Quality of life of HIV patients taking antiretroviral treatment in a resource limited setting: A case of University of Gondar comprehensive specialized hospital, Ethiopia

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ABSTRACT

Background: HIV/AIDS posed one of the greatest challenges to mankind. Despite the international and local initiatives to improve access to life prolonging HAART drugs, little attention is paid on the aspect of improving quality of life of people living with HIV/AIDS in Ethiopia. Thus the aim of this study was to assess the quality of life (QoL) of patients with HIV/AIDS who were taking HAART at University of Gondar Comprehensive Specialized Hospital.

Methods: A cross-sectional study was conducted in University of Gondar Comprehensive Specialized Hospital starting from April 10 to May 24, 2017. Data was collected by using interviewer administered validated Amharic version of WHO QOL-HIV-BREF-Eth questionnaire and analyzed using SPSS version 20. Binary logistic regression was used to determine association between quality of life and socio-demographic characteristics. Level of statistical significance was declared at P- Value ≤ 0.05.

Result: A total of three hundred participants were included in the study. Majority (57.3%) were males, 35% were illiterates and nearly half (48.3%) were married. Eighty one (27%) of the respondents had poor overall quality of life. Being widowed (P=0.000), divorced (P=0.001) and illiterate (P=0.007) were found to be significantly associated with poor QoL. Patients who spent more than 5 years after tested positive had better quality of life as compared to patients who know their HIV status within the recent 5 years.

Conclusion: More than a quarter of participants had poor quality of life. Widowed and divorced marital status, having no formal education and spending less than five year after tested as HIV positive were significantly associated with poor quality of life. More emphasis should be given for these groups of patients to improve their quality of life through multifaceted interventions.

Key words: Quality of life; HIV/AIDS; Highly active anti-retroviral treatment; Ethiopia

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INTRODUCTION

HIV/AIDS posed as one of the greatest challenge to mankind in the last two decades of the twentieth century and continue to do so in the first and second decades of the twenty first century. An estimated 36.7 million people were infected with HIV worldwide at the end of 2015 [1]. It has impacted negatively the world population, especially in developing countries where infection rates have been high [2].

The latest UNAIDS data, covering 160 countries, demonstrated both the enormous gains already made and what can be achieved in the coming years through a Fast-Track approach. In just the last two years, the number of people living with HIV/AIDS (PLWHA) and hence on antiretroviral therapy has increased by about a third, reaching 17.0 million people, 2 million more than the 15 million by 2015 target set by the United Nations General Assembly in 2011. Since the first global treatment target was set in 2003, annual AIDS-related deaths have decreased by 43%. In the world's most affected region, eastern and southern Africa, the number of people on treatment has more than doubled since 2010, reaching nearly 10.3 million people. AIDS related deaths in the region have decreased by 36% since 2010 [2].

During the past two decades, Quality of life (QoL) has become an important outcome in medical and psychological research. New evidence increasingly supports the importance of including patient's assessment of Health-Related Quality of Life (HRQoL) in clinical studies [3]. Although the burden of HIV-related morbidity and mortality in Africa has been reported, there has been little research on the impact of HIV on peoples' everyday lives [4]. The intensity of HIV in Africa, together with increasing expectations for the availability of HIV treatment and services, suggests a need for the assessment of QoL in African population [5].

In Ethiopia, HIV/AIDS has been recognized as a health problem and a development challenge. With an estimated 671,941 people living with HIV/AIDS and a national prevalence rate of 1.1% (4.2% urban and 0.6% rural). Ethiopia is one of the most affected countries by HIV/AIDS. Expected new infections and deaths per anum are 14,405 and 24,813 respectively. The national ART need in Ethiopia was 485,025 in 2016 [6].

Despite the international and local initiatives to improve access to life prolonging HAART drugs, reduce the incidence of infection,

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improve care and the availability to measurement instruments, little attention is paid on the aspect of QoL of people living with HIV/AIDS in Ethiopia [7]. Nonetheless, patients' quality of life serves as a practical guide in judging the performance of services, clinical practice and resource allocation and utilization in health care. So this study was aimed at investigating the QoL and factors associated with QoL of PLWHA attending University of Gondar Comprehensive Specialized Hospital (UoGCSH).

METHODS

Study area and period

The study was conducted in HIV clinic of UoGCSH which is located at Gondar town, 738 kms North-west of Addis Ababa, capital city of Ethiopia. The hospital is providing service for more than five million people of North Gondar zone and peoples from the neighboring zones. It is providing both inpatient and outpatient health care services in different specialties. The HIV care service of the hospital was initiated in 2005 and has 7 outpatient rooms, one voluntary testing and counseling room, one pharmacy, and one laboratory. Since 2005 during which the hospital started HAART, 7581 adults and 738 pediatrics patients were enrolled to the HIV care. Data was collected from April 10 to May 24, 2017.

Study design and subjects

A prospective cross-sectional study was conducted on adult HIV patients, who were on HAART and having follow-up at UoGCSH. HIV Patients who were less than 18 years old, those who were on HAART for less than six month period, patients who were involuntary and uncooperative and patients who were unable to speak or listen were excluded from the study.

Sample size and sampling technique

The sample size was calculated using single population proportion formula, considering proportion of HIV patients with poor quality of life as 56.4% (taken from previous study) [8], a 95% confidence interval and 5% margin of error. On average 40 patients were expected to come to the clinic per day for 5 days per week. Then correction formula was used as the source population was less than 10,000. Finally the minimum sample size that should be taken for this study was found to be 287 and we included 300 patients. Simple random sampling technique was used to recruit participants.

Data collection procedure

WHO QOL-HIV-BREF-Eth questionnaire [9], proved to be a valid measure of quality of life for use in clinical settings among people with HIV in Ethiopia, was employed to collect data through face to face interview. Three pharmacy BSc degree graduating class students collected the data while patients were waiting to receive their medication. The questionnaire consisted of twenty-five items with six domains (physical, psychological, social, environmental, independence and spirituality). The items were rated out of five based on the likert's scale as "not at all/very dissatisfied", "a little/dissatisfied", "and moderately", "Very much/ satisfied" and "extremely/very satisfied" by the patient.

Data processing and analysis

Data was entered in to SPSS version 20.0 for analysis. Descriptive statistics were used for demographic details. Binary logistic regression was used to determine association between QoL and the independent variables. Adjusted odds ratio (AOR) for each variable was calculated by considering adjustment for all of the other independent variables using multi-variate binary logistic regression. Level of statistical significance was declared at P- Value ≤ 0.05. For positively stated questions 'Not at all' or 'very dissatisfied' responses were given 1 point and 'Extremely' or 'very satisfied' responses were give 5 points. For negatively stated questions, the reverse was applied. The average response of each patient was calculated by adding the value given for all the 25 questions and dividing by 25 (the number of questions). An average value of 3.00 (60%) and below was considered as poor quality of life and above 3.00 (60%) was classified as good quality of life score [10].

Ethical consideration

Letter of ethical clearance was obtained from ethical review board of school of pharmacy. Letter of cooperation was obtained from University of Gondar referral hospital before going to HIV clinic. Oral consent was taken from patients before starting the interview. Privacy and confidentiality were ensured during patient interview; thus, name and address of the patient were not recorded.

RESULTS

Socio demographic characteristics

As indicated in Table 1 majority (57.3%) of the study subjects were male. More than half of respondents were 31-45 years old. More than one thirds were illiterates. Married participants account nearly half of the study subjects. Most of them had spent 5-10 years after tested as HIV positive.

Table 1: Socio demographic characteristics of study subjects, UoGCSH, North West Ethiopia.

Variables	Category	Frequency (%)
Sex	Male	172 (57.3%)
	Female	128 (42.7%)
Age (years)	18-30	84 (28.0%)
	31-45	161 (53.7%)
	≥ 46	55 (18.3%)
Education	Illiterate	105 (35.0%)
	Primary	89 (29.7%)
	Secondary	65 (21.7%)
	College and above	41 (13.7%)
Marital status	Married	145 (48.3%)
	Single	62 (20.7%)
	Divorced	44 (14.7%)
	Widowed	49 (16.3%)
Time spent after tested positive	More than 10 years	42 (14%)
	5-10 years	157 (52.3)
	Less than 5 years	101 (33.7%)

Quality of life of HIV patients taking HAART

Each of the respondents was asked 25 questions with a 5 scale response options to measure their quality of life. More than half (54.3%) of participants reported that they did not bothered at all by people blaming them for their HIV status. Only 4% of participants expressed that they have very frequent negative feelings like blue mood, despair, anxiety and depression. The number of patients in each response option for all the 25 questions is indicated in Table 2.

The average response of each patient was calculated by adding the value given for all the 25 questions and dividing by 25 (the number of questions). An average value of 3.00 and below was considered as poor quality of life and 3.01 and above was classified as good quality of life score. Based on these 219 (73%) patients had good quality of life and the rest 81 (27%) had poor quality of life.

Factors associated with quality of life

Multiple binary logistic regression result showed that marital status, level of education and time spent after tested as HIV positive are significantly associated with quality of life of HIV patients who are taking ART. Accordingly Widowed and divorced HIV patients are 10.6 and 4.3 times more likely to have poor quality of life as compared to married individuals. Illiteracy was significantly associated with poor quality of life indicated by AOR and 95% CI of 0.221 (0.075-0.657). Patients who spent more than 5 years after tested HIV positive had better quality of life as compared to patients who know their HIV status within the recent 5 years. Table 3 shows the detail description of factors associated with quality of life of HIV patients taking antiretroviral therapy.

Table 2: Participants' responses for quality of life assessment questions, UoGCSH, North West Ethiopia.

Sr. no	Questions	Not at all (very dis satisfied) N (%)	A little (Dis satisfied) N (%)	Medium N (%)	Very much (satisfied) N (%)	Extremely (Very satisfied) N (%)
1	To what extent do you feel that physical pain prevents you from doing what you need to do?	150 (50%)	75(25%)	32(10.3%)	31(10.3%)	12(4%)
2	How much are you bothered by any physical problems related to your HIV infection?	123(41%)	73(24%)	45(15%)	37(12.3%)	22 (7.3%)
3	How satisfied are you with your sleep?	11(3.7%)	43(14.3)	88 (29.3)	124(41.3%)	34(11.3%)
4	How much do you enjoy life?	17 (5.7%)	52(17.3%)	96(32)	113(37.7%)	22 (7.3%)
5	How well are you able to concentrate?	12. (4%)	45 (15%)	101(33.7)	116(38.7%)	26(8.7%)
6	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	105 (35%)	96(32%)	53(17.7)	34(11.3%)	12(4.0%)
7	How much do you need any medical treatment to function in your daily life?	97(32.3%)	75(25%)	76(25.3%)	29(9.7%)	23.7 (7%)
8	How well are you able to get around?	8(2.7%)	17(5.7%)	118(39%)	131(43.7%)	34(11.3)
9	How satisfied are you with your ability to perform your daily living activities?	7 (2.3%)	50(16.7%)	85(28.3%)	123(41%)	27 (9%)
10	How satisfied are you with your capacity for work?	7(2.3%)	47(15.7%)	86(28.7%)	133(44.3%)	27 (9%)
11	To what extent do you feel accepted by the people you know?	45(15%)	55(18.3%)	89(29.7%)	93(31%)	18(6%)
12	How satisfied are you with the support you get from your friends?	68 (22.7%)	64(21.3%)	77(25.7%)	70(23.3%)	21(7%)
13	How much do you worry about food in your daily life?	92(30.7%)	84 (28%)	49(16.3%)	42(14%)	33(11%)
14	How much do you afford to take care of your family?	82 (27.5%)	80(26.7%)	50(16.7%)	44(14.7)	44(14.7%)
15	How safe do you feel in your daily life?	17(5.7%)	37(12.3%)	90(30%)	122(40%)	34(11.3%)
16	How healthy is your physical environment?	16(5.3%)	39(13%)	107(35.7%)	115(38.3%)	23(7.7%)
17	Have you enough money to meet your needs?	43(17.7%)	43(17.7%)	115(38.3%)	73(24.3%)	16(5.3%)
18	To what extent do you have the opportunity for leisure activities?	89(29.7%)	57(19%)	89(29.7%)	47(15.7%)	18(6%)
19	How satisfied are you with the conditions of your living place?	16(5.3%)	40(13.3%)	123(41%)	99(33%)	22(8.5%)
20	How satisfied are you with your access to health services?	13(4.3%)	29(9.7%)	74(24.7%)	138(46%)	46(15.3%)
21	How satisfied are you with your transport?	13(4.3%)	45(15%)	129(43%)	98(32.7%)	15(5%)
22	To what extent do you feel your life to be meaningful?	32(10.7%)	30(10%)	70(23.3%)	106(35.3%)	62(20.7%)
23	To what extent are you bothered by people blaming you for your HIV status?	163(54.3%)	55(18.3%)	28(9.3%)	39(13%)	15(5%)
24	How much do you fear the future?	112(37.3%)	50(16.7%)	48(16%)	70(23.3%)	20(6.7%)
25	How much do you worry about death?	147(49%)	49(16.3%)	32(10.7%)	35(11.7%)	37(12.3%)

Table 3: Factors associated with quality of life of HIV patients taking antiretroviral therapy, UoGCSH, North West Ethiopia.

Variable	Category	Quality of life		COR (95%CI)	AOR (95%CI)
		Poor QoL	Good QoL		
Sex	Male	41 (23.8%)	131 (76.2%)	1.452 (0.870-2.425)	1.150 (0.618-2.142)
	Female	40 (31.3%)	88 (68.8%)	1	1
Age	18-30	24 (28.6%)	60(71.4%)	0.938 (0.439-2.003)	0.363 (0.130-1.016)
	31-45	42 (26.1%)	119 (73.9%)	1.063 (0.533-2.118)	0.815 (0.352-1.890)
	≥46	15 (27.3%)	40 (72.7%)	1	1
Marital status	Married	26 (17.9%)	119 (82.1%)	1	1
	Single	10 (16.1%)	52 (83.9%)	1.136 (0.511-2.525)	1.575 (0.628-3.953)
	Divorced	17 (38.6%)	27 (61.4%)	0.347 (0.165-0.728)	0.235 (0.102-0.544)
	Widowed	28 (57.1%)	21(42.9%)	0.164 (0.081-0.332)	0.094 (0.040-0.222)
Educational status	Illiterate	45 (42.9%)	60 (57.1%)	0.185 (0.067-0.510)	0.221 (0.075-0.657)
	Primary	23 (25.8%)	66 (74.2%)	0.399 (0.140-1.138)	0.475 (0.154-1.461)
	Secondary	8 (12.3%)	57 (87.7%)	0.990 (0.300-3.262)	1.557 (0.424-5.716)
	College and above	5 (12.2%)	36 (87.8%)	1	1
Time spent after tested HIV positive	More than 10 years	11 (26.2%)	31 (73.8%)	1.494 (0.671-3.328)	3.011 (1.077-8.422)
	5-10 years	35 (22.3%)	122 (77.7%)	1.848 (1.060-3.223)	2.657 (1.341-5.266)
	Less than 5 years	35 (34.7%)	66 (65.3%)	1	1

DISCUSSION

This study assessed quality of life of HIV patients who were on highly active antiretroviral therapyat Gondar University Referral Hospital, North West Ethiopia. The proportion of patients with poor quality of life was 27%. This finding is comparable with the result of studies conducted in Norway [11] and Bangladesh [12]. In contrast to this a study conducted in Felege Hiwot Referral Hospital, Bahir Dar, North West Ethiopia reported that more than half (56.4%) of respondents had poor quality of life [8]. The possible explanation for this difference may be because of variation in the tools used to assess QoL. In our study culturally adapted and validated questionnaire was used while the study in Feleg Hiwot referral hospital used a non-validated questionnaire prepared by reviewing literatures on the topic. The other possible reason may be difference in the composition of study subjects. In our study males took the larger proportion (57.3%) but in the felegehiwot study males were only 37.3%. According to previous literatures males have better quality of life as compared to females [13-16]. So the higher proportion of male subjects in our study may result in higher proportion of patients with good QoL.

The odds of good QoL are 78% less among illiterates compared to the odds of good QoL among persons who had diploma or above. In line with this many studies reported that Illiteracy was significantly associated with poor quality of life [13,17]. Previous studies in Ethiopia also identified illiteracy as independent predictor for poor quality of life [16,18,19]. The poor QoL observed in patients who had no formal education may be because of the lesser knowledge that they may have about HIV, related opportunistic infections and the medication; as well as they may not easily understand instructions given from health professionals and this may in turn result in poor adherence to medications and life style modifications which may finally lead to poor quality of life. In addition illiterate individuals in Ethiopia are mostly rural residents with poor economic status, limited access to health facilities, poor feeding habit and poor sanitation and personal hygiene which will have negative impact on health related quality of life.

Patients who spent more than 5 years after tested positive had better quality of life as compared to patients who knew their HIV status within the recent 5 years. Similarly a study done in Northeastern region of Brazil found that a longer time since diagnosis has a positive association with QoL [20]. This may be because patients who spent longer after knowing their HIV status are more aware about the disease, the medication and the life style that they should follow and they adapted themselves to live with the disease. But patients who were diagnosed a few years ago may still not accept the situation, may not be able to adapt themselves to the social environment and may feel as guilty and socially neglected.

Widowed and divorced HIV patients are more likely to have poor quality of life as compared to married individuals. This may be explained that married individuals may have better social support from a husband or a spouse and children, while widowed individuals may feel sad and discomfort because of loss of beloved ones and may feel hopeless. Divorced patients may also have poor quality of life due to their transition from an organized family to loneness, some of them may also take responsibility to take care of children alone without a husband or a wife and feel more stressed. The study in south west Ethiopia reported contradicted result in this regarding by saying marital status has no significant association with quality of life [21].

As impaired quality of life was showed to predict survival in a previous study [22] special emphasis should be given for illiterate, widowed, divorced patients and for patients who were tested positive recently (less than 5 year) in order to improve their quality of life. Issues like social and environmental support, adherence to HAART, education programs about how HIV impacts an individual, the benefit of the drug as well as their side effect and how to deal with it should be addressed in order to ensure the highest possible quality of life of people living with HIV/AIDS.

Sex and age did not show significant association with quality of life of HIV patients. Similarly sex was reported as not affecting quality of life by studies conducted in rural Uganda [23], Nigeria [24] and south west Ethiopia [21]. Other studies had contradicted with our finding by saying males had better QoL than females [13-16]. In line with the result of our study a studies in South Africa [25] and south west Ethiopia [21] reported that age of respondents did not affect health related quality of life of PLWHA. In contrast to our finding the studies in china [13], Nigeria [26] and Croatia [27] reported that Age of the patient significantly affects quality of life of PLWHA. Accordingly, younger individuals had significantly better QOL.

Even though the use of locally adapted and validated questionnaire to measure quality of life is the strength of this study it is not without a limitation. First, the information obtained may be influenced by the recall bias because patients were asked to respond based on their life experience in the past two weeks prior to the interview; Second, The cross-sectional nature of the study did not enable the establishment of cause and effect relationships; Third, the use of face to face interview may introduce social desirability bias. So the findings in this study should be interpreted in consideration of the above limitations.

CONCLUSION

More than a quarter of participants had poor quality of life. Widowed and divorced marital status, having no formal education and spending less than five year after tested as HIV positive were significantly associated with poor quality of life. Issues like social and environmental support, adherence to HAART, education programs about how HIV impacts an individual, the benefit of the drug as well as their side effect and how to deal with it should be addressed in order to ensure the highest possible quality of life of people living with HIV/AIDS in Gondar, Ethiopia. More emphasis should be given for patients who are widowed, divorced, and illiterate; and for patients who were tested positive recently (less than 5 year).

List of Abbreviations

AIDS: Acquired Immune Deficiency Syndrome

ART: Antiretroviral Therapy

BSc: Bachelor of Science

HAART: Highly Active Antiretroviral Therapy

HIV: Human Immune Virus

HRQoL: Health Related Quality of Life

PLWHA: People Live With HIV/AIDS

QoL: Quality of Life

RVI: Retrovirus infection

SPSS: Stastical Package for Social Science

UNAIDS: United Nation Aid for International Development

UoGCSH: University of Gondar Comprehensive Specialized Hospital

WHOQoL: World Health Organization Quality of Life

DECLARATIONS

Ethics approval and consent to participate: Ethical clearance was obtained from the Ethical Review Committee of School of Pharmacy, University of Gondar. The respondents were informed about the purpose of the study and their consent to participate was obtained.

Availability of data and materials: Additional data are available on reasonable request from the corresponding author.

Competing interests: The authors declare that they have no any conflict of interest.

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AUTHORS' CONTRIBUTIONS

MBA had participated in concept development, questionnaire design; write up of the final research and manuscript preparation and finalization. AS, DA and NS had contributed in concept development, questionnaire design, data analysis, interpretation and write up of the final research. OAA had participated in questionnaire design; write up of the final research and manuscript preparation and finalization. JSY and BTY had participated in write up of the final research and manuscript preparation and finalization. All authors read and approved the final manuscript.

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