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Common Mental Disorders among HIV-uninfected Women Living in HIV Serodiscordant Setting: A Clinic-based Study in Pune, Maharashtra, India

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Abstract

Background: India is home to 2.1 million people living with HIV with an estimated 44% people having an uninfected partner. Living in HIV serodiscordant setting can be stressful, especially for women and can lead to several common mental disorders (CMDs). However, the occurrence of CMD in this population is not studied in India. **Objectives:** The study aimed to assess the occurrence of CMD in HIV-uninfected women living in HIV serodiscordant setting. A sample of 152 HIV-uninfected women who are wives of HIV-infected men attending an HIV clinic were interviewed by trained interviewers. **Methods:** The International Classification of Diseases-10 diagnosis of any of the CMDs was done using standard structured diagnostic interview MINI 5.0.0. Current, past, and lifetime occurrence was estimated for various CMDs. Chi-square and point-biserial correlation coefficients were used to understand the relationship between various sociodemographic and HIV-related factors with current CMD. **Results:** The current, past, and lifetime occurrence of at least one CMD was 35.5%, 49.3%, and 62.5%, respectively. Common diagnoses were mixed anxiety-depressive disorder, major depressive disorder, and posttraumatic stress disorder. Of the women with CMD, 22% had accompanying suicidality. **Conclusions:** The high rate of occurrence of CMD observed among the study population calls for more attention on the policy and program level to address the mental health needs of this population. Globally, more number of HIV-infected people are now linked to the care. This provides an opportunity to incorporate mental health care into routine HIV care.

Key words: Common mental disorders, HIV serodiscordance, HIV transmission, India, mental health, posttraumatic stress disorder

INTRODUCTION

Globally, there were approximately 36.7 (34.0–39.8) million people living with HIV (PLHA) at the end of 2015, including around 1.8 million people becoming newly infected with HIV in that year.^[1] Among PLHIV, significant proportions of people live as HIV serodiscordant couples where one among the couple is HIV infected.^[2] India is home to around 2.1 million PLHA, of which almost 1.3 million (59.5%) are men.^[3] It is estimated that around 44% of HIV-infected individuals in India have uninfected partners.^[2] This implies that more than half a million women are living in HIV serodiscordant relationship in India.

Majority of the studies carried out among serodiscordant couples have focused entirely on the prevention of HIV transmission to uninfected partners. There is little focus on the mental health needs of the uninfected partners.^[4-7] While

there is increasing research highlighting the importance of addressing mental health needs of HIV-infected people to improve treatment outcomes,^[8] there is lack of understanding of mental health needs of uninfected partner in serodiscordant settings.

Living in serodiscordant relationship, particularly in long-term relationship, can generate unique stressors adversely affecting the mental health. Partners in such setting struggle to maintain relationship with constant fear of HIV transmission. Dilemma of altered reproductive possibilities, shifts in

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patterns of sexuality and emotional intimacy, stigma and discrimination, coping with thoughts of impending illness, lack of social support, addiction, financial stress, etc., can act as additional stressors.^[9-11] In Indian sociocultural context, where monogamous marital relationship is a norm and is considered a moral obligation, there can be strong sense of betrayal upon disclosure of HIV-positive status of a spouse. Majority of the people living in serodiscordant setting in India are women. The role of caregiving is inevitably conferred to women adding to the burden. Being women and spouse caregivers add to the vulnerabilities to this population.^[12-14] The physical and psychological effects of long-term informal caregiving have been widely documented in the literature,^[15] resulting in various common mental disorders (CMDs), especially depression and anxiety.^[16,17]

The term CMDs refer to a range of anxiety and depressive disorders.^[18] CMDs significantly contribute to the global burden of disease. It is estimated that 4.4% of the world's population (322 million people) suffer from depressive disorders and 3.6% (264 million people) from anxiety disorders with many people experiencing both conditions simultaneously.^[19] In India, different studies documented high prevalence of CMDs in general population. A recent (2015–2016) community-based national mental health survey in India reported that 10% of the country's population experience CMDs with depression being the most common.^[20] Among different factors, chronic stress, long-term illness such as diabetes, cancers, and HIV have been causally linked with CMDs. Not only people suffering with the illness but also those who are affected (family care providers) are at higher risk of experiencing CMDs.^[15-17]

This study sought to assess the occurrence of CMDs among HIV-uninfected women who are wives of HIV-infected men in selected HIV discordant setting in Pune, Maharashtra. In the context of HIV, where counseling services are already available for HIV-infected people, adequate understanding of the prevalence of CMDs among HIV-uninfected partners would be helpful for care providers and policy-makers to design appropriate strategies to address this issue.

MATERIALS AND METHODS

Study design and setting

This cross-sectional study was conducted at a specialized HIV clinic run by a nongovernmental organization in Pune, Maharashtra, India. HIV-infected and affected people from all over the state of Maharashtra access services at the clinic.

Sample size and study population

Considering CMD prevalence of 10% in general population (as reported in the recent National Mental Health Survey of India)^[20] and 95% confidence interval (CI), the estimated sample size was 166. In the stipulated period, we could recruit 152 participants in the study. The study participants were purposively selected HIV-uninfected women, whose HIV-infected partners were accessing care at the clinic. HIV-infected men living in serodiscordant setting were

identified through their clinical records. These men were informed about the study during their clinical visit in the study period, and their written assent to contact their wives was sought. Women were then contacted and informed about the study. If women agreed to participate, they were invited to clinic for interview. Fixed amount of money was given to them for their travel expenses, depending on the distance of their home from the clinic. Written informed consent was obtained from the women before interview. HIV testing was carried out for women consenting to participate in the study before any data collection.

Eligibility criteria

Women who were tested negative for HIV, who were aware of the husband's HIV-positive status for more than 6 months, and who were willing to provide written consent were eligible to participate. Women having a prior history of known psychiatric illness and women who were not living with husband for 6 months or more were considered not eligible to participate in the study.

Data collection

The data were collected from April 2015 to September 2016. All eligible women were interviewed by trained researchers and a clinical psychologist in face-to-face interview. The trained clinical psychologist administered structured diagnostic interview, MINI 5.0.0.^[21] Data were also collected on the burden experienced by women after the diagnosis of husband's HIV in the form of change in family and social relationship, negative feelings toward husband, impact on physical and emotional health, burden on fear of HIV transmission, and perceived financial burden. Routine physical examination was performed by clinician, and vital parameters were noted. Hemogram, routine blood sugar levels, and test for thyroid function (thyroid-stimulating hormone) were performed free of cost for every woman to exclude the common biological causes of psychosomatic symptoms.

Data were entered by trained data entry operators into Epi-Info (version 7) Centers for Disease Control and Prevention (CDC) in (Atlanta, Georgia, US).

Identification of common mental disorders

A validated diagnostic interview using Mini International Neuropsychiatry Interview 5.0.0 (MINI) was conducted to identify women having CMD. MINI was designed as a brief structured interview for the major axis I psychiatric disorders in the Diagnostic and Statistical Manual of Mental Disorders-IV and International Classification of Diseases-10. The results of validation and reliability studies show that the MINI has acceptably high validation and reliability scores.^[21] MINI is useful to diagnose current as well as past CMDs. Timeframes of current and past diagnoses were used as per MINI. Lifetime diagnosis was done when there was at least one CMD at least once in lifetime. Additional module for posttraumatic stress disorder (PTSD) in the past was developed and administered by trained psychologist considering the unique need of the study population.

Data analysis

Statistical analysis was done using SPSS 16 statistical software and Microsoft Excel 2010. The occurrence of CMDs in the study population is estimated by analyzing the proportion of women diagnosed as having CMD as per the MINI 5.0.0. Relationship was assessed between different sociodemographic, general health condition parameters, HIV-related factors, and CMDs by univariate analysis. Univariate analysis was done using Chi-square test.

Ethical approval

The study was approved by the Independent Ethics Committees for Research of Prayas (registration number: ECR/146/Indt/MH/2014). Women diagnosed with CMD were informed about appropriate care services and were assisted in accessing these services. Consent for appropriate mode of contacting the women to inform her blood test report was sought, and blood reports were informed accordingly.

RESULTS

From April 2015 to September 2016, 344 men living in HIV serodiscordant setting were informed about the study, out of which 291 (85%) men provided assent to contact their wife at the first visit. However, 79 (27%) men who first provided assent later suggested that they or their partner were not willing to participate in the project. At the end, 154 (45% of the total informed) women were seen at the clinic of which 2 were not eligible to participate and 152 completed the interview.

Sociodemographic profile

Among the women enrolled in the study, the mean age was 40.1 years (standard deviation \pm 8.06). The women had mainly come from Pune district (65.1%). Majority of the women (61.2%) were from upper middle socioeconomic strata which were determined using Kuppuswamy's scale.^[22] Little more than half of the women (53.3%) were doing some or the other remunerated work and half of those who were working were self-employed, the most common occupations being farming and tailoring. Husbands of all except one were taking antiretroviral drug therapy. Most of the women (70.4%) knew about husband's HIV status for more than 5 years at the time of interview. Table 1 gives the sociodemographic profile of the women and Table 2 depicts HIV-related characteristics of the husbands.

Occurrence of common mental disorder

Current common mental disorder

Of the 152 women in the study, 54 women had at least one current CMD as per the MINI diagnostic interview, amounting to the occurrence of current CMD as 35.5% (95% CI – 28–44) (Clopper–Pearson exact method) [Table 3]. The most common diagnosis was mixed anxiety-depressive disorder (MADD) [Table 4]. Of the 18 women suffering from MADD, 8 women were suffering for at least 4 years. Current major depressive episode (MDE) was reported among 10 women. Of these, 4 women were suffering for >18 months. PTSD was seen in 5 women, of whom 3 women were suffering for >5 years. The

MINI diagnostic interview provides additional information on suicidality which was reported by 12 women as accompanying symptom with other disorders. Of these, 3 women had high suicidality. Out of those women who had current CMD, 8 women were found to be in significant distress as assessed by clinical psychologist and were prescribed medication by a psychiatrist.

Many women perceived burden of caring for husband. Half of them ($n = 76$) reported negative feelings toward husband, 49% reported burden of change in family and social relationships due to husband's HIV diagnosis, and 36% reported the impact of husband's HIV diagnosis on their emotional health.

Past common mental disorder

History of symptoms of CMDs investigated through MINI revealed that 49.3% (95% CI 41–58) of the women had suffered from symptoms of at least one of the CMDs in the past. The most common disorder was MDE. MDE was reported in 64 (42.1%) women of whom 19 women suffered for more than a year. PTSD was seen in 23 (15.1%) women, and for all of them, the onset was linked to the disclosure of husband's HIV-positive status to them. Of these 23 women, 7 continued to suffer for more than a year.

The occurrence of CMD at least once after disclosure of husband's HIV status was 56.5% (95% CI 48–65) excluding 9 women who had suffered from symptoms of CMD in the past but before the disclosure.

There were 35 (23%) women who had suffered from one or more CMDs in the past, had complete recovery, and were suffering again at the time of data collection. The lifetime occurrence, proportion of women who had suffered from any of the CMDs at least once in their lifetime, was 62.5% (95% CI 54–70).

DISCUSSION

The occurrence of current CMD among HIV-uninfected women living in HIV serodiscordant setting in Maharashtra is as high as 35.5%. While 49.3% of women have had CMD in the past, more than half of the women have suffered from CMD at least once after the disclosure of HIV status of the husband to them. The observed pattern shows substantially high occurrence of PTSD, and other mood and anxiety disorders accompanied by suicidality.

The observed rate of occurrence of CMD in the study population appears to be significantly higher than that found among the general population in India (10%).^[20] The rate CMD in this group is almost comparable to the reported CMD prevalence among HIV-infected people,^[23] suggesting the severity of stress experienced by uninfected women who are spouses of infected men. Almost similar rate of depression (34.5%) was reported by a recent study (2017) from North of Karnataka, India, among 145 HIV-infected women.^[24] This suggests similar vulnerability of HIV-infected as well as affected women for experiencing mental disorders. Spouses

Table 1: Sociodemographic characteristics of the study population and their association with the common mental disorder

Sociodemographic factors	Total (n=152)	Current CMD (n=54)	χ^2, P
Age (years)			
26-35	45 (29.6)	18 (33.3)	1.796, 0.407
36-45	79 (52.0)	29 (53.7)	
46 and above	28 (18.4)	7 (13.0)	
Place of residence			
Urban	107 (70.4)	36 (66.7)	0.559, 0.455
Rural	45 (29.6)	18 (33.3)	
Education (years)			
0-7	38 (25.0)	14 (25.9)	1.339, 0.512
8-12	68 (44.7)	21 (38.9)	
13 and above	46 (30.3)	19 (35.2)	
Work for remuneration			
Yes	81 (53.3)	26 (48.1)	0.889, 0.346
No	71 (46.7)	28 (51.9)	
Number of family members			
1-4	82 (53.9)	27 (50.0)	0.559, 0.756
5-7	51 (33.6)	20 (37.0)	
8 and above	19 (12.5)	7 (13.0)	
Socioeconomic status			
Lower	35 (23)	14 (25.9)	0.542, 0.763
Middle	24 (15.8)	9 (16.7)	
Upper	93 (61.2)	31 (57.4)	
Marital information			
Age at marriage (years)			
<18	72 (47.4)	30 (55.6)	2.252, 0.133
≥18	80 (52.6)	24 (44.4)	
Duration of marriage (years)			
<10	11 (7.2)	5 (9.3)	0.602, 0.740
10-20	81 (53.3)	29 (53.7)	
≥21	60 (39.5)	20 (37.0)	
Marriage to disclosure (years)			
0-5	43 (28.3)	16 (29.6)	1.513, 0.469
6-10	35 (23.0)	15 (27.8)	
>10	74 (48.7)	23 (42.6)	
Reproductive history			
Number of living children			
0	8 (5.3)	3 (5.6)	1.159, 0.763
1	39 (25.6)	12 (22.2)	
2	67 (44.1)	23 (42.6)	
>2	38 (25.0)	16 (29.6)	
Death of a child			
Yes	14 (9.2)	3 (5.6)	1.338, 0.381
No	138 (90.8)	51 (94.4)	
Substance use			
Substance use (husband)			
No	80 (52.7)	26 (48.1)	0.675, 0.411
Yes (any)	72 (47.3)	28 (51.9)	
Type of substance (husband)			
Tobacco chewing	55 (36.2)	20 (37.0)	0.026, 0.871
Tobacco smoking	13 (8.6)	8 (14.8)	
Alcohol	38 (25.0)	18 (33.3)	
Substance use among women			
No habit	128 (84.2)	43 (79.6)	1.322, 0.250
At least one habit	24 (15.8)	11 (20.4)	

Table 2: HIV related characteristics and common mental disorders of the study population

HIV related characteristics	Total (n=152)	Current CMD (n=54)	χ^2, P
Knows husband's HIV since			
6 months - 2 years	15 (9.9)	5 (9.3)	1.001, 0.801
2-5 years	30 (19.7)	9 (16.7)	
6-10 years	60 (39.5)	24 (44.4)	
>10 years	47 (30.9)	16 (29.6)	
Disclosure of husband's HIV			
No one outside family	23 (15.1)	7 (13.0)	2.123, 0.346
Close relatives in family	51 (33.6)	15 (27.8)	
Others outside family	78 (51.3)	32 (59.3)	
Unprotected sex in the last 3 months			
Yes	6 (3.9)	3 (5.6)	0.571, 0.667
No	146 (96.1)	51 (94.4)	
General health condition			
Presence of any chronic illness			
No illness	123 (80.9)	45 (83.3)	0.316, 0.574
At least one illness	29 (19.1)	9 (16.7)	
Types of illness present			
Hypertension	17 (11.2)	5 (9.3)	0.312, 0.603
Diabetes	7 (4.6)	1 (1.9)	1.445, 0.422
Asthma	2 (1.3)	0 (0)	1.117, 0.535
Thyroid disorders	7 (4.6)	3 (5.6)	0.172, 0.704
Blood investigation findings			
TSH in normal range	137 (90.1)	50 (92.6)	0.570, 0.575
TSH< or >normal range	15 (9.9)	4 (7.4)	
Anemia (HB <12 g %)	57 (37.5)	21 (38.9)	0.069, 0.793
Random blood sugar >140 mg/dl	19 (12.5)	5 (9.3)	0.804, 0.370

HB: Hemoglobin, TSH: Thyroid function, HIV: Human immunodeficiency virus, CMD: Common mental disorder

Table 3: Occurrence of the common mental disorder among human immunodeficiency virus-uninfected women in serodiscordant setting

ICD-10 diagnosis of CMD	n	Percentage (95% CI)
At least one CMD at present	54	35.5 (28-44)
At least one CMD in past	75	49.3 (41-58)
At least one CMD after disclosure	86	56.5 (48-65)
At least one CMD in lifetime	95	62.5 (54-70)

CMD: Common mental disorder, CI: Confidence interval, ICD: International Classification of Diseases

among all the informal caregivers of HIV-infected people in India seem to have higher level of stress and stigma, resulting in higher rate of depression and anxiety.^[25]

HIV-infected husbands of majority women who participated in the study were taking antiretroviral treatment and were apparently asymptomatic. The stress and the burden expressed by many women were related to the emotional impact of knowing husband's HIV status, the feeling of betrayal, concern about future, and to lesser extent about the physical exhaustion of caring for the husband. This also clearly suggests that even with increasing antiretroviral treatment access to HIV-infected persons and significant improvement in their physical health, the emotional impact of

knowing partner's HIV status persists, making the uninfected partner at risk of mental disorders.

The observed pattern of CMDs also differs from that seen in the general population. Many women suffered from CMD for a considerable time, suggesting continuation of stress after knowing husband's HIV status. The substantially high occurrence of PTSD around the time of disclosure of husband's HIV status suggests that knowing husband's HIV status is nothing less than experiencing a personal disaster. The link between PTSD and HIV has been previously reported by Neigh *et al.* (2016) who discussed biological mechanisms which may contribute to coexistence and potential interactions of these two disorders.^[26] However, the findings of this study among HIV-uninfected women suggest that knowing about HIV status of husband could itself act as a severe trauma. The adverse psychological reaction could range from mild transitional emotional distress to more enduring and impairing psychopathology such as PTSD.

Apparently the sociodemographic characteristics of the women do not seem to have any correlation with CMDs, suggesting that the vulnerabilities of these women and the possible coping strategies are beyond the sociodemographic differences. The gender differences^[27] and disadvantages with respect to vulnerability to experience mental health issues are

Table 4: Frequency of occurrence of different mental disorders among human immunodeficiency virus-uninfected women in serodiscordant setting

ICD-10 diagnosis of CMD	Current, <i>n</i> (%)
MADD	18 (11.8)
MDE	10 (6.6)
PTSD	5 (3.3)
Adjustment disorder	6 (3.9)
Panic disorder	4 (2.6)
OCD	2 (1.3)
GAD	1 (0.7)
Somatization disorder	1 (0.7)
Bulimia nervosa	1 (0.7)
Other specified mood (affective) disorders (premenstrual dysphoric disorder)	7 (4.6)
Dysthymia	4 (2.6)

MADD: Mixed anxiety depressive disorder, MDE: Major depressive episode, PTSD: Posttraumatic stress disorder, OCD: Obsessive compulsive disorder, GAD: Generalized anxiety disorder, ICD: International Classification of Diseases, CMD: Common mental disorder

known in the literature where women are reported to have higher CMDs.^[25,28] Further research is needed to identify the “protective” factors helping women to cope with the trauma and “risk” factors which act as stressors and lead to psychopathological effects.

One of the limitations of the study could be representativeness bias inherent in the clinic-based studies; however, community-based studies among HIV-infected and affected population are difficult. The characteristics of those women who participated and who (women or their husbands) refused to participate could not be compared, thus making it difficult to comment on the occurrence of CMD among those who refused to participate.

CONCLUSION

Globally, more number of HIV-infected people are now linked to the care.^[29] While there is an acknowledgment of mental health needs of PLHIV, integrating mental health in routine HIV care is far from reality. In case of serodiscordant couples, there is no systemic inclusion of uninfected partners in the care, and focus is on mere prevention of transmission of infection. The high occurrence of CMD observed among the study population calls for more attention on the policy and program level to address the mental health needs of this population. Extrapolating this rate of occurrence to an estimated 5,72,000 HIV-uninfected women living in HIV serodiscordant setting in India results in more than 200,000 women currently suffering from some CMD. With increasing number of people being tested for HIV and are aware of their HIV status, this number can be expected to increase further. High emphasis on linking HIV-infected people to care and treatment facilities is an opportunity to strengthen mental health care to them and to systematically link and retain their uninfected partners in the care. There is an urgent need to identify and implement culturally appropriate^[30] cost-effective

interventions. Interventions delivered by health counselors^[31] and with the use of technology^[28] should be considered.

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Conflicts of interest

There are no conflicts of interest.

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