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Full Length Research Paper

What do we need to know about sexual risk vulnerability among married HIV positive individuals in serodiscordant relationships? - A study from South India

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We studied the issues around marriage and sexual behaviour in persons living with HIV whose married partners were HIV negative. This was a descriptive study on 111 persons living with HIV, 83 of them being male and 28 of them being female. Early marriages were reported by both males and females but more among the females and most of the respondents reported their spouse to be a relative. A quarter of the female respondents were married the second time, having lost their husbands of the first marriage, early in their marriage. Premarital unsafe sexual intercourse was reported by 55 (66%) of the males thus posing risk to their partner. Furthermore extra marital sexual intercourse after diagnosis of HIV was reported by one third of the males. Those who have reported extra marital sexual intercourse report less condom usage with their spouse (HIV negative) as compared to those who have not had extra-marital sex. (Adjusted O.R. = 0.29 (95% C.I.: 0.12, 0.73); p-value = 0.008). This furthers the risk of HIV transmission. This information calls for the need to evolve strategies that could work toward HIV risk reduction which needs to be included in premarital counselling as well as within the marriage.

Key words: Sero discordance, condom, ART, HIV/AIDS, sexual behavior.

INTRODUCTION

Several studies from diverse regional settings have documented that seronegative partners in HIV discordant relationships are at increased risk of acquiring HIV and that a substantial number of new HIV infections occur within stable relationships (Carpenter L, 1999; Buchacz K, 2001; Bouhnik A, 2007; Van der Straten A, 2000; Hugonnet S, 2002). In recent years, the prevention agenda has expanded to include "positive prevention" efforts among serodiscordant couples-married or cohabitating couples in which one partner is HIV positive and the other is HIV negative. Despite the empirical evidence pointing to their programmatic importance, serodiscordant couples are often overlooked or, at best,

only vaguely addressed in national prevention plans (Bishop M, 2010). This omission may stem from sensitivity and cultural norms surrounding marriage with early marriages and marriages within families not being uncommon, unknown risky sexual practices outside and within marriage increasing vulnerability to HIV and misperceptions on HIV transmission.

It is estimated that in India there are 2.3 million people infected with HIV, 83 percent in age group of 15-49 years (NACO, 2011-12), with most infections occurring through the heterosexual route of transmission (NACO, 2009-2010). It has also been reported that increasing rates of HIV infection in married women is from their infected spouses and the only risk they were exposed to was being married. (Chatterjee N, 2006; Newmann S, 2000). A study from India to determine the status of long term partners of HIV infected patients reported a HIV discordance prevalence of 44% which could reflect a rela-

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tively early stage of the HIV epidemic (Rogers M, 2000). Research also suggests that a significant proportion (between 20 and 60 percent) of HIV positive heterosexual male and female practice unprotected sex with their negative partner, believing the relationship to be safe, which for some turned out not to be the case (Asha persson, 2009). Findings further demonstrate that serodiscordant couples are not different from the general population—in effect, they are hidden population. Therefore, prevention to reduce intra-couple transmission must first encourage couples to get tested and then provide serodiscordant couples with appropriate risk-reduction behaviours (Bishop M, 2010).

The management of serodiscordant relationships has been fraught with challenges (Mark Cichocki RN, 2007), which include the stress of sexual transmission (Attia S, 2009) and coping with HIV-related stigma, all of which may have negative influence on their quality of life (Kalichman SC, 2002).

In order to plan effective intervention strategies to prevent HIV transmission among serodiscordant couples it is crucial to understand the challenges they face especially with regard to marriage and sexual behavior patterns. Little information is available on these issues from India.

Conceptual Framework for the Study

The framework adopted for the study was the ecological systems model, introduced by Bronfenbrenner, 1979. The ecological framework was helpful in understanding the underlying challenges around marriage, sexual behaviour and condom usage among HIV positive individuals in serodiscordant relationships. The systems which guide this model have been described below.

Micro system: Refers to the closest influences such as family, social norms with regard to marriage, influence of peers and gender.

Meso system: The interconnections between the structures of the micro system and the health environment (sexual vulnerability and HIV infection).

Exo system: The larger environment: Unknown risky sexual practices outside and within marriage increasing vulnerability to HIV (attitude of partners, dissatisfaction in sex, access to commercial sex workers, coercion to sex, influence of alcohol which influence the risky behavior).

Macro system: This comprises of cultural values such as early marriages, marriage with relatives, lack of awareness on HIV status prior to marriage especially in the case of women who have been married the second time and inability to negotiate safe sexual practices.

Chrono system: Encompasses the dimension of time as it relates to the change in partner's attitude after diagnosis leads to the presence or absence of coercion and frequency of sex, practice of unsafe sex due to desire for children and the accessibility of ART.

MATERIAL AND METHODS

We conducted a descriptive analysis on 111 of 130 HIV positive recruited from a cohort of patients attending the out patient clinic of the National Institute for Research in Tuberculosis at the Government General Hospital Chennai between March 2006-2008. They were part of a TB chemoprophylaxis clinical trial and attended the clinic for follow up care. Eligible participants were those who were married and whose spouses tested HIV negative. These eligible participants were screened by a medical social worker who explained the study to them and the sensitive nature of the questions. If the respondent was willing he/she was enrolled to the study after obtaining their written consent and scheduled for an interview.

The semi structured interview schedule covered details on socio-demographics, marriage and sexual behavior patterns such pre marital and extra marital sexual experiences, condom usage, sexual satisfaction with spouse, and frequency of sex with spouse and unsafe sexual practices after their HIV diagnosis. The schedule included open ended questions which allowed generating the participant's experiences. This data has been presented as vignettes in the results to gain insight into some of the quantitative responses especially with regard to premarital, marital, extramarital and sexual experiences.

Frequency of sex was classified as frequent (15 times or more in a month), occasional (5-14 times) or rare (less than 5 times a month) based on patterns over the past 6 months. The description of sexual relationship was based on factors such as openness in sexual discussions, respecting each others decisions, presence or absence of coercion and frequency of mutually consented sex. Participants were asked to rate their relationships on a score of 1-10 with regard to the factors described above. A score of above 5 was considered as "satisfactory".

Condom usage with spouse in the last 6 months was taken as the outcome variable. Condom usage indicates safe sex behavior as the spouse is seronegative.

DATA ANALYSIS

The data analysis consisted of exploratory description of interest variables using frequencies and percentages by gender. Covariates of interest including age, education level, sex, marital status, age at marriage, sexual risk behavior such as premarital and extramarital sex were tested as independent variables against condom usage with spouse as the dependant variable in a univariate logistic regression analysis. Finally Adjusted odds ratio (AOR) and 95% confidence intervals (95% CI) were obtained through a multiple logistic regression model of variables that were significant ($p < 0.05$) at the univariate level. Statistical analysis was done using SPSS Version 14.0.

Table 1. Socio-Demographic and Marriage Details –Gender specific.

Variables	Sex			
	Male (N=83)		Female (N=28)	
	N	%	N	%
Age				
15-25	1	1	4	14
26-36	43	52	14	50
37-47	30	36	10	36
48 and above	9	11	-	-
Education				
Illiterate	69	83	21	75
Literate	14	17	7	25
Occupation				
Skilled labour	38	46	3	10
Unskilled labour	43	52	12	43
Unemployed/House wife	2	2	13	47
Income (in Rs)				
1-2500	37	45	13	46
>= 2501	44	53	2	13
No income	2	2	13	46
Age at the time of Marriage				
≤20	11	13	13	46
21-25	33	40	11	39
26-30	34	41	4	14
31-35	5	6	-	-
First marriage	81	98	22	79
Partner Relative	39	47	14	50
Pre-marital sex	55	66	2	13
Extra-marital sex	27	34	2	13

RESULTS

Socio-demographic Profile (Table 1)

Of the 111 respondents, 83 (75%) were male respondents and 28 (25%) female respondents. The median age was 36 years. Marriages ≤20 years was

reported by 11 (13%) males and 13 (46%) of the females. There were 6 of the 28 female respondents who had remarried having lost their husbands of their first marriage to HIV/AIDS (not tabulated). Fifty percent of the females and 39(47%) of the males reported that their spouse was a blood relative who was usually the maternal uncle or maternal cousin.

Table 2. Sexual Relationship with spouse.

Variables	Male (N=83)		Sex Female (N=28)	
	n	%	n	%
Frequency of sex with partner				
Often	29	35	16	57
Occasional	30	36	6	21
Rarely	24	29	6	22
Sexual relationship				
Satisfied	45	54	20	71
Dissatisfied	38	46	8	29
Partner's attitude changed after diagnosis				
Yes	36	43	19	68
No	47	57	9	32
Coerce to sex				
Yes	17	20	12	43
No	66	80	16	57

Among the 111 respondents, 14 (17%) of the males and none of the females said that they had gone through voluntary testing and screening for HIV. The reasons for screening was doctor's advice among 53 (64%) of the males and 26 (93%) of the females and STI complaints among 7 (8%) of the males. (Not tabulated).

Premarital and Extramarital Sexual Behaviour-Gender Specific

Premarital sexual intercourse was reported by 55 (66%) of the males and 2 females. The sexual partners included commercial sex workers (CSWs) (62%), casual acquaintance 21 (35%), neighbours (6), friends (3) or relatives (4). Twenty three (42%) of them reported peer pressure as being the most influencing factor that prompted these sexual experiences. Forty seven (85%) of them said they had not used condoms during their premarital sexual experience. Among the 2 females the sexual partners reported were a friend and neighbour.

Extra Marital Sexual Behaviour

Extra marital behaviour were reported by 27 (34%) of the males and 2 of the female respondents. Their sexual partners were CSWs reported by 15 (56%) of the males, followed by a neighbour (4) casual friend (2) and others included employer, relative or co-worker (5). The female (2) respondents' sexual partners were a casual acquaintance or a neighbour (not tabulated). The reasons for this sexual experience reported by half the respondents was not wanting to infect their spouses, under the influence of alcohol (15%) or due to the nature of their work (41%) and one said because his wife died (Not tabulated). Twenty two of the males (82%) and both the females reported not using condoms during their sexual experiences.

Sexual Relationship with spouse: Gender specific (Table 2)

Twenty nine (35%) of the males and 16 (57%) of the females respondents reported to having sex often with th-

Table 3. Sociodemographic variables with Condom usage (N=111).

	N	Condom Usage with spouse			
		Yes		No	
		N	%	n	%
Sex					
Male	83	56	67.5	27	32.5
Female	28	20	71.4	8	28.6
Age (in years)					
20-30	21	16	76.2	5	23.8
31 - 40	67	47	70.1	20	29.9
40 and above	23	13	56.5	10	43.5
Education					
Illiterate	21	13	61.9	8	38.1
Literate	90	63	70.0	27	30.0
Occupation					
Skilled labour	41	29	70.7	12	29.3
Unskilled labour	55	37	67.3	18	32.7
Unemployed/House wife	15	10	66.7	5	33.3
Income (in Rs.)					
1-2500	50	34	68.0	16	32.0
2501-5000	46	33	71.7	13	28.3
Not applicable	15	9	60.0	6	40.0

eir spouse after the diagnosis. Thirty eight (46%) males and 8 (29%) females said they were dissatisfied with their sexual relationship.

Thirty six (43%) males and 19 (68%) females said that their partner's attitude had changed after the diagnosis ($p=0.03$). This included partner being scared of infection as reported by 19(53%) males and 15(79%) females, followed by reduction in the sex act as reported by 10(18%) males and 4(17%) females.

"We had a very active sex before diagnosis, now I am interested but she refuses because she is scared of infection." (Male, 42 years)

"Although my wife is negative and I am positive for HIV, we continue to have sex. I am scared of infecting her but she has more sex drive than me and she demands for it. I feel coerced and give in. However our sexual life is much less than it used to be." (Male, 38 years)

Sexual coercion was reported by 17(20%) of the males and 12(43%) of the females.

Sociodemographic Variables with Condom Usage (N=111) (Table 3)

Among the 111 sero positive individuals, 35 (31.5%) did not use condoms with their sero negative spouse during their last sexual intercourse.

"My husband forces me to have sex without condoms as he does not like it. He knows I am infected but does not seem to care. It is difficult as I do not enjoy it." (Female, 32 years)

There was no association of age, education, occupation or income with condom usage.

Sexual Relationship with Spouse/condom Usage (Table 4)

It was found that 23 (51%) of those who indulge in sex rarely with their spouse, have significantly not used condoms during their last sexual intercourse as compared to 12 (18%) of those who indulge in sex often ($p<0.001$).

Twenty two (48%) of those who were dissatisfied with their sexual relationship with spouse reported having sex without condoms as compared to 20% of those who had a satisfactory sexual relationship with their spouse ($p=0.003$). Forty five percent of the respondents who reported a change in their partner's attitude after HIV diagnosis, did not use condoms while having sex with their spouse, as compared to 18% of those who did not experience change in their partner's attitude ($p=0.002$).

Some of the respondents also reported not using condoms as they were on antiretroviral therapy (ART) and the desire

Table 4. Sexual relationship with spouse/condom usage.

Variables	Total	Condom usage with spouse			
		Yes		No	
		N	%	n	%
Frequency of sex with spouse					
Often	66	54	81.8	12	18.2
Rarely	45	22	48.9	23	51.1
Rating of sexual relationship with spouse**					
Satisfied	65	52	80.0	13	20.0
Not satisfied	46	24	52.2	22	47.8
Sexual relationship changed after diagnosis of HIV**					
Yes	78	47	60.3	31	39.7
No	33	29	87.9	4	12.1
Partner's attitude changed after diagnosis of HIV**					
Yes	55	30	54.5	25	45.5
No	56	46	82.1	10	17.9

Note: Chi-square test to look for association with condom usage **P<0.01

to have children (not tabulated).

"My wife was very keen on having a child. She is well aware of the risks of getting HIV but wants so much to be a mother. We therefore have sex without a condom."

Logistic Regression of Significant Variables that Contribute to Condom Usage with Spouse in the Last 6 months (Table 5)

Only those variables that were significant with condom usage, by chi-square test, were considered for multiple logistic regression. They were frequency of sex with partner, pre-marital relationship and extra-marital relationship. The Hosmer-Lemeshow chi-square test statistic was 0.126 (p=0.939) indicating a good fit.

Pre-marital sexual experience was found to be significantly associated with condom usage with their spouse as compared to those who did not indulge in premarital sex (Adjusted O.R.= 2.87 (95% C.I.: 1.21, 6.83); p-value = 0.02).

"I have had premarital sex. I feel very guilty and due to this avoid having sex with my wife. I use condoms every time we have sex but in spite of condom use I feel I may infect my wife. I get depressed very often and maybe that explains my low sex drive". (Male, 32yrs).

On the other hand, those who have reported extra marital sexual experience report less condom usage with their spouse as compared to those who have not had extra-marital sexual experiences. (Adjusted O.R.= 0.29 (95% C.I.: 0.12, 0.73); p-value = 0.008).

DISCUSSION

This study has provided insight into issues around marriage and sexual behaviour in people living with HIV who are in a serodiscordant relationship. More than 21%

of the respondents in this study are below 36 years of age. Recent data from India continue to reflect a higher HIV prevalence in the sexually active and economically productive 15 to 44 age group (NACO, 2010). It is a matter of concern however that the majority of respondents were tested for HIV, as advised by a physician and only a tenth were screened voluntarily. This is especially worrisome as fifty percent of the respondents, primarily males, reported unsafe premarital sex without the use of condoms. This is similar to other studies which report risky premarital and extra marital sexual experiences among HIV positive individuals (Thomas BE, 2009). This suggests that they may have entered into the marriage relationship, often with a relative, in spite of being at risk for HIV. This may also explain why condom usage with their spouses was reported more among those who had premarital experiences. This could be attributed to their awareness of their sexual risk and therefore were more inclined to use condoms with their spouse.

Early marriages among women with nearly half of them being married before the age of 20 years and to a relative are not uncommon. However like other studies have reported simply being married exposes female to the risk of HIV (Srikanth P, 1997; Jacob M, 1995). Studies from Asia and Africa have shown that many married female contract HIV from their one and only sex partner, their husband (UNAIDS, 2000; Rodrigues JJ, 1995). On the other hand nearly one fourth of the female respondents have reported being married for the second time having lost their first husband to HIV/AIDS. This is a worrisome as they could also serve as a bridge population infecting their male partner who may or may not have been aware of their HIV diagnosis before marriage, given that in many instances their spouse is relative.

Another finding of this study is that nearly one third of the respondents, primarily males, reported risky extra ma-

Table 5. Multiple Logistic Regression of variables for factors that contribute to not using condoms with spouse.

Variables	Total	Condom usage with spouse		O.R.# (95% C.I.)	
		n	%	Unadjusted	Adjusted
Pre-marital sexual experience					
Yes	57	45	78.9	2.78 [*] (1.21, 6.41)	2.87 [*] (1.21, 6.83)
No	54	31	57.4	1.0 (Reference)	1.0 (Reference)
Extra marital sexual relationship					
Yes	29	14	48.3	0.30 (0.12, 0.73)	0.29 (0.12, 0.73)
No	82	62	75.6	1.0 (Reference)	1.0 (Reference)

*p<0.05 #Odds Ratio (OR) from logistic regression with "using condom with spouse in the past 6 months" as the outcome variable.

rital sexual relationships and half of them with commercial sex workers most often without condoms. It is even more worrisome and paradoxical that whilst the reasons for sex have been primarily to prevent transmission of HIV to their wives, they report unsafe sex without condoms both with the sex workers as well as with their wives. This could be explained due to the fact that condom use is associated with infidelity in Indian society (Chimbiri AM, 2007). This is a matter of concern as reported in another study that uninfected married female have a continuous risk of acquiring HIV because of spousal extramarital sexual relationships usually with CSWs (Fideli U, 2001; Gangakhedkar R, 1997).

Other studies have reported powerlessness among female to negotiate safe sexual practices (Ford NJ, 1994) in spite of being aware of their husbands indulging in risky sexual practices. Sexual coercion has often been expressed by females who have reported violence from their partners on refusing sex (Go VF, 2003; Jejeebhoy SJ, 1997). This study has also reported sexual coercion by the males from their wives in spite of their being aware of their partner's HIV status. This could be attributed to the sexual frustrations faced by their spouses who are in a sexually active age group who are refused sex, when they desire it.

Frequent sex with their spouse after the diagnosis has also been reported by nearly forty percent of the respondents. This is worrisome as it is known that seronegative individuals in discordant relationships are at risk for HIV infection due to continued sexual activity with their HIV-infected partner (Crepaz N, 2004; Kalichman SC, 2002). However this can also be attributed to the access of antiretroviral therapy and the security that comes with it and the desire for having children. Studies have also documented unsafe sexual practices due to the free and easy access to antiretroviral drugs and the desire to have children more frequently expressed (Crepaz N, 2004; Mlambo M, 2011; Bouhnik A, 2007).

The study findings also point out a significant difference in unsafe sex without condoms in 51% of those who

indulged in sex rarely with their spouse as compared to those who indulged in sex often (p<0.001). This reflects a false notion that infrequent sex among serodiscordant couples could reduce transmission. Another salient finding from this study is that those who expressed satisfaction in their sexual relationship, had sex often, whose partners attitude did not change after the diagnosis have reported safer sex with their partners. This difference was significant as compared to those who were dissatisfied in their sexual relationship and with their partners having changed their attitude in sexual matters.

The study findings have also brought out that there was no association of age, education, occupation or income with unsafe sex (sex without condoms) with their spouses. Data suggest that reasons for continuous high-risk sexual behaviour are not necessarily related to levels of knowledge, but include a variety of issues around trust and love, social norms and relationships with peers and community as well as openness within the relationship to discuss sexuality (Tamm NH, 2002).

CONCLUSION AND SUGGESTIONS

The findings of this study suggest the need for intervention strategies among HIV serodiscordant couples to deal with sex and issues around safer sex in such a way that it promotes safe and healthy sexual practices. Differences in perceptions of risk and justifications for risk behaviour within a couple, suggests that tailored couple-counselling to high-risk couples may be beneficial (Fox J, 2009). Furthermore intervention programmes need to adopt gender based strategies which cater to the risks that both females and males are exposed to within and outside of marriage. Premarital counselling is important for all young couples especially with early marriages being common and the lack of awareness on sexual risks which could increase their vulnerability to HIV. This has not gained importance in India due to the socio cultural norms which makes discuss-

ion on issues around sex, sexuality and HIV a sensitive area. However this needs to be incorporated as an important HIV prevention intervention.

LIMITATIONS

There are limitations to this paper since the sample is drawn from a clinical setting and generalisability is limited. More over the cross sectional design adopted restricts the assumption of causality between the independent predictors and dependent variables. While there are a number of factors that influence risky sexual practices it become difficult to establish causality in this cross sectional study. This would require a prospective study with a larger representative sample to power the analysis. There is a need to include intervention strategies and test the intervention with an experimental design would help to strengthen the future studies and help recommend strategies that would prevent HIV transmission among serodiscordant couples.

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