

Assessing HIV and AIDS treatment safety and health-related quality of life among cohort of Malaysian patients: a discussion on methodological approach

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Abstract

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Accepted for publication

17 July 2013

Keywords: adverse drug reactions, HIV/AIDS, patients' perspective, quality of life

Background Health-related quality of life (HRQoL) is increasingly recognized as an important outcome and as a complement to traditional biological end points of diseases such as mortality. Unless there is a complete cure available for HIV/AIDS, development and implementation of a reliable and valid cross cultural quality of life measure is necessary to assess not only the physical and medical needs of HIV/AIDS people, but their psychological, social, environmental, and spiritual areas of life.

Methods A qualitative exploration of HIV/AIDS patients' understanding, perceptions and expectations will be carried out with the help of semi structured interview guide by in depth interviews, while quantitative assessment of patient reported adverse drug reactions and their impact on health related quality of life will be carried out by using data collection tool comprising patient demographics, SF-12, Naranjo scale, and a clinical data sheet.

Results/Outcomes The findings may serve as baseline QOL data of people living with HIV/AIDS in Malaysia and also a source data to aid construction of management plan to improve HIV/AIDS patients' QOL. It will also provide basic information about HIV/AIDS patients' perceptions, expectations and believes towards HIV/AIDS and its treatment which may help in designing strategies to enhance patients' awareness which in turn can help in addressing issues related to compliance and adherence.

Background

HIV and AIDS

Human immunodeficiency virus (HIV) infects human body immune system, thus impairing its

function. HIV-positive patients often present with reduced CD4⁺ cell count and increased viral load, while acquired immunodeficiency syndrome (AIDS), the terminal stage of HIV is diagnosed when the patient presents with a CD4⁺ cell count of less than 200 cells/dl.

Patients with AIDS are more prone to opportunistic infections such as *pneumocystis carinii* pneumonia, extensive oral candidiasis and tuberculosis.^{1,2}

According to UNAIDS 2012, global report on world epidemics, 34.0 million (31.4–35.9 million) people were living with HIV at the end of 2011. An estimated 0.8% of adults aged 15–49 years worldwide are living with HIV, although the burden of the epidemic continues to vary considerably between countries and regions.³ There is no cure for HIV/AIDS. However, with the introduction of highly active antiretroviral therapy (HAART), effective suppression of viral load and improvement of morbidity and mortality can be achieved.^{1,2} As survival of patients living with HIV has been increased, their quality of life (QOL) has become more and more important.

In Malaysia, the first HIV case was reported in 1986. Based on Surveillance data on HIV and AIDS, up to June 2009, a total of 86 127 HIV infections were reported to Ministry of Health (MOH), Malaysia. Out of this figure, 14 955 were patients with AIDS and 73 124 people were living with HIV.^{4,5}

Quality of life (QOL) and Health-related quality of life (HRQOL)

World Health Organization (WHO) defines 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 While quality of life is a broad concept that incorporates individual’s perceptions of factors affecting his or her general well-being, health-related quality of life (HRQOL) focuses specifically on quality of life related to health. WHO defines concept of health-related quality of life (HRQOL) as, ‘a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity’. In recent years, interest in measuring HRQOL increased with publication of more HRQOL studies. QOL is, in fact, a concept that incorporated all factors affecting a

person (economic status, social functioning, self-satisfaction and well-being), while HRQOL focuses more on QOL related to health. Major aspects of HRQOL include physical, social, emotional and cognitive functioning; mobility and self-care; patient perception of health; and symptoms.⁷

Health-related quality of life is increasingly recognized as an important outcome and as a complement to traditional biological end points such as mortality. Unless a cure is found of a life-prolonging therapy can be made more widely available, the majority of people living with HIV/AIDS (PLHIV) will continue to suffer from this disease with serious impact on quality of life.

HRQOL has emerged as an important issue in the treatment of HIV infection. HIV-infected patients generally demonstrate a lower HRQOL than that of the general population. Also those with AIDS report lower HRQOL than patients with other chronic conditions like cancer or depression. Assessment of HRQOL has been found to be effective in enhancing communication between patients and health-care providers. This can also be used to track changes in functional status over time, especially in monitoring treatment effects.^{6,7}

Patients’ perspective on HIV and treatment

There has been an unprecedented increase in access to HIV treatment even in resource-limited settings where antiretroviral medications were previously unavailable. Access to antiretroviral drugs in low–middle-income countries had rose 10-fold, based on World Health Organization (WHO). In high-income countries, antiretroviral drugs have long been widely available and access to treatment has had a prominent impact on HIV-related mortality. Introduction of highly active antiretroviral therapy had resulted decline of as much as 85% in the mortality rate in HIV-infected patients.⁸

The lack of information about drugs in usage is pointed as one of the most significant reasons why individuals do not adequately

follow their treatment. Beliefs about health and illness in particular about the necessity of medication to ward off illness and concerns about potential medicine-related adverse events have been found influential in both HIV and other disease areas.

The emic perspectives are useful for examining when we are seeing things from our own point of view and when we are trying to understand someone else's view of things. The emic perspective shows the meaning that people attach to things from their own cultural perspective.⁹

Adverse drug reactions (ADRs) and impact of ADRs on HRQOL

It is well established that HAART therapy exerts range of acute and chronic adverse drug events that not only affect patient's adherence but result in declining quality of life. HIV-infected persons normally complained of fatigue, pain, nausea and vomiting, sleep disturbances, sexual dysfunction, and body image issues. All these health-related problems may be affecting HIV-infected persons' daily life. Therefore, routine clinical assessment of health-related quality of life in persons with HIV infection is vital. It has the potential to improve care by assessing and monitoring treatment effects, enhancing communication between patients and also tracking back their functional status over time.^{6,7}

Living with HIV affects not only the patients' physical health but also their mental and social well-being. HIV can no longer be defined as simply a virus but is also a social and historical event on how patients survive along with HIV. Issues that include personal safety, human rights and other aspects of political and social infrastructure can radically affect patients' quality of life.⁷

The assessment of HRQOL as an outcome of management has increased since its introduction in late 1940s. It has the potential to facilitate patient's care by constructing better management and care plan for patients. HRQOL data are currently lacking among

people living with HIV/AIDS in Malaysia. This study therefore aims to evaluate HIV/AIDS-related quality of life among people living with HIV/AIDS.

Monitoring and optimizing HRQOL may improve adherence to therapy and also possibly overall adherence. HRQOL measures serve as an important gadget in evaluating patients' well-being and health improvement. The main purpose of assessing HRQOL is mainly to discuss on issues that are particularly relevant to HIV/AIDS patients and also to provide an overview of common research-based HRQOL assessment tools used in patients population.⁶

Methods/Design

Quantitative assessment

Study design

A cross-sectional study will be conducted on patients diagnosed with HIV/AIDS. Patients diagnosed with HIV/AIDS and using antiretroviral therapy (ART) for at least last 3 months will be recruited in this study. A validated, interviewer-administered questionnaire (SF-12) will be used to gather necessary information. The patients will be selected from HIV/AIDS outpatient and medication therapy adherence clinics, Hospital Sungai Buloh, an infectious disease referral centre in Malaysia.

Patients who fulfil the inclusion criteria and agree to participate in this study will be brought to a private room whereby they will be further briefed on the nature of this study. Study information sheet will be provided and both verbal and written consent will be taken from patients prior to interview. Upon obtaining patients' consent, a 10–15-min interview will be carried out using study questionnaire. Patients' medication chart and medical record will also be reviewed to gather relevant information.

Development and validation of questionnaire

The short-form health assessment questionnaire (SF-12) will be used to assess patients' health-related quality of life (HRQOL). SF-12 is a generic instrument widely used for HRQOL

assessment. The questionnaire is divided into two parts; first part includes information about patients' demographics, whereas the second part covers questions on HRQOL. Some novel questions are also developed and included in the final version of the draft questionnaire after reviewing available literatures. Validation and reliability assessment for the questionnaire will be carried out to ascertain its quality and outcome.

Sampling and sample size

Simple random sampling method will be used for data collection of this study. A name list of patients having clinic visit will be obtained from nurse incharge of the clinic prior to the start of the clinic. Simple randomization will be carried out based on patients' medical record numbers (MRN) whereby every second patient will be recruited for the study. The name list serves as a guide for identification of patients' MRN and demographics. To assure the confidentiality and anonymity of patients, name and identity card number of the study participants will not be taken. The target sample size for this study is 385 based on estimated prevalence of HIV/AIDS of 0.5%, 95% confidence level and acceptable margin of error of 5%.

Inclusion and exclusion criteria

Patients from any age group, gender and ethnicity diagnosed with HIV/AIDS and using ART for at least 3 months will be included. Patients who will be unable to give consent for any reason, having communication barrier, with neurological or psychological OR do not meet the inclusion criteria will be excluded from this study.

Statistical analysis

Both descriptive and inferential data analysis will be performed using spss® version 16.0 (SPSS, Chicago, IL, USA) with nd inferential data analysis will be performed using SPSS and using ART for at least 3 months will be included. Patients will be unable to give consent for any reason.

Qualitative assessment

Little has been known about patients' perceptions and experiences towards HIV/AIDS in Malaysia. To explore this qualitative study, it will be carried out at stated hospitals. For the purpose, a semi-structured interview guide has been developed after extensive literature review. The initial draft was given to a few faculty members and researchers, and necessary changes were made. A pilot testing will be carried out to see whether the required information can be retrieved with questions and probes used. A study information sheet will be provided and all interviews will be audio-recorded where patient consent will be taken prior to interview process. Data will be transcribed to reflect individual themes and thematic content analysis will be carried out for data analysis.

Discussion

To our knowledge, this will be the first study ever conducted with Malaysian HIV/AIDS population, aimed not only to evaluate impact of adverse drug reactions on health-related quality of life but an extensive qualitative exploration of patients' perspective on HIV/AIDS and its management.

Studies have shown factors effecting health-related quality of life among patients with chronic diseases and adverse drug reactions were highlighted as one the most important factors among them, and complex HAART medications also found to have impacts on HRQOL. Additional factors such as gender, age, socio-economic characteristics, stigmatization, disease severity, psychological status also adversely affect patients' HRQOL; for example, Wisniewski *et al.*¹⁰ reported that women with HIV/AIDS compared to men have poorest QOL score ($P < 0.05$). Gender is also found to be associated with differences in terms of physical functioning, pain, energy, positive feelings, sexual activity, financial resources and transport facets as well as physical, psychological, social relationships and environment domains.^{11–13}

There is no doubt that HAART significantly reduces morbidity and mortality among people living with HIV/AIDS; however, the HAART associated adverse drug reaction often adversely affecting the QOL of HIV/AIDS patients. This in turn reduces patients' adherence to HAART regimen. Some of these most common adverse reactions associated with HAART use are induced by protease inhibitors (PIs)¹⁴ Tramarin *et al.*¹⁵ concluded that HIV/AIDS patients with PI-induced diarrhoea had significantly lower scores in general health, physical functioning, social functioning, mental health, cognitive functioning, overall quality of life and health transition domains as compared to those without diarrhoea ($P < 0.05$). Similarly, in a study involving 125 patients with lipodystrophy, more than 40% of patients reported pain, physical limitation, poor health status and lower overall QOL.¹⁶

There is no doubt that evolution of HAART has greatly reduced the epidemics in developed world, but at the same time, many developing countries are facing challenges.³ Until there is a cure of HIV/AIDS prolongation in patients' life with improved HRQOL will remain as paramount of antiretroviral treatment. Impact of HAART on HRQOL has been widely researched in developed world; however, there are limited data available from developing countries and in Malaysian context it is not available. Along with adverse drug reactions, other treatment-related factors were also found to be barriers to a good HRQOL. It was found that maintaining the same antiretroviral regimen during follow-up period and having lower number of adverse drug reactions secondary to use of ART are related to better health-related quality of life.⁸

Assessment of HRQOL for HIV/AIDS patients on antiretrovirals (ARVs) becomes particularly important due to chronic nature of HIV/AIDS, common appearance of severe side-effects associated with treatment and uncertainty of the durability of therapeutic effects. Patients with lipodystrophy reported that changes were noticed by family, friends and work colleagues; disfigurement caused stigma

and attractiveness; it also influences social relations and leads to anxiety and depression affecting physical and emotional health.^{17–21}

Patients' expectations and understanding of disease and its treatment have been found to have close link to HRQOL. Some investigators explain the relationship between expectations and HRQOL outcomes in terms of education. Others suggest that patient expectations are strongly influenced by the physician's expectations. A variety of studies have linked positive expectations with future good physical outcomes in populations such as students, heart surgery patients and alcoholics. At the other end of the spectrum, patients with unrealistic expectations may become discouraged and fail to reach their maximum potential. Therefore, it seems that the level of expectations that patients have about their recovery or clinical improvement can influence the reported outcomes, after receiving some type of clinical.²¹

Studies exploring patients' reasons for refusing HAART have identified the potential importance of patients' beliefs about antiretroviral treatment. Patients reported a number of negative perceptions about HAART, including fears about side-effects, concerns about the need for strict adherence, inconvenience and practical problems associated with the regimen, distrust of conventional medicines, fear of long-term damage to body organs, and the perception that there is no reason to start in the absence of symptoms.^{22–31}

Lack of information on antiretroviral drugs or the misunderstanding of available information can facilitate incorrect use of such drugs. This can result in non-adherence to the prescribed regimen, leading to a great possibility of a therapeutic failure. Those who believe in the necessity and benefit of the medication are more likely to follow the treatment properly, so the quantity and quality of information have the potential to influence the ability of individuals to judge and participate in decisions concerning their treatment.³²

Numerous studies in South-East Asian countries including Taiwan, China, Hong Kong and Cambodia have explored HRQOL in patients

taking ARVs. Most of them revealed difficulty in adhering to the regimen due to the adverse drug effect, deteriorated quality of life, contributed negative feelings to their mental health and over all well-being.^{33–36} A preliminary data from Malaysian patients with HIV/AIDS would be helpful in providing patients inside related to HRQOL and their understanding and expectations from ARVs treatment and services. A mix methodology has been adopted for this reason to evaluate ADRs, HRQOL and patients' perspective. Although there are studies carried out in regional countries in exploring HRQOL, the impact of ADR on HRQOL and qualitative exploration in a single study would provide some essential and interesting findings. Even in developed part of the world, not many qualitative explorations of HIV patients' perspective have been carried out, and somehow with best of our knowledge and search, such comprehensive qualitative exploration among Malaysian HIV patients would be first of its kind in Malaysia if not in the region. In the recent era, there is a growing interest of researchers in exploring patients' perspectives using qualitative methodology, which indeed has resulted in knowing these patient population and their issues related to treatment and adherence.³⁷ Experts argue on importance of patient perspective evaluations and their effectiveness in shaping medical practice. However, many evidences in favour of such evaluations have suggested that such measures are robust and useful indicators of quality health services.³⁸

Expected outcomes

The findings of the planned study may serve as baseline HRQOL data of people living with HIV/AIDS in Malaysia and also a source data to aid devising management plan to improve HIV/AIDS patients' QOL. In addition, it will provide basic information about HIV/AIDS patients' perceptions, expectations and believes towards HIV/AIDS and its treatment which may help in designing strategies to enhance patients' awareness which will help in addressing issues of compliance and adherence.

Conflict of interest

The authors declare that they have no competing interest.

Authors' contribution

IAS is the scientific coordinator of this study and has developed the concept and made substantive intellectual contributions to the manuscript. All authors contributed to the study concept and design, manuscript revision for intellectual concepts and final approval for manuscript submission.

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