Assessment Of Quality of Life Among PLHIV Attending the FIART Clinic of Bankura Sammilani Medical College, West Bengal

Surya Prakash Dey¹, Tridibes Bhattacharya², Aditya Prasad Sarkar³

¹Hooghly CMOH office, Kolkata, India
²,³Bankura Sammilani Medical College, Bankura, West Bengal, India

ABSTRACT

Introduction: People Living with HIV (PLHIV) are facing increasing challenges pertaining to the disease as life expectancy is gradually rising. This study was conducted to assess the quality of life (QOL) in various domains among PLHIV and to find out its associated factors.

Methods: A descriptive, cross-sectional study was conducted in Facility Integrated Anti-retroviral Therapy (FIART) clinic of Bankura Sammilani Medical College & Hospital (BSMCH) among 99 PLHIV from 01/07/2019 to 30/06/2020. Data were collected by interviewing PLHIV aged within 18-60 years using pre-designed, pre-tested, and semi-structured questionnaire incorporating WHO Quality of Life for HIV (WHOQOL-HIV) - BREF version to assess the QOL of the study subjects in various domains.

Results: 44% participants rated their QOL as good, 79% satisfied with their health. Among all other domains, QOL score (median- 17.0, IQR- 4) was found highest in physical domain, while it was lowest (median- 14.0, IQR- 2) in spiritual domain. Overall QOL was significantly higher in males, rural residents, joint family and higher socio-economic class. Multiple linear regression revealed statistically significant relation of overall QOL with residence, family type and socio-economic status.

Conclusion: Psychological and spiritual well-being of PLHIVs is an area of concern and requires clinical attention.

Keywords: HIV/AIDS, Quality of life; PLHIV; WHOQOL-HIV BREF

INTRODUCTION

Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) is a chronic disease of immune system caused by infection with human immune deficiency virus (HIV). It gradually weakens immune system by destroying the CD4 T-lymphocytes (CD4 cells) leaving the body vulnerable to life-threatening opportunistic infection and malignancies. Around 38.0 million people were living with HIV (PLHIV) worldwide.¹ India has the third largest HIV epidemic in the world having 0.22% HIV prevalence among the adults in 2017 whereas West Bengal having prevalence of 0.21%.²

With initiation of anti-retroviral treatment (ART), HIV patients achieve excellent improvement of their clinical course but a PLHIV has to come up with a range of HIV-related symptoms like the infection itself, co-morbid illnesses, or iatrogenic effects from HIV-related medications.³⁴ Many of the HIV patients struggle with numerous social problems such as stigma, discrimination, poverty, depression, substance abuse, and cultural beliefs, which can affect their QOL.⁵ Hence, HIV/AIDS infection compromises the QOL in PLHIV and it has become an important indicator for implementing HIV health-related intervention.⁶

How to cite this article: Dey SP, Bhattacharya T, Sarkar AP. Assessment of Quality of Life Among PLHIV Attending the FIART Clinic of Bankura Sammilani Medical College, West Bengal Nat J Community Med 2022;13(11):809-814. DOI: 10.55489/njcm.131120222397

Financial Support: None declared
Conflict of Interest: None declared
Date of Submission: 31-08-2022
Date of Acceptance: 05-11-2022
Date of Publication: 30-11-2022

Correspondence: Tridibes Bhattacharya (Email: tridibes1986@gmail.com)
Copy Right: The Authors retain the copyrights of this article, with first publication rights granted to Medsci Publications.
QOL is defined by the World Health Organization (WHO) as "the condition of life resulting from the combination of the effects of the complete range of factors such as those determining health, happiness (including comfort in the physical environment and a satisfying occupation), education, social and intellectual attainments, freedom of action, justice and freedom of expression."  

With the introduction of highly active antiretroviral therapy (HAART) and scaling up of its availability, life expectancy of the infected persons has increased. In the HAART era, infected individuals might live a longer life; however, they might not lead a well-satisfied life as the infected person has to follow ART regimen lifelong. This might lead to PLHIV facing increasing health-related challenges pertaining to the disease, managing medication, side effects due to medication and aging. Hence, it is important to determine the factors contributing to better QOL among PLHIV. 

As QOL shows wide variations depending on different socio-demographic and clinical characteristic of the individuals, measuring QOL and determining factors affecting QOL will help us in understanding, which domains of the QOL are commonly affected and will also provide regional data for planning intervention strategies to improve the QOL among PLHIV. 

There was dearth of studies in this context in West Bengal specially in Bankura, regarding QOL of PLHIV, though it is vulnerable to infiltrate from neighbouring districts, states like Bihar and Jharkhand. 

With this background, the present study was conducted to assess the QOL of PLHIV patients attending Bankura Sammilani Medical College (BSMCH) FIART centre in Bankura, West Bengal in respect of physical, psychological, level of independence, social, environmental and spiritual domains and to find out associated factors with their QOL. 

### MATERIALS AND METHODS

This institution-based, descriptive, cross-sectional study was conducted at facility integrated antiretroviral therapy (FIART) clinic of BSMCH (Centre Code- WB/BKR/01) from 1st July 2019 to 30th June 2020 among all registered PLHIV aged between 18-60 years receiving ART with minimum duration of HIV diagnosis of 6 months. Patients having serious complications of the disease (e.g., severe pneumonia, Hepatitis B) and with other serious co-morbid conditions (e.g., cancer, uncontrolled diabetes, renal failure) were excluded from the study.

As no data on prevalence of poor QOL of PLHIV were found in context of Bankura, so considering 50% prevalence of poor QOL of PLHIV in Bankura, 95% confidence interval (CI) and 10% absolute error, sample size was calculated to be 96. Applying finite population correction [Finite population size = 856 registered adult PLHIV (as stood on 2 September 2018)] revised sample size came out to be 90. Assuming 10% non-response rate the final sample size was 99.

The study subjects were selected by systematic random sampling among all the registered PLHIV patients attending FIART clinic. Data were collected with the help of a pre-designed, pre-tested semi-structured interviewer administered questionnaire (in Bengali language) containing WHO Quality of Life for HIV (WHOQOL-HIV) BREF Version, 2002 as well as participant’s medical records (if required) bi-weekly for six months (total 48 days), until the desired sample size was achieved. Approximately, two to three study participants were interviewed per day. Since the total registered PLHIV was 856 and the desired sample size was 99, hence the sampling interval came out to be 9 \( \frac{856}{99} = 8.64 \). First participant was selected following a simple random sampling technique using random number table from the FIART clinic register. Then from every 9th PLHIV had been included in the study with prior communication over phone and appointment was taken individually for interview. If any selected participants were ineligible as per exclusion criteria, then very next registered PLHIV were included as study subjects.

WHOQOL-HIV BREF Version, 2002 contains six domains namely Physical health (4 items), Psychological health (5 items), Level of independence (4 items), Social relationship (4 items), Environment (8 items) and Spirituality/Religion/Personal beliefs (4 items). First two questions evaluated overall QOL. Individual items were rated on a 5-point Likert scale where 1 indicates low, negative perceptions and 5 indicates high, positive perceptions. Some facets (pain and discomfort, negative feelings, dependence on medication, death and dying) were not scaled in a positive direction, meaning that for these facets higher scores did not denote higher QOL. The scale was validated for language as well as content (CVI- 0.94, CVR-0.89) with Cronbach’s alpha value 0.703.

### Calculation of Domain Scores

**Box 1 – Method of calculation of domain score**

| Computation of domain scores |  
| --- | --- |
| Domain 1 = (Q3 + Q4 + Q14 + Q21)/4 * 4 |  
| Domain 2 = (Q6 + Q11 + Q15 + Q24 + Q31)/5 * 4 |  
| Domain 3 = (Q5 + Q22 + Q23 + Q30)/4 * 4 |  
| Domain 4 = (Q27 + Q26 + Q25 + Q17)/4 * 4 |  
| Domain 5 = (Q12 + Q13 + Q16 + Q18 + Q19 + Q28 + Q29 + Q30)/8 * 4 |  
| Domain 6 = (Q7 + Q8 + Q9 + Q10)/4 * 4 |  

(These equations calculate the domain scores. All scores are multiplied by 4 so as to be directly comparable with scores derived from the WHOQOL-100)

After explaining the purpose of the study and prior written informed consent data were collected in a...
private room maintaining their dignity, privacy and comfort consent with face-to-face interview. The average duration of the interview was about 40 minutes. At the end of data collection each participant were thanked for their cooperation. Ethical Clearance was obtained from the Institutional Ethics Committee of Bankura Sammilani Medical College and Hospital, Bankura.

Data were codified and entered in MS Excel Spread Sheet. Data were presented in the form of table and diagram and mean, median, proportion, interquartile range and standard deviation were calculated for describing the data. Normality of the data set was tested by Shapiro-Wilk's normality test as well as various plots like histogram, P-P plot etc. Scores of overall QOL & other continuous data did not follow normal distribution. For bivariate analysis Mann Whitney U, Kruskal Wallis, Spearman's correlation was applied wherever required. p value of <0.05 was considered as significant with 95% confidence interval for drawing statistical inference regarding relationship among variables. Variables, which had p values <0.1 in bivariate analysis, were considered for multiple linear regression analysis to find out strength of association of different variables with QOL of the participants. Software package IBM SPSS 22.0 trial version was used for data analysis.17

RESULTS

The overall age of participants was 36.1±8.9 years (mean ± SD) with median of 35 years; range was 19-56 years. Most of the participants (69.7 %) belonged to 21-40 years age group. In this age group, females were predominant (83.3%).

Majority of the participants were Hindu (95.9 %), belonged to General Caste (66.7%), lower SES class (37.4%), joint family (57.6%), residing in rural area (88.9 %). 14.1% participants were illiterate, while more than half of the participants (63.6 %) had primary level of education.

Majority of the female participants was homemaker (64.6 %) while most of the male participants were laborer (27.6%). More than two-thirds (70.7%) of the participants were married, living with their family (83.8%). 44% of participants rated their QOL as good, while the majority (79%) satisfied with their health.

Among all the domains, QOL score was found highest (median- 17.0, IQR- 4) in physical domain, while it was lowest in spiritual domain (median- 14.0, IQR- 4).
was lowest (median = 14.0, IQR = 2) in spiritual domain. (Fig no. 1)

Overall QOL was significantly higher (p < 0.05) in participants, who were males, residing in rural area, belonging to joint family and higher socioeconomic class. [Table 1]

| Model | Unstandardized Coefficients | Standardized Coefficients | 95.0% C.I for Beta | Collinearity Statistics |
|-------|-----------------------------|---------------------------|-------------------|------------------------|
|       | B    | Std. Error | Beta | t     | p value | Tolerance | VIF |
| (Constant) | 12.727 | 0.719 | 17.696 | 0 | 11.30-14.16 | 1 | 1 |
| Residence | 2.114 | 0.763 | 2.771 | 0.007 | 0.60-3.63 | 0.244 | 2.16 |
| (Constant) | 11.845 | 0.78 | 15.184 | 0 | 10.29-13.39 | 0.244 | 2.16 |
| Residence | 2.32 | 0.746 | 3.109 | 0.002 | 0.84-3.80 | 0.244 | 2.16 |
| Type of family | 1.213 | 0.475 | 2.555 | 0.012 | 0.27-2.16 | 0.244 | 2.16 |
| (Constant) | 11.126 | 0.829 | 13.426 | 0 | 9.48-12.77 | 0.244 | 2.16 |
| Residence | 2.655 | 0.746 | 3.558 | 0.001 | 1.17-4.14 | 0.244 | 2.16 |
| Type of family | 1.343 | 0.469 | 2.867 | 0.005 | 0.41-2.27 | 0.244 | 2.16 |
| Socioeconomic status | 1.145 | 0.51 | 2.247 | 0.027 | 0.13-2.16 | 0.244 | 2.16 |

DISCUSSION

This study had revealed that overall age of participants was 36.11 ± 8.9 years (mean ± SD) with median of 35 years; range was 19-56 years. Most of the participants (69.7%) belonged to 21-40 years age group in which females were predominant (83.3%). This finding is comparable with the findings of the study by Khakha DC et al, Marashi T and Dasgupta P et al.18-20

In this study, 43.4% of the participants rated their QOL neither poor nor good, 6.1% rated their QOL poor, while 44.4% rated it as good. Majority of the participants (68.7% much, 11.1% very much) were satisfied with their health while few (5%) were dissatisfied. This was contrary to the finding of Sarkar T et al had found that only 19.1% were satisfied with their health but 36.6% were dissatisfied.21 This might be due to the difference in study setting.

In this study, highest score of QOL was obtained in physical domain; this suggests that the patients had relatively better quality of health services and good accessibility to them. Similar findings were reported in various studies.20,22-25

Spiritual domain had lowest score of QOL in this study, as worrying about future, dying and death was a prime concern in majority of the participants. Some of them were bothered about people blaming them for having HIV infection. This was on the contrary to findings to several studies. 26-29

Followed by spiritual domain, psychological domain was, however, badly affected indicating poor self-esteem, social contacts, and sexual activity. QOL in Psychological domain scored lowest in study done by Marashi T et al., Dasgupta P et al whereas scored highest in Khakha DC et al, Sarkar T et al, Yadav S.18-21

The mean score of Overall QOL was 14.60 ± 2.46 (Mean ± SD) with a median of 14.0, range was 4-20. It was significantly associated with all the domains and similar findings were also reported by Gupta SK et al.20

In this study, overall QOL was significantly associated with male gender, rural residence, joint family and high socioeconomic class. This finding is consistent in various studies 20, 23-26, 28, 30-33) Low levels of literacy among females, unemployment, financial dependency, and social binding can be the contributory factors for lower scores on QOL domains by females.20,23-26,28,30-33 On the contrary, study by Dasgupta P et al, Sarkar T et al reported lower SES has better QOL.20-21

This study had shown that overall QOL was higher in the Hindu religion, married individual, higher education level and person with addiction although it failed to reach statistical significance. Similar study by Dasgupta p et al. reported that the Muslim had poor QOL compared to The Hindu.20 Various studies had also shown that good QOL is found higher in married and with higher level of education.20,25,28 It might be due to more positive attitude toward the disease with the increasing awareness level.

Overall QOL was positively correlated with duration since HIV diagnosis and duration of ART. Early diagnosis of HIV with prompt ART can decrease chances of HIV related complication, improve overall survival and thereby improve QOL. A Brazilian study reported participant having long duration of ART with good adherence had better QOL.34
Addiction helps in numbing emotional stress related to HIV infection. QOL also high in those who travel by bus to reach FIART center. Overall QOL was positively correlated with monthly cost of transport.

Current study revealed that overall QOL was negatively correlated with age of the participants which corroborates with various studies. The lowest scores for QOL younger might be due to lack of education and duration of disease. On the other hand, Sarkar T et al reported young PLHIV (less than 40 years) has better QOL.

This study also revealed a negative correlation between overall QOL with distance from home to hospital and patient’s age during diagnosis of HIV. Patients who were coming from interior part of the district with poor transport accessibility had poor QOL compared to those coming from places nearer to the hospital with better transport facilities. However, evidence could not be provided due to very limited resources in this account. As previously discussed, young age has negative correlation with QOL, so those PLHIV who were diagnosed at a young age had poorer QOL.

The present study had some limitations like recall bias regarding duration of diagnosis during interview. There was a possibility of conscious falsification of some sensitive information by the participants as well.

CONCLUSION

QOL among PLHIV and its’ determinants assessment is very much needed besides adherence of treatment. Especially, spiritual, psychological, environmental domain of QOL must be prioritized during attendance to ART center. Counselling regarding HIV-related stigma and psychotherapy for PLHIV is of paramount importance and need of the hour.

REFERENCES

1. UNAIDS Global HIV & AIDS statistics 2019 factsheet. Available at: https://www.unaids.org/sites/default/files/media_asset/UNAIDS_Fact_Sheet_en.pdf (Accessed on March 2020)

2. HIV Facts & Figures. National AIDS Control Organisation. Available at: http://naco.gov.in/hiv-facts-figures#:--text=Other%20%o%20states%20have%20less%20than%202%20%o%20of%20people%20living%20with%20HIV.&text=India%20%o%20estimated%20%o%20have%27%25%20between%202010%20&2017. (Accessed on March 2020)

3. India HIV Estimation 2017 Technical Report. NACO, Department of AIDS Control, Ministry of Health and Family Welfare, Government of India. Available at: http://naco.gov.in/sites/default/files/HIV%20Estimations%202017%20Report%1.pdf (Accessed on March 2020)

4. West Bengal State AIDS Prevention & Control society, Annual report 2016-17; 45. Available at: http://wbabcs.wbhealth.gov.in/readwrite/files/annual%20report/Annual%20Report%202016-17.pdf (Accessed on March 2020)

5. Halloran J. Increasing survival with HIV: Impact on nursing care. AACN Clin Issues 2006; 17:8-17.

6. Kassutto S, Maghsoudi K, Johnston MN, Robbins GK, Burgett NC, Sax PE, et al. Longitudinal analysis of clinical markers following antiretroviral therapy initiated during acute or early HIV Type I infection. Clin Infect Dis 2006;42:1024-31

7. Ries L, Melbert D, Krupcho M, SEER cancer statistics review, 1975-2004.Bethesda, MD: National Cancer Institute.

8. Safren SA, Otto MW, Worth JL, Salomon E, Johnson W, Mayer K et al. Two strategies to increase adherence to HIV antiretroviral medication: life-steps and medication monitoring. Behav Res Ther. 2001;39(10):1151–1162.

9. Molassiotis A, Callaghan P, Twinn SF, Lam SW. Correlates of quality of life in symptomatic HIV patients living in Hong Kong. AIDS Care. 2001;13(3):319–334.

10. Thomas BE, Josephine A, Suryanarayanan D, Fathima R, Padmapriyadarshini C, Soumya S. Gender differences in perceived health related quality of life among persons living with HIV. SAARC J Tuberc, Lung Dis and HIV/AIDS. 2005:2:15–22.

11. O’Connell K, Skevington S, Sazona S; WHOQOL HIV Group. Preliminary development of the World Health Organization’s Quality of Life HIV instrument (WHOQOL-HIV): analysis of the pilot version. Soc Sci Med. 2003;57(7):1259–1275.

12. Dasgupta P, Mukhopadhyay S, Saha D. Assessment of quality of life among human immunodeficiency virus/acquired immune deficiency syndrome patients: A study at antiretroviral therapy center at Malda, West Bengal, India. Arch Med Health Sci 2018;6:208-13.

13. Sarkar T, Karmakar N, Dasgupta A, Saha B. Quality of life of people living with HIV/AIDS attending antiretroviral clinic in the center of excellence in HIV care in India. J Edu Health Promot 2019;8:226.

14. Chatterjee S, Akbar F, Das N, Ray K, Randypadhyay A, Singh MK. Quality of Life of HIV/AIDS Patients: The Influence of CD4 Count on It. NH J Community Med 2016; 7(11):s89-863.

15. User Manual WHOQOL-HIV Instrument WHO/MSD/MER/Rev. 2012.03. Available at https://appwho.int/iris/bitstream/handle/10665/77776/WHO_MSD_MER_Rev.2012.03.eng.pdf;jsessionid=F703B5BFCC1871FA5AE9C6?sequence=1

16. Gupta SK, Shrivastava AK, Gupta P, Sharma P, Sarawagi R. A study on the Self-Reported Quality of Life of HIV-Positive Shum-Dwellers in Mumbai, India. J Community Med Health Educ. 2012;2:172. https://doi.org/10.4172/2161-0711.1000172

17. IBM SPSS trial version 22, available at: https://www.ibm.com/support/pages/downloading-ibm-spss-statistics-22

18. Khakha DC, Kapoor B, Manju, Sharma SK. Three sides of a coin in the life of people living with HIV (PLWH). Indian J Community Med 2015;40:233-8.

19. Marashi T, Garg S, Gupta VK, Singh MM, Sinha P, Dewan R, et al. Assessment of quality of life among HIV positive people attending tertiary hospital of Delhi, India. J Commun Dis 2009;41:101-8.

20. Dasgupta P, Mukhopadhyay S, Saha D. Assessment of quality of life among human immunodeficiency virus/acquired immune deficiency syndrome patients: A study at antiretroviral therapy center at Malda, West Bengal, India. Arch Med Health Sci 2018;6:208-13.

21. Sarkar T, Karmakar N, Dasgupta A, Saha B. Quality of life of people living with HIV/AIDS attending antiretroviral clinic in the center of excellence in HIV care in India. J Edu Health Promot 2019;8:226.
22. Subhaprada SC, Shasank RVSS, Sivalakha T, Madhusai S. An evaluation of healthrelated quality of life and its determinants among people living with HIV/AIDS attending tertiary care hospital of Kurnool, India. Int J Community Med Public Health 2019;6:4470-7.

23. Rashmi A, Kundapur R. A study on demographic factors affecting quality of life among HIV positive individuals attending a district anti retroviral treatment centre in Mangalore. Int J Community Med Public Health 2018;5:215-9.

24. Banagi Yathiraj A, Unnikrishnan B, Ramapuram JT, Thapar R, Mithra P, Madi D et al. HIV-Related Knowledge among PLWHA Attending a Tertiary Care Hospital at Coastal South India—A Facility-Based Study. Journal of the International Association of Providers of AIDS Care. 2017 Nov 1;1(6):615-619. https://doi.org/10.1177/2325957417742671

25. Liping M, Peng X, Haijiang L, Lahong J, Fan L (2015) Quality of Life of People Living with HIV/AIDS: A Cross-Sectional Study in Zhejiang Province, China. PLoS ONE 10(8): e0135705. doi:10.1371/journal.pone.0135705

26. Hipolito RL, Oliveira DC, Costa TL, Marques SC, Pereira ER, Gomes AMT. Quality of life of people living with HIV/AIDS: temporal, socio-demographic and perceived health relationship. Rev. Latino-Am. Enfermagem. 2017;25:e2874.

27. Anand D, Puri S, Mathew M. Assessment of quality of life of HIV-positive people receiving ART: An Indian perspective. Indian J Community Med 2012;37:165-9

28. Gupta SK, Srivastava AK, Gupta P, Sharma P, Sarawagi R. A study on the Self-Reported Quality of Life of HIV-Positive Slum-Dwellers in Mumbai, India. J Community Med Health Educ. 2012;2:172. https://doi.org/10.4172/2161-0711.1000172

29. Odili VU, Ikhuorunran IB, Usifoh SF, Oparah AC. Determinants of quality of life in HIV/AIDS patients. West Afr J Pharm 2011;22:42-8

30. Yadav S. Perceived social support, hope, and quality of life of persons living with HIV/AIDS: a case study from Nepal. Qual Life Res. 2010;19(2):157-166. doi:10.1007/s11136-009-9574-2

31. Imam MH, Karim MR, Ferdous C, Akhter S. Health-related quality of life among the people living with HIV. Bangladesh Med Res Councl Bull 2011;37:3-6.

32. Shriharsha C, Rentaia S. Quality of life among people living with HIV/AIDS and its predictors: A cross-sectional study at ART center, Bagalkot, Karnataka. J Family Med Prim Care 2019;8:1011-6

33. Passos SM, Souza LD. An evaluation of quality of life and its determinants among people living with HIV/AIDS from Southern Brazil. Cadernos de Saude Publica. 2015 Apr;31(4):800-814. DOI: 10.1590/0102-311x00000514.

34. eSilva AC, Reis RK, Nogueira JA, Gir E. Quality of life, clinical characteristics and treatment adherence of people living with HIV/AIDS. Rev Lat Am Enfermagem. 2014;22(6):994-1000. doi:10.1590/0104-1169.3534.2508

35. Karkashadze E, Gates MA, Chkhartishvili N, DeHovitz J, Tsertsvadze T. Assessment of quality of life in people living with HIV in Georgia. International Journal of STD & AIDS. 2017 Jun;28(7):672-678. DOI: 10.1177/0956462416662379.