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THE IMPACT OF HAART ON
THE REPRODUCTIVE DECISION-
MAKING PROCESS OF HIV-
POSITIVE PEOPLE IN
BULAWAYO, ZIMBABWE

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Abstract

This article explores how the advent of HAART has impacted the fertility plans of people with HIV/AIDS in Zimbabwe. It argues that HAART has had a significant impact on the outlook that HIV-positive people have on reproduction and health in general especially among those who intend to continue with childbearing. The results section presents responses from HIV-positive people who intend to continue with child bearing with regard to how the advent of HAART has impacted their views and decisions on this issue. The discussion evaluates, from a broader perspective, whether the views concerning HAART and reproduction expressed by those who intend to reproduce are justifiable. The article concludes that it is mainly the availability and efficacy of HAART that has motivated some HIV-positive people to continue pursuing their childbearing plans.

Introduction

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 obstetrical procedures have enabled those HIV-positive people who need children to have them with a very low risk of transmitting the virus to their infants.

This paper examines how the advent of HAART has impacted on the decision-making process of HIV-positive people in Zimbabwe. The article is based on a

study that reproductive decision-making among people with HIV/AIDS, I 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. The interesting issue which arises from the study is the centrality of HAART in the decision to have a child among those who intend to have one in the near future. Though a myriad of complex social, personal, medical and cultural factors were cited as important in desiring and deciding whether to have or not to have a child, they were found to be overridden by the respondents' health concerns. All the respondents who intended to have children noted that they would not have considered having a child if there was no HAART and nevirapine. This reveals their confidence in HAART. However not all respondents shared the confidence of this group.

From the results of the study, three identifiable groups emerge with regard to the issue of HAART, Mother to Child Transmission (MTCT), general health and reproduction. There are those who intend to have children as a result of diminished chances of MTCT and the good health afforded by HAART. Another group encompasses those who desire to have children in the future but who are 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. Then there are those who though conceding the effectiveness of HAART in improving their health feel that the risk of MTCT is still high. They therefore argue against HIV-positive people having children. This paper focuses on those who intend to continue with child bearing since they are the people who are likely to or who have experienced the impact of HAART on their reproductive decision-making. Noting that most of the studies on the impact of HAART on decision-making 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 explores the hypothesis that the improvement in health which is associated with the use of HAART plays a significant role in the reproductive decisions of HIV-positive people.

Method

Couples in the sample were participants in a qualitative study conducted to gain an understanding of reproductive decision-making among HIV-positive couples. Between February and May 2005, I conducted in-depth interviews with HIV-positive heterosexual couples in Bulawayo, Zimbabwe. 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.

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.

The sample consisted of 13 sero-concordant couples and 2 sero-discordant couples. The age of the sample ranged from 24 to 48 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 live. This means that unlike in rural areas, the study participants have ready access to health centres and theoretically have better access to health related information. They have access to information pamphlets in health centres; they can access information through radios, televisions and newspapers. In terms of socio-cultural status the respondents fall 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. For further sample characteristics, see Appendix Table 1 at the end of the paper.

Participants in the study were recruited with the help of the MSF office which seconded one of the HIV+ peer counsellors from the Mpilo Opportunistic Infections Clinic to help me. For the success of this research I am indebted to them. Before conducting an interview, study objectives and procedures were described to potential participants, and consent was obtained. Each interview lasted for an hour or more. All interviews were audio taped and transcribed. Interviews were designed to elicit, in the individuals' own words, the defining features of their life that might affect their reproductive health behaviours and decision-making; as well as their psychological and practical adaptation to HIV.

Results

The negative impact of HIV/AIDS on fertility has been well documented (Ntozi, 2002; Zaba & Gregson, 1998). HIV/AIDS generally lowers the fertility rate of those infected by the virus. Though high rates of desire to have children ranging between 26-30% among HIV-positive people have been documented, the actual fertility rate remains as low as 5% (Sauer & Chang, 2002; Chen *et al.*, 2001; Klein *et al.*, 2003; van de Vanter *et al.* 1998). This indicates 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 (CDCP, 1985; 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. This discussion however focuses on those who intend to have children in the near future and for whom HAART has played a significant role in this decision.

The study found that 26.7% (N=8) of the sample intends to have children in the near future. Some like Couple 12 (C12), have tried for a child in the past year but failed and intend to have another attempt 'soon'. There are a number of factors that these couples and individuals cited as motivations behind their quest to have children, the most common one being the importance attached to motherhood/fatherhood as well as the need to have a child of a particular sex by some. Couple 5 Female (C5F), Couple 14 Male (C14M), Couple 9 Male (C9M) and Couple 1 Male (C1M) all want to have children because they currently do not have any and they feel it is an important milestone in life socially and personally for one to be a parent. C4F and C5M point to the need to have another child as they had not had their desired number of children. C5M also points to the fact that it is difficult for him to have a child with his HIV-negative wife as there is a high risk of infecting her. As a result, he feels it is better to accomplish his goal of having another child with someone who has a similar sero status. C12 pointed out that they currently do not live with their children, either because they are grown up (C12F) or they are not in his custody in the case of C12M whose wife deserted him as a result of their sero-discordant status. However there is a complex interplay of forces behind their decisions to have children. The factors cited above are the ones which the respondents cited as the more immediate ones. Over and above these factors however, the availability of HAART and the impact it has had on their health seems to be the overriding factor in their quest to have children.

Most of the respondents who intend to have children are on HAART. However there are some who are not yet into the treatment programme. These are C4F and C14M whose CD4 lymphocyte cell counts are still well above the threshold of ≤ 200 which is used as the commencement standard for HAART at the OI clinics. C9M is HIV-negative. All the respondents in this group indicated that the impact of HAART on their health or the observed impact of the therapy on others has played a pivotal role in their reproductive decision-making. 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 testimony;

“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 normal healthy lives with some like C12M going back to work. C14M, who is not on therapy, also indicated that he has seen many people who have “unbelievably risen from death” as a result of HAART. With their health assured as a result of HAART the couples and individuals feel that they can take the chance and have a child. As C12 indicate, HAART has given them an assurance and hope that they can at least live a normal life, have children and raise them.

The advent of HAART seems to be significantly altering the landscape in reproductive decision-making. Whereas couples had only prayer to hold on to, now they are almost certain of having an HIV-negative child and this has strengthened their resolve to have children. The impact of their good health due to HAART on their chances of having HIV-negative children is not lost to HIV-positive people. A number (C12, C5, C1) noted that as a direct result of HAART, their CD4 cell count has gone up and their viral load is steadily declining. The link between this and MTCT was not lost either. All those who intend to have children are aware that as a result of a high CD4 cell count and diminished viral loads the chances of MTCT are significantly lowered. Though most of them put the chances of MTCT at between 5-30% when one is on HAART, actual risks are much lower at 1-2%, it remains an important point to them that these are relatively low percentages to such an extent that they are willing to take the risks.

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 its not in the blood anymore, its 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 blood stream 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 with 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 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.”

People who intend to have children seem to be very proactive in researching their chances of having HIV-negative children. They researched further on issues of MTCT, re-infection, impact of pregnancy on the mother, dietary issues and their chances of having an HIV-negative child. They seemed well informed on the choices and chances that they have. In this sample Couple 12 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 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 see as appropriate and sound information they felt that having or trying for a child at this 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 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 is high optimism in this group about their chances of having an HIV-negative child. This optimism is 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 post-natal.

The respondents also cited a number of strategies that can be used to reduce MTCT apart from being on HAART and nevirapine. These include 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 (C1M, C12, C5M). There was mention of avoidance of contraindicated drugs in pregnancy. 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. Breastfeeding was also indicated as another way that the mother may infect her child and most indicated that it is best for the mother not to breastfeed. C5F and C12M indicated that given the risks of transmitting the virus to the child during birth they would opt for an elective C-section. As C5M indicated with his statement of hope, there is confidence in this group that if all the available strategies to minimise MTCT are taken into account, then the result will be an HIV-negative child. He 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 is not strong; I do not see any risk of having a positive child”.

What is notable in this group is the centrality of HAART in their decision-making. This points to the fact that being HIV-positive plays an important role in reproductive decision-making. The respondents in this group pointed out that had it not been for HAART they would not have considered having children in spite of all other factors they indicated as important in their decision-making process. Though socio-cultural factors are seen as important in making a decision and are seen as driving the decision to have children now, they are not considered as the overriding factors. All the respondents indicated that the presence of these factors will not have pushed them into having children in the absence of HAART thus pointing to the critical role played by being HIV-positive in decision-making.

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 adds that being on antiretrovirals is 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. She further pointed out that without triple therapy she would not have considered having a child. 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 decision by these couples and individuals to conceive.

Discussion

Three important issues with regard to reproductive decision-making emerged from the people who intend to have children. These relate to their being on HAART, their chosen mode of delivery should they conceive and their preferred mode of infant feeding. All these issues have an impact on their decision to continue with child bearing. As Sauer (2003) notes, though 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 is beginning to take root among those who are on therapy with most reporting that they now conceive it just like any other debilitating or chronic disease like cancer or diabetes. The health that they have enjoyed since commencing therapy has made them see AIDS as a manageable disease whose progression can be successfully controlled through a cocktail of drugs, diet and safe sexual practices.

With such an outlook it is not surprising therefore to see a high percentage of people who intend to have children since they see themselves living longer and more productive lives. It is important to note that in the study all those interviewed were confident of the effectiveness of HAART in transforming their health. Those not on therapy pointed to examples of people they know who had AIDS but who since commencing therapy are now healthy. The general outlook on HAART among the interviewees was positive.

HIV-positive people on therapy indicated that the increase in their CD4 cell count gave them the courage to conceive while those not yet on therapy pointed to their 'high' CD4 cell count, the availability of nevirapine as well as HAART to fall back on as a basis for their wanting to have a child now. 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 (Frenkel *et al.*, 1997; O'Shea *et al.*, 1998; Mayaux *et al.*, 1995; Newell *et al.*, 1996; Landesman *et al.*, 1996; Maiques *et al.*, 1999; Ioannidis *et al.*, 2001). The optimism of people on HAART is therefore not misplaced. A number of observational studies have demonstrated low mother-to-child transmission in the setting of HAART (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.

In a study in the USA, the risk of transmission in women on HAART was 1.2% compared to 20% in women with no prenatal antiretroviral therapy (ibid, 2003). This means the couples and individuals who were interviewed stand a better chance of getting an HIV-negative child than they gave themselves. Most of them considered the chance of having an HIV-negative child at between 70-95%. Recent studies have also shown that MTCT rates may be as low as 1-2% in women with HIV RNA levels of below 1000copies/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. Furthermore the effectiveness of nevirapine as a single drug therapy has also been noted in reducing MTCT to around 5% (Conway, 2005).

The other important issue arising from those who intend to have children is their chosen mode of delivery. C5F and C12F indicated that it was preferable to go for an elective C-section as this further reduces the risk of MTCT. The role of elective C-section in reducing MTCT has been well noted (*Lancet*, 1999; NEJM, 1999). However recent studies in the era of HAART 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 1000copies/mL, many study results point to the significant morbidity associated with caesarean delivery among HIV infected women (Semprini *et al.*, 1995; Watts *et al.*, 2000; Marcollet *et al.*, 2002; Read, 2000). It is therefore important for those on HAART to consider this mode of delivery carefully with their GPs or HPs and the HPs have to play their role by giving up to date, appropriate and unprejudiced information so as to enable those who want to have children to make informed decisions.

A number of studies have demonstrated the role of breastfeeding in HIV transmission (Fawzi *et al.*, 2002; John *et al.*, 2001; Leroy *et al.*, 1998; Willumsen *et al.*, 2003; Meda *et al.*, 1997). 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 (John *et al.*, 2001; Dunn *et al.*, 1992). Those who are against child bearing among people with HIV/AIDS raised an important issue, that of in-utero exposure of the foetus to ARVs and the possible adverse effects this can have on it. This is still somewhat a grey area where

research is still ongoing. There are drugs that are contraindicated in pregnancy as a result of their association with malformation. A number of studies have found no increase in any specific fetal abnormality, neonatal condition or low birth weight with currently recommended antiretroviral regimens. However there is mixed evidence regarding the association between combination antiretrovirals and premature delivery (AIDS 2001 vol. 15; Tuomala *et al.*; 2002; JAIDS, 2003). Notwithstanding this, the information that those who intend to have children seems to be generally sound. Given the information they have their hope and optimism of having HIV-negative children is to be expected.

Studies in the USA where HAART has been available for years 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 widespread use of HAART. This is seen as impacting on the 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, it appears people are taking advantage of their newly found health and the low risk of MTCT afforded by HAART to reproduce.

What is notable among those who intend to have children is the importance of the availability and accessibility of reliable information in reproductive decision-making. It is important to note that due to lack of appropriate information C12 had at one time decided not to try for a child. This was soon after commencing therapy. C12M indicates that he got information to the effect that it was very dangerous to conceive while on ARVs especially to the foetus. However a number of studies have indicated that the in-utero risk to the foetus is rare if drugs contraindicated in pregnancy are not included in the drug regimen of the pregnant woman (APRSC, 2001; McIntosh, 2000). The importance of information in reproductive decision-making is also demonstrated by the lack of it exhibited by a number of people who desire to have children. C14F, C15, C13F and C11 all indicated they lacked information on the relationship between HAART and reproduction. This indicates an information vacuum and the need for more information on the association of HAART and conception among HIV-positive people. People need to be aware of how HAART relates to CD4 cell count, viral load and how all this relates to MTCT. Lack of this critical information is apparent among HIV-positive people and it needs to be addressed. It is therefore critical that such information be available to HIV-positive people through HPs, the media and other community outreach

programmes targeting HIV-positive in their support groups. There is need among HPs to note that being pregnant among HIV-positive people is not always accidental or unwanted. Cognisance needs to be taken of people's desire to conceive. As such there is need in the medical fraternity to move with the changing medical landscape in the field of HIV research and treatment.

In the era of HAART there is need for the medical fraternity to balance ethical and moral rationalities with patients' rights and autonomy and as such give HIV-positive people reproductive counselling that is non directive and supportive of the patients' decision. A supportive attitude through the provision of appropriate and accessible information is called for. However, in Zimbabwe this ideal situation seems to be still far off. The majority of HPs still encourage people with HIV not to conceive and the reproductive counselling they give generally directs people into non-conception. Most HIV-positive people including those who intend to have children indicate that they generally get anti-pregnancy information from HPs. In the study 76.7% (n=23) of the respondents indicated that they got anti-pregnancy information from HPs, 13.3% (n=4) said they got balanced information, 10% (n=3) had never heard any reproductive information from HPs, while none of the respondents indicated that they ever got pro-pregnancy information. From the interviews with HPs it emerged that 50% (n=6) took a conditional pro choice stance, 33.3% (n=4) were pro children while only 16.7% (n=2) were pro rights.

From the comparison and analysis of the views from HIV-positive people and the HPs it is apparent that HIV-positive individuals and couples are mainly given directive, prejudiced and generally anti pregnancy information. The dominant stance displayed by HPs on child bearing among HIV-positive people are conditional pro-choice and pro-children. HPs aligned to these points of view generally gave anti-pregnancy information to HIV-positive people. Thus the high percentage, 76.7% (N=23) of HIV-positive people who feel HPs are generally against them having children tallies with the high percentage of HPs who are likely to encourage HIV-positive people not to procreate (83.3%; n=10) . This high percentage of HPs who are anti pregnancy points to the need to urgently realign the medical fraternity with the realities on the ground. That is, HIV-positive people are likely to continue to have children in spite of the discouragement they get from HPs. In the age of HAART, with improved health, more people are likely to opt for pregnancy hence there is an urgent need to provide people with adequate information for them to make informed decisions. It is also apparent the existence of the information gap among HIV-positive people is a result of the failure by the health sector to anticipate the need to have children among HIV-positive people. This can be linked to the continued stance in the health sector to try and promote non-conception among HIV-positive people.

Concluding remarks

Although the effects of HAART on fertility are not yet clear both in the developed world where HAART has been available for longer and in the developing world where it became available recently, the results of this study indicate that improved immune system and good health has led a sizeable percentage (26.7%; n=8) of HIV-positive people to opt for pregnancy. From the results of the research it may be further inferred that as HAART becomes more accessible to a population which is mainly in its reproductive age, and as more information and evidence about its effectiveness filters into the infected population, more HIV-positive people who desire to have children will opt for conception. What is apparent from the study is that HAART has had a significant impact on the decision-making process of HIV-positive people. It has in fact played a pivotal role among those who intend to have children. Where previously they only dreamed of having a child they can now make that dream a reality. It is significant to note that all those who intend to have children now do point out that in the absence of HAART they would not have considered having a child. Thus the impact of HAART is evident in their decision-making. It is the foundation upon which they have built their hope of having a negative child whom they can bring up themselves.

Appendix Table 1 – Main Characteristics of the HIV-positive sample

		Age	Relationship status	Level of education (years in educ)	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		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
C12	F	36	Single; in a relationship	Secondary (11 yrs)	1	1	0	HIV-positive Dec2002	Yes Apr.2004	yes	yes	Peer counsellor
	M	38	divorced; in a relationship	Secondary (11 yrs)	3	NA	0	HIV-positive 2003	Yes May2004	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	NA	2	HIV-positive Oct.2003	Yes Jul.2004	yes	no	Security guard
C14	F	24	Single; in a relationship	Secondary (11 yrs)	0	0	0	HIV-positive Jan.2004	no	yes	No	Self employed
	M	29	Single; in a relationship	Secondary (11 yrs)	0	NA	0	HIV-positive Dec.2003	no	yes	Yes	unemployed
C15	F	35	married	Primary (7 yrs)	1	2	0	HIV-positive Feb.2005	no	yes	no	Self employed
	M	30	married	Secondary (9 yrs)	1	NA	0	HIV-positive Mar.2005	no	yes	no	Self employed

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