Journal of
AIDS & Clinical Research
ISSN: 2155-6113

Alemu, et al., J AIDS Clin Res 2013, 5:1
DOI: 10.4172/2155-6113.1000272

Research Article Open Access

Health Related Quality of Life Assessment and Associated Factors Among People on Highly Active Antiretroviral Therapy at Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia

Amare Alemu[1]*, Aemiro Yenealem[2], Amsalu Feleke[3] and Solomon Meseret[3]

[1]*Department of Midwifery, College of Health Sciences, Mekelle University, P.O.BOX 1871, Mekelle, Ethiopia*
[2]*TB/HIV and ART Clinic, Bahir Dar Felege Hiwot Referral Hospital, P.O.BOX 47, Bahir Dar, Ethiopia*
[3]*Institute of Public Health, College of Medicine and Health Sciences, University of Gondar, P.O. BOX 196, Gondar, Ethiopia*

Abstract

Background: Antiretroviral therapy has reduced HIV/AIDS related mortality and more of people living with HIV/AIDS alive longer. Hence, this study tried to assess the health related quality of life and associated factors among people on highly active antiretroviral therapy at Felege Hiwot Referral Hospital in Bahir Dar, North West Ethiopia.

Methods: Institutional based cross sectional study was conducted among 424 people on highly active antiretroviral therapy at Bahir Dar Felege Hiwot Referral Hospital, North West Ethiopia. Study participants were obtained with a systematic sampling and interviewed to respond for structured pre-tested questionnaires. Clinical variables of highly active antiretroviral therapy were collected from their hospital charts. Data were entered into EPI info version 3.5.1 and analyzed by using SPSS version 20 software for windows. Bivariate and multivariate logistic regression analyses were done.

Result: The proportion of respondents with low health related quality of life in all domains was 56.4%. Unemployment (AOR = 2.32 [95% CI = 1.49, 3.59]), poor adherence (AOR = 3.24 [95% CI = 1.02, 10.32]) and being ambulatory (AOR = 3.19 [95% CI = 1.36, 7.48]) were found to have statistically significant association with health related quality of life.-

Conclusion: This study finding stress the need for enhanced support and a better environment for improving the health related quality of life among people living with HIV/AIDS.

Keywords: HIV/AIDS; HAART; HRQoL; Ethiopia

Introduction

Human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) epidemic is now a global crises, constituents one of the most formidable challenges to development and social progress. Since HIV/AIDS was first discovered, it has taking the lives of 30 million people around the world, around 1.2 million of whom were living in sub-Saharan Africa [1]. Ethiopia is one of the hardest hit countries by HIV/AIDS epidemic and the fifth largest number of people living with the virus, with an estimated overall HIV prevalence rate of 1.4 percent in aged 15 to 49 years [1].

With the development and start of national programme for providing care and free highly active antiretroviral therapy (HAART) to people living with HIV/AIDS, there has been a significant reduction in morbidity and mortality and more of them are surviving with improved quality of life. HAART and other HIV treatments not only keep people alive longer, they also provide a better quality of life, allowing people to return to work and school, take care of their families, and contribute to their communities [2]. During the past two decades, quality of life (QoL) has become an important outcome in medical and psychological research. Increasingly, new evidence supports the importance of including patient's assessment of health-related quality of life (HRQoL) in clinical studies [3].

As the quality of life for patients on HAART improves, frequent contact with health care providers become difficult, they start missing monthly appointments to obtain antiretroviral drugs. Most patients had returned to their jobs, often requiring stays far from home [3]. The assessments of HRQoL in these patients have become priority, for their wellbeing may be influenced not only by their response to treatment but also by other dimensions including treatment related toxicity. At the same time, psychosocial factors may mediate patients' self-perception of their health [4]. HIV infection mainly affect on physical, psychological, level of independence, social, environmental and spiritual domains of HRQoL which is varied in term of socio-demographic characteristics and disease related variables [5].

Studies are documented that good adherence, higher education, high income and $CD4^+$ >200 cells/mm^3 had higher quality of life in all domains [6,7]. Multiple fears of AIDS related stigma and discrimination and worries about ability to get married and disclosing their need are also major problems of people living with HIV/AIDS on HAART [8]. The level and extent to which clinical parameters and socio demographic factors influence the HRQoL of people living with HIV/AIDS on HAART have impact on sickness and complex therapeutic strategies [9]. Thus this study assessed the health related quality of life and associated factors among people on HAART at Felege Hiwot Referral Hospital in Bahir Dar, North West Ethiopia.

***Corresponding author:** Amare Alemu Department of Midwifery, College of Health Sciences, Mekelle University, P.O.BOX 1871, Mekelle, Ethiopia, Tel: +251-034-440-6963; Fax: +251-034-441-66-81/40-93-04; E-mail: ame439@yahoo.com

Received November 12, 2013; **Accepted** December 16, 2013; **Published** December 20, 2013

Citation: Alemu A, Yenealem A, Feleke A, Meseret S (2013) Health Related Quality of Life Assessment and Associated Factors Among People on Highly Active Antiretroviral Therapy at Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia. J AIDS Clin Res 5: 272. doi:10.4172/2155-6113.1000272

Methods

Study design, area and period

An institution-based cross sectional study was conducted among people living with HIV/AIDS on HAART using structured interviews. A total of 424 respondents were recruited from Felege Hiwot Referral Hospital in Bahir Dar, North West Ethiopia. Data were collected between March and May, 2013. At the time of data collection, the hospital ART registration records indicated that about 1,275 people were receiving HAART in the hospital. The hospital provides services to patients from surrounding rural villages and other nearby towns. Most of people who were receiving HAART from the hospital were from their home town, Bahir Dar. Respondents were recruited systematically every third units, from those 1,275 people who were receiving HAART during the data collection period. For the purpose of this study, we defined quality of life as personal evaluation of how things have been going for one self, and health related quality of life as how the individual's wellbeing may be impacted over time by a disease, a disability, or a disorder.

Sampling

The sample size was calculated using single population proportion formula with estimated proportion of people living with HIV/AIDS with good quality of life is assumed to be 50%, since there were no a research done in the area. Assuming a marginal error of 5% and a 10% non-respondent rate, the estimated sample size was 424.

Data collection

Pre-tested structured questionnaire was prepared by reviewing literatures on the topic of people living with HIV/AIDS health related quality of life [6,7,10]. The questionnaire was first prepared in English and then translated in to Amharic, the local language of patients in the study area. The data were collected using structured interviewer-administered questionnaire. The questionnaires were administered to every third respondents who were attending the hospital during the data collection period, and who met the inclusion criteria. The interview took place while these participants waited for consultation and medication during the routine monthly visits for their drugs. Relevant clinical data such as CD4 count, clinical stage, HAART regimen, and drug adherence status were extracted from participants' medical charts. In addition, respondents provided demographic information such as age, gender, marital status, and monthly income.

Data quality control

Data were collected by three ART trained nurses who were responsible for in the follow up of people on HAART and worked in the ART units after one day training was given about the objectives and procedures of the data collection by the investigators. Questionnaire was pre-tested to assess clarity, understand ability, flow and consistency, and revised prior to the start of data collection. Data completeness and consistency was checked by the investigators. Data cleaning and editing took place; missed values were statistically handled to help address concerns.

Data analysis

Data were entered using Epi Info version 3.5.1 and exported to, and then analyzed using SPSS version 20. First, descriptive statistics were carried out to explore the socio-demographic characteristics of respondents, and the results were summarised as frequencies and percentages. To determine which factors were associated with health related quality of life to people living with HIV/AIDS, binary and multiple logistic regressions were employed. Variables associated with HRQoL in bivariate analyses were included in the multiple logistic models and P-values less than 0.05 were considered to be statistically significant in all cases.

Ethical consideration

Ethical approval and clearance was taken from institutional review board of Bahir Dar University, College of Medical Sciences. The Regional Health Bureau gave permission to conduct the study in the hospital in the study area. After the purpose of the study was explained, a written informed consent was obtained from study participants before data collection. Study subjects were informed that participating in the study was voluntary and that refusal to participate would not compromise the medical care they received from the hospital. The right to withdraw from the study at any time was also assured. The interviews were conducted in a private room in the hospital to ensure privacy. Coding was used to eliminate names and other personal identification of respondents throughout the study process to ensure participants confidentiality.

Results

Demographic characteristics of study participants

A total of 424 respondents participated in the study. Of 424 HAART HIV infected people, females accounted for 266 (62.7%) and 244 (57.5%) were age less than 30 years. Eighty seven percent participants were urban residents. Half of the study participants 222 (52.4%) were married and 361 (85.1 %) were orthodox religion followers. 282 (66.5%) participants had household size of more than three. More than half 266 (62.7%) were unemployed (Table 1). In this study, clinical stage three 303 (71.5%) was the predominant, 373 (88%) were working in functional status. The mean duration of treatment was 47.5 months (range 2 -120) (Table 2).

Variables	Frequency	Percent
Age (in year)		
≤35	244	57.5
≥36	180	42.5
Sex		
Male	158	37.3
Female	266	62.7
Residence		
Urban	370	87.3
Rural	54	12.7
Education status		
Illiterate	130	30.7
Primary school	152	35.8
Secondary school	98	23.1
Higher education	44	10.4
Ethnicity		
Amhara	406	95.8
Other*	18	4.2
Religion		
Orthodox	361	85.1
Other**	63	14.9
Marital status		
Single	76	17.9
Married	222	52.4
Divorced or Separated	69	16.3
Widowed	57	13.4

Relation to head of household		
Head	204	48.1
Spouse	183	43.2
Daughter or son	29	6.8
Relative	8	1.9
Currently with whom are you living		
Alone	90	21.2
Family/Friends	334	78.8
Family Size		
0-2	142	33.5
>3	282	66.5
Income (in Ethiopian birr)		
<500.00	202	47.6
501-999	102	24.2
1000-1499	54	12.7
1500-1999	28	6.6
≥2500	38	8.9
Employment status		
Employed	158	37.3
Unemployed	266	62.7
Substance Use		
Alcohol	90	21.2
Chat	8	1.9
Smoking	2	0.5
Other	2	0.5
None	322	75.9

* Tigre and Oromo, Agew
** Protestant, Catholic, and Muslim

Table 1: Socio demographic characteristics of HIV infected people on HAART in Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia, 2013 (n = 424).

Variables	Frequency	Percent
Duration of treatment (in months)		
≤ 36	172	40.6
≥37	252	59.4
WHO Clinical Stage		
Stage I	41	9.7
Stage II	67	15.8
Stage III	303	71.5
Stage IV	13	3.1
CD4+ cells count/mm³ at start of HAART*		
<200	284	67.0
>200	140	33.0
CD4+ cells count/mm³ at time of study*		
<200	70	16.5
≥200	354	83.5
HAART Regimen		
First line	403	95
Second Line	21	5
Adherence status		
Good	241	56.8
Poor	158	37.3
Fair	25	5.9
Functional status		
Working	373	88.0
Ambulatory	41	9.7
Bed-Ridden	10	2.4

* Based on WHO CD4 classification

Table 2: Clinical characteristics of HIV infected people on HAART at Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia, 2013 (n = 424).

Quality life scores	Frequency	Percent
Overall HRQoL		
Good	185	43.6
Bad	239	56.4
Physical health functioning problem		
Low	37	8.7
Moderate	117	27.6
High	270	63.7
Role Functioning Problem		
Yes	70	16.5
No	354	83.5
Social activities		
Low	164	38.7
Moderate	89	21.0
High	171	40.3
Mental Health Domain		
Low	189	44.6
Moderate	102	24.1
High	133	31.3
Vitality(Feeling full life & energy)		
Low	175	41.3
Moderate	112	26.4
High	137	32.3
Health Distress		
Low	48	11.3
Moderate	93	21.9
High	283	66.7
Cognitive functioning		
Low	236	55.7
Moderate	121	28.5
High	67	15.8

Table 3: Health-related quality of life of people on HAART at Felege Hiwot Referral Hospital, in Bahir Dar, North West Ethiopia, 2013.

QOL- Domain	Mean (SD)	Cronbach's α	Number of items	Score range	Correlation with the total score
General	1.85 (0.72)	0.7	2	0-8	0.75
Physical	2.55 (0.63)	0.801	6	0-24	0.69
Psychological	2.66 (1.42)	0.881	8	0-32	0.81
Social	6.40 (1.6)	0.64	4	0-16	0.84
Mental	12.6 (2.41)	0.83	6	0-24	0.88
Total	26.06 (6.78)	0.80	26	0-104	0.96

Table 4: Mean (SD) of domains of the quality of life with scales description.

Health related quality of life among people on HAART

Each domain of quality of life was included: low, moderate and high HRQoL score; more than half 239 (56.4%) of the participants had low in overall quality of life domain (Table 3). The weighted mean ± SD of total quality of life was 26.07±6.78. The mean score of all domains was low especially on physical functioning domain. Relationship between various domains of the quality of life was assessed by Pearson's correlation coefficient. All scores of domains were correlated with the total measure of the quality of life significantly ($P<0.05$). The most significant positive correlation was observed for the social and mental domains (0.84 and 0.88, respectively) (Table 4). There was also better quality of life who had higher CD4+ with long time usage of HAART with ($P=0.05$) using chi-square. However, there was no association

between health of quality and CD4 absolute count during baseline with (P=0.52) using chi-square (Figure 1).

Factors associated with health related quality of life among people on HAART

Factors associated with quality of life were assessed for their associations with socio demographic and clinical characteristics of respondents' variables. While assessing associated factors of health related quality of life among HIV infected people on HAART, we found that age, educational status, marital status, employment status, CD4+ at base line, adherence and functional status were associated with quality of life using binary logistic regression analyses. However, only unemployment (AOR=2.32 [95% CI=1.49, 3.59]), poor adherence (AOR=3.24, [95% CI=1.02, 10.32]), and being ambulatory (AOR=3.19 [95% CI=1.36, 7.48) were remained independent factors of health related quality of life in the multivariate logistic regression analyses (Table 5).

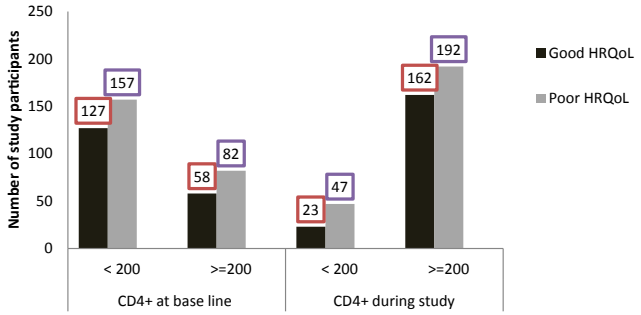

Figure 1: The effect of CD4 count on quality of life among people on HAART at Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia, 2013.

Discussion

This study assessed the health related quality of life and associated factors among people on highly active antiretroviral therapy at Felege Hiwot Referral Hospital in Bahir Dar, North West Ethiopia. In this study, more than half (56.4%) of respondents had low quality of life scores in all domains of health related quality of life. This finding is not comparable with study conducted in Norway [11]; however it is concordant with the study conducted in Bangladesh [7]. This difference may be due to the study design, demographic characteristics and economic affairs.

The result of this study showed that unemployment status of respondents was associated with health related quality of life. Unemployed respondents were 2.3 times more likely risk to have poor health related quality of life than their counterparts (AOR=2.32 [95% CI=1.49, 3.59]). This finding is consistent with study conducted in Ethiopia [12]. This might be due to respondent's poor daily food consumption because almost half 202 (47%) of respondents in this study had low monthly income (<500 ETB).

In this study, drug adherence of people on HAART was found to be a significant predictor of poor health related quality of life. People who had poor drug adherence were 3.2 times more likely to be risk to poor QoL than good drug adherence (AOR=3.24 [95% CI=1.02, 10.32]). This finding is similar with study conducted in Thailand and different African countries [13-15]. This could be explained that since drug adherence is associated with CD4 counts, and this CD4 number depend on drug adherence so that poor drug adherence leads to poor QoL of people.

Functional status of the respondents was significantly associated with their QoL. Ambulatory people were 3.2 times more likely to have

Variables	Quality of Life			
	Poor	Good	COR (95% CI)	AOR (95% CI)
Age				
≤35	125	119	1	
≥36	114	66	1.64 (1.12, 2.44)	1.54 (0.98, 2.44)
Educational status				
Illiterate	87	43	2.66 (1.32, 5.36)	
Primary	78	74	1.39 (0.71, 2.73)	1.33 (0.61, 2.90)
Secondary	55	43	1.68 (0.82, 3.45)	
Higher	19	25	1	
Employed status				
Employed	73	85	1	1
Unemployed	166	100	1.99 (1.29, 2.88)	**2.32** (1.49, 3.59)
Income in ETB				
<500.00	125	77	2.23 (1.104, 4.512)	
501-999	58	44	1.81 (0.85, 3.85)	
1000-1499	26	28	1.28 (0.55, 2.95)	0.84 (0.40, 1.73)
1500-1999	14	14	1.37 (0.51, 3.67)	
≥2000.00	16	22	1	
Adherence				
Good	120	121	1	1
Fair	98	60	1.65 (1.09, 2.48)	1.54 (1.00, 2.36)
Poor	21	4	5.29 (1.76, 15.88)	**3.24** (1.01, 10.32)
Functional status				
Working	198	175	1	1
Ambulatory	33	8	1.25 (1.64, 8.10)	0.16 (1.36, 7.49)
Bed-ridden	8	2	3.59 (0.74, 16.87)	**3.19** (1.49, 5.04)

* Based on WHO CD4 classification

COR – crude odds ratio **AOR –** adjusted odds ratio **CI –** confidence interval

Table 5: Factors associated with health related quality of life for people on HAART at Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia, 2013.

poor QoL than working ones (AOR=3.19 [95% CI=1.36, 7.48]). This finding is similar with study conducted in different African countries [14-16]. This might be due to people's poor daily living activities that lead them into poor income generating and finally this could affect their health related quality of life. In this study, age, educational status, marital status, and CD4 count were not significantly associated with health related quality of life among HIV infected people on HAART.

The study had some limitations; only focuses on HAART, since there are many social factors that may alter people's health related quality of life on HAART. This study was cross-sectional and could not establish the circumstances resulting in low health related quality of life; we recommend more studies be conducted to answer these questions. Given this, further research involving qualitative methods could overcome this limitation.

Conclusion

This study found that more than half of HIV positive people on HAART had poor health related quality of life in almost all quality scores. Employment status, drug adherence, and functional status of respondents were significantly associated with health related quality of life among HIV infected people on HAART. Establishing improved drug adherence services for all people receiving HAART so that they could have a better knowledge on the importance of good drug adherence will help to increase their quality of life.

Acknowledgment

This research was funded by Bahir Dar University, College of Medical Sciences Grants for Graduate Research. Therefore, we are grateful to Bahir Dar University, College of Medical Sciences for their financial support. We thank all health care providers of Felege Hiwot Referral Hospital for their facilitation during training of data collectors and data collection period. We would also like to thank all data collectors, supervisor and research participants who took part in this study without whom this research would not have been realized.

References

1. UNAIDS (2012) The Global AIDS Epidemic. Global Report.
2. Ethiopian MOH (2008) strategic plan for intensifying multi sect oral HIV/AIDS response. Addis Ababa, Ethiopia.
3. Collins D (2003) Pretesting survey instruments: an overview of cognitive methods. Qual Life Res 12: 229-238.
4. Meuleners LB, Lee AH, Binns CW, Lower A (2003) Quality of life for adolescents: assessing measurement properties using structural equation modelling. Qual Life Res 12: 283-290.
5. Basavaraj KH, Navya MA, Rashmi R (2010) Quality of life in HIV/AIDS. Indian J Sex Transm Dis 31: 75-80.
6. Nonenoy S, Panza A (2009) Health related quality of life among persons living with HIV/AIDS in three hospitals in Thailand.
7. Imam MH, Karim MR, Ferdous C, Akhter S (2011) Health related quality of life among the people living with HIV. Bangladesh Med Res Counc Bull 37: 1-6.
8. Andrew SF (2005) WHO'S 3 by 5 initiatives to increase access to antiretroviral drugs to people with AIDS in developing countries is highly ambitious. Some of biggest obstacles related to delivering care. STUDENTBMJ.
9. Tostes MA (2004) The quality of life of HIV -infected women is associated with psychiatric morbidity. Aids care 16: 177-186.
10. Ethiopian MOH (2005) Guideline for implementation of antiretroviral therapy in Ethiopia.
11. Groenningsaeter A (2002) Living condition and quality of life among people living with HIV (PLWH) in Norway. XV International AIDS conference, Bangkok, Thailand 3856.
12. Tolla L. (2006) Measuring the Quality Of Life (QOL) of People Living With HIV/AIDS (PLWHA) With Highly Active Antiretroviral Therapy (HAART) in Addis Ababa Zenebework Hospital. Ethiopian medical journal: 21-40.
13. Ladefoged K, Andersson M, Koch A, Rendal T, Rydbacken M (2012) Living conditions, quality of life, adherence and treatment outcome in Greenlandic HIV patients. Int J Circumpolar Health 71: 18639.
14. Leclerc-Madlala S (1997) Infect one, infect all: Zulu youth response to the AIDS epidemic in South Africa. Med Anthropol 17: 363-380.
15. Magafu MG, Moji K, Igumbor EU, Hashizume M, Mizota T, et al. (2009) Usefulness of highly active antiretroviral therapy on health-related quality of life of adult recipients in Tanzania. AIDS Patient Care STDS 23: 563-570.
16. Nuwagaba-Biribonwoha H, Mayon-White RT, Okong P, Carpenter LM, Jenkinson C (2006) The impact of HIV on maternal quality of life in Uganda. AIDS Care 18: 614-620.