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Missed Opportunities for HIV Infection Prevention in HIV Sero-Discordant and X-Negative Concordant Couples

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1. Introduction

Most HIV-1 transmission in Africa occurs among HIV-1-discordant couples (in which one partner is HIV-infected while the other one is not) who are unaware of their discordant HIV-1 serostatus (1). HIV-negative individuals living in stable HIV-discordant partnerships are twice as likely to get infected with HIV as those living in concordant HIV-negative relationships (2). The percentages of couples in HIV sero-discordant relationships range from 5 to 31% in the various countries of Africa (3). In a study conducted at five sub-Saharan HIV affected countries, at least two thirds of the infected couples are discordant couples. Between 30 and 40 percent of the infected couples are couples where the female partner only is infected (4). The risk of HIV transmission through sexual intercourse from an HIV-positive male to an HIV-negative female was estimated as being around 1 in 10 for less than 10 unprotected contacts and around 1 in 4 after 2,000 contacts(5). What accounts for high rates of HIV-1 discordance and why some individuals remain uninfected despite repeated sexual exposure to HIV-1 is unknown. StudyingHIV-1-discordant couples may contribute to understanding correlates of HIV-1 immunity and acute infection. Additionally, HIV-1-discordant couples are an important population for prevention efforts. Consequently, HIV-1-discordant couples are increasingly viewed as a valuable source of participants for HIV vaccine and prevention trials(6).

Misconceptions about discordance are widespread among clients and counselors. Common explanations includes: the concept of a hidden infection not detectable by HIV tests, belief in immunity, the thought that gentle sex protected HIV-negative partners. Such explanations for discordance reinforce denial of HIV risk for the negative partner within discordant couples and potentially increases transmission risk. Couples identify negotiation of sexual relations as their most formidable challenge. Discordant couples represent a critical risk group and improved counseling protocols that clearly explain discordance, emphasize high risk of transmission, and support risk reduction are need(7)

The need for conception seems to lead couples to HIV infection. HIV sero-discordant couples with strong desire for childbearing have a dilemma of risking HIV infection or

infecting their spouse. The main reasons for wanting a child include: ensuring lineage continuity and posterity, securing relationships and pressure from relatives to reproduce. However the challenges include: risk of HIV transmission to partner and child, lack of negotiating power for safer sex, failure of health systems to offer safe methods of reproduction(8).Natural conception could now be considered a possible alternative for HIV sero-discordant couples, as long as complete suppression of viremia with HAART is achieved in the infected partner (9). Overall, it would appear that unprotected sex for the purposes of conception in couples with the HIV-infected man not taking HAART carries a risk of HIV transmission to the female of no more than 8%(10).Given that both sexual and perinatal transmission of HIV is directly correlated with the level of viral replication, being almost negligible in patients with undetectable viremia, HAART should be given to the infected sero discordant partner to minimize the risk of transmission (11). For ethical issues raised by (assisted) reproduction for HIV positive men and women, recommendations are made concerning methods avoiding HIV transmission in the couple and to their offspring. It is concluded that, if certain precautions are taken, medical assistance to reproduction of HIV positive people is ethically acceptable. For the time being, only cases of serodiscordant couples should be considered (12).

Provision of HCT to family members of people in HIV care and treatment programs is an important intervention for case finding and prevention of HIV transmission, especially among discordant couples (13). Interventions targeting sero-discordant couples should explore contraceptive choices, the cultural importance of children, and partner communication (3). Family planning and HIV prevention programs should integrate counseling on ''dual method use'', combining condoms for HIV-STI prevention with a long-acting contraceptive for added protection against unplanned pregnancy (14).

In a study conducted on 535 African American HIV serodiscordant, 72% of couples reported that one or both had child sexual abuse histories. These findings underscore the heightened emotional vulnerability, and STI and HIV transmission risk taking practices, associated with sexual abuse. Adult and child sexual abuse histories among couples should be assessed to better understand how these histories may contribute to couples dynamics and risk-taking practices(15).A Study on women from three AIDS information Centres in Uganda showed alcohol abuse by the male partners was an important factor in the experience of sexual violence among the women. Their experiences evoke different reactions and feelings, including concern over the need to have children, fear of infection, desire to separate from their spouses/partners, helplessness, anger and suicidal tendencies. HIV counseling and testing centers should be supported with the capacity to address issues related to sexual violence for couples who are HIV discordant (16). Male-focused and couple-focused testing and counseling programs appear to be effective in reducing risky sexual behaviors in heterosexual couples, even if one or both partners have received testing and counseling services previously (17).

New developments in therapy, counseling, testing technology, and new trends in the HIV epidemic have increased the value of partner notification. In general, between 50 and 100% of notified partners will accept counseling about their HIV exposure, and will agree to have an HIV test (18).Such partner referral for HIV testing through partner notification reduces the missed opportunities for HIV infection prevention.

Missing the ways to prevent factors contributing for HIV infection in negative concordant and sero-discordant couples gradually lead to a new infection to the partner as well as to the other family members. The primary aim of this study is to identify factors contributing to missed opportunities for HIV infection prevention in HIV discordant and x-negative concordant partners before they become concordant HIV positive couples.This study is designed to uncover the degree and the reason why missed opportunities in HIV infection prevention occur in sero-discordant, concordant and x-sero negative concordant (who was HIV negative concordant and later became sero-discordant or positive concordant) couples.

2. Methods

A qualitative study methodology was applied both on HIV discordant (including x-negative concordants) and HIV positive concordants living together. Confidential in-depth interview

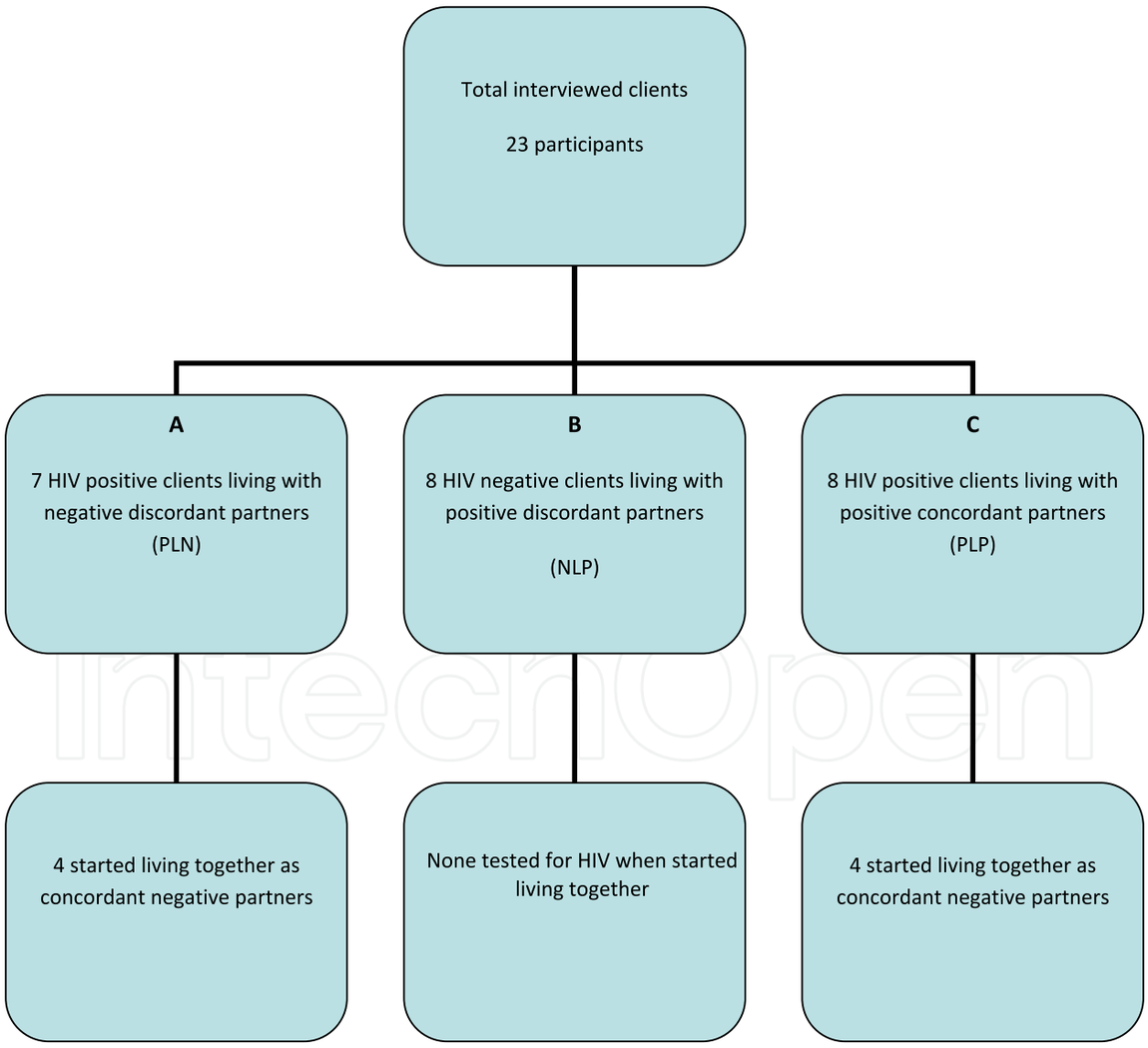

Fig. 1. Schematic representation of participants involved in the study

of HIV positive concordant and HIV discordant living clients was conducted till saturation reached. Data was collected at Mekdim clinic (a local NGO clinic mainly devoted to treating clients living with HIV), Bahirdar office, Ethiopia. Twenty three interviewed clients were categorized to three cohorts to exhaustively exploit the views from different perspectives. Category 1: Positive clients living with negative partner (PLN). Seven clients involved in the interview of this category.Catagory2: Negative clients living with positive partner (NLP). Eight clients involved in this group. Category 3: Positive clients living with positive clients(PLP) .Eight clients participated in this group. Data collection was conducted by three health professionals who were trained on VCT and ART to ensure the data quality. To maintain clients' privacy and confidentiality, clients were interviewed in separate room and clients name were not included during the tape recorded in-depth interview.

The collected data was transcribed and categorized in to the five themes. Initially four themes were identified for the analysis of the findings: the theme of timing in HIV test result awareness, the theme of knowledge and practice of clients in HIV prevention, the theme of reasons for seroconversion and the theme of missed opportunities in preventing exposure to HIV infection. One emergent theme was later included during the analysis of the finding: the theme of future intention on marital relationship. The data was analyzed using qualitative(STATA) software

3. Result

3.1 HIV positive clients living with negative discordant partners (PLN)

Seven HIV positive clients who were living with negative sero discordant partners were interviewed in the first group. The time of clients' knowledge of their HIV test result as positive was ranged from one year to six years. The majority (four out of seven) of respondents knew their blood status negative before marriage. These four participants lived together with their partners as negative couple for an average period of 3.5 years. An average year of living together as sero-discordant was calculated to be 2.4 years. The average year of positive result notification to clients was 3.28 years. A 38 years old female participant said "I waited for one year before I told my husband about my HIV positive result ''.All respondents were still living together with their partners; however, three clients thought that divorce is eminent. All of them described that they had one extra partner in their life. Three participants did not satisfy with their sexual relationship because the sexual relationship is usually occurred infrequently; sometimes once in every month. The duration may be much longer due to severe illness like tuberculosis.

Six participants used condom during sexual intercourse. However, only four reported consistent condom use. Five among seven participants said that there were some possibilities of infecting their partners. A 35 years old HIV positive client living with an HIV negative husband said "Sometimes we were having sex without condom". Three clients confirmed that there was no means of complete prevention method for their negative partner. As the result, they believed that, sooner or later, their partners would be infected. Of the seven respondents, three used dual protection. Three of the seven respondents did not know the prevention methods of HIV transmission from the mother to children. Two participants had already given birth of two children (one HIV positive and one HIV negative children). Four out of seven participants wanted to have children in future but

feared that their babies might be infected. A 42 years old male participant said "We wanted to have children but we feared the virus transmission to them". The majority of patients (five) had started ART drugs with an average duration of one year and six months.

3.2 HIV negative clients living with positive discordant partners (NLP)

Eight HIV negative clients who were living with positive sero discordant partner were interviewed in another group. These HIV negative clients had been living together with their HIV positive partners for an average of five years. All of the interviewed clients didn't know their blood status until they tested together. As the result, none of the participants were able to describe if they were both negatively lived together. Similarly, sero status check up was done once in their life with an average time of five years. All negative partner who lives with positive partner preferred not to be tested any more. A 38 old man said ''Once I tested negative, I did not want to be tested again for fear the result might affect my life". Three participants partner have shared their positive result immediately while four participants partner talked lately after duration ranged from 2 months to two years. Six said that they had one or more partners before their marriage. Six participants said that they were satisfied with their sexual relationships with their partner. However, three of the eight HIV negative discordant who had been living with positive partners were decided to divorce a moment later. The five participants also said that they had interested to discontinue the marriage.

Half of the eight HIV negative participants living with positive partner did not know how to prevent HIV infection. Only one participant responded the couple used condom consistently during their sexual intercourse. Three participants didn't know the availability of the reduction of HIV infection transmission from mother to child. Half of the participants wanted to have children. However, fear of positive children was their challenge. Three participants believed that their blood status would never turn out to be positive .A 34 years old male HIV negative respondent living with discordant wife said ''How can I become positive?, my blood remains negative''.

3.3 HIV positive clients living with positive partners (PLP)

Eight HIV positive clients living with HIV positive partner as concordant were interviewed in separate group. The average year of knowing sero status as positive for both couple was calculated to be 4.1 year. Four out of eight participants had a negative test results by the time of marriage. However, all study participants knew their positive result at the same time with their partner during the couple counselling. Five participants lived together with their partner as HIV negative couple for period ranged from one year to 20 years. A 37 years old man said " I had lived with my wife for about 20 years as HIV negative". However, as most interviewed clients were not tested while living together, they did not know if they lived as discordant couple for sometimes. For couples who tested together and proofed they were both positive, the sequence of seroconversion among the couple was difficult to sorted out putting the couples in dilemma. A 35 years old female said "We had similar results of living with HIV on the same day; therefore, it was difficult for us to say who was infected first''. Three participants were not satisfied in their marital sexual relationship. Two participants had already thought of divorce because they believed that "it was difficult to live together persecuting each other all the time"

Three participants delayed the disclosure of their positive status to other family members by about one to two years of duration. Seven of HIV positive participants believed that their HIV infection easily could had been prevented if they took precautions and they condemned their past negligence. Five HIV positive clients living in concordance relationship said that they had other sexual partners out of their marriage. All of the study participants reported they were using male condom all the time they had sex with their positive partners. Two participants said that they used male condom and injectables as dual protection. Six participants knew the method of prevention from mother to child transmission.

Serial No.	Description		Positive Living with Negative partner(PLN)	Negative Living with Positive partner(NLP)	Negative Living with Positive partner(PLP)
1.	**Participant HIV status**		**Positive**	**Negative**	**Positive**
2.	**Total number interviewed**		**7**	**8**	**8**
3.	**Average age of participants**		**32.2**	**33**	**35.7**
4.	**Sex**	**Male**	**3**	**4**	**4**
		Female	**4**	**4**	**4**
5.	**Total average years of living together in marriage**		**5.75**	**5**	**6.5**
6.	**Time of HIV result seroconversion awareness(years)**		**3.3**	**4**	**4**
7.	**HIV serostatus of both couple before marriage as negative**		**4**	**unknown**	**5**
8.	**Participants who lack basic knowledge in HIV infection prevention**		**5**	**4**	**7**
9.	**Current regular and consistent condom use**		**4**	**1**	**8**
10.	**Use of dual protection**		**3**	**1**	**2**
11.	**Client/partner use of ART**		**5**	**6**	**7**
12.	**Belief in self/partner HIV infection while living as serodiscordant**		**5**	**5**	**NA**
13.	**Need of participants for children**		**4**	**4**	**2**

Table 1. Summary of result on missed opportunities in HIV sero discordant, positive concordant and x-concordant at Bahirdar Mekdim HIV/AIDS clinic, Ethiopia, Feb/2011

The majority of participants (six) did not want to have children. Two participants had already two children with both HIV positive result. Seven participants of HIV positive clients living with HIV positive partner had been taking ART. The average time since ART started was 3.5 years.

4. Discussion

4.1 The theme of timing in HIV test result awareness

The timing of HIV test result awareness of the participants' and/or the partners' positive result for all groups was less than five years (PLN=3.3yrs, NLP=5yrs, PLP=4yrs).This time was the duration since the couple became living either as discordant or concordant positive couple. Large proportion of interviewed participants knew their sero status as negative before they were married. Four out of seven HIV positive sero discordants lived sometimes as HIV negative concordants after their marriage with their recent partners (PLN=4/7).Five out of eight positive concordants Participants were both negative concordant at the time of their marriage (PLP=5/8).The important timing of living together as negative before becoming discordant positive was fairly long duration (PLN=3.3 years).

For HIV negative patients who were living together with HIV positive partners, they all knew their serodiscordance at the time of couple counselling. They were never tested before. This highly substantiates the importance of couple counselling in tracing such kind of serodiscordant married couples who has never tested before. However, failure of these clients to have their premarital HIV test result raises the concern of whether serodiscordancy was before or after the marriage. These group of clients were also not checked again once they were tested negative (average duration since tested was 5 years).The major reason for their not being tested then after and frequently was the fear of receiving positive result.

For HIV positive concordant clients who tested together as positive, the timing and origin of infection among the couples paused dilemma. Though the majority (five out of seven) started marriage tested as negative, the focus of infection among the couples remained unknown. This is highly linked with infrequent testing among the couples which negatively contributed for the inability to address the prevention methods within the available short sero discordance period among such couples (on average tested every 4.3 years). However, the majority of same couple had frequent HIV viral load test check-ups(every three to six months) after their HIV infection.

Three of the seven HIV positive interviewed sero discordant were women while four of the eight HIV negative living in serodiscordant were women. This shows proportion of male to female positive proportion among serodiscordant couples is almost similar which supports the finding stating women are as likely as men to be the index partner in a discordant couple (19).

4.2 The theme of clients HIV prevention knowledge and practice

The majority of the interviewed sero discordant participants in each groups lack the basic HIV prevention knowledge (PLN=5/7,NLP=4/8).The majority of participants living as positive concordant(PLP=7/8) said they lacked the basic HIV prevention knowledge by the time of their infection and regretted back of those occasions. The majority of respondents

were not consistently and regularly using condoms (PLN=4/7,NLP=1/7,PLP=8/8).The consistent use of condom was low among the serodiscordant than concordant positive which risked the negative partners infection. Dual protection was universally low among all groups (PLN=3/7,NLP=1/7,PLP=2/8). The majority of the participants or their partners (for negative clients) were already on ART which may contributes positively for the clients living in discordance ((PLN=5/7,NLP=6/7,PLP=7/8). The majority of clients living in serodiscordant relationship believed that they would either infect their partner or be infected some time in future(PLN=5/7,NLP=5/8).

4.3 The theme of reasons for seroconversion

Large proportion of clients living in sero discordant relationship wanted to have children (PLN=4/7, NLP=4/8). This supports the study which showed 59% of the sero discordant participants desired to have children. The same study showed that the belief that serodiscordant partners wanted children was a major determinant of the desire to have children, irrespective of the HIV sero-status (20).The interest to have children was lower in HIV positive sero concordant clients; only two out of eight HIV positive concordant couple wanted children.

The fear associated with the risk of HIV infection to the negative partner as well as to the child was mentioned frequently for their desire not have children. Moreover, the majority from all groups lacked how to prevent the transmission of HIV from mother to child. Two HIV positive participants who were living with negative partner had already given birth of two children (one positive and one negative sero- status children).One negative male participant living with positive partner took the risk and had one HIV negative child. This type of occasion seems to support the idea which goes 'natural conception could now be considered a possible alternative for HIV sero discordant couples, as long as complete suppression of viremia with HAART is achieved in the infected partner' (11).

Multiple partner sexual relationship was common both in sero discordant and sero positive concordant before the seroconversion. All of the three groups, the majority described they have had extra marriage relationship before or after current marriage (PLN=5/7, NLP=6/8,PLP=5/8).Some participants were not satisfied with their sexual relationship because it was usually occurred infrequently, due to fear of infection and sometimes due to severe illness like tuberculosis. The majority of participants with HIV positive result reported that they enjoyed their sexual relationship and they usually practiced one to twice in a week. The infrequent use of condom predisposed the sero discordant couples with negative partner in further risk of infection. This result is consistent with the finding which stated that fear of transmitting the HIV to the sero negative partner is constant. Besides the fear, there are the difficulties to talk about the problem, to plan the future and to keep a satisfactory sexual life. Condom use does not seem to be an easily adopted practice (21).

HIV positive result disclosure remained a challenge to sero discordant partners. Four out of seven positive partners did not disclose their result immediately to their negative partner. They waited until 6 months to one year duration. Four HIV negative participants' partner were shared their partner positive results lately(duration ranged from two months to two years). Some participants from concordant positive partners delayed the disclosure of their positive status to other family members by about one to two years of duration. Such delay in HIV positive result disclosure has a negative impact in the

prevention of the disease. Subsequently, a further missing of opportunities for HIV infection prevention occur.

4.4 The theme of missed opportunities in preventing exposure to HIV infection

From the total interviewed twenty three participants, fifteen were sero discordant clients and were lived for an average duration of 3.8 years with their partner in serodiscordant relationship. Discordant couples were living together for long period of time without using HIV infection prevention techniques. With few knowledge of HIV prevention and practices, discordant couples were missing the opportunities of preventing themselves as well as their partners from HIV infection. This result goes with the finding which showed partners in a negative serodiscordant relationship are at higher risk of HIV infection by not taking appropriate HIV transmission preventions techniques. (22).

A total fifteen HIV positive clients were interviewed. Nine of these HIV clients were married as negative. Their results became positive after lived for more than four years as negative partners. Had prevention of HIV infection intervention been made, these clients with their partners could have been saved from HIV infection. Such loss of opportunity is related to the finding which states HIV negative participants in sero concordant relationships view themselves at relatively low risk for HIV transmission and they make infrequent HIV test (22).Partner notification and referral for HIV test was delayed in most of the occasions of all group might have led to an increase in missed opportunity for prevention of further new infection. But, a study conducted to assess the outcome of partner notification showed that there is a high degree of compliance suggesting that at-risk groups are interested in obtaining information about their exposure and the options available for management provided that positive partners disclose their result (18).

The gap found in knowledge and practices of interviewed clients on HIV prevention was mainly linked to the missed opportunities by health professionals in addressing the issues while clients were in the health facilities.HIV transmission may be reduced among HIV discordant couples after initiation of ART due to reductions in HIV viral load and increased consistent condom us (11).Five of the 23(self or partner positive) clients were not on ART which increases the risk of infection.

4.5 The theme of future marital relationship

The majority of HIV positive client living together with a negative partner didn't want to think and discuss issues on future marital relationship or divorce. However, a good number of this group(three out of seven) think that divorce is inevitable. Almost all negative clients living with positive partner prefer divorce (three decided to recently divorce and five interested to discontinue the relationship).The future plan of living together in marital relationship looked stable among concordant HIV positive clients(six out of eight want to live together). However, some participants (two) mentioned their relationship would not continue because of continuous accusation of one another. A 38 years old male HIV positive client living with HIV positive partner said "it is difficult to live together persecuting each other all the time".

5. Conclusion

A large number of HIV sero discordant and x-sero negative concordant couples were living together for long period of time without using HIV prevention precautions. As the result,

married or cohabiting couples started living together as HIV negative concordant have lost the opportunities of preventing HIV infection and became HIV serodiscordant and then HIV positive concordant. Factors contributing for missed opportunities for HIV infection prevention among sero discordant and x-sero negative concordant couples were found to be related to infrequent HIV testing, delayed HIV result notification to partner, lack of knowledge and practice onHIV prevention, the need for children and dissatisfaction in sexual and marital relationship.

6. Acknowledgment

We are highly grateful for the dedicated data collectors and all staffs of Mekdim Ethiopia, Bahirdar clinic, for their full collaboration while we conducted the study in the clinic. Without their assistance and group effort this study would have not been realized. Our sincere thanks goes to Mr.Menberu Getachew for reviewing and commenting on the semi-structured interview questionnaire and commenting throughout the study process. Finally, we highly acknowledge the contribution of Dr Belete Tafesse for his constructive comment till we completed the work of this study.

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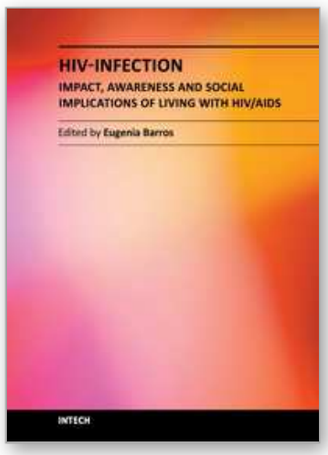

HIV-infection - Impact, Awareness and Social Implications of living with HIV/AIDS

Edited by Dr. Eugenia Barros

ISBN 978-953-307-343-9
Hard cover, 336 pages
Publisher InTech
Published online 26, October, 2011
Published in print edition October, 2011

The past few decades have seen the escalation of HIV-infections and the 'frantic' search for new drugs to treat the millions of people that live with HIV-AIDS. However because HIV-AIDS cannot be cured, but only controlled with drugs, and the Antiretroviral (ARV) treatment itself results in some undesirable conditions, it is important to generate wider awareness of the plight of people living with this condition. This book attempts to provide information of the initiatives that have been used, successfully or unsuccessfully, to both prevent and combat this 'pandemic' taking into consideration the social, economic, cultural and educational aspects that involve individuals, communities and the countries affected.

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