therapy, also indicated that he had seen many people who had 'unbelievably risen from death' as a result of HAART. With their health assured as a result of HAART the couples and individuals studied felt that they could take the chance and have a child. As Couple 12 indicated, HAART gave them 'an assurance and hope that they could at least live a healthy life, have children and raise them'.

A number of respondents noted that as a direct result of HAART, their CD4 cell count had gone up and their viral load was steadily declining. The link between this and MTCT was not lost to them. All those who intended to have children were aware that a high CD4 cell count and diminished viral loads meant a diminished MTCT risk. Though most of them put the chances of MTCT at between 5 – 30% when one is on HAART (actual risks are much lower at 0 – 2%) to them these were relatively low percentages to warrant the risk.

Commenting on the low chances of MTCT when one is on HAART C5F said:

'...considering that I am on ARVs and he is also taking them, so that is forcing the virus to hide...so it's not in the blood anymore, it's in the lymphatic system...I am thinking my chances are very good since I am on ARVs.'

C12M added:

'If you are on ARVs there may come a time when they will tell you that your viral load is undetectable, it will no longer be in the blood...so that shows that the chances for a child to get the virus are very slim, there are more chances for it to be born negative. That is what we are hoping for.'

The undetectability of the virus in the bloodstream is inevitably associated with a low risk of vertical transmission. The significance of nevirapine in lowering MTCT risks was also pointed out. The respondents were confident that their being on HAART and the availability of nevirapine placed them in a better position of having HIV-negative children as compared to pregnant mothers not on HAART who are only given nevirapine as a single dose therapy. C12M who is a peer counsellor and works part-time at the Mpilo Opportunistic Infections (OI) clinic said:

I have worked with nevirapine and people who use it. It really works...I have met many people who have negative children while they are positive who used nevirapine and they were not on ARVs. This shows that it is very effective.'

It has been shown that CD4 cell count and HIV RNA levels are related to the likelihood of disease progression in the mother and also the risk of vertical transmission (Sullivan, 2003). A high CD4 cell count is associated with a lowered risk of vertical transmission while a low maternal CD4 count is similarly associated with higher transmission risk of HIV. (Boer *et al.*, 2007; Ioannidis *et al.*, 2001; Maiques *et al.*, 1999) The optimism of people on HAART was therefore not misplaced. Furthermore, a number of studies have demonstrated low MTCT in the setting of HAART (Boer *et al.*, 2007; Cohan, 2003). The lowest transmission prevalence observed is among women with maximally suppressed virus at the time of delivery and, as Cohan (2003) notes; this is most likely to occur among women on HAART. Recent studies have also shown that MTCT rates may be as low as 1 - 2% in women with HIV RNA levels of below 1 000 copies/ml regardless of mode of delivery (Minkoff, 2003; Cooper *et al.*, 2002; Dorenbaum *et al.*, 2002;). HIV-positive people with a low HIV RNA as a result of HAART thus have an over 98% chance of having an HIV-negative child. The effectiveness of nevirapine as a single-drug therapy has also been noted in reducing MTCT to around 5% among those who are not on HAART (Conway, 2005). Thus being on HAART, a high CD4 cell count and the use of nevirapine are all factors consistent with a greater chance of having an HIV-negative child as noted by the study respondents.

People who intended to have children in this study seemed to be very proactive in researching their chances of having HIV-negative children. They researched further on issues of MTCT, re-infection, the impact of pregnancy on the mother, dietary issues and their chances of having an HIV-negative child. They seemed relatively well informed on the choices and pregnancy outcomes that they faced. In this sample C12 used their association with OI clinics as peer counsellors as a stepping

stone towards gathering relevant and appropriate information while C5F used her knowledge as a former medical student to inform her decision. Others pointed out that they sourced information from both the print and the electronic media including the internet (C9M, C14M) and from people who work in the medical field. These people demonstrated resourcefulness insofar as information gathering was concerned, which goes to demonstrate the importance of a child in their lives. Armed with what they saw as appropriate and sound information they felt that having or trying for a child at that particular time was the right decision.

Talking of her impending intention to try again for a child C12F said:

'...I have since talked to another sister [senior nurse] and she said "you can have a child. Because you are on ARVs your CD4 cell count has gone up. If you become pregnant we will change your drug regimen". She said "Look at these women who are not on ARVs who do have children. She can have a child and remain healthy for a long time, so it also depends on your lifestyle".'

There was high optimism in this group about their chances of having an HIV-negative child. This optimism was not based solely on their improved health as a result of HAART but also on the information they have on its efficacy and on other strategies that can be used in ensuring that the risks of vertical transmission are reduced both pre- and postnatal.

Strategies for reducing MTCT risk and re-infection

The respondents cited a number of strategies that can be used to reduce the risk of MTCT and re-infection apart from being on HAART and nevirapine. These included having unprotected sex only during the woman's fertile period and the practice of safe sex as soon as the woman becomes pregnant to reduce the viral load and the chances of infecting the foetus with drug-resistant HIV strains. '...one counsellor told me that we should only have unprotected sex during her fertile period so as to reduce chances of re-infection' said C1M. C12, C5M also indicated that they had been given similar advice.

Contraindicated drugs in pregnancy

There was mention of avoidance of contraindicated drugs in pregnancy for the sake of the foetus. C12F and C5F indicated that there are certain drugs in triple therapy, like efavirenz, which are unsuitable for a pregnant mother as they may cause malformations of the foetus. C12F said that a nursing sister had advised her that 'if you become pregnant we will change your drug

regimen' so as to reduce risks to the unborn child. C5F, probably using her medical knowledge, pointed out that '...there are some ARV drugs that are not suitable for a pregnant woman'. The issue of in utero exposure of the foetus to ARVs and the possible adverse effects this can have on it is still somewhat a grey area where research is still ongoing. There are drugs, like efavirenz, mentioned previously, that are contraindicated in pregnancy as a result of its association with congenital anomalies. The jury is still out on the association of ARVs with mitochondrial toxicity, malignancies, and congenital anomalies on babies exposed in utero. Some small studies have found association of ARVs with these conditions while larger cohort studies have found no increase in any specific foetal abnormality, neonatal condition or low birth weight with currently recommended antiretroviral regimens (Ammann, 2007). There is also mixed evidence regarding the association between combination antiretrovirals and premature delivery (AIDS, 2001; Tuomala et al., 2002; JAIDS, 2003). Notwithstanding this, the information that those who intend to have children have seems to be generally sound. Given the information they have, their hope and optimism of having HIV-negative children is to be expected.

Breastfeeding

Breastfeeding was also indicated as another way that the mother may infect her child, and most of the respondents indicated that it was best for the mother not to breastfeed. C4F indicated that '...we are taught (in support groups) about the dangers of breastfeeding and some other options of feeding the baby'. C12F added, '...I do not think I will breastfeed. They say breastfeeding can transmit the virus to the baby'.

A number of studies have demonstrated the role of breastfeeding in HIV transmission (Coovadia et al., 2007; Willumsen et al., 2003; Fawzi et al., 2002). In a study carried out in Kenya it was found that breastfeeding increased the risk of transmission by as much as 16% (Nduati et al., 2000). In the study 44% of MTCT was attributable to breastfeeding. Even in the era of HAART it has been found that breastfeeding significantly increases the risk of MTCT (Coovadia et al., 2007; Kilewo et al., 2007; Arendt et al., 2007). Thus to eliminate the risk of infecting the infant through breastmilk the mother has to forgo breastfeeding altogether. Though this is a difficult choice in resource-poor settings like Zimbabwe, where most of the respondents lived below the poverty datum line, those who intend to have children pointed out that they would opt for this option to maximise their chances for an HIV-negative child.

Caesarean section

C5F and C12 indicated that given the risks of transmitting the virus to the child during birth they would opt for an elective C-section. This group's views can be summed up by C5M, who said:

'As long as this whole thing is done properly, I do not see any major risk. If you do not breastfeed, always use protection during pregnancy, take nevirapine if you are supposed to, go back for Caesar if your immune system is not strong; I do not see any risk of having a positive child.'

The role of elective C-section in reducing MTCT has been well noted (European Collaborative Study, 2005; Posokhova et al. 2004; *Lancet*, 1999; *NEJM*, 1999). However, some studies have found no significant differences in transmission prevalence among women with vaginal deliveries (0.8%), elective C-section (0.8%) and non-elective C-section (1.1%) (Shapiro et al., 2002). Although some studies have found a potential protective role of elective C-section among women with HIV RNA levels greater than 1000 copies/ml many study results point to the significant morbidity associated with caesarean delivery among HIV-infected women (Marcollet et al., 2002; Watts et al., 2000; Read, 2000). It is therefore important for those on HAART to consider this mode of delivery carefully with their GPs. The health professionals also have to provide up-to-date, appropriate and unprejudiced information to infected couples so as to enable those who want to have children to make informed decisions.

The centrality of HAART in reproductive planning

What was notable among those who intended to have a child or children in the near future was the centrality of HAART in their reproductive plans. The respondents pointed out that had it not been for HAART they would not have considered having a child or children in spite of all other social and cultural factors they indicated as important. Responding to how they would have approached the issue of conception in the absence of HAART, C12F said, 'we were not going to consider it. It was going to remain a wish'. C5F added that being on antiretrovirals was what actually made her decide to have a child. 'Actually it has helped. I think that is what made me decide to have a child', she said. Similar sentiments were expressed by others who further indicated that their experiences of seeing other HIV-positive people having negative children as a result of nevirapine is what assured them that it is possible (C4F, C14M). Thus being on HAART, appropriate information and seeing living testimonies

of people whose health has been transformed by HAART played a significant role in the reproductive plans of these couples and individuals.

The impact of prophylactic drugs on the foetus

A few respondents felt that HAART and nevirapine may pose a risk to the unborn child. Among these two were on HAART (C2F, C8F) while one was not (C7F). Only one still desired to have a child (C7F). These respondents felt that 'antiretrovirals are quite strong drugs which can ruin the foetus' (C2F). C8F felt that instead of having mitigating effects, prophylactic drugs may have a negative impact on the unborn child. Asked about the chances of having a negative child when one is positive but on ARVs she had this to say, 'imh, as for me I can say it makes matters worse to be on ARVs and then become pregnant. It may happen that you may give birth to an abnormal child'. C7F and C8F also felt that the MTCT risk was rather too high even with the availability of nevirapine. C7F said:

'though one is given that pill (nevirapine) there is danger especially during labour, it [child] can get it [HIV] during labour. It may miss it during pregnancy but catch it during birth. It can just be luck for it to come out negative but a-a-ah, it is rare'.

C8F also expressed similar sentiments:

'...the risks...I can say to be pregnant when positive is very dangerous. Of course even if nevirapine is there and you can go through that program to prevent transmission to your child the chances are that my child will be born positive'.

It is notable that both these women had children that were born when they were already positive. C7F discovered her status after she gave birth to an HIV-positive child while C8F discovered her status during pregnancy. Even though she (C8F) went through the Prevention of Parent to Child Transmission (PPTCT) programme and her 2-year-old child was HIV-negative she attributed the negativity of her child to miracles. She was not fully convinced of the efficacy of nevirapine and HAART on preventing MTCT of HIV to the unborn baby. The fears and concerns of these people with regard to *in utero* effects of ARVs on the foetus were not largely misplaced, as indicated on the discussion of the issue above. Nonetheless, their views on this and on the risk of MTCT even when one is on HAART points to the need for more relevant information regarding these issues to be made available to HIV-positive people.

Discussion

Three important issues with regard to childbearing emerged from the people who intended to have children. These related to HAART, mode of delivery should they conceive and their preferred mode of infant feeding. All these issues had an impact on their views on childbearing and to some on their decision to conceive. As Sauer (2003) notes, although AIDS remains a serious disease which, if not treated, can lead to death, with appropriate medical intervention the disease usually revolves towards chronicity and patients generally enjoy years of good health. This view of the disease was beginning to take root among those on therapy, with most in the study reporting that they now perceived it to be just like any other debilitating or chronic disease. The health that they had enjoyed since commencing therapy made them see AIDS as a manageable disease whose progression could be successfully controlled through a cocktail of antiretroviral drugs, diet and safe sexual practices.

With such an outlook it is not surprising therefore to see an increase in the percentage of HIV-positive people who intend to have children, since they see themselves living longer and more productive lives (Boer *et al.*, 2007).

Studies indicate that HIV-positive women on HAART are more likely to choose to conceive than those who are not. (Blair *et al.*, 2004) This is associated with improvements in health which are attributed to the use of HAART. This is seen as impacting on the reproductive decisions of HIV-positive people as well as their sexual activity because of improved health. The availability of HAART makes it possible for HIV-positive people to fulfil reproductive needs which they had before they discovered their sero status. HAART has given them hope, a new lease of life and as it reduces the risk of MTCT it will not be surprising to see more HIV-positive people choosing to reproduce. As people feel the burden of being HIV positive lifted off them and as the disease ceases to be seen as a death sentence, more HIV-positive people may take advantage of their new-found health and the low risk of MTCT afforded by HAART to reproduce.

Although some of the respondents who desire and/or intend to have children displayed a high level of relevant knowledge compared with their level of education regarding HAART, pregnancy and MTCT, there were still notable knowledge and information gaps. The fears and concerns expressed by some respondents regarding the impact of pregnancy on disease progression when one is on HAART as well as on the impact of HAART in mitigating MTCT, though well-placed, indicate a lack of understanding of antiretroviral triple therapy and its benefits or lack of in reproduction. There was also overestimation

of MTCT risk even among those who had close contact with health professionals, that is, those who had discussed their intentions to have a child with the health professionals. Most of the respondents considered the chance of having an HIV negative child at between 70% and 95%. There is thus a need to address this knowledge and information gap to enable HIV-positive people to make informed reproductive decisions. More information on the impact of pregnancy on the health of the mother, the impact of prophylactic drugs on the foetus, the relationship of HAART, MTCT, high CD4 cell count and pregnancy and on other health and psychosocial issues related to pregnancy and childbearing needs to be made available to HIV-positive people.

Conclusion

The effects of HAART on childbearing are not yet clear in the developing world, where it became available recently. However, the results of this study suggest that the positive benefits of HAART in terms of improved health and its mitigation of MTCT may lead a sizeable number of HIV-positive people to try for a child. As HAART becomes more accessible to an HIV-positive population which is mainly in its reproductive age, and as more information and evidence about HAART's effectiveness filters down, it is possible that more HIV-positive people who desire to have children will opt for conception. What is evident from the study results is that HAART had a significant impact on the reproductive plans of those who intended or desired to have children. Where previously they only 'dreamed' of having a child, they could now make that dream a reality. It is significant to note that all those who intended to have children pointed out that in the absence of HAART they would not have considered having a child. HAART seems to have been the foundation upon which they built their hope of having a negative child whom they could bring up themselves. The study results also point to the need to provide more relevant information on the issues discussed as there was some uncertainty and knowledge gaps among others who desire to have children about the efficacy of HAART in mitigating MTCT, and on the impact of pregnancy on the health of the woman.

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