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**Original Research Article**

# A study on demographic factors affecting quality of life among HIV positive individuals attending a district anti retroviral treatment centre in Mangalore

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## ABSTRACT

**Background:** Prevention and treatment in HIV greatly influences the quality of life (QOL). The objective of the study was to assess QOL of individuals with HIV and its association with demographic factors.
**Methods:** 400 patients with HIV attending the district anteretroviral treatment (ART) centre were interviewed with WHO QOL BREF questionnaire using systematic random sampling. Descriptive statistics, Chi square and independent t test and logistic regression was done to analyse the results.
**Results:** Mean quality of life score was highest in the physical domain (Mean=14.93, ±3.59). Least score was seen for Social domain (Mean=12.30, ±2.37). The physical domain score was highest among those belonging to class 1 SES (Mean=17.50, ±0.707). Domain scores varied significantly ($p>0.05$) with respect to gender. There was significant variation in domain scores across the different socioeconomic groups except in social domain.
**Conclusions:** Gender, Socioeconomic and marital status significantly affected the QOL of People Living with HIV.

**Keywords:** HIV positive individuals, QOL, WHO QOL BREF

## INTRODUCTION

In recent years the decline in AIDS related deaths have continued, with evidence of drop in the number of people dying from AIDS-related causes. There are more than 700 000 fewer new HIV infections globally in 2011 than in 2001.[1] These national declines in HIV incidence shows that sustained investments and increased political leadership for AIDS response are paying dividends. Prevention leads to behaviour change; treatment reduces a person's viral load. Both reduce the potential of virus transmission. These affect the quality of life of an individual immensely. The term Quality Of Life (QOL) references the general well-being of individuals and societies. Measuring quality of life is currently at the forefront of various fields of science. In HIV, the first applications of quality of life assessment coincided with the advent of antiretroviral therapy.[2]

Some studies have discussed that enhancing QOL has long been a major explicit or implicit life-style and policy goal for individuals, communities, nations, and the world.[3] There are two measures of quality of life: one being the objective wellbeing and the other subjective wellbeing. Objective measures include indices of economic production, literacy rates, life expectancy, and other data that can be gathered without directly surveying the individuals being assessed. Assessing the QOL of People Living with HIV (PLHIV) and its association with demographic features was the objective in this study.

## METHODS

The study was conducted at the District ART centre in 2013. All those HIV positive patients who were above 18yrs and registered and attending the ART centre were the study subjects with exclusion of pregnant and lactating women, terminally ill patients, patients on Pre-ART and those not consenting. Proportion of adherence among patients on ART from previous studies was 73.5%.[4] Taking an allowable error of 7% for the above estimate, sample size was calculated and rounded off to 400. A pretested questionnaire was used to assess the demographic profile of the patients. HIV QOL BREF, a questionnaire with total of 31 items was used to assess QOL under 6 domains i.e. physical, psychological, level of independence, social relationships, environment, and spirituality and rated on a 5 point Likert scale. Some facets (pain and discomfort, negative feelings, dependence on medication, death and dying) scaled in a negative direction, were recoded so that high scores reflect better quality of life.[5]

Patients attending ART centre were selected by systematic random sampling. Every 6$^{th}$ patient attending the ART clinic was interviewed which was carried out once a week. With an average of 60 patients attending the ART centre every day, 10 patients were interviewed every week. The same day of the week was selected on consecutive weeks till the required sample size was achieved. Informed consent was obtained from individual patient. Linguistic validation of the questionnaire was done. The quality of life was correlated with the patient's socio demographic profile. Descriptive statistics, Chi square and independent t test and logistic regression was done to analyse the results.

## RESULTS

In our study we found that the mean quality of life scores was the highest (Table 1) in the physical domain (Mean= 14.93, ±3.59). Psychological and spirituality/religion/ personal beliefs (SPRB) domain scores were the next (Mean=13.96, ±2.91 and Mean=13.81, ±4.24 respectively). With respect to age groups individuals in 58-67 yrs scored higher in Physical, psychological and SPRB domains (15.63, ±3.594; 14.65, ±3.018; 15.5, ±3.559 respectively) though these results were not significant (p>0.05).

**Table 1: Overall domain scores.**

| Domain | Mean | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|
| **Physical** | 14.93 | 3.59 | 6 | 20 |
| **Psychological** | 13.96 | 2.91 | 6 | 20 |
| **Level of independence** | 12.57 | 2.18 | 6 | 20 |
| **Social** | 12.30 | 2.37 | 4 | 20 |
| **Environment** | 13.07 | 2.17 | 4 | 19 |
| **Spirituality/religion/personal beliefs** | 13.81 | 4.24 | 4 | 20 |

**Table 2: Association between domain scores and gender.**

| Domain | Gender | Number | Mean score | Standard deviation | Standard error | P value |
|---|---|---|---|---|---|---|
| **Physical** | Male | 224 | 16.26 | 3.310 | 0.221 | 0.000*** |
| | Female | 176 | 13.23 | 3.224 | 0.243 | |
| **Psychological** | Male | 224 | 15.20 | 2.708 | 0.181 | 0.000*** |
| | Female | 176 | 12.39 | 2.359 | 0.178 | |
| **Level of independence** | Male | 224 | 13.11 | 2.066 | 0.138 | 0.000*** |
| | Female | 176 | 11.89 | 2.135 | 0.161 | |
| **Social** | Male | 224 | 12.41 | 2.430 | 0.162 | 0.275 |
| | Female | 176 | 12.15 | 2.311 | 0.172 | |
| **Environment** | Male | 224 | 13.51 | 2.285 | 0.153 | 0.000*** |
| | Female | 176 | 12.50 | 1.881 | 0.142 | |
| **Spiritual/religion/ social beliefs** | Male | 224 | 15.64 | 3.509 | 0.234 | 0.000*** |
| | Female | 176 | 11.49 | 3.955 | 0.298 | |

Table 2 shows that the domain scores varied significantly (p<0.05) with respect to gender with the males showing better QOL than females except in the social domain where the mean domain scores were higher in males (Mean= 12.41, ±2.430) as compared to females (Mean= 12.15, ±2.311) but the difference was not significant on computing the independent t test (p=0.277). Table 3 shows the association between domain scores and socioeconomic status wherein the scores are significantly different among the different Socioeconomic status classes except in social domain (p=0.294). The physical domain score was highest among those belonging to

Class 1 SES (Mean= 17.50, ±0.707). So was the psychological (Mean=16.80, ±3.394), level of independence (Mean=15.50, ±0.707) and environmental domain (Mean=16.25, ±3.182). With regard to spirituality/ religion/ personal beliefs domain the scores were highest for Class 3 SES (Mean= 15.42, ±4.245). On computing the domain scores regarding the marital status (Table 4) the homogeneity of variance was not observed for physical domain and psychological domain scores. Hence chi square test was applied which showed a significant difference between the various marital status of the individuals. The scores varied significantly across the remaining domains (parametric test). The differences that we saw between the individuals with regard to their marital status were highly significant ($p<0.05$). Individuals who were single scored the highest in physical domain (Mean=17.23, ±2.810), psychological domain (Mean= 16.07, ±2.458), level of independence (Mean= 13.63, ±2.193), social domain (Mean= 12.95, ±2.281), environmental domain (Mean= 14.22, ±2.129) and the spiritual and religious beliefs domain (Mean= 15.91, ±3.269).

**Table 3: Association between domain scores and SES (socioeconomic status) (Acc. to modified BG Prasad classification 2013).**

| Domain | Socioeconomic status | Number | Mean score | Standard deviation | Standard error | P Value |
|---|---|---|---|---|---|---|
| **Physical** | Class 1 | 5 | 17.50 | 0.707 | 0.500 | 0.001*** |
| | Class 2 | 17 | 17.14 | 1.565 | 1.565 | |
| | Class 3 | 55 | 16.67 | 0.522 | 0.522 | |
| | Class 4 | 197 | 15.42 | 0.240 | 0.240 | |
| | Class 5 | 126 | 13.81 | 0.334 | 0.334 | |
| **Psychological** | Class 1 | 5 | 16.80 | 2.400 | 2.400 | 0.006*** |
| | Class 2 | 17 | 14.40 | 0.720 | 0.720 | |
| | Class 3 | 55 | 14.90 | 0.435 | 0.435 | |
| | Class 4 | 197 | 14.46 | 0.209 | 0.209 | |
| | Class 5 | 126 | 13.17 | 0.257 | 0.257 | |
| **Level of independence** | Class 1 | 5 | 15.50 | 0.500 | 0.500 | 0.001*** |
| | Class 2 | 17 | 13.43 | 0.612 | 0.612 | |
| | Class 3 | 55 | 13.31 | 0.275 | 0.275 | |
| | Class 4 | 197 | 12.76 | 0.161 | 0.161 | |
| | Class 5 | 126 | 12.05 | 0.197 | 0.197 | |
| **Social** | Class 1 | 5 | 13.00 | 1.000 | 1.000 | 0.294 |
| | Class 2 | 17 | 13.57 | 0.841 | 0.841 | |
| | Class 3 | 55 | 12.65 | 0.340 | 0.340 | |
| | Class 4 | 197 | 12.27 | 0.175 | 0.175 | |
| | Class 5 | 126 | 12.00 | 0.223 | 0.223 | |
| **Environment** | Class 1 | 5 | 16.25 | 2.250 | 0.250 | 0.001*** |
| | Class 2 | 17 | 15.29 | 0.999 | 0.999 | |
| | Class 3 | 55 | 13.76 | 2.490 | 0.371 | |
| | Class 4 | 197 | 13.42 | 1.979 | 0.145 | |
| | Class 5 | 126 | 12.14 | 1.983 | 0.184 | |
| **Spiritual/Religion/ Social beliefs** | Class 1 | 5 | 15.00 | 7.071 | 5.000 | 0.001*** |
| | Class 2 | 17 | 15.00 | 3.464 | 1.309 | |
| | Class 3 | 55 | 15.42 | 4.245 | 0.633 | |
| | Class 4 | 197 | 14.35 | 3.946 | 0.289 | |
| | Class 5 | 126 | 12.65 | 4.372 | 0.406 | |

**Table 4: Association between domain scores and marital status.**

| Domain | Marital status | Number | Mean score | Standard deviation | Standard error | P Value |
|---|---|---|---|---|---|---|
| **Physical** | Married | 218 | 15.27 | 3.523 | 0.239 | 0.000* |
| | Widowed | 101 | 13.18 | 3.468 | 0.345 | |
| | Single | 57 | 17.23 | 2.810 | 0.372 | |
| | Divorced/ Separated | 23 | 13.62 | 2.729 | 0.596 | |

| Domain | Marital status | Number | Mean score | Standard deviation | Standard error | P Value |
|---|---|---|---|---|---|---|
| **Psychological** | Married | 218 | 14.31 | 2.887 | 0.196 | 0.000* |
| | Widowed | 101 | 12.37 | 2.301 | 0.229 | |
| | Single | 57 | 16.07 | 2.458 | 0.326 | |
| | Divorced/ separated | 23 | 12.42 | 2.395 | 0.523 | |
| **Level of independence** | Married | 218 | 12.66 | 2.102 | 0.142 | 0.002 |
| | Widowed | 101 | 11.75 | 2.042 | 0.203 | |
| | Single | 57 | 13.63 | 2.193 | 0.290 | |
| | Divorced/ separated | 23 | 12.95 | 2.312 | 0.505 | |
| **Social** | Married | 218 | 12.21 | 2.480 | 0.168 | 0.001 |
| | Widowed | 101 | 12.37 | 2.943 | 0.193 | |
| | Single | 57 | 12.95 | 1.281 | 0.302 | |
| | Divorced/ separated | 23 | 10.56 | 2.481 | 0.541 | |
| **Environment** | Married | 218 | 13.07 | 2.186 | 0.148 | 0.007 |
| | Widowed | 101 | 12.45 | 1.891 | 0.188 | |
| | Single | 57 | 14.22 | 2.123 | 0.281 | |
| | Divorced/ separated | 23 | 12.48 | 2.034 | 0.444 | |
| **Spiritual/religion/ social beliefs** | Married | 218 | 14.57 | 4.111 | 0.278 | 0.004 |
| | Widowed | 101 | 11.45 | 3.897 | 0.388 | |
| | Single | 57 | 15.91 | 3.269 | 0.433 | |
| | Divorced/ separated | 23 | 11.48 | 3.932 | 0.858 | |

## DISCUSSION

In our study the mean quality of life scores was the highest in the physical domain in contrast to another study where QOL scores were high for psychological domain followed by spirituality/religion/personal beliefs, social relationship domain in descending order.[6] This difference seen in our study could be because of better care and treatment received at the ART centre which helped the patients perceive their physical wellbeing in a positive way. In another study the psychological and SPRB domains were the most affected domains.[7] In our study the least scores were seen for level of independence domain which depends on mobility, activities of daily living, dependence on medication or treatment and the patients work capacity.

We found that with increasing age the physical, psychological, environment and spiritual/ religion/ personal beliefs domain scores were increasing with not much change in the level of independence and social domain scores as seen in another study.[7] Older age individuals probably have better coping skills especially in the areas of physical, psychological domain, environment and spiritual/ religion/ personal beliefs domain.

It is generally seen and well supported by other studies that the quality of life among the males who are HV positive is better than their female counterparts.[7-11] Past studies have found that females report symptoms more often than males and rely more on feelings of discomfort during physical activity in reporting health related quality of life (HRQL) as compared with males as seen in our study also.[9] According to a WHO report the gender situation in most societies negatively affects women's power and independence.[12] The social domain scores did not vary with gender an evidence to say that HIV related stigma is still prominent in the society.

Socioeconomic status conceptualized as the social standing or class of an individual or group is a key factor in determining the quality of life for affected individual.[13] Research suggests a correlation between low SES and earlier death from HIV/AIDS.[14] Accordingly, individuals of higher SES levels experience slower progression of HIV infection.[15] We saw that mean domain scores was least among the lower class and the highest among the upper and middle class individuals which were similarly seen in other studies.[3,7,8,16] This shows that the quality of life is highly influenced by financial independence of an individual.

Like other studies, our study showed that single individuals scored highest across all domains than married individuals.[8,17] Some studies showed that married individuals had better quality of life as compared to the single individuals.[18-20] Majority of the single individuals were males in our study. In a society like that of India, responsibility of providing for the family falls heavily on

the father or the husband. They might experience a heavy burden as a provider. Some studies argue that though family is an institution where variety of needs are fulfilled, the heterogeneity in it has a potential for strain and conflict among the members.[20,21]

The cross sectional nature of the study poses a limitation in understanding the various intrinsic and external factors contributing to the QOL

Our study showed that gender, SES and marital status of the individuals significantly affected the QOL of PLHIV. A sustained effort towards improving the QOL remains the mainstay of dealing with people living with HIV, second only to treatment. A dedicated effort by the government and the private sector to help the HIV affected individuals financially by various schemes would likely bear fruitful results.

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