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Original Research Article

Quality of life among people living with HIV/AIDS in tertiary care centre of Himachal Pradesh

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ABSTRACT

Background: The world health organization (WHO) has defined quality of life as an 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. The objective of study was to assess the quality of life among people living with HIV/AIDS by comparison of mean scores of their quality of life in physical, psychological, social and environmental domain.
Methods: This cross-sectional study was conducted among PLWHA on ART during 2016-17. Data were collected using WHOQOLHIV-BREF scale and mean±SD of score was calculated. The difference in mean scores of various domains were analysed using ANOVA test. All variables with $p<0.2$ on univariate analysis were included in multivariate linear regression model.
Results: The total score of QOL was 61.71±9.43. The scores of QOL was highest in physical and lowest in environmental domains with 69.55±12.27 and 57.14±10.61 respectively. 71.25% patients rated their QOL good and only 10% were dissatisfied with their health. Currently ill status was the most associated factor under all except social domain. Males with higher education or living with their spouse had significantly better QOL scores.
Conclusions: Being a male, educated, employed in the government sector, belonging to general caste category and living with their married spouse were the factors for their better QOL in comparison to their counterparts. Along with ART, other factors should be taken into consideration to improve QOL of PLWHA.

Keywords: Domains, PLWHA, QOL, WHOQOL-BREF

INTRODUCTION

Current concept of quality of life in public health and medicine refers to how the individual's wellbeing including all physical, psychological, social, spiritual and environmental aspects of the individual's life may be impacted over time by a disease, a disability, or a disorder.[1] The WHO has defined quality of life "as an 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".[2] Since the discovery of HIV at the beginning of the 1980s, HIV/AIDS have been a major health problem for the world. HIV/AIDS places an increasing burden on the health of the population and causes further socioeconomic problems for individual families, communities and governments in many countries. For a person living with HIV, this means having to cope with a range of HIV-related symptoms for extended periods. Symptoms may be related to the infection itself, comorbid illnesses, or iatrogenic effects from HIV-related medications. Many of the HIV patients struggle with numerous social problems such as stigma,

poverty, depression, substance abuse and cultural beliefs which can affect their QOL, not only from the physical health aspect, but also from mental and social health point of view that causes numerous problems in useful activities and interests of the patients. The impact of HIV upon QOL falls under four major domains, which are the physical, psychological, social and environmental domain.[3,4]

Objective of the study was to assess the quality of life among people living with HIV/AIDS by comparison of mean scores of their quality of life in physical, psychological, social and environmental domain according to socio-demographic, clinical and disease related characteristics.

METHODS

Study area

The present study was conducted at the Anti-retroviral therapy (ART) centre of IGMC Shimla among people living with Immune suppressed state.

Study population

Patients attending out-patient department (OPD) services at the ART centre, IGMC Shimla with immune suppressed state whose age >15 years and duration on ART >6 months.

Study design and study duration

It was a cross-sectional study conducted from September 2016 to August 2017.

Sampling

All the consecutive patients seeking treatment at ART center IGMC Shimla were included for the purpose of the study.

Inclusion criteria

All people living with immune suppressed state whose age >15 years visiting ART center at IGMC Shimla; and duration of ART >6 months.

Exclusion criteria

Terminally ill patients and who had other co-morbid disorders like tuberculosis, hepatitis, cancers, cognitive impairments etc.; and patients who refused to participate in the study.

Data collection

Data was collected from all consecutive patients who fulfilled the inclusion criteria and attended OPD in ART center within study period, only on working days from 9:30 am to 4:00 pm. In depth interviews were conducted in a separate room so that confidentiality of information, privacy and anonymity of participants was maintained.

Study tools

The data was collected through standardized structured questionnaires i.e. WHOQOL-BREF. WHO quality of life questionnaire for brief version (WHO QOL-BREF) instrument to assess the quality of life, classified as good, moderate and poor.[5] WHO QOL-BREF has 26 items grouped under 4 domains:

Physical health: dependence of treatment, energy and fatigue, mobility, presence of pain and discomfort, sleep and rest, activities of daily living, and perceived working capacity.

Psychological well-being: affect, positive self-concept, negative feelings, higher cognitive functions, body images, and spirituality.

Social relations: social contacts, family support, sexual activity.

Environment: freedom, quality of home environment, physical safety and security, involvement in recreational activity, quality of health and social care and accessibility to services.

Each item was categorized into a 5-point Likert scale. There were 2 other items that were measured separately: Patient's overall perception of QOL, and overall perception on his/her health. Domain scores were scaled in a positive direction; higher scores denote higher QOL.

RESULTS

Total 160 patients were enrolled in the study after obtaining written informed consent. PLWHA visiting ART center had a mean QOL score in physical domain, psychological domain, social domain, environmental domain and total quality of life are 69.55±12.27, 60.84±12.88, 59.32±18.8, 57.14±10.61 and 61.71±9.43 which made physical domain ranking the highest and that in an environmental domain ranking the lowest.

Table 1: Domain scores using WHOQOL BREF-instrument.

Domain score	Mean ± SD
Physical (Domain 1)	69.55±12.27
Psychological (Domain 2)	60.84±12.88
Social relation (Domain 3)	59.32±18.89
Environmental (Domain 4)	57.14±10.61
Total quality of life score	61.71±9.43

Table 2: Comparison of mean scores of QOL according to socio-demographic, clinical and disease-related characteristics (n=160).

Gender	Physical domain 1	Psychological domain 2	Social relation domain 3	Environmental domain 4	Total score of QOL
Male	69.73±12.12	61.51±12.55	63.27±16.16	57.95±10.84	63.12±9.15
Female	69.06±12.74	59.13±13.67	49.20±21.62	55.06±9.80	58.11±9.28
P value	0.75	0.29	0.0001*	0.12	0.001*
Age group (years)					
<30	69.33±7.74	54.83±8.92	54.66±18.08	53.83±9.08	58.16±8.79
>30	69.56±12.58	61.33±13.04	59.69±18.96	57.41±10.70	62.00±9.45
P value	0.94	0.09	0.37	0.26	0.17
BMI category					
Undernourished	69.07±13.03	55.30±16.37	56.12±21.55	55.72±10.24	59.05±11.56
Normal	69.49±12.28	62.22±11.22	60.51±17.74	57.28±10.92	62.37±8.78
Overweight	71.00±10.77	65.52±8.93	59.58±19.33	59.64±9.44	63.94±6.37
P value	0.86	0.02*	0.46	0.43	0.09
Level of Education					
Illiterate	69.08±13.03	57.41±16.55	57.54±15.41	55.83±9.03	59.96±10.06
Primary school	66.84±12.81	59.43±13.64	56.12±21.43	56.45±10.62	59.71±9.72
Secondary school	72.98±10.75	62.96±10.19	62.38±16.94	56.79±9.67	63.78±8.38
Tertiary	71.60±10.61	67.80±4.73	70.00±10.54	67.10±6.53	69.12±5.30
P value	0.04*	0.07	0.07	0.01*	0.004*
Currently ill?					
No	71.46±10.13	61.65±11.97	60.02±18.61	57.20±10.34	62.75±8.65
Yes	51.00±15.67	53.00±18.31	52.53±20.85	50.20±10.96	51.68±11.00
P value	0.0000*	0.01*	0.14	0.008*	0.0001*
Religion					
Hindu	69.41±12.07	60.84±12.75	59.70±18.78	57.29±10.63	61.81±9.16
Non-Hindu	72.42±16.93	60.85±16.53	50.85±20.82	53.85±10.15	59.50±15.08
P value	0.52	0.99	0.22	0.40	0.52

Table 3: Comparison of mean scores of qualities of life according to socio-demographic, clinical and disease-related characteristics (n=160).

Marital status	Physical domain 1	Psychological domain 2	Social relation domain 3	Environmental domain 4	Total score of QOL
Single	70.54±6.83	55.18±8.31	47.72±13.74	58.72±9.46	58.04±8.11
Married	69.41±13.57	61.33±13.72	67.25±13.20	57.55±11.06	63.89±9.10
Divorced/separated/widowed	69.64±9.11	61.02±11.06	38.75±17.76	55.43±9.49	56.21±8.32
P value	0.95	0.31	0.0000*	0.50	0.0000*
Caste					
General	69.99±12.37	61.12±12.90	61.66±16.53	57.88±10.41	62.66±8.90
Others	67.84±11.89	59.75±12.93	50.27±24.31	54.27±11.03	58.03±10.62
P value	0.37	0.58	0.002*	0.08	0.02*
Occupational Status					
Agriculture worker	68.50±13.31	61.38±10.71	64.14±17.26	58.52±9.80	63.13±8.50
Govt. Service	72.69±7.18	62.88±14.21	64.92±14.56	60.03±8.73	65.13±8.58
Homemakers	69.36±12.72	59.47±13.63	49.88±21.36	55.31±9.76	58.51±9.00
Others	68.93±13.11	60.52±13.38	60.70±17.13	56.04±12.58	61.55±10.33
P value	0.54	0.74	0.001*	0.21	0.006*
Living status					
Alone	70.60±12.09	56.90±12.09	43.70±15.88	54.60±10.99	56.45±10.34
with spouse	69.10±13.50	61.04±13.50	68.46±12.06	57.89±10.94	64.12±8.66
without spouse	70.41±9.79	61.25±11.51	40.18±16.85	55.86±9.64	56.93±8.92
P value	0.80	0.60	0.0000*	0.42	0.0000*
Family history of HIV					
None	70.75±10.61	61.36±11.84	65.36±12.62	57.08±10.55	63.63±8.26

Continued.

Marital status	Physical domain 1	Psychological domain 2	Social relation domain 3	Environmental domain 4	Total score of QOL
Wife (+ve)	68.92±13.60	61.69±14.43	59.70±19.39	58.76±10.67	62.27±10.17
Husband (+ve)	68.95±13.03	59.87±12.26	51.70±22.23	55.87±10.54	59.10±8.99
Parents (+ve)	64.66±9.60	48.00±6.92	33.33±15.63	46.00±3.46	48.00±8.77
P value	0.73	0.32	0.000*	0.15	0.006*
Duration on ART					
6 months-1 year	69.83±13.15	55.37±15.25	50.58±24.13	54.33±11.80	57.53±12.75
1-5 years	70.10±13.35	62.02±10.51	60.69±17.13	56.04±10.55	62.21±7.71
>5 years	68.75±10.55	61.54±13.75	61.06±18.01	59.60±9.83	62.74±9.58
P value	0.81	0.07	0.048*	0.05	0.05
Clinical stage					
Stage I	69.61±12.41	64.38±10.44	57.90±20.60	58.97±13.15	62.72±8.48
Stage II	69.74±13.08	61.52±13.75	61.28±18.37	56.74±9.51	62.32±10.51
Stage III	69.82±11.64	58.11±13.03	58.47±20.24	57.58±10.92	61.00±10.03
Stage IV	68.91±11.96	58.20±13.48	61.02±17.29	55.02±8.00	60.92±8.37
P value	0.98	0.09	0.84	0.43	0.65
Mode of transmission					
Don't know	69.49±10.52	61.75±11.89	67.70±11.56	58.63±8.83	64.39±7.98
Sexual	69.55±13.46	60.40±13.39	54.48±20.67	56.41±11.54	60.21±9.68
MTC	64.66±9.60	48.00±6.92	33.33±15.63	46.00±3.46	48.00±8.77
IDU	69.00±0.00	50.00±0.00	69.00±0.00	50.00±0.00	49.50±0.00
Blood products	78.50±13.43	78.00±4.24	62.50±17.67	65.50±13.43	71.12±12.19
P value	0.82	0.10	0.0001*	0.15	0.003*

There was statistically significant difference found in the domain score of social relation and total QOL ($p<0.05$) with gender, males had higher scores in comparison to females. No statistically significant difference found in all the domain scores in relation to age group but apparently Subjects aged <30 years had better scores in all domains. Those who had BMI>25 (overweight) had significantly higher scores as compared to lower BMI scores in psychological domain. Those with higher education level had better scores in physical, environmental domain and total score of QOL ($p<0.05$). Those who were not currently ill (asymptomatic) had significantly better scores in all domains except social relation domain. There was no statistically significant difference found between all domain scores ($p>0.05$) in relation to religion. But apparently patients who were non-Hindus i.e. others (Christians, Muslims and Buddhism) had lower scores in majority of the domains.

Those who were of general caste or in government service or married or living with their spouses or had no family history of HIV, they had better scores than others and it was statistically significant found in social relation domain and total QOL. Patients on ART for >5 years had significantly better score in social relation domain only. There was no statistically significant difference found in all the domains score ($p>0.05$) in relation to staging of the disease but patients in stage 1 category had higher scores in majority of the domains. Patients who had blood products as their main mode of transmission showed higher scores and found statistically significant in social relation domain and total score of QOL ($p<0.05$).

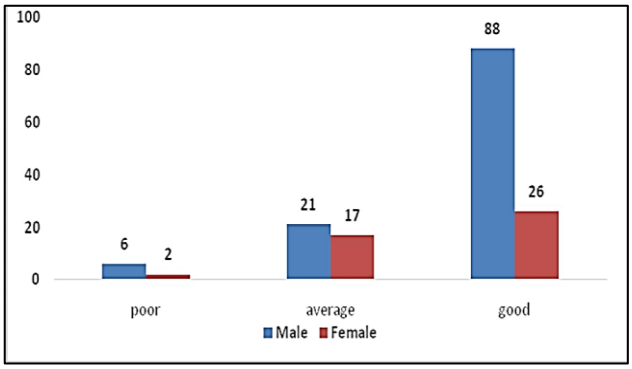

Figure 1: Rating of QOL.

Majority of the patients (71.25%) rated their QOL as good and 72.5% of the patients were satisfied with their health and only 10% were dissatisfied with their health.

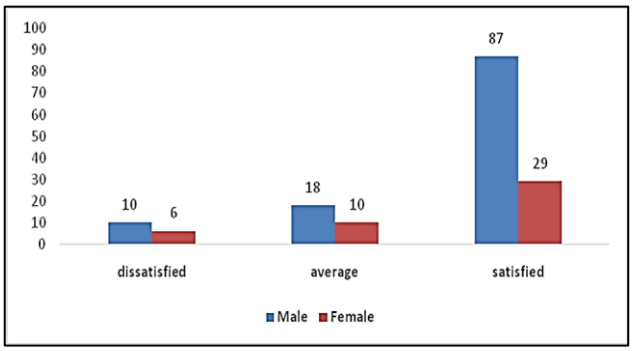

Figure 2: Rating of health satisfaction level.

For QOL, in physical domain currently ill (β=-19.83), in psychological domain currently ill (β=-7.63) and stage 1 (β=7.60), in social domain marital status (β=19.69) and in Environmental domain currently ill (β=-7.75) are associated factors.

Table 4: Multiple step wise regression analysis for QOL.

Dependent Variable	Independent Variable	Unstandardized β coefficient	S. error	T value	P value	95% confidence interval	
						Lower bound	Upper bound
QOL physical domain	Currently ill	-19.83	2.92	-6.70	<0.001	-25.60	-14.06
QOL psychological domain	Currently ill	-7.63	3.49	-2.19	0.03	-14.52	-0.73
	Stage 1	7.60	3.11	2.44	0.02	1.45	13.75
QOL social domain	Marital status	19.69	4.60	4.27	<0.001	10.59	28.78
QOL environmental domain	Currently ill	-7.75	2.90	-2.66	0.009	-13.50	-2.003

DISCUSSION

To our knowledge, in Himachal, very few facility-based studies have been conducted to assess the QOL among PLWHA and the impact of ART on them. Our study using the WHOQOL-BREF instrument assessed the QOL among PLWHA in ART Centre of IGMC Shimla Himachal Pradesh and attempted to clarify the associated factors.

Mean QOL domain score was maximum for physical domain followed by psychological, social relation and environmental domain. Similar to our study, Trinath et al in India, Kolkata and Oliveira et al in North East Region of Brazil found lowest score in environmental domain.[6,7] Also, Giri et al in Nepal and Trinath et al in India, Kolkata found highest score in physical domain.[6,8] Contrarily Osei-Yeboah et al in Ghana noted that the highest score was in social relation.[9]

In our study, statistically significant gender differences were found in social relation domain and total QOL scores. Males had higher scores in comparison to females. Our findings supported by Bakiono et al in Burkina Faso West Africa, they found a statistically significant difference with all the domains except physical domain score.[10] However, Arjun et al in South India observed a statistically significant difference with psychological domain only.[11] Both above studies found that males had better QOL Score than females. In Nigeria Fatiregun et al noted that females had higher scores in all the domains as compared to males.[12] These higher scores of males in our study may be explained by the fact that the socioeconomic status of men was higher than that of women, thus facilitating a better dealing with the disease. Shriharsha et al in Bagalkot, Karnataka, found no statistical difference in any of the domain.[13]

All the groups were comparable but no statistically significant difference was found in all the domain scores in relation to age group but apparently patients more than 30 years of age had higher scores as compared to younger age it may be because they are matured, more open-minded and have higher tolerance to disease. Opposed to our findings, Liping et al in China and Kumar et al in Karnataka, India found that patients less than 30 years of age had higher scores as compared to older ones.[14,15]

Patients who were undernourished had significantly lower scores in psychosocial domain. This may be because during ART, there is regular monitoring of weight gain on every visit and if there is no progressive weight gain during course of treatment, it would affect patient psychologically.

As mentioned by other studies like Bakiono et al in Burkina Faso, Alemu et al in North West Ethiopia and Shriharsha et al in Bagalkot, Karnataka noted that people with higher level of education had higher scores.[10,13,16] We also found patients who had tertiary level of education had significantly higher scores in physical, psychological domains and Total QOL scores. The reason may be that people with higher education level had more enlightened attitude towards the disease because of being more aware of HIV. They can understand the disease better, leading to better coping attitude, and interact with other people in a harmonious way. With higher education level their standard of living also improves.

Patients with general caste had higher scores and was found statistically significant in social relation domain score and total score of QOL. In our society, people are still discriminated based on their caste and person belonging to general caste also had higher literacy rate as compared to other categories, so this can be one of the causes of their better QOL.

In our study, religion had no statistically significant relation with QOL similar to the observations made by Liping et al in China, Shriharsha et al in Bagalkot, Karnataka and Bakiono et al in Burkina Faso West Africa.[10,13,14] Although, patients who were non-Hindus in our study had lower scores in majority of the domains. This may be explained by the Hindu predominant society in our study.

Similar to Bakiono et al in Burkina Faso West Africa, in our study patients who had Government service had

significant higher score but only in social relation domain score and total score of QOL, the reason for higher QOL scores is that in government services, people have greater social security and other benefits.[10] But Shriharsha et al in Bagalkot and Kumar et al in Karnataka found no statistically significant difference between all the domain scores with occupation.[13,15] In their studies, people who had public or private sector jobs showed higher scores in majority of the domains.

Marital and living status was significantly associated with social relation domain score and total QOL scores. Married patients or those living with their spouses had higher scores. This may be attributed to love, emotional support offered and encouragement to conquer the difficult times by their spouses. Similar findings are observed in study of Bakiono et al in West Africa and Shriharsha et al Bagalkot, Karnataka noted that married patients had higher scores.[10,13] However, Kumar et al in Karnataka observed no statistically significant difference in all the domain scores with marital status.[15] Dissimilar to our findings, Arjun et al in South India observed other than married had higher scores.[11]

Those who were asymptomatic or not currently ill had significantly higher scores in all the domains except social relation domain. It reflects the impact of HIV and AIDS on the physical and psychological health of patients as the disease progresses. Bakiono et al in West Africa and Folksier et al in Nigeria also noted asymptomatic patients had better quality of life.[10,17]

Patients with blood products as the main mode of transmission had significantly higher scores in social relation domain score and total score of QOL. It is because that there are no feelings of regret or guilt. Though Liping et al in China observed that patients having other routes of transmission other than sexual route had higher scores in majority of the domains.[14] Shriharsha et al in Bagalkot, Karnataka, found significantly higher scores in those who don't know their mode of transmission.[13]

Shriharsha et al in Bagalkot, Karnataka and in our study, it was found that those patients who had no history of HIV in their families have higher scores and found statistically significant in social relation domain score and total score of QOL.[13] Subsequently if any other member of the family also suffering with same ailment it will affect all facets of QOL.

Similar to Acharya et al in Nepal, in our study no statistically significant difference was found in relation to staging but apparently patients in stage 1 category had higher scores in majority of the domains may be because disease is not in advanced stage, diagnosed early, treated well in time and better patients' compliance for treatment.[18] Liping et al in Zhejiang province, China also noticed that patients in stage 1 category had higher scores in majority of the domains.[14] Contrary Shriharsha et al in Bagalkot, Karnataka found significantly higher score in stage II patients.[13]

More the duration on ART, better the score of QOL. Similarly, Arjun et al in South India and our study observed that patients who were on ART for more than 5 years had significantly higher scores.[11] It shows that they are well adjusted with their disease. Acharya et al in Nepal, Liping et al in China and Bakiono et al in Burkina Faso West Africa, found no statistically significant difference.[10,14,18]

In our study, 71.25% patients rated their quality of life as good 23.7% and only 5% patients rated their QOL as poor. Trinath et al in India, Kolkata found 28.2% were rated their QOL as good, 2% as very good, and only 15.5% as poor.[6] Osei-Yeboah et al in Ghana observed that 79.75% patients were graded their overall QOL as excellent, 8.86% as good, while 11.39% rated as negatively affected by the disease.[9] Contradictory to our findings, Kumar et al in Karnataka, India observed that majority of the patients (47%) rated their QOL as average, 26% poor, 22% good and 5% very poor.[15] Alemu et al in North West Ethiopia noted that more than half (56.4%) of the participants rated their QOL as low.[16] Karkashadze et al in Georgia observed that majority of the HIV patients (63.7%) had poor general QOL.[19]

In our study 72.5% patients were quite satisfied with their health while 17.5% patients rated their satisfaction level as average and 10.0% patients were dissatisfied with their health. Osei-Yeboah et al in Ghana found that 77.85% patients rated their health as excellent, 6.96% assessed their health as good, and 15.19% appraised their health as poor.[9] Trinath et al in India, Kolkata observed that majority of the patients (81%) were dissatisfied with their health and only 4.9% were satisfied with their health.[6]

However, Kumar et al in Karnataka, India observed that nearly half of the patients 47% were neither satisfied nor dissatisfied, 27% patients were dissatisfied, 24% were quite satisfied while 2% patients were very satisfied with their health.[15]

We observed the four distinct models for QOL in physical domain, currently ill is an associated factor. It shows that those who were not currently ill they had better QOL in physical domain in comparison to those who were currently ill. In psychological domain, currently ill and stage I are associated factors. So those who were not currently ill and stage 1 patients they had better QOL than their other comparison groups. For QOL in social domain, marital status is associated factor therefore those who were single, divorced or separated they had low QOL in social domain than comparison to other groups. For QOL in environmental domain, currently ill is an associated factor which reflects that those who were currently ill (symptomatic) they had low QOL than those who are not currently ill.

But Liping et al in Zhejiang Province, China observed that QOL in physical domain, age (β=-0.045), the last recorded CD4 count (β=0.002), and ART adherence (β=1.231) are associated factors.[14] For QOL in psychological domain, the last recorded CD4 count (β=0.002) and WHO clinical stage (β=-0.437) are associated factors. For QOL in social domain, WHO clinical stage (β=-0.704) and ART adherence (β=1.177) are associated factors. For QOL in environmental domain, WHO clinical stage (β=-0.538), educational status (β=0.549) and ART adherence (β=1.078), which is dissimilar to our findings.

Though conducted with the relatively sound methodology, this study nonetheless also had few limitations. The study being a part of a time bound project could not afford larger sample size and hence the findings of this study need to be corroborated in larger sample studies. A smaller study sample may limit the utility of this study in interpreting clinic-demography of HIV for a diverse population like India.

CONCLUSION

The highest mean scores were in the physical health domains and showed better quality of life. On the other extreme, the environmental domain had the lowest score indicating its importance as the most affecting domain on the QOL of study participants.

Being a male, educated, employed in the government sector, belonging to general caste category and living with their married spouse were the factors for their better QOL in comparison to their counterparts. It had led to their good social contacts, family support, satisfaction with sexual activity, accessibility to avail health services and improved standard of living.

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