

## Quality of Life Among HIV/AIDS Patients in a Secondary Thailand Border Hospital: A Cross-Sectional Study

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Received March 25, 2019

Accepted April 23, 2019

Published April 30, 2019

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### ABSTRACT

**Introduction:** AIDS (Acquired Immunodeficiency Syndrome) has been long recognized as a major public health threat for humankind. In 2018, there were 36.9 million people living with HIV and 1.8 million people becoming newly infected globally. **Objective:** The study aimed to assess the quality of life and determine factors associated with a good quality of life among HIV/AIDS patients in Chiang Sean hospital, Thailand. **Methods:** A cross-sectional study was conducted. All HIV/AIDS patients who were attending antiretroviral (ARV) clinic at Chiang Sean hospital in 2017 were invited to participate in the study. A questionnaire and WHO quality of life BREF (WHOQOL-BREF) form were used for collecting data. Chi-square test was used to determine the associations between variables. **Results:** Totally, 246 HIV/AIDS patients enrolled into the study; 53.3% were females, 44.3% were aged 41-50 years, 92.3% hold Thai nationality. The overall quality of life was in a moderate level (96.3%). Nearly two thirds scored moderately in psychological, social relationship and environment domains. No Thai nationality and low CD4 level had statically significant associations with a low quality of life ( $p$ -value<0.05). **Conclusion:** HIV/AIDS patients at Chiang Sean hospital have moderate quality of life. A specific public health intervention should be developed to improve quality of life among the HIV/AIDS patients.

### Keywords

Quality of life, HIV/AIDS, CD4 level, Thai nationality

### Introduction

Acquired Immunodeficiency Syndrome (AIDS) is caused by the human immune deficiency virus (HIV) which has become a major threat for human population today. World Health Organization (WHO) reported that more than 35 million died from HIV/AIDS since the first case report [1] and 940,000 people died from HIV-related causes globally in 2017 alone [1]. There were approximately 36.9 million people living with HIV at the end of 2017 with 1.8 million people becoming newly infected in 2017 globally [1]. Countries in Africa and Asia are the most affected regions of HIV/AIDS [1]. Thailand is one of the countries with the highest HIV prevalence in Asia and the Pacific accounting for 9.0% of the region's total population of people living with HIV [2]. In 2017, approximately 440,000 people were living with HIV, and 6,400 were new HIV infections [3]. Chiang Rai

province has been one of the top rank provinces of HIV/AIDS affected areas in Thailand [4].

Antiretroviral therapy (ART) is one of the most significant treatments for HIV/AIDS eradication [5]. There are several regimens that have been implemented in saving lives among HIV/AIDS patients [5]. 59.0% of adults and 52.0% of children living with HIV were receiving lifelong antiretroviral therapy (ART) in 2017 [1]. Global ART coverage for pregnant and breastfeeding women living with HIV is high at 80.0% [1]. It is estimated that currently only 75.0% of people with HIV know their status. In 2017, 21.7 million people living with HIV were receiving ART globally [1]. In Thailand, 72.0% adults and 84.0% children were on antiretroviral treatment in 2017 [3].

Quality of life (QOL) is one major concern among HIV/AIDS patients who are receiving ART. Even though ART has a great positive result in longer life among the users, it has several side effects including

poor quality of life. According to the WHO, quality of life has been divided into physical, psychological, social relationship, and environment domains. It has been used as the key assessment in all public health intervention particularly for those who are suffering with health conditions. The study aimed to assess the quality of life and to determine factors associated with quality of life among HIV/AIDS patients who were receiving ART in a hospital.

## Methodology

### Study design

Analytic cross-sectional study design was applied to gather and analyze the information from the study samples.

### Study Setting

The study was conducted at the ARV clinic, Chiang Sean hospital, Chiang Rai, Thailand.

### Study population

All HIV/AIDS patients who were attending the ARV clinic at Chiang Sean hospital in 2017 were the study population.

### Study sample

All HIV/AIDS patients who were attending antiretroviral clinic (ARV) clinic at Chiang Sean hospital, Chiang Rai province in 2017 between January and December 2017 were the study sample. However, those HIV/AIDS patients who were not able to provide essential information regarding the research protocols were excluded from the study.

### Research instruments

Questionnaire was used to ask questions regarding sex, age, nationality, education level, underlying disease, medical condition, income, complication, access to service, living with HBV-infected patient in family, sharing personal objects in family, history of tattooing, history of piercing, alcohol drinking, smoking, history of being commercial sex worker, age at first sexual intercourse, history of STDs, history of sexual orientation, oral sex, anal sex and number of partners. The information regarding the CD4 level and viral load were collected from a medical record after getting written agreement from the participants. The questionnaire was tested for reliability and validity by piloting among 10 subjects who were similar with the study population. Afterward, all questions were revised before use in the field.

Detection of quality of life of the participants was assessed by using the WHOQOL-BREF from [6] which is the most relevant to access the quality of life among HIV/AIDS patients [7]. This instrument contains 26 questions which refers to four domains: physical health, psychological, social relationships, and environment. Each domain was scored on a 5-scale.

Then, those who scored >59% were defined as “poor” quality of life, scores between 60-79% were defined as moderate level, and ≤80% were defined as good quality of life.

### Steps of data collection

Access to data and ARV clinic were granted by Chiang Sean hospital director and the head of ARV clinic. All HIV/AIDS patients who were attending the hospital clinic were asked for approval in accessing their individual clinical information before providing all essential information regarding the study. Afterward, an appointment was made for interview. Before the interview, informed consent form was obtained on voluntary basis. Interviews were done in a private and confidential room at the ARV clinic. Each interview lasted for 25 minutes.

### Statistical analysis

Data were double-entered into excel spreadsheet. All analyses were done by using the Statistical Package of the Social Science (SPSS) version 20 (IBM, Armonk, NY). Descriptive statistics were used for explaining the general characteristics and QOL of the participants. QOL was calculated in each domain. The associations between variables and level of quality of life were detected by Chi-square at  $\alpha=0.05$ .

### Ethical consideration

All research protocols and instruments were approved by the Human Research Ethics Committee for School of Health Science (No.13/2017) before the study commenced.

## Results

Totally, 246 HIV/AIDS patients enrolled into the study; 53.3% were female, 44.3% were aged 41-50 years, 92.3% hold Thai nationality, and 67.1% earned ≤ 5,000 baht/month as income (Table 1).

Regarding the medical history, 8.1% had underlying disease, 8.9% had a medical condition, 6.5% had health complication. 16.3% had CD4 less than 200 cell/cm<sup>3</sup>, 96.7% had viral load less than 40 copies/mL (Table 2).

Regarding individual risk behaviors among the participants; 34.6% were sharing personal items with family members, 17.1% tattooed, 27.2% pierced, 49.6% used alcohol, and 26.8% smoked. Two people (0.8%) had worked as commercial sex workers, 15.4% had their first sexual intercourse while aged less than 15 years, 20.7% had STIs history, 66.3% had sexual partners 2-9 persons (Table 3).

### Quality of life

The overall quality of life among HIV patients was moderate (96.3%). When considered on each domain; 94.3% were moderate in physical health domain, 92.3% were moderate in psychological domain,

78.9% were moderate in social relationship, and 79.7% were moderate in environment domain (Table 4).

**Table 1** General characteristics and medical history of participants

Characteristic	n	%
<b>Total</b>	<b>246</b>	<b>100.0</b>
<b>Sex</b>		
Male	115	46.7
Female	131	53.3
<b>Age (years)</b>		
≤ 20	4	1.6
21-30	9	3.7
31-40	50	20.3
41-50	109	44.3
51-60	64	26.0
> 60	10	4.1
<b>Income (baht/month)</b>		
No income	23	9.3
≤ 5,000	165	67.1
5,001-10,000	48	19.5
> 10,000	10	4.1
<b>Attending school</b>		
No	61	24.8
Yes	185	75.2
<b>Nationality</b>		
Thai	227	92.3
Non-Thai	19	7.7

**Table 2** Medical history of the participants

Factor	n	%
<b>Underlying disease</b>		
Yes	20	8.1
No	226	91.9
<b>Medical conditions</b>		
Yes	22	8.9
No	224	91.1
<b>Health complications</b>		
Yes	16	6.5
No	230	93.5
<b>CD4 level (cell/cm<sup>3</sup>)</b>		
<200	40	16.3
>200	206	83.7
<b>Viral load level (copies/mL)</b>		
< 40	238	96.7
> 40	8	3.3

#### **Factors associated with quality of life among HIV patients**

Two variables were found to be associated with poor quality of life among the HIV/AIDS patients who attended ARV clinic at Chiang Sean hospital, Chiang Rai province; Nationality and CD4 level. Non Thai nationals had a greater proportion of poor quality of life compared to Thai nationals at a statistically significant level (p-value=0.036). Those who had CD4 level ≤ 200 cell/cm<sup>3</sup> had a greater proportion of poor quality of life than those who had CD4 level >200 cell/cm<sup>3</sup> statistically significant level (p-value=0.053) (Table 5).

**Table 3** Risk behavior of the participants

Risk behavior	n	%
<b>Tattooed</b>		
Yes	42	17.1
No	204	82.9
<b>Pierced</b>		
Yes	67	27.2
No	179	72.8
<b>Alcohol drinking</b>		
Yes	122	49.6
No	124	50.4
<b>Smoking</b>		
Yes	66	26.8
No	180	73.2
<b>History of sex worker</b>		
Yes	2	0.8
No	244	99.2
<b>Age at first sexual intercourse (years)</b>		
≤ 15	38	15.4
> 15	208	84.6
<b>History of STDs</b>		
Yes	51	20.7
No	195	79.3
<b>Oral sex</b>		
Yes	42	17.1
No	204	82.9
<b>Anal sex</b>		
Yes	5	2.0
No	241	98.0
<b>Number of partner (persons)</b>		
No partner	2	0.8
1	48	19.5
2-9	163	66.3
≥ 10	33	13.4
<b>Sharing personal objects in family</b>		
Yes	85	34.6
No	161	65.4
<b>Living with HBV infected patient in family</b>		
Yes	5	2.0
No	241	98.0

#### **Discussion**

Majority of HIV/AIDS patients receiving ART were female Thai nationals, aged 41-50 years. Alcohol and smoking were very common risk behaviors among the HIV/AIDS patients including ear piercing. A large proportion had their first sexual intercourse while less than 15 years, and had STIs. Quality of life among the HIV/AIDS patients receiving ART were in moderate levels in all four domains; physical, psychological, social relationship, and environment. The overall quality of life is also in a moderate level. Non-Thai nationality and lower CD4 were significantly associated with poor quality of life.

Under the Thailand universal coverage scheme, all Thai citizens have the rights to access health care services without charging including access to ARV [8]. Therefore, those Thai people who are suffering with HIV and AIDS can voluntarily get ART at any ARV clinic in a hospital. Both general and

**Table 4** Number and percentage of quality of life among HIV/AIDS patients

Domain	Level of QOL					
	Poor		Moderate		Good	
	n	%	n	%	n	%
Physical health	8	3.3	232	94.3	6	2.4
Psychological	18	7.3	227	92.3	1	0.4
Social relationship	7	2.8	194	78.9	45	18.3
Environment	6	2.4	196	79.7	44	17.9
<b>Overall quality of life</b>	<b>7</b>	<b>2.8</b>	<b>237</b>	<b>96.3</b>	<b>2</b>	<b>0.8</b>

**Table 5** Factors associated with quality of life

General Characteristic	QOL Level				$\chi^2$	p-value
	Poor		Moderate-to- Good			
	n	%	n	%		
<b>Nationality</b>						
Thai	5	2.2	222	97.8	4.39	0.036*
Non-Thai	2	10.5	17	89.5		
<b>CD4 level (cell/cm<sup>3</sup>)</b>					3.74	0.053*
≤ 200	3	7.5	37	92.5		
> 200	4	1.9	202	98.1		

private channels are commonly provided to access ARV clinics. However, it is not a guarantee that Thai people could access these services effectively. Some marginalized populations are not having equal access to care even if they hold Thai citizenship especially the hill tribe and stateless populations who are living in border areas in northern Thailand [9]. In 2018, there were 6 hill tribe groups accounting for 30.0% of the whole population of people living in Chiang Rai province [10]. A large proportion of the hill tribe people are suffering with HIV/AIDS and also TB currently and need to access ARV clinic [11].

A cross-sectional study conducted among the HIV/AIDS patients in Ghana reported that religion and personal belief mostly affected their quality of life [12]. This is different from the HIV/AIDS patients in northern Thailand. Pozniak [13] reported that getting ARV had significant association with a better quality of life among the HIV/AIDS patients. This coincides with our study.

A study in China reported that age, CD4 level and adherence to ARV clinic were associated with a good quality of life among the HIV/AIDS patients [14]. Bunjongmanee, et al. reported that HIV/AIDS patients who were on ART and in good compliance with ART were associated with a good quality of life among the HIV/AIDS patients in Thailand [15]. Moreover, studies in Jakarta [16], Nigeria [17], Brazil [18], and India [19] also presented that CD4 level and attending ARV were associated with a good quality of life among the HIV/AIDS patients. These coincides with our study that CD4 level was a significant factor for a good quality of life among the HIV/AIDS patients in northern Thailand.

There are some limitations in this study. Samples were collected from one hospital which might not be generalized for all HIV/AIDS patients in Chiang Rai province. However, the study was done in the

hospital located in border area and non-Thai HIV/AIDS populations were extracted as a key variable related to poor quality of life. The wide range of participants' age would be another impact on the analysis, it should be controlled in the analysis in the next study.

## Conclusion

HIV/AIDS patients who are receiving ART are living in moderate level of quality of life. Nationality and CD4 level impacted their quality of life. The intervention for improving quality of life among the HIV/AIDS patients receiving ART should focus on non-Thai population. It may need interventions which require inter-country collaboration to improve access to ARV among non-Thai HIV/AIDS population. Moreover, a closer clinical investigation to improve the CD4 level among the HIV/AIDS patients receiving ART is also needed to be considered to improve CD4 level which will improve quality of life among the HIV/AIDS patients eventually.

## Acknowledgements

The authors would like to thank all the participants for providing essential information in the study. We also would like to thank Chiang Sean hospital director and also all ARV clinic staff for their support during the research period. Finally, we would like to thank the staff from Department of Public Health, School of Health Science and the Center of Excellence for the Hill tribe Health Research for both grant and technical support.

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