

Lessons learnt from ongoing counseling during follow-up visits by men and women attending a VCTC

Nita Mawar^{*}, Rajani Bagul, Suvarna Sane, Tuman Katendra, Srikanth Prasad Tripathy, Ramesh Shivram Paranjape

National AIDS Research Institute (ICMR), Pune, India

Abstract. Documenting behavior change through ongoing counseling is critical when HIV counseling strategies are being formulated. This study aims to demonstrate risk reduction behavior in a year in the context of HIV related problems in men and women attending ongoing counseling at a Voluntary Counseling and Testing Centre during their regular follow-ups. This is a descriptive study based on one year observation of 253 HIV infected men (112) and women (141) attending a Voluntary Counseling and Testing Centre for ongoing counseling of a research institute in Pune during six-monthly follow-up visits. A face to face interview using a 22 item semi-structured questionnaire administered after an informed consent to collect data on sexual history since last visit, condom use, HIV related problems etc. SPSS and Pearson's chi-square test Association was used. The HIV infected ever married men (91%) and women (98% married including widows) have significant differences with respect to age, marital status, occupation ($p < 0.01$), and similarity in education. There is an increase in condom usage with spouse with advancing follow-up i.e. increasing dose effect through ongoing counseling is observed, it being statistically significant for men (P value < 0.004). Consistent condom use with other partners is reported by men and widows. The participants reported problems ranging from health, economic, social, support issues like stigma and concerns of future. Economic problems are reported in those having frequent follow-ups, being more in men than women (34%, 29% resp.). An ongoing counseling of follow-up participants is a useful opportunity to reinforce behavior change, demonstrated by safer behaviors, especially reduction in partners, consistent condom use with spouse and other partners. The problems faced by HIV infected require support of Non- governmental organizations to address their problems like alternative source of incomes, health care, children's education, and women's right to property etc. Networking of Non- governmental organizations for support, capacity strengthening including gender sensitivity should go hand in hand with ongoing counseling to bring sustained behavior change when other interventions are planned for HIV infected persons.

Key words: Behavior change, consistent condom use, dosage effect of counseling, HIV infected widows, human rights, Stigma

1. Introduction

In India are 2.5 million (between 2 million to 3.1 million) (1) people living with HIV, a figure confirmed by UNAIDS in 2008 (2). Currently, among those living with HIV, an estimated 39% are females, 3.5% are children and rest are adults (15 years or above) i.e. 0.34% prevalence (3). The Indian government and NACO established a large network of integrated counseling and testing centers (ICTCs) the erstwhile Voluntary Counseling and Testing

Centers (VCTCs) in a phased manner. The number increased from 62 VCTCs in 1997 to 4245 ICTCs in 2007 (4). These centers tested 5.9 million people for HIV in 2007, a major increase from just 0.14 million tested in 2001 (3). It is expected that the ICTCs access, utilization and services for care and support including counseling would bring behavior changes.

A higher voluntary counseling and testing utilization (VCTU) and prevention practices has been reported in studies elsewhere (5-7). It is seen that discussions during ongoing counseling focusing on risk reduction behaviors are reinforced over a period of time through VCTU that brings behavior changes overtime, although this number gets relatively lower in subsequent follow-ups (5-9). Thus the effect of VCTU over a period of time (8-10) works as a dose effect of

^{*}Correspondence: Dr Nita Mawar Scientist 'F'
National AIDS Research Institute (ICMR)
73-G, Bhosari Industrial Estate PB1895 Pune, 411026 India
Email: nmawar@nariindia.org, nita.mawar@yahoo.com

discussions at each subsequent visit for counseling. Risk reductions through decrease in casual sex practices, increased access of VCTU and use of care and support services have been documented to show behavior change in adults and adolescents (13-17). Behavior change includes disclosure of HIV status to spouse and significant others. Disclosure has mixed results of significant risk reduction in sero-discordant couples after disclosure to having multiple partners and unsafe sex with regular partners among those who had not disclosed their status (15-18, 19). Logically, participants absorb more need based information that is contextualized as per the problems that they experience. Also, at each follow-up visit more frequent ongoing counseling opportunities are possible which reinforces behavior change. This “dosage effect” of counseling during follow-up visits is useful and needs to be studied. This has been successfully demonstrated in the NACO’s feasibility study to prevent mother to child transmission where ongoing counseling during frequent visits enabled reinforcing drug compliance to women in last month of gestation and after delivery mother’s appropriate feeding

practice for the new-born like either only breast feeding or only alternate feeding (20).

Ongoing counseling during follow-up visits leads to sustainable behavior changes where the actual concerns of participants are understood, contextualized and addressed during counseling sessions aimed at care and support (20). Follow-up assessment within a year of enrollment has shown an improvement in safe behavior for prevention among women and adolescents (20, 21). Thereby, a need to compare the VCTC participants getting ongoing counseling at varied levels of follow-up becomes imminent. The emphasis by government to improve care and support for HIV infected individuals through ICTCs makes it pertinent to document behavior modifications, by understanding concerns and problems that HIV infected persons experience to plan evidence based strategies for care and support for those living with HIV infection.

This study aims to demonstrate risk reduction behavior in a year in the context of HIV related problems in men and women attending ongoing counseling at a Voluntary Counseling and Testing Centre (VCTC) during their regular follow-ups.

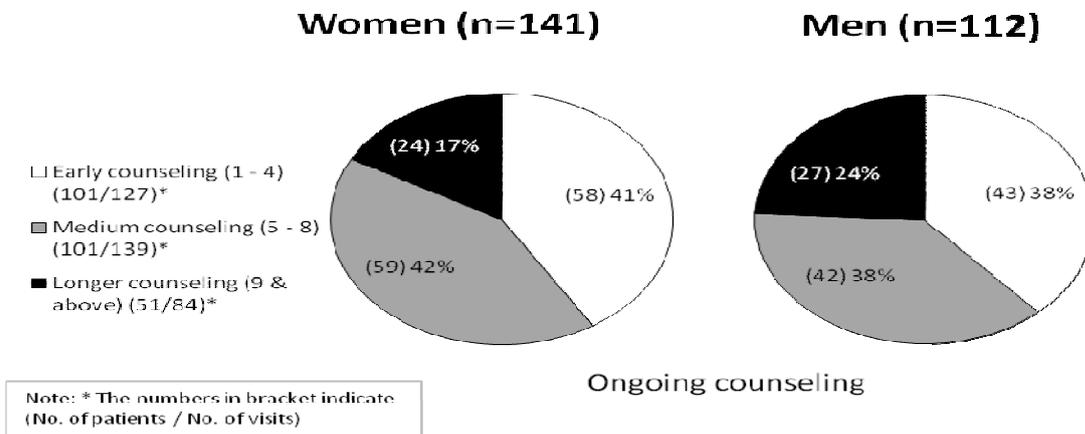


Fig. 1. Snap-shot of follow-up visits by women and men according to the frequency of visits to VCTC.

2. Material and methods

The present study is descriptive based on six-monthly follow-up visits made by men and women at Voluntary Counseling and Testing Centre of a research institute in Pune during the period 1st April 2008 to 31st March 2009. The follow-up data is based on ongoing counseling. A snap-shot people living with HIV visiting the VCTC for ongoing counseling in one year is

analyzed. The participant coverage ranges from first follow-up visit made after knowing HIV status at post test counseling to those who made more than 15 visits i.e. those experiencing their HIV positive status for past six months to those who are living with HIV for more than six to eight years. The present study represents 253 HIV positive study participants who made a total of 350 visits in this year 1st April 2008-31st March 2009 with varied experiences of ongoing

counseling at these visits (Fig 1). All participants were provided ongoing counseling during the follow-up visits made by them.

2. 1. Intervention

The follow-up study participants were provided ongoing counseling as per WHO/UNAIDS and NACO guidelines aimed at risk reduction, disclosure of the HIV status to partner, understanding and contextualizing their problems related to HIV status as individuals, as family members or in neighborhood, place of work and coping with the problems that HIV positive persons experience through supportive counseling (20-23). During the interactive ongoing counseling sessions, concerns of the study participants were discussed that included sharing experiences by being HIV positive related to their health, disclosure, future plans like marriage and having a child etc. vis a vis their risk behavior. Based on discussions various options were discussed with the participants to plan their strategies for coping with the problems through individual and couple counseling. At each subsequent follow-up visit the risk reduction behavior through ongoing counseling was reinforced. This is referred the dosage effect of counseling in this study. The present study captures the problems reported during this one year period in context of HIV risk. The following definitions are used.

2.2. Follow up visit

In the present study each participant is classified as getting early, medium or longer ongoing counseling based on the number of follow-up visits made at the VCTC. Those making one to four follow-up visits (approximately 2 years) are called as Early and those making five to eight visits (approximately 3rd - 4th year) are referred as Medium and the Longer are those coming after eighth visit i.e. five or more years of ongoing counseling. During each follow-up visit safe behavior and related issues are discussed to reinforce behavior change through additional dosage effect of ongoing counseling. Those who made two follow-up visits in the year are referred as FU-2 and those making three visits in the year are referred as FU-3

2. 3. Ongoing counseling

On knowing the HIV status, ongoing counseling is provided to study participants during each follow-up visit. Each participant is encouraged to make at least two follow-up visits in a year at the VCTC where on-going counseling

addressing to specific issues of the study participant is provided along with test for CD4 counts for clinical management. The early, medium and longer ongoing counseling reflects the varied dosage of counseling provided for reinforcing risk reduction to bring behavior change.

2. 4. Data collection

The study data set is based on 350 follow-up ongoing counseling visits by 167 men and 183 women during one year by representing 253 HIV infected study participants of which 112 are men and 141 women. Amongst these 253 participants 82 (47 men and 35 women) made two visits in the year referred as FU-2 and of these 14 (8 men and 6 women) made three visits in the same year, referred as FU-3.

2. 5. Tools

Face to face interview (FTFI) using a 22 item pre-tested semi-structured questionnaire was administered by trained counselors for each individual, to collect individual data since last visit on the sexual history, their type and number of partners, frequency of condom use, reported HIV related problems. This record was maintained for each individual at each follow-up visit and computer files maintained. Subsequent to the individual interview, ongoing counseling was provided based on individual needs.

2. 6. Ethical concerns

As an Institutional policy written informed consent was obtained from all participants at each follow-up visit. The participant's identity was kept confidential by assigning a personal identification number for each participant and computer files maintained by this number.

2. 7. Statistical methods

Mann-Whitney U test was used for comparison of median. Association of various socio-economic characteristics with gender was tested with Pearson's chi-square test. SPSS 15.0 (SPSS Inc. USA) is used to run the analysis. Analysis for linear trend in proportion was done using chi-square test. The analysis was done in Epiinfo Statcalc version 6 (November 1993). The qualitative data from the semi-structured questionnaire was coded and analyzed as per the themes.

Table 1. Socio-demographic characteristics of men and women follow-up visit in 2008-09

Characteristic	Women (n=141)	Men (n=112)	P value
Age(in years)			
Mean	32 years	39 years	<0.01
Std. Dev.	6.8	8.8	
Marital status			<0.01
Unmarried	2% (3)	9%(10)	
Married	47% (66)	85% (95)	
Divorced	6% (9)	3% (3)	
Widowed	45% (63)	4% (4)	
Number of children			0.340
No child	21% (29)	29% (32)	
Single child	32% (46)	28% (31)	
More than one child	47% (66)	44% (49)	
Total sons			0.966
No son	40% (56)	41% (46)	
At least one son	60% (85)	59% (66)	
Total daughters			0.999
No daughter	51% (73)	52% (58)	
At least one daughter	49% (68)	48% (54)	
Education			0.744
Low: Illiterate/up to Primary	15% (21)	16% (18)	
Middle: up to Middle school	58% (82)	53% (59)	
Higher: beyond middle school and above	27% (38)	31% (35)	
Occupation			< 0.01
Agriculture	4% (5)	13% (14)	
Semi skilled labor	5% (7)	34% (38)	
Skilled labor	5% (7)	21% (23)	
Business	1% (2)	14% (16)	
Service	4% (6)	5% (5)	
Other (Housewife, Student, Retired etc.)	81% (114)	14% (16)	

3. Results

3. 1. Baseline socio-demographic characteristics of the study participants

The study of follow-up participants shows younger women than men (mean age of women 32 and men 39 years, $p < 0.01$) representing ever married women (98%) and men (91%), the rest being unmarried. Most men are currently married (85%), the others being divorcees, widowers; while in women the proportion of currently married and widows is almost equal. Most participants are literate with at least a middle level schooling (about 85%); women are housewives (81%) while men are semi-

skilled/skilled ad-hoc labor (55%) or have own trade or agriculture (21% of each). Significant differences are observed for men and women participants with respect to age, marital status and occupation ($p < 0.01$), while they are similar with respect to family size, number of sons and daughter ($p=0.34$), and educational levels ($p=0.7$) (Table 1).

3. 2. Follow-up visits

During one year observation, 350 follow-up visits were made of which 183 made by women and 167 by men with 32% being repeat visits. The visits, represented 253 HIV infected women (141) and men (112) i.e. in this year more women

availed of ongoing counseling. At the VCTC mean number of follow-up visits in the year were 1.4 being higher in men (1.5) than in women

(1.3); also, the early follow-up visits were made more often by women while more men continued

Table 2. Reported risk reduction behavior of men and women according to frequency of visits made at the VCTC

Risk behavior characteristic	Early ongoing counseling (Visit 1 – 4)		Medium ongoing counseling (Visit 5 – 8)		Longer ongoing counseling (Visit 9 & above)	
	Men (N=56)	Women (N=71)	Men (N=61)	Women (N=78)	Men (N=50)	Women (N=34)
Sexual contact with spouse (%)	43 (76.8)	36 (50.7)	42 (68.9)	28 (35.9)	41 (82.0)	13 (38.2)
Sexual contact with spouse - comparison of men & women (P value)	0.005		< 0.01		< 0.01	
Condom use with spouse (%)	34 (79.1)	32 (88.9)	40 (95.2)	26 (92.9)	40 (97.6)	13 (100)
Consistent condom use with spouse (%)	31 (91.2)	27 (84.4)	39 (97.5)	24 (92.3)	38 (95.0)	13 (100)
Sexual contact with sex worker** (%)	1 (1.8)	--	2 (3.3)	--	2 (4.0)	--
Condom use with sex worker (%)	1(100)	--	2(100)	--	2(100)	--
Consistent condom use with sex worker (%)	1(100)	--	2(100)	--	2 100)	--
Sexual contact with other partner (%)	2(3.6)	1* (1.4)	0 (0)	4*(5.1)	0 (0)	2* (5.9)
Condom use with other partner (%)	1 (50)	1*(100)	NA	4* (100)	NA	2*(100)
Consistent condom use with other partner (%)	0 (0)	1*(100)	NA	4*(100)	NA	2*(100)

Test used: chi square test for trend in proportions

*Widow women

**4 unmarried & 1 divorced

the longer follow-up visits for more than five years. The repeat first (FU-2) and second (FU3) follow-up visit in the one year observation period have been made often by men than by women (47 & 8 in men and 35 & 6 in women respectively for FU-2 and FU-3 data not shown).

3. 3. Changes in risk behavior in ongoing counseling over a period of time

Differences according to gender understood by the type of partners and condom usage was seen in the ongoing counseling participants. In both men and women an increase in condom usage with spouse was observed in those with more frequent follow-up visits i.e. those getting Medium and Longer ongoing counseling, the

difference being statistically significant. In more women than men, consistent condom usage increased with those making more follow-up visits. The few unmarried men reported consistent condom use with sex workers. Unsafe sex with other partners was reported by ever married men. The widows reported sex with "other" partners with consistent condom which increased with medium and longer ongoing counseling. Safer sex practices have increased in both men and women with longer ongoing counseling i.e. those receiving higher doses of ongoing counseling in follow-up visits for more than two years. Table 2

3. 4. Risks in conjugal sexual relations among repeaters

More than a half (45/82) of the repeaters (FU-2) i.e. 31 men and 14 women reported spouse as the only partner in the past one year. Consistent condom use was reported during the repeat visits by most men (29/31) and women (12/14). The study participants who made regular visits for ongoing counselling showed a reduction in type of partners and reported an increase of "spouse as the only partner". The trend regarding condom use over time is not obvious and statistically non-significant (Data not shown).

3. 5. Trends for condom use

Condom usage with spouse has increased in both men and women. In men consistent condom use with sex worker was reported by both ever and never marrieds, while unsafe sex with casual partner is reported. All currently married women and widows reported consistent condom usage with other partners. However, the one year data seems inadequate for testing trend for the type of partners and consistent condom use.

3.6. Sharing experiences of problems

The HIV positive men and women at varied stages of HIV infection during one year observation of Early, Medium and Longer ongoing counselling reported problems that ranged from economic issues, disclosure, support, social issues, problems related health, stigma and future concerns. About one third of the HIV related problems have financial implications. During the year, women experienced more health problems (26%), were concerned about their future (9%) while problems of men related to economic issues (34%) and stigma (14%) (Fig 2). The problems are interrelated and monetary aspects remain a common factor. The specific issues are discussed below and captured in the figure (Fig.2).

A. Economic problem

Economic burden due to HIV infection are common in both men and women, where men lost jobs due to frequent absenteeism and women were forced to take up other jobs to cope with additional expenses on health care for husband and self.

B. Social Issues and support

More than one-fourth of HIV infected individuals expressed the need of a social support at home.

Unmarried Men/Women: HIV positive unmarried men who did not disclose their status have a challenge to cope with the pressure for marriage e.g. a 27yrs unmarried now unemployed man disclosed HIV report to family after 10 years

to avoid pressure of marriage and now looking HIV positive partners.

Married men: Disclosing HIV status in a joint family where other family support is available is challenging due to uncertainties of future support e.g. stigma, especially if a girl in the family of a HIV positive man is to be married or a HIV positive husband has not disclosed status to wife and delaying childbearing through consistent condom use.

Widow and widower: Remarriage among ever married men and women varies, it being "acceptable option to cope with loneliness" in men while for women, especially the young consider "the need for economic and social support as more important". Remarriage for women with a HIV partner remains an option, although "social acceptance is a concern" for these women. The older widows face economic problem especially when they lose the rights of their husband's property and have limited financial support.

C. Health

Health problems have been reported by more women than men and included general health problems like weakness, weight loss, joint pains, decreasing CD4 count and TB. On the other hand men have lost their jobs due to their ill health and frequent absenteeism.

D. Stigma and discrimination

HIV stigma is reported by both men and women and this is the reason for seeking support at the VCTC. They experienced stigma at place of work and in their social network. The married women on the other hand experience blame at their husband's house while some widows got support from their regular partners. The fear of stigma dissuaded both men and women to visit ART centre as frequent visits to hospitals may reveal their HIV status e.g. a 35 year old married man reported that he kept his and wife's HIV status confidential but when they started their Anti-retroviral therapy at the government hospital they were spotted by a family member who was eager to know the reason for the frequent visits.

4. Discussion

The present study, of 'ongoing counseling' through a snapshot observations of 'follow-up visits', made in one year on participants attending the Voluntary Counseling and Testing Centre (VCTC now referred as ICTC) was a useful opportunity to understand problems of participants. The ongoing counseling at each visit enabled them plan strategies for coping with these issues. During the one year observation period, more women than men made early follow-

up visits although repeat follow-ups in the year were made by more men. Ongoing counselling at each follow-up visit reinforced reduction in risky behaviours including number and type of partners, practice of safe sex through consistent condom use. Safe sex practices were observed through consistent condom showed increased

usage in those having longer ongoing counselling ie higher dosage of counselling. Ongoing counselling was useful in reinforcing safer practices at each subsequent visits where with each progressive visit there was an additional dosage effect of counselling.

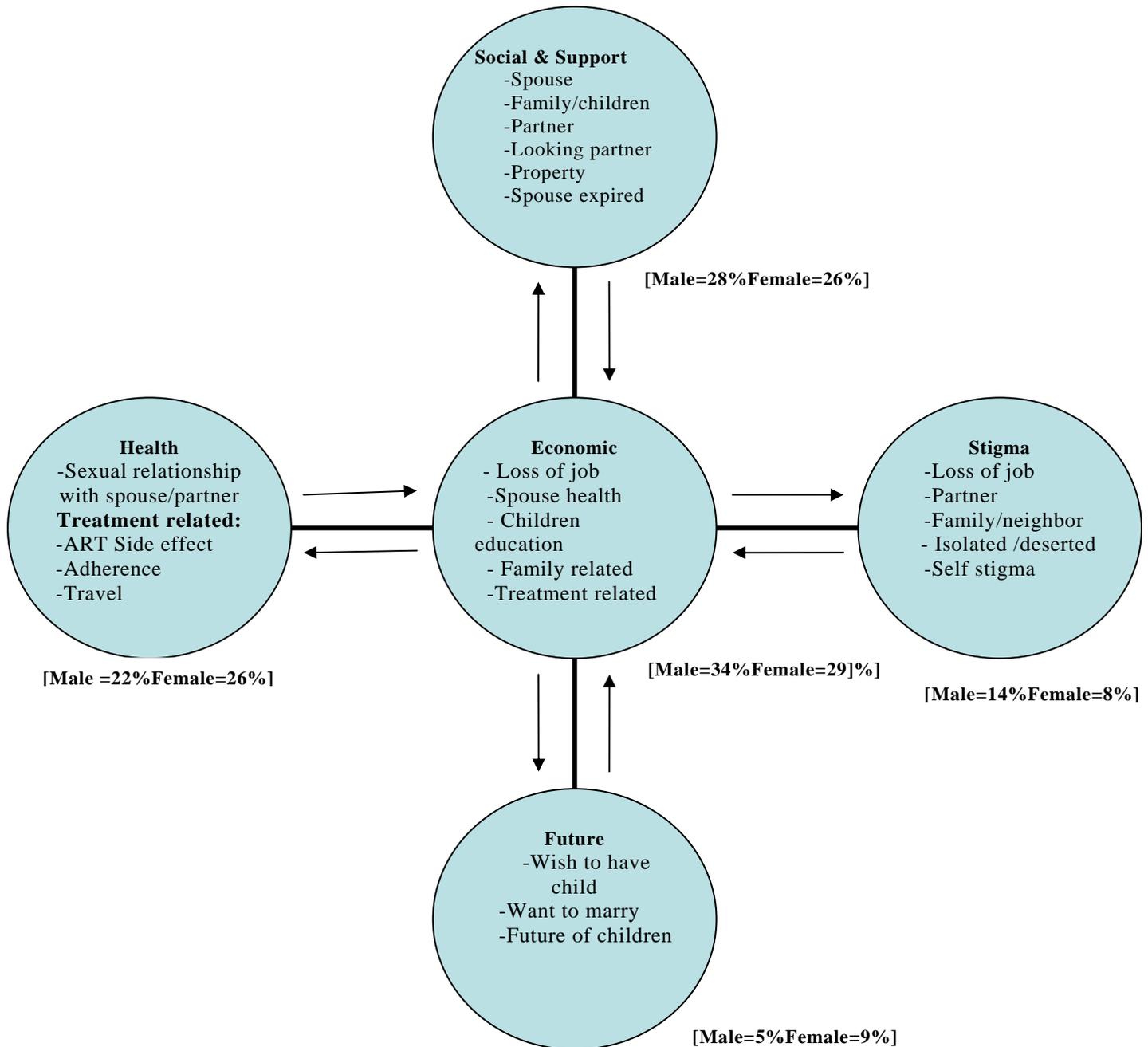


Fig. 2. Problems experienced by HIV infected reported during follow-up visits in one year period.

The ongoing counselling during follow-up visits created an enabling environment that made participants share the problems they experienced since their last visit. During the ongoing counselling participants reported problems related to the financial burden due to loss of job, besides the additional expense on health care, coping-with and the social support. The counselling sessions helped the participants develop strategies to cope with varied problems they faced.

4. 1. Ongoing counseling at VCTC

The findings in the present study based on ongoing counseling at six-monthly follow-up visits addressed the specific needs of the participants. These findings are similar to studies where VCTC gives the adult participants an opportunity to get exposed to a variety of practices associated with prevention, ongoing HIV education, discussing risk behaviors, condom use and reduced HIV risk behavior (5,6,11-24). The studies based on marital status of participants availing the counseling services have been reported although this was not differentiated by gender (10), while the present study differentiates the behavior of ever married men and women and how widows practice safe behavior through consistent condom use.

The consistent condom use with spouse as only partner increased in both men and women seeking longer- ongoing- counseling and also in those making repeat visits during the year. This reduction in unsafe practices was similarly reported in a one year study on women (12). The ongoing counseling, HIV education through reinforcement and dosage effect of counseling improved condom usage and ability to negotiate and indirectly reduced self-stigma (18). The increased condom use with spouse among those making frequent visits to VCTC indicates the dose effect of ongoing counseling where such practices were discussed at each visit to reinforce behavior change through risk reduction.

4. 2. Risk reduction behavior

Type of partners and safe sex practices by the participants showed improvement over time, with an increase of consistent condom use with spouse and sex workers however in men this did not improve for casual sex. 'Consistent condom use' increased with spouse in married women, and regular partners in the few widows who came for longer ongoing counseling. The findings from this study are similarly observed in VCT clients where multiple sexual partners decreased and a higher level of condom use by women with their

regular partner was reported (15-17). Ongoing counseling during follow-up visits reinforced risk reduction behavior and helped HIV infected men practice safe sex with spouse and casual partners, while HIV-infected women practiced safer sex through condom use with regular partners as also seen elsewhere (8,9-12,13-25). As a result of frequent visits to VCTC a reduction in risk behavior was observed. However this needs to be observed for a longer period, although this observation gives a direction about critical need of ongoing counseling to reinforce risk reduction. The potential for risk reduction behavior change is possible at a VCTC through reinforcement during ongoing counseling that is sustainable (26).

4. 3. Disclosure, stigma and discrimination

The present study shows disclosure helped follow safe behavior vis a vis risk reduction as can be seen by increase of consistent condom use with spouse. Opportunities to discuss safe behavior in context of other related issues like the need of disclosure to partner, having a child, prevention of mother to child transmission, care and support discussed during individual counseling further reinforce behavioral change.

4. 4. Problems experienced by participants and shared during ongoing counseling

The counselling sessions at the VCT gave opportunity to men and women to share their problems with the counsellors and seek support. These problems ranged from economic, social support problems to stigma that an individual experienced. Monetary issue was a major problem faced by both men and women (Fig 2). This needs to be addressed through a networking mechanism with NGOs and government where existing income generating activities for both men and women can be utilised. The creation of a user friendly ambience and networking where HIV support of self-help groups exists can be a mechanism to help the health department access care and support. This would enable ongoing education and creating positive support for the People living with HIV /HIV infected in the community and also make it a community responsibility.

Normalizing HIV in the community should be made a priority even if it is kept as a long term goal. This would also then address to the future aspiration of PLHA both men and women e.g. job, marriage, planning a family or remarriage, future of children's education etc.

5. Conclusion

On-going counseling of follow-up participants had been a useful opportunity to bring behavior change among men and women, both ever-married and never-married. Behavior change demonstrated through safer behaviors, reductions in type of partners, increase of consistent condom use with spouse are encouraging. This underscores the need to focus on behavior change interventions through ongoing counseling at the VCTC now known as Integrated Counseling and Testing Centers. Sustained behavior change through understanding the real life concerns that participant's experience would enable more realistic risk reduction behavior. The other concerns of health, coping with social issues and support, stigma is as challenging for men as it is for women more so for the latter, who are young and some are recently widowed. These women are primarily housewives and have no source of income. There is need for a right based approach to address the problems that the HIV infected men and women experience. This would enable in a behavior change where ongoing counseling can bring sustainable changes.

Encouraging a network with NGOs, self help groups through the erstwhile VCTC now the ICTC to support both women and men cope with alternate source of incomes, caring and support, asserting rights to access health care, right for children's education, and women's right to property is a logical measure. It would be pertinent that the network envisages optimum care required by HIV positives while their confidentiality is maintained. It is imperative that strategies for scaling up of ongoing counseling at the newly created Integrated Counseling and Testing Centers of the government utilize the rights based approach to enable behavior changes of risk reduction that can have sustainable long term effect of HIV prevention, care and support program.

Acknowledgements

We would like to acknowledge our thanks for the support on NARI intra mural fund through which this study could be carried out. The help of the staff of NARI clinic, the Serology and Immunology laboratories is acknowledged. We are grateful to all study participants who have been participating in this study through regular follow-ups.

References

1. UNAIDS (2007, 6th July.) Press release: 2.5 million people in India living with HIV, according to new estimate. //www.avert.org/aidsindia.htm access on 17th September 2009.
2. UNAIDS (2008) India: Country Situation, http://www.avert.org/aidsindia.htm access on 17th September 2009.
3. HIV/AIDS Statistics; India http://www.avert.org/aidsindia.htm access on 17th September 2009.
4. NACO (2008), UNGASS country progress report 2008:Indiahttp://www.avert.org/aidsindia.htmaccess on 17th September 2009.
5. Matovu JK, Gray RH, Makumbi F, et al. Voluntary HIV counseling and testing acceptance, sexual risk behavior and HIV incidence in Rakai, Uganda. *AIDS* 2005; 19: 503-511.
6. Drainoni ML, Dekker D, Lee-Hood E, Boehmer U, Relf M. HIV medical care provider practices for reducing high-risk sexual behavior: results of a qualitative study. *AIDS Patient Care STDS* 2009; 23: 347-356.
7. Turner AN, Miller WC, Padian NS, et al. Unprotected sex following HIV testing among women in Uganda and Zimbabwe: short- and long-term comparisons with pre-test behaviour. *Int J Epidemiol* 2009; 38: 997-1007.
8. Mola OD, Mercer MA, Asghar RJ, et al. Condom use after voluntary counselling and testing in central Mozambique. *Trop Med Int Health* 2006; 11: 176-181.
9. Holmes KK, Levine R, Weaver M. Effectiveness of condoms in preventing sexually transmitted infections. *Bull World Health Organ* 2004; 82: 454-461.
10. Arthur G, Nduba V, Forsythe S, et al. Behaviour change in clients of health centre-based voluntary HIV counselling and testing services in Kenya. *Sex Transm Infect* 2007; 83: 541-546.
11. Lifshay J, Nakayiwa S, King R, et al. Partners at risk: motivations, strategies, and challenges to HIV transmission risk reduction among HIV-infected men and women in Uganda. *AIDS Care* 2009; 21: 715-724.
12. Sherr L, Lopman B, Kakowa M, et al. Voluntary counselling and testing: uptake, impact on sexual behaviour, and HIV incidence in a rural Zimbabwean cohort. *AIDS* 2007; 21: 851-860.
13. Gregson S, Garnett GP, Nyamukapa CA, et al. HIV decline associated with behavior change in eastern Zimbabwe. *Science* 2006; 311: 664-666.
14. MacPhail CL, Pettifor A, Coates T, Rees H. "You must do the test to know your status": attitudes to HIV voluntary counseling and testing for adolescents among South African youth and parents. *Health Educ Behav* 2008; 35: 87-104.
15. Weinhardt LS, Carey MP, Johnson BT, Bickham NL. Effects of HIV counseling and testing on sexual risk behavior: a meta-analytic review of published research, 1985-1997. *Am J Public Health* 1999; 89: 1397-1405.
16. Cremin I, Nyamukapa C, Sherr L, et al. Patterns of self-reported behaviour change associated with receiving voluntary counselling and testing in a

- longitudinal study from Manicaland, Zimbabwe. *AIDS Behav* 2010; 14: 708-715.
17. The Voluntary HIV-1 Counseling and Testing Efficacy Study Group. Efficacy of voluntary HIV-1 counselling and testing in individuals and couples in Kenya, Tanzania, and Trinidad: a randomised trial. *Lancet* 2000; 356: 103-112.
 18. Skinner D, Mfecane S. Stigma, discrimination and the implications for people living with HIV/AIDS in South Africa. *SAHARA J* 2004; 1: 157-164.
 19. Simbayi LC, Kalichman SC, Strebel A, et al. Disclosure of HIV status to sex partners and sexual risk behaviours among HIV-positive men and women, Cape Town, South Africa. *Sex Transm Infect* 2007; 83: 29-34.
 20. Mawar N, Joshi PL, Sahay S, Bagul RD, Paranjape RS. Concerns and experiences of women participating in a short-term AZT intervention feasibility study for prevention of HIV transmission from mother-to-child. *Cult Health Sex* 2007; 9: 199-207.
 21. Clark LR, Brasseur C, Richmond D, Getson P, D'Angelo LJ. Effect of HIV counseling and testing on sexually transmitted diseases and condom use in an urban adolescent population. *Arch Pediatr Adolesc Med* 1998; 152: 269-273.
 22. Voluntary HIV Counselling and Testing Manual. WHO 2004.
 23. HIV Counselling Training Modules for VCT, PPTC and ART Counselors', NACO, Ministry of Health and family welfare, Government of India 2006.
 24. Patel SN, Golin CE, Marks G, et al. Delivery of an HIV prevention counseling program in an infectious diseases clinic: implementation process and lessons learned. *AIDS Patient Care STDS* 2009; 23: 433-441.
 25. Kawichai S, Beyrer C, Khamboonruang C, et al. HIV incidence and risk behaviours after voluntary HIV counselling and testing (VCT) among adults aged 19-35 years living in peri-urban communities around Chiang Mai city in northern Thailand, 1999. *AIDS Care* 2004; 16: 21-35.
 26. Zukoski AP, Thorburn S. Experiences of stigma and discrimination among adults living with HIV in a low HIV-prevalence context: a qualitative analysis. *AIDS Patient Care STDS* 2009; 23: 267-276.