# A STUDY ON ASSOCIATION OF DEPRESSION WITH SOCIAL SUPPORT AND QUALITY OF LIFE AMONG WOMEN LIVING WITH HIV/AIDS IN SOUTH INDIA

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**ABSTRACT**

**BACKGROUND**

Women bear the brunt of disastrous effects of HIV/AIDS as they are the major caregivers and in return they get very less support and care. Depression is the commonest psychiatric condition seen in HIV positive patients and it is affected by many socio demographic correlates like age, gender, socio-economic status, area of residence and Anti-Retroviral Treatment (ART) medications. Social support is an important factor against stigma and depression. As the wide availability of ART has increased the survival among the HIV positive persons, it becomes essential to focus on the Quality of Life (QoL) of the sufferer.

The objectives of this study were

1. to assess depression, social support and QoL in HIV positive women
2. to study the association of depression with social support and QoL among HIV positive women attending ART centre attached to tertiary care centre in South India.

**MATERIALS AND METHODS**

This cross-sectional study constituted of 145 HIV positive women; depression was assessed using BDI (Beck Depression Inventory), social support was assessed using Lubben social network scale and QoL was assessed using World Health Organization – Quality of Life BREF scale. Data was analysed using Statistical Package for the Social Sciences (SPSS) software version 22. Chi-square test, Independent t test and ANOVA were used appropriately. p value <0.05 was considered as statistically significant.

**RESULTS**

Depression was found to be present in 34.5% of subjects. No statistical significance was found between depression and socio-demographic variables except for area of residence. Significant association between depression and risk of isolation was observed among HIV positive women. Significant mean difference was observed for all the domains of QoL with Severity of Depression.

**CONCLUSION**

The present study shows a high prevalence of depression in HIV positive women and low social support and quality of life.

**KEYWORDS**

Human Immunodeficiency Virus, Acquired Immune Deficiency Syndrome, Depression, Social Support, Quality of Life, Women, South India

**HOW TO CITE THIS ARTICLE:** Hiremath SB, Desai M. A Study on association of depression with social support and quality of life among women living with HIV/AIDS in South India. J. Evid. Based Med. Healthc. 2018; 5(11), 1007-1012. DOI: 10.18410/jebmh/2018/207

## BACKGROUND

In 2014, there were around 35 million people living with Human Immune Deficiency Virus (HIV) infection across the globe. India has 3rd highest number of People Living with HIV/AIDS (PLWHA) in the world. There are around 2.1 million PLWHA in India and women account for 36% (0.75 Million).[1] Karnataka has around 2,09,366 PLWHA, out of which 83,917 are women.[2]

HIV infection has been known to have serious psychological and social impact on the people who are affected. Those infected with HIV, struggle with issues of disclosure to others, particularly when first diagnosed. Most patients with serious, progressive illness, face many psychological challenges including the prospect of real and anticipated losses, worsening quality of life, the fear of physical decline and death, and coping with uncertain future.[3] In spite of awareness and education about this disease, HIV patients are still considered to be social outcastes and are treated badly by the community at large.[4]

Biological, socio-cultural and economic factors make women more vulnerable to HIV and AIDS. The HIV is more easily transmitted from men to women than from women to men; male-to-female transmission during sex is about twice

*Financial or Other, Competing Interest: None.*
*Submission 20-02-2018, Peer Review 24-02-2018, Acceptance 08-03-2018, Published 10-03-2018.*
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*DOI: 10.18410/jebmh/2018/207*

as likely as female to- male transmission.[5] In India, the low status of women, poverty, early marriage, trafficking, sex-work, migration, lack of education and gender discrimination are some of the factors responsible for increasing the vulnerability of women to HIV infection. Women seem to bear disproportionate brunt of the epidemic psychologically, socially and economically.[3]

Depression is the most common psychiatric condition reported in studies among PLWHA. Major depression in HIV-positive population is elevated about two fold above those in healthy community sample.[3]

Several studies have assessed the role of gender in psychiatric morbidity, particularly depression. Majority of studies in India have reported higher rates of depression among women compared to men. Women with HIV infection in India face higher caregiver burden, more stigma and poor health care, which probably contribute to the higher prevalence of depression among them.[5-8]

PLWHA tend to have less social support compared to others due to stigma and loss of family structure associated with the disease.[9] As women are considered as care givers in the family if they get affected by this disease, it puts an additional strain on them physically, mentally and emotionally. Women and young girls are said to be mostly affected due to social and cultural inequality, economic marginality, restricted access to power, among others. Thus, women who are considered as the poorest of the poor are the worst hit, especially in the face of unavailable financial assistance which they require to feed well and take care of their health condition. Furthermore, childbearing in spite of their being infected is not negotiable because culture rarely gives women opportunity to dictate how and when to stop childbearing. Previous studies have suggested that social support can be an important factor for influences on well-being and quality of life of PLWHA.[10]

WHO defines Quality of Life (QoL) as, "Individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". Many studies have indicated that women with HIV have significantly lower QoL.[11]

There is a need for a study on association of depression with social support and QoL among HIV positive women, as these factors can have a significant association among them and the outcome of the study may have an implication on interventions targeted at making the lives of HIV positive women better.

## MATERIALS AND METHODS

This time bound cross-sectional study was conducted from July- December 2016, among women living with HIV/AIDS attending the antiretroviral therapy (ART) centre attached to a tertiary care centre in Northern Karnataka.

*Objectives of Study*

1. To assess the prevalence of depression
2. To assess the Social support and Quality of Life among women living with HIV/AIDS.
3. To determine the association of depression with social support and quality of life among women living with HIV/AIDS.

*Method of Data Collection*

The sample size was determined by calculation based on the prevalence of depression among HIV-positive women in the previous studies. In those studies, the prevalence was found to be around 45%, with confidence limit of 95% the sample size was around 145 with allowable error 8%.

HIV-positive women between the age 18–45 years, who have been diagnosed with HIV and informed about their status at least 3 months before the study and who were willing to participate in the study with a written informed consent were included in the study.

Women with significant acute systemic illness, previous history of psychiatric illness and current substance/alcohol abuse or dependence (as per the Diagnostic and Statistical Manual of Mental Disorders fifth edition [DSM-5] criteria), pregnancy, and nursing mothers were excluded from the study.

A total of 145 patients were recruited over 6 months and then subjected to evaluation for inclusion into the study after fulfilment of both inclusion and exclusion criteria. This study was approved by Institutional Ethics Committee. The HIV-positive female patients were selected to participate in the study on their arrival at the ART centre for monthly medications and follow-up. Patients who attended the ART centre, by order of arrival, were invited to participate in the interview. The procedure was clearly explained to them in their local language, and all aspects of confidentiality were reassured.

All study procedures, as well as the related ethical aspects, such as professional privacy safeguards and psychiatric follow-up in case of referral for psychiatric treatment, were explained to participants, all of whom gave written informed consent. The clinical treatment of those who declined to participate in the study was not affected any way. The interviews were conducted in a separate consultation room. Each interview lasted for an average of 60–70 min. In the case of a patient feeling tired or uncomfortable, she was allowed to take a break following which she could resume. Participants diagnosed with depression were treated at department of psychiatry later, and appropriate treatment was provided individually.

*The data were collected by a pretested semi-structured questionnaire. Tools used were*

1. Modified Kuppuswamy's Social Status Scale[12]
2. Diagnostic and Statistical Manual of Mental Disorders, 5th Edition - DSM-5[13]
3. Severity of depression was assessed using Beck's Depression Inventory (BDI)[14]
4. Lubben Social Network Scale (LSNS)[15]
5. World Health Organization Quality of Life -BREF Scale[11]

*Beck Depression Inventory Scale*[14]

BDI scale was used in this study to measure depressive symptoms. BDI is a self-reporting instrument and contains 14 cognitive/affective items and 7 somatic items. Individuals are asked to rate themselves on a zero-to-three spectrum with a score range of 0–63, total score is a sum of all items. Each question is designed to assess a specific symptom common among people with depression. Scores from 0 to 9 were considered as normal, 10–16 as mild depression, 17–29.

*Lubben Social Network Scale*[15]

It is a self-report 10-item scale to assess the level of social support available to a person. Each item is rated from zero to five. It has five domains including family network, friends' network and confidant relationship, helping others, and living arrangements. The minimum score is zero and maximum is 50, higher scores indicating greater level of social support. Scores <20 was considered as isolated, scores between 21 and 25 as high risk for isolation, 26–30 as moderate risk for isolation, and scores more than 31 as low risk for isolation.

*World Health Organization Quality of Life-BREF Scale*[11]

QoL was measured using the World Health Organization BREF scale with 26 items. This instrument has 4 domains (physical, psychological, social, and environmental). Each domain has questions covering various aspects of the respective domain. There are also two items examined separately; one about the individual's overall perception of QoL and the other about the individual's overall perception of his or her health. Each item uses a five-point Likert-type scale. The domain scores were scaled in a positive direction, implying that higher the score, higher the QoL. A total score for each domain and an overall QoL score were calculated. The raw scores were transformed to 0–100 scale.

*Statistical Analysis*

Categorical data were represented in the form of frequencies and proportions. Chi-square was used as test of significance. Continuous data were represented as mean and standard deviation. Independent t-test was used as test of significance to identify the mean difference between two groups and analysis of variance was the test of significance to identify the mean difference between more than two groups. $P < 0.05$ was considered as statistically significant. Data were analysed using Statistical Package for the Social Sciences (SPSS) for Windows, Version 20.0., Armonk, NY: IBM Corp.).

## RESULTS

Mean age of the participants was 35.32 years and 81(55.9%) were in the age group of 35-45 years. 82 (56.6%) belonged to urban areas and rest were from rural areas (Table 1). Majority of them. i.e. 124 (85.5%) belonged to Hindu religion. In total, 83 (57.2%) women were widowed and 51 (35.2%) were married. 44(30.3%) did not have any formal education. 43 (29.7%) had primary education. 34 (23.4%) had studied till high school. Majority of them i.e. 67 (46.2%) were unemployed. 120 (82.2%) women were on ART and 87 (60%) had CD4 count more than 350. 80(55.2%) women belonged to upper-lower socioeconomic class according to the modified Kuppuswamy's classification.

| | Frequency (n) | Percentage (%) |
|---|---|---|
| **Age groups** | | |
| 18 to 24 years | 7 | 4.8 |
| 25 to 34 years | 57 | 39.3 |
| 35 to 45 years | 81 | 55.9 |
| | | |
| **Location** | | |
| Urban | 82 | 56.6 |
| Rural | 63 | 43.4 |
| | | |
| **Marital Status** | | |
| Unmarried | 2 | 1.4 |
| Married | 51 | 35.2 |
| Married but Separated | 3 | 2.1 |
| Married But not living together | 6 | 4.1 |
| Widow | 83 | 57.2 |
| | | |
| **Educational Status** | | |
| Graduate | 8 | 5.5 |
| PUC | 16 | 11.0 |
| High | 34 | 23.4 |
| Primary | 43 | 29.7 |
| Uneducated | 44 | 30.3 |

***Table 1. Basic Demographic Details of Study Population***

Out of 145 subjects, 50 (34.5%) had depression and 27 (54%) had mild, 21 (42%) moderate, and 2 (4%) had severe depression (Table 2). Among the depressed women, 29 (58%) were from rural and 21 (42%) were from the urban area. Rural women were more depressed than urban women, and it was statistically significant.

| | | Frequency (n) | Percentage (%) |
|---|---|---|---|
| **Prevalence of Depression** | Absent | 95 | 65.5 |
| | Present | 50 | 34.5 |
| | Total | 145 | 100.0 |
| | | | |
| **Severity of Depression** | Mild | 27 | 54 |
| | Moderate | 21 | 42 |
| | Severe | 2 | 4 |
| | Total | 145 | 100.0 |

***Table 2. Prevalence and Severity of Depression***

Among the subjects, 6 (4.1%) were socially isolated, 63 (43.5%) had moderate-to-high risk and 76 (52.4%) had low risk for isolation. 22 (44%) of depressed women had low risk for isolation, 23 (46%) had moderate-to-high risk for isolation, and 5 (10%) were isolated. There was a statistically significant association of social support with depression and its severity. Risk of isolation was low in the majority of the patients without depression. (Table 3)

| Correlation | | | |
|---|---|---|---|
| | | **BDI Score** | **LSNS+ Score** |
| BDI* score | Pearson Correlation | 1 | -0.450** |
| | P value | | <0.0001* |
| | N | 145 | 145 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

***Table 3. Correlation between BDI Score and LSNS Score***

*BDI – Beck's Depression Inventory; +Lubben Social Network Scale

Significant mean difference was observed for all the domains of QoL between depressed and non-depressed participants and also with respect to severity of depression. (Table 4) Scores of all domains of QoL were higher in non-depressed participants than depressed subjects indicating that QoL was lower in depressed participants. Among all domains, social domain was the most affected component of QoL in our study participants.

| Domains of Quality of life | Depression | | | | P value |
|---|---|---|---|---|---|
| | Depression Present | | Depression Absent | | |
| | Mean | SD | Mean | SD | |
| Physical | 47.50 | 12.47 | 59.83 | 12.61 | <0.001* |
| Psychological | 45.72 | 14.83 | 62.40 | 13.91 | <0.001* |
| Social | 29.14 | 15.62 | 41.37 | 19.61 | <0.001* |
| Environmental | 65.26 | 12.05 | 71.38 | 12.13 | 0.004* |

***Table 4. Association of Depression with Domains of Quality of life***

In the study there was significant positive correlation between LSNS score and all the domains of QoL (Table 5). Indicating with increase in LSNS score there was increase in QoL. i.e. Lower the risk of isolation higher the quality of life. Hence, suggesting that social support is very important to improve QoL in HIV women.

| Correlations | | | | | | |
|---|---|---|---|---|---|---|
| | | **LSNS Score** | **Physical Domain** | **Psychological Domain** | **Social Domain** | **Environmental Domain** |
| LSNS Score* | Pearson Correlation | 1 | 0.408** | 0.568** | 0.599** | 0.464** |
| | P | | <0.001* | <0.001* | <0.001* | <0.001* |
| | N | 145 | 145 | 145 | 145 | 145 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | | | | |

***Table 5. Correlation between LSNS score and Domains of QoL***

*LSNS- Lubben Social Network Scale

**DISCUSSION**

Prevalence of depression among the participants was found to be 34.5% and among depressed, 54% had mild depression, 42% had moderate depression, and 4% had severe depression. The rates were similar to that of rates noted in previous studies Unnikrishnan et al. (37%),[5] Jagannath V et al. (43%)[10] and Naik et al. (46.99%).[6] However, there are studies[7,8] which have reported a lower and few others[16,17] a higher prevalence rate of depression among HIV-positive women. It is necessary to observe that studies that use the stricter DSM criteria report lower prevalence rates than which use the International Classification of Diseases-10 criteria. Furthermore, other studies[18] have elaborated the underreporting of prevalence rates of depression in HIV-positive patients, and social stigma may be a contributing factor.

In our study, rural women were found to be more depressed than urban women. This may be because of poor availability of health care and social services to rural women.[5] The rural conservative society forces them not to disclose their HIV status, thus depriving them of the social support and ultimately leading to depression.[19] There was no significant association of depression with religion, marital status, socioeconomic status, education, occupation, CD4 count, and duration of ART. Though few other studies have demonstrated positive association of marital status, socio economic status and CD4 counts,[20,21] more planned studies with sufficiently large samples, are needed to examine such hypotheses.

There was a significant association between risk of isolation and depression and its severity among HIV-positive women in our study. Risk of isolation was low in the majority of non-depressed participants. These findings are similar to the results of the previous studies[22,23] which observed a low prevalence of depression in HIV-positive women having a good social support as compared to those patients having low social support, and higher social support was associated with lower depression and higher QoL.

Our study observed that there was a significant negative correlation between depression and all the domains of QoL. Hence, QoL is significantly poor among depressed HIV-positive women. Among all the domains, social domain was the most affected component of QoL. This is similar to the observations made in the previous studies.[23,24] Social domain of QoL involves personal relationships, social support, and sexual activity. Charles *et al.* observed that QoL was markedly affected in social domain (poor QoL 51.2%) as compared to other domains such as physical (42.5%),

psychological (40%), and environmental (34%). Some other studies also reported poor QoL in different domains.[25] As depression affects many domains of the QoL, depressed individuals present with significant impairment in QoL and physical and mental functioning.[24] Therefore, depression is one of the strongest predictors of lower QoL of people with HIV/AIDS. Depression has a negative impact on all the dimensions of QoL studied, in addition to being associated with poor adherence to the antiretroviral treatment[26,27] and a greater perception of the stigma associated with HIV.[23]

## CONCLUSION

The prevalence of depression among women living with HIV is high, and also, it is under diagnosed and undertreated. Depression negatively impacts QoL, medication adherence, and immunity leading rapid progression of HIV infection. Therefore, early diagnosis and treatment of depression among HIV-positive women become essential. There is a need to incorporate mental health services as an integral component of HIV care.

## ACKNOWLEDGMENTS

We wish to thank Dr. Mahesh V, Dr. Gomadi and all the staff of ART Centre and Dr. Chaitra V Hiremath for their constant help for the study.

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