

# Fertility Desires and Intentions among People Living with HIV/AIDS (PLWHA) in Southern India

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## ABSTRACT

**Introduction:** The desire of people living with HIV/AIDS (PLWHA) to have children can have significant public health implications. Combination Antiretroviral Therapy (cART) has increased the life expectancy of PLWHA as a result of which they may consider child bearing. There are hardly any studies from India addressing the fertility desires among PLWHA.

**Aim:** This study was done to assess the fertility desires of PLWHA in Southern India.

**Materials and Methods:** It was a cross-sectional study conducted among 230 HIV-positive men and women who presented to Kasturba Medical College (KMC), Mangalore, India. Study was conducted between October 2012 and October 2014. Statistical analysis was performed using SPSS software version 11.5. Chi-square test, Fisher's exact test and student t-test was used to find out the association of various factors affecting fertility desire. A p-value of less than 0.05 was considered statistically significant.

**Results:** The mean age of our study population was 36.3±5.5 years. The mean age of males was 37.3±6 years and for female 34.9±5 years. In our study 132 (57.4%) were males. Majority were literate 229 (99%). Majority of patients were employed 166 (72%). In our study 195 (84.7%) were on cART. Out of 230 PLWHA 39 (16.95%) were unmarried and 151(65.5%) married PLWHA were living with partners at the time of study. In our study 77 (33.5%) patients had fertility desire. Age, gender, marital status, number of children, partner's fertility desire and HIV status of partner had an association with fertility desire.

**Conclusion:** Providing universal access to cART is the main aim of national programs. It is high time that these programs focus on fertility issues of PLWHA. Reproductive rights of PLWHA need to be respected. Physicians and HIV counselors should proactively discuss and address reproductive issues of PLWHA.

**Keywords:** Combination Antiretroviral Therapy, Children, Reproduction

## INTRODUCTION

Health concerns, fear about vertical transmission and financial issues are the factors that have traditionally reduced fertility desires of people living with HIV/AIDS (PLWHA) [1,2]. In the past, pregnancy was discouraged among women living with HIV because of the risk of vertical transmission. In the present era the risk of vertical transmission is negligible if PLWHA achieve optimal viral suppression by taking combination antiretroviral therapy (cART) before planning pregnancy. Combination ART has increased the life expectancy of PLWHA. As a result of these factors PLWHA can now contemplate child bearing [3]. PLWHA feel that having children will strengthen their marriage and they will be cared in future by their offspring [4]. The desire of PLWHA to have children can have significant public health implications.

Clinicians routinely don't discuss issues related to reproduction with PLWHA [5,6]. There are hardly any studies from India in the cART era addressing the fertility issues of PLWHA, hence the need for this study.

## AIM

The main aim of our study was to determine the fertility desire among PLWHA living in Southern India. We also assessed factors affecting their fertility desire.

## MATERIALS AND METHODS

**Study Design and Setting:** This is a cross-sectional study conducted at the hospital attached to Kasturba Medical College (KMC), Mangalore, India, which is a tertiary care referral hospital of Southern India.

**Sample Size, Sampling technique, Study duration and Study population:** The sample size of 230 was calculated based on expected proportion of PLWHA who desired children as 65% based on previous study [7], relative precision as 10%, power as 80%, Confidence Interval 95% (CI) and a non responsive error of 20%. For sample size calculation we used relative precision of 10% in relation to expected proportion of 65%.

Formula used for sample size calculation:

$$n = 4pq/d^2$$

Where, n = Sample size, p= Expected proportion, i.e., 65% q=1 - p, d=relative precision (10% of p). Male PLWHA of age group 18-55years and female PLWHA of age group 18-45 years were included in this study. Study participants were selected by non probability sampling. Bed ridden PLWHA were excluded from the study. The study was conducted between October 2012 and October 2014 over a two year period.

**Data collection:** The study subjects were informed and written consent was obtained before subjects were enrolled in the study.

The data were collected by face-to-face interview by the same investigator. The investigator was a postgraduate in the department of internal medicine. The interviews lasted for 10-15 minutes. The semi-structured questionnaire was developed based on literature review and consultation with experts [8]. The 15 item questionnaire included questions about sociodemographic characteristics, fertility desires and intention. Before the start of the study the investigator pilot tested the questionnaire among three PLHIV who were not included in the final analysis. Content validity was done by four experts in the field of internal medicine and community medicine. The outcome variables were fertility desire and fertility intention. Fertility desire question had binary response choice of "YES" or "NO", asking if the respondent would like to have children in the future [8]. Among participants who indicated they would like to have children in the future, their fertility intention was assessed by using another question asking how many children they would expect to have in the future [8]. Debriefing was done by the investigator at the end of the study. The study was approved by the institutional ethics committee of KMC Mangalore.

## STATISTICAL ANALYSIS

Data collected was analyzed using Statistical Package for the Social Sciences (SPSS) Version 11.5 statistical software. The qualitative data was presented as percentages and quantitative data was presented as mean±standard deviations and median (IQR). The Chi-square test, Fisher's exact test and student t test was used to find out the association of various factors affecting fertility desire. A p-value of less than 0.05 was considered statistically significant.

## RESULTS

**Sociodemographic and clinical data of study population:** The mean age of our study population was 36.3±5.5 years; whereas, the mean age of males was 37.3±6 years and females 34.9± 5 years. In our study 132 (57.4%) were males and 229 (99%) were literate. Majority 166 (72%) of PLWHA were employed, and 195 (84.7%) were on treatment. Out of 230 PLWHA 151 (65.5%) were married and living with their partners at the time of study. Among married PLWHA living together 113 (74.8%) had children [Table/Fig-1]. Among widowed /divorced PLWHA 26 (65%) had children. Median CD4 count was 501Cells/mm<sup>3</sup> (IQR 368 – 693) in the study group.

**Fertility desire and intentions:** In this study 77(33.5%) PLWHA had fertility desire of which 72 (93.5%) expressed intention to have at least one more child [Table/Fig-2]. Younger PLWHA, males, PLWHA who did not have children or who had one child were more likely to express desire for having children. Marriage and having infected partners showed low fertility desire. Fertility desire of PLWHA was dependent on partners' desire which was found significant [Table/Fig-3].

## DISCUSSION

This study assessed fertility desire among PLWHA in the era of cART. In our study 33.5% of PLWHA expressed fertility desire. Out of 77 patients who expressed desire, 96% showed intention of having children in the future. Age, gender, marital status, having children, partner's fertility desire and partner's HIV status showed significant association with fertility desire.

Studies in Africa have addressed the issue of fertility desire among PLWHA. Fertility desire was 33%-56% in Ethiopia [9-11], 37% in Tanzania [12], 63 % in Nigeria [8] and 78% in Gabon [13]. In a study conducted in South Africa 29% PLWHA expressed fertility desire [14]. In a large multicenter study (Kenya, Namibia and Tanzania) 17% of PLWHA had fertility desire [15]. Studies conducted in Europe and USA has also examined fertility desire among PLWHA. In a study done in Switzerland 38% of male PLWHA and 48%

Characteristics	n (%)
<b>Gender</b>	
Male	132 (57.4)
Female	98 (42.6)
<b>Education</b>	
Illiterate	1 (0.43)
Primary(up to Grade X)	139 (60.4)
Secondary and above( above Grade X)	90 (39.1)
<b>Occupation</b>	
Employed	166 (72.2)
Unemployed	64 (27.8)
<b>Monthly Income (Rupees)</b>	
<1500	34 (14.8)
1500-5000	133 (57.8)
>5000	63 (27.4)
<b>Religion</b>	
Hindu	177 (77)
Muslim	32 (13.9)
Christian	21 (9.1)
<b>Marital Status</b>	
Married	151 (65.65)
Unmarried	39 (16.95)
Divorced	8 (3.49)
Widowed	32 (13.91)
<b>Duration Since Diagnosis (Years)</b>	
≤1	40 (17.39)
>1	190 (82.61)
<b>Number of PLWHA with Children</b>	
Married	113(74.8)
Divorced\Widowed	26(65)
<b>Treated with cART</b>	
Yes	195 (84.78)
No	35 (15.22)
<b>CD4 Count (Cells/mm<sup>3</sup>)</b>	
≤200	10 (4.35)
201-499	103 (44.78)
≥500	117 (50.87)

[Table/Fig-1]: Sociodemographic and clinical data of study population.

Fertility Desire (n=230)	n (%)
Yes	77 (33.5)
No	153 (66.5)
<b>Fertility Intention (n=77)</b>	
0	3 (3.9)
1	72 (93.5)
2	2 (2.6)

[Table/Fig-2]: Fertility desire and intention among PLWHA.

of female PLWHA expressed the desire for child bearing [16], whereas in one US study 28% of male PLWHA and 29% female PLWHA expressed their fertility desire [17].

Studies have examined factors affecting fertility desire. In a meta-analysis conducted by Berhan et al., the two variables that showed a strong association with fertility desires was age less than 30 years and being childless [6]. In our study younger PLWHA and PLWHA with fewer children were more likely to express desire of having children. In one Nigerian study those who desired children were younger and had a shorter duration of disease [8]. Factors such

Characteristics	Fertility Desire		p-value
	Yes (n=77)	No(n=153)	
<b>Age (Years)</b>	33.80±6.29	37.59±4.72	0.001*
<b>Gender</b>			
Male	55 (41.7%)	77 (58.3%)	0.002*
Female	22 (22.4%)	76 (77.6%)	
<b>Education</b>			
Illiterate	1 (100%)	(0)	0.34
Primary(up to Grade X)	48 (34.5%)	91 (65.5%)	
Secondary and above(above Grade X)	28 (31.1%)	62(68.9%)	
<b>Occupation</b>			
Employed	61 (36.7%)	105 (63.3%)	0.091
Unemployed	16 (25%)	58 (75%)	
<b>Monthly Income(Rupees)</b>			
<1500	13 (38.2%)	21 (61.8%)	0.803
1500-5000	44 (33.1%)	89 (66.9%)	
>5000	20 (31.7%)	43 (68.3%)	
<b>Religion</b>			
Hindu	58 (32.8%)	119 (67.2%)	0.606
Muslim	13 (40.6%)	19 (59.4%)	
Christian	6 (28.6%)	15 (71.4%)	
<b>Marital Status</b>			
Currently Married	44 (29.1%)	107 (70.9%)	0.001*
Unmarried/ Divorced/Widowed	33 (33.3%)	46 (66.6%)	
<b>Number of Children</b>			
0-1	77 (46.9%)	87(53.04%)	0.001*
>1	0(0)	66 (100%)	
<b>Duration Since Diagnosis (Years)</b>			
≤1	14 (35%)	26 (65%)	0.822
>1	63 (33.2%)	127 (66.8%)	
<b>Treated with cART</b>			
Yes	67 (34.4%)	128 (65.6%)	0.504
No	10 (28.6%)	25 (71.4%)	
<b>CD4 Count (Cells/mm<sup>3</sup>)</b>			
≤200	4 (40%)	6 (60%)	0.88
201-499	34 (33%)	69 (67%)	
≥500	39 (33.3%)	78 (66.7%)	
<b>Partner's Status (n=191)</b>			
Infected	27 (26.5%)	75 (73.5%)	0.001*
Not infected	22 (28.6%)	55 (71.4%)	
Don't know	1 (8.3%)	11 (91.7%)	
<b>Partner's Desire (n=151)</b>			
Yes	25 (100%)	0	0.001*
No	14 (11.6%)	107 (88.4%)	
Don't know	5 (100%)	0	

**[Table/Fig-3]:** Factors affecting fertility desire among PLWHA.  
\*Significant at p<0.05

as age, duration of marriage, community pressure and duration of HIV diagnosis had significant association with fertility desire in a study conducted by Demissie et al., [10]. Increased fertility desire was associated with good perceived health status and CD4 count  $\geq 200$  cells according to Mmbaga et al., [12]. Factors associated with desiring a child was age, gender, number of surviving children, social support and household wealth of the respondent according to Wekesa et al., [18]. Younger and married women, those who received cART for more than one year and had CD4 count  $>350$

were more likely to desire children according to Mohammed et al., [19]. Partner's desire for a child is a strong predictor for women's fertility desire [4]. In our study, duration of disease, treatment and CD4 count did not affect patients' fertility desire.

## LIMITATION

Our study had some limitations. Reason for fertility desire was not assessed in our study. Single centre study and cross sectional design has its own limitations. Selection bias may have played a role in our study. As fertility issue is a sensitive topic social desirability bias cannot be excluded.

## CONCLUSION

Providing universal access to cART is the main aim of National HIV/AIDS program in India. It is high time that these programs focus on fertility issues of PLWHA. Clinicians must be aware that PLWHA may have fertility desire alike the general population and they need to help PLWHA who desire to have children without compromising the health of their sexual partners. Clinicians and other healthcare providers should respect reproductive rights of PLWHA. Physicians and HIV counselors should proactively discuss reproductive issues with PLWHA in their HIV clinics. Awareness regarding newer reproductive techniques, cART usage during pregnancy and information about Prevention of Mother to Child HIV Transmission (PMTCT) services must be given to PLWHA. In turn PLWHA must freely discuss reproductive issues with their physicians in the interest of their future offspring.

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