International Journal of Health Sciences and Research
www.ijhsr.org ISSN: 2249-9571

Original Research Article

Knowledge and Practice of Positive Prevention among Serodiscordant Couples in South India

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Received: 19/08/2015 *Revised: 05/10/2015* *Accepted: 07/10/2015*

ABSTRACT

Introduction: An important aspect of success in a HIV Prevention program is the effectiveness of interventions to reduce HIV transmission between serodiscordant couples. This study aims to explore the understanding and practice of positive prevention including condom use, sexually transmitted infections (STIs), opportunistic infections (OIs) and treatment seeking behavior for STIs and OIs among serodiscordant couples in Karnataka, south India.
Materials and Methods: A cross sectional survey, was conducted among 326 serodiscordant couples in Haveri and Chitradurga Districts located in central part of Karnataka, between January 2014 to May 2015. Participants were selected using a simple random sampling technique and were recruited with the help of peer groups while seeking care and support services. Index people living with HIV (PLHIVs) were interviewed with the help of a pretested structured interview schedule. Data was analysed by calculating mean, standard deviations and proportions. The tests of significance applied were Chi-square test. A P-value of 0.05 was considered to be statistically significant
Results: 99.4% believe that condoms can protect them from STIs whereas only 80.4% (81.7% of men & 74% of women) reported that they use condoms with spouse. PLHIV in the younger age group (21-30 years) reported higher condom use with their spouse when compared to middle (31-40 years) and older (>40 years) age groups. 80.8% (79% of men & 90% of women) of participants had good knowledge on STIs. Those with good knowledge on STI reported higher rates of condom use with spouse (81.7%) and reported lesser STI episodes, while compared to others. 21.4% of PLHIV who have adopted permanent methods of contraception reported not using condoms with spouse. Education of Index PLHIV, spousal education and enrollment with support groups were found to be positively associated with higher condom use with spouse, lower incidence of STIs and OIs.
Conclusions: Gaps exist in translation of knowledge into practice. Low levels of condom use among middle aged couples and those who have adopted permanent methods of contraception, is a cause for concern and calls for further investigation of other structural and social barriers to condom use among these population groups.

Key Words: Positive prevention, serodiscordant, spouse, couple.

INTRODUCTION

Involving people living with HIV (PLHIV) communities is an important prerequisite for the success of HIV prevention programs. Encouraging positive prevention practices among PLHIV is a strategy often ignored in efforts for HIV prevention.

Serodiscordance in couples refers to two people (One HIV positive and the other HIV negative) who are in an ongoing sexual relationship in which both partners have tested for HIV and there has been full disclosure of HIV status. [1] The role of both the partners in practicing HIV prevention measures and helping each other contributes to maintain health and the serodiscordant status. The success of a HIV prevention program depends upon effective interventions to reduce HIV transmission between serodiscordant couples. [1] This study aims to explore the understanding of positive prevention among such couples.

Background: According to recent estimates, there are 2.089 million People Living with HIV (PLHIV) in India, based on a HIV Prevalence of 0.27% of adult population (15-49 years). [2] The HIV epidemic continues to be largely heterosexually transmitted. [2] As per World Health Organization (WHO), among PLHIV who are in stable relationships; it is possible that nearly half of them are in serodiscordant relationships. [3] A study in Zambia showed that HIV transmission from one partner to another co-habiting partner accounts for 87% of new HIV infections. [4] This indicates the importance of HIV prevention directed to reduce transmissions between serodiscordant couples.

A study on sero-conversion in Henan province of China, reported a sero-conversion rate of 1.71 per 100 person–years, [5] while one of the studies from south India, reported a sero-conversion rate of 6.52 per 100 person-years. [6] A study by Bouhnik a D et al, from France reported that factors associated with unsafe sex among serodiscordant couples are gender specific, and the same study reported that 26% of the men and 34 % of the women PLHIV were involved in unsafe sex with their regular partners. [7]

Information on positive prevention practices among serodiscordant couples in India is restricted to few studies. [6] This study is undertaken among serodiscordant couples to understand their positive prevention including condom use, sexually transmitted infections (STIs), opportunistic infections (OIs) and treatment seeking behavior for STIs and OIs among serodiscordant couples in Karnataka, south India.

MATERIALS AND METHODS

Study design: A Cross sectional survey was conducted in Haveri and Chitradurga Districts of Karnataka between January 2014 to May 2015.

Sampling procedure: By taking 80% power, with 95% confidence limits, a sample size of 296 was determined based on the reported prevalence of 26% of unsafe sex from relevant studies [7]. Additional 10% of sample size was included to avoid loss of sample due to reasons of non-response and refusals. A total of 326 serodiscordant couples were selected using simple random sampling technique and were recruited with the help of peer groups while seeking care and support services in public sector hospitals. Serodiscordant couples who were married and or cohabiting together with full disclosure of status were included for the study; couples where in Index PLHIV was seriously ill or bed ridden were excluded from the study.

Study Tools: A pretested structured interview schedule was used for data collection. The tool consists of sections capturing information related to socio-demographic factors, knowledge and practices surrounding condom use, STIs, OIs and contraception. The tools were translated into local language, and then pretested before adopting for data collection. Selected PLHIV community interviewers were oriented on the protocols of the study including subject enrolment procedures, consent process and the instrument. Index (HIV infected) person among the serodiscordant couples

were interviewed ensuring auditory and visual privacy after obtaining written informed consent.

Statistical Analysis: Data analysis was done using SPSS version 16.0 software applying appropriate statistical tests of significance. Socio-demographic factors were studied in relation to condom use, STIs, OIs and contraceptive methods followed, etc. Data was analysed by calculating mean, standard deviations and proportions. The tests of significance applied were Chi-square test. A P-value of 0.05 was considered to be statistically significant. The study was approved by the Institutional Ethical Board of Santosh Medical College and Hospital, Ghaziabad.

RESULTS

314 subjects (response rate of 96.6%) participated in the study.

Sample Characteristics: Out of 314, 264 (84%) were men and 50 (16%) were women. The mean age was 39 years (SD: 39+ 9.058) which ranged from 19 to 67 years (Mean age for men was 40.5 yrs & 32 for women) Majority of participants were residing in rural areas (69%). 70.4% were residing in nuclear families: 24.5% in joint families & 5% were residing in extended families. 26.4% of the participants & 27.5% of spouses in the sample had no formal education. Only 19.8% of the participants have a monthly income belonging to the uppermost category of the revised BG Prasad's socioeconomic classification. 88.2% were currently on ART treatment and 40.7% of them were enrolled into a positive support group or a network

Condom Use: Majority of the participants (99.7%) were aware about condoms, 95.5% of them were told repeatedly about condoms by someone; among them 93.1% reported that they get messages on condom use during counseling sessions. 99.4% believed that condoms can protect them from STIs, and 80.4% stated that they use condoms with their spouse. 81.7% of men and 74% of women reported that they use condoms with their spouse, this difference was not found to be statistically significant.

78.9% of the rural and 83.5% of the urban PLHIV reported that they use condoms with spouse and this was not statistically significant. There was no significant difference in the condom use between different socio economic groups.

PLHIV in the younger age (21-30years) group reported of higher condom use (92.73%) when compared to middle (84.8%) and elder age groups (71.76%); and this difference was found to be statistically significant (P<0.01).

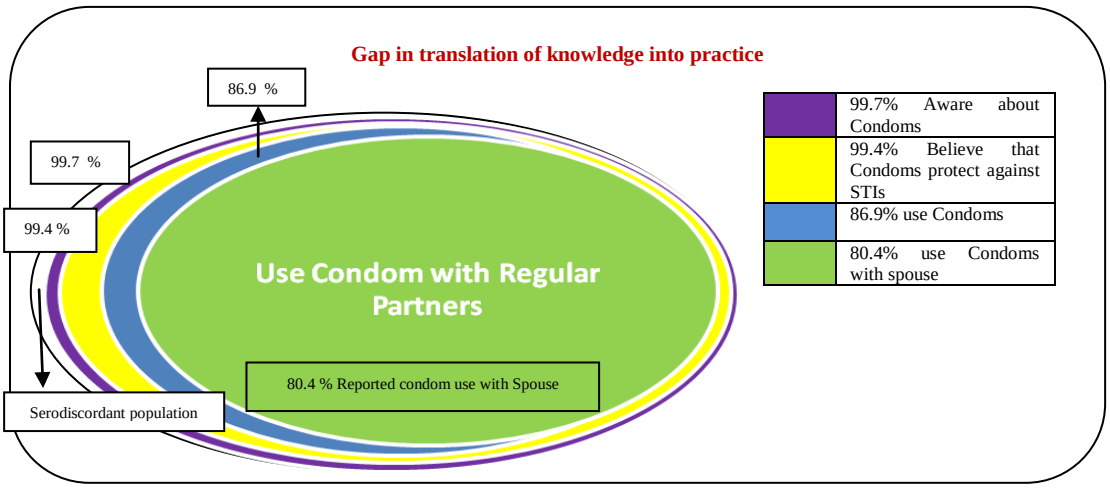


Table 1: Study of Socio-demographic, Family and Knowledge on STI related variables with practice of Condom use among serodiscordant couples				
Variable	**Condom use with spouse**		**$\chi 2$**	**P Value**
Gender	Yes	No		
Men	214 (81.7%)	48 (18.3%)		
Women	37 (74%)	13 (26%)	1.57	0.24
Age Group				
21-30 Yrs	51 (92.7%)	4 (7.3%)		
31-40 Yrs	106 (84.8%)	19 (15.2%)	17.18	**<0.01**
>41 Yrs	94 (71.8%)	37 (28.2%)		
Residential status				
Rural	168 (78.9%)	45 (21.1%)		
Urban	81 (83.5%)	16 (16.5%)	0.9	0.342
Level of Education				
No Formal Education	59 (71.1%)	24 (28.9%)		
Primary Education	78 (85.7%)	13 (14.3%)	6.57	**<0.05**
Secondary Education and above	113 (82.5%)	24 (17.5%)		
Level of Education of Spouse				
No Formal Education	67 (77.9%)	19 (22.1%)		
Primary Education	109 (84.5%)	20 (15.5%)	2.03	0.36
Secondary Education and above	75 (78.1%)	21 (21.9%)		
Type of Family				
Nuclear	172 (78.5%)	47 (21.5%)		
Joint	64 (83.1%)	13 (16.9%)	2.65	0.26
Extended	15 (93.8%)	1 (6.2%)		
Socio Economic Status				
Rs 5156 and above	52 (83.9%)	10 (16.1%)		
Rs 2578-5155	75 (73.5%)	27 (26.5%)		
Rs 1547-2577	67 (79.8%)	17 (20.2%)	7.60	0.107
Rs 773-1546	54 (90%)	6 (10%)		
Below Rs 773	2 (100%)	0 (0%)		
Enrolled with a Positive Network				
Yes	110 (85.9%)	18 (14.1%)		
No	141 (76.6%)	43 (23.4%)	4.15	**<0.05**
Knowledge on STI				
Poor	16 (72.7%)	6 (27.3%)		
Average	28 (75.7%)	9 (24.3%)	1.63	0.44
Good	206 (81.7%)	46 (18.3%)		
Method of Family Planning adopted				
Condom	27 (100%)	0 (0%)		
OCPs	0 (0%)	0 (0%)		
Copper T	4 (100%)	0 (0%)	10.9	**<0.01**
Sterilization	132 (78.6%)	36 (21.4%)		
Natural Method	0 (0%)	0 (0%)		

Note: Missing numbers are not included

Level of Education and condom use with spouse: PLHIV having higher education level reported higher level of condom use (82.4%) when compared to PLHIV with no formal education (71.08%); and this difference was found to be statistically significant (P <0.05). There was no significant relation when we compared spousal education with condom use.

Knowledge on STI and Condom use with spouse:

Participants were asked to name Sexually Transmitted Infections (STI) or any symptoms related to STIs, and their knowledge was assessed on a scale (Table 2)

80.8% of total participants had good knowledge about STIs; women had better knowledge on STI when compared to men, and statistically this difference was not significant**.** Those who had good knowledge about STI reported relatively higher rate of condom use with spouse (81.7%) when compared to those having some knowledge (75.7%) or poor knowledge (72.7%) on STIs

Table 2: Assessment of Knowledge on STIs	
Good Knowledge on STI	Able to identify any 03 or more STIs and symptoms related to STIs
Some Knowledge on STI	Able to identify any 02 STIs or symptoms related to STIs
Poor Knowledge on STI	Unable to identify any STIs or able to identify only 01 STI

Table 3: Study of Socio-demographic and Knowledge STI related variables with occurrence of STIs				
Variable	**Suffered from STI in past 03 months**		**$\chi 2$**	**P Value**
Gender	Yes	No		
Men	16 (6.1%)	244 (93.5%)		
Women	7 (14.3%)	42 (85.7%)	4.15	0.12
Age Group				
21-30 Yrs	5 (9.1%)	50 (90.5%)		
31-40 Yrs	7 (5.6%)	117 (94.4%)	2.49	0.87
>41 Yrs	11 (8.5%)	118 (90.8%)		
Level of Education				
No Formal Education	12 (15%)	68 (85%)		
Primary Education	7 (7.5%)	86 (92.5%)	11.81	**<0.01**
Secondary Education and above	4 (2.9%)	131 (96.3%)		
Level of Education of Spouse				
No Formal Education	8 (9.4%)	77 (90.6%)		
Primary Education	12 (9.4%)	114 (89.8%)	6.95	0.13
Secondary Education and above	2 (2.1%)	95 (97.9%)		
Socio Economic Status				
Rs 5156 and above	4 (6.6%)	57 (93.4%)		
Rs 2578-5155	4 (4%)	96 (95%)		
Rs 1547-2577	8 (9.5%)	76 (90.5%)	6.05	0.64
Rs 773-1546	7 (11.7%)	53 (88.3%)		
Below Rs 773	0	2 (100%)		
Enrolled with a Positive Network				
Yes	12 (9.5%)	114 (90.5%)		
No	11 (6%)	172 (93.5%)	2.025	0.36
Knowledge on STI				
Poor	2 (9.1%)	20 (90.9%)		
Average	3 (8.6%)	32 (91.4%)	0.405	0.98
Good	18 (7.1%)	233 (92.5%)		

Note: Missing numbers are not included

Table 4: Study of Socio-demographic and Knowledge on STI related variables with the occurrence of OIs				
Variable	**Suffered from OI in the past 01 Year**		**$\chi 2$**	**P Value**
Gender	Yes	No		
Men	57 (21.7%)	202 (76.8%)		
Women	6 (12%)	42 (84%0	3.57	0.16
Age Group				
21-30 Yrs	10 (18.2%)	44 (80%)		
31-40 Yrs	29 (23.2%)	93 (74.4%)	1.81	0.93
>41 Yrs	24 (18.2%)	106 (80.3%)		
Level of Education				
No Formal Education	17 (20.7%)	62 (75.6%)		
Primary Education	29 (31.2%)	62 (66.7%)	14.98	**<0.01**
Secondary Education and above	17 (12.4%)	119 (86.9%)		
Level of Education of Spouse				
No Formal Education	21 (24.7%)	60 (70.6%)		
Primary Education	28 (21.7%)	99 (76.7%)	10.34	**<0.05**
Secondary Education and above	13 (13.3%)	85 (86.7%)		
Socio Economic Status				
Rs 5156 and above	7 (11.3%)	54 (87.1%)		
Rs 2578-5155	12 (11.7%)	89 (86.4%)		
Rs 1547-2577	20 (23.8%)	63 (75%)	22.78	**<0.01**
Rs 773-1546	23 (38.3%)	35 (58.3%)		
Below Rs 773	0	2 (100%)		
Enrolled with a Positive Network				
Yes	27 (21.1%)	98 (76.6%)		
No	36 (19.5%)	14.6 (78.9%)	0.36	0.835

Note: Missing numbers are not included

Enrollment into positive network: The PLHIV who were enrolled into positive networks or any support groups reported of higher condom use with spouse (85.9%) while compared to those who are not (76.6%); this was found to be statistically significant (P<0.05)

Method of contraception adopted and Condom Use: Condom use among couples who have adopted permanent method of contraception was low while compared to those who were using temporary methods, and this difference was found to be statistically significant (P<0.01).

Sexually Transmitted Infections (STIs): 7.3% of subjects have experienced at least one STI in the past 03 months; (Men = 6.1% & Women = 14.3%). Among those who experienced STIs in the past 03 months, 95.6% of them approached STI clinic for treatment.

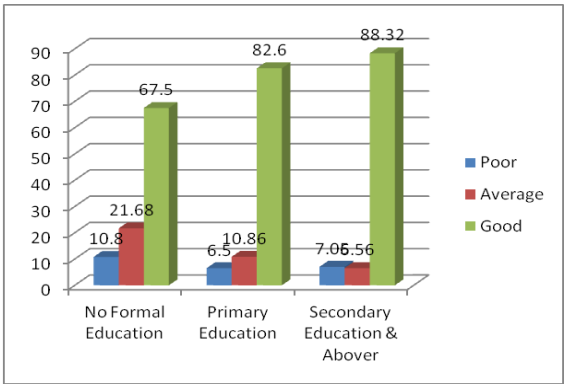
Opportunistic Infections (OIs): 20.1% of participants stated that they have experienced at least one episode of opportunistic infection in last one year (21.7% of men & 12% of women). Among those who experienced OIs, 88% of them availed treatment.

DISCUSSION

This study was undertaken to study positive prevention practices among serodiscordant couples, with a specific focus on understanding their knowledge and practices surrounding condom use, sexually transmitted infections (STIs), opportunistic infections (OIs) and contraception. It was observed that 80.4% of serodiscordant couples were using condoms with their spouse; the results were almost similar to the previous studies among general PLHIV population in Karnataka. [8]

Higher proportions of PLHIV who were illiterate reported not using condoms with spouse while compared to those with higher education (p<0.05). Poorly literate also reported of experiencing a higher level of STIs (p<0.01) and Opportunistic Infections (p<0.05). Knowledge on STI was low among PLHIV who were illiterate compared to others. Similar findings were found in studies on general PLHIV population in earlier studies where level of education of the index PLHIV and the spouse was found to be associated with higher rates of condom use [8-10] Studies in general population and general PLHIV population have found that higher educational levels of partner education [11] or non-spousal partner [12] are associated with higher levels of condom use and lower chances of occurrence of STIs

Education Vs Knowledge on STI



A study by Adegun P T et al from Nigeria reported that educational status influences knowledge related to STI, [13] consistent findings were found in our study where better educated PLHIV had higher knowledge about STIs and had experienced lower incidence of STIs compared to others reinforcing the fact that Knowledge on Prevention and treatment of STIs and opportunistic infections (OIs) helps PLHIV to avoid transmission of infections to others. [14]

A higher proportion of couples where index PLHIVs are enrolled with positive network or support groups were better in practice of using condoms with spouse while compared to those who were not (p<0.05), this indicates that peer mediated strategies seemed to have made a difference in influencing condom use with spouse among serodiscordant couples. [8]

Method of contraception adopted & Condom use with spouse: Nearly half of the PLHIV who have adopted permanent method of contraception (43.5%) were less than 40 years of age; 7.6% of them were below the age group of 30 years. A higher number of PLHIV in the elder age groups, reported not using condoms with spouse compared to younger ones ($p<0.01$) and those who have adopted permanent methods of contraception reported of lower level of condom use with spouse ($p<0.01$). Lower proportions of condom use with spouse were reported among those who have adopted permanent methods of contraception. This needs to be further explored to study the understanding among couples, their knowledge about benefits of using condoms in a regular relationship and barriers to adopt such practices.

Many studies on fertility desires, family planning among serodiscordant couples have studied contraception and conception choices amongst discordant PLHIV, [15-17] but high proportions of couples who have adopted permanent methods of family planning reporting no condom is consistent with our finding.

CONCLUSIONS

A gap exists in translation of knowledge into practice on condom use among serodiscordant couples. Illiterate PLHIV or their spouse should be prioritized for behavior change communication in HIV interventions since condom use is lower, and STI and OIs are more prevalent among this group.

Low levels of condom use among middle aged couples and those who have adopted permanent methods of contraception also persists and this is a cause for concern and calls for further investigation of structural and social barriers, such as gender inequity in decision making and stigma around condom use in these population groups.

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How to cite this article: Manjunatha R, Arya RK, Krishnamurthy J et al. Knowledge and practice of positive prevention among serodiscordant couples in South India. Int J Health Sci Res. 2015; 5(11):270-277.

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