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Health-Related Quality of Life of Patients with HIV/AIDS in Bogotá, Colombia

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ABSTRACT

Background: There has rarely been any reporting on health-related quality of life (HRQOL) of patients with HIV/AIDS in developing countries. **Objectives:** To estimate the health utilities of people with HIV/AIDS in Bogotá, Colombia. **Methods:** A cross-sectional survey was conducted for 181 patients receiving antiretroviral therapy from an outpatient HIV/AIDS clinic in Bogotá. The five-level version of the EuroQol five-dimensional questionnaire (EQ-5D-5L) and the EuroQol visual analogue scale (EQ-VAS) were used to estimate HRQOL scores. To derive utilities on the basis of the EQ-5D-5L, the Spanish value set was used. Subgroup analyses were performed according to sex, age, the Centers for Disease Control and Prevention classification, and CD4 cell count. **Results:** The mean utility of the EQ-5D-5L was estimated at 0.85 ± 0.21 and the EQ-VAS score was estimated at 84 ± 14 .

Pain/discomfort and anxiety/depression were the two EQ-5D-5L dimensions associated with the poorer outcomes. Subgroup analyses revealed significantly higher utilities (using the EQ-5D-5L) for men than for women (0.88 vs. 0.76; $P = 0.002$) and lower utilities for patients with severe HIV (0.83 for $CD4 < 200$ vs. 0.87 for $CD4 \geq 500$; $P = 0.024$). **Conclusions:** The HRQOL scores of patients with HIV/AIDS receiving antiretroviral therapy were relatively high in Bogotá, Colombia, using the EuroQol questionnaire. The utility data could be useful, in combination with cost data, for future economic evaluations.

Keywords: AIDS, burden, Colombia, EQ-5D-5L, HIV, quality of life, utility.

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Introduction

There is scarcely any other virus that is as well known as the human immunodeficiency virus (HIV). Once this virus infiltrates a human being, it spreads through the whole body and leads to a failure of the immune system. The lack of an adequate immune system leaves the host unable to combat opportunistic infections and cancer. This clinical picture is known as acquired immunodeficiency syndrome (AIDS) [1]. With approximately 35 million people infected with the virus worldwide, it is a concern for every government. Although the number of newly infected people decreased worldwide from 3.4 million in 2001 to 2.3 million in 2012 [2], this positive trend does not apply in Colombia. According to the World Health Organization, in 2011 there were 150,000 people (0.5% of the adult population) infected with HIV in Colombia [3]. In 2010, HIV was one of the top four causes of burden of disease in Colombia [4]. Because of expanded access to antiretroviral therapies, people now live longer with the disease; as a consequence, the economic burden of HIV/AIDS is substantial in developing countries.

As in many other countries, the constrained health system of Colombia needs to become more efficient in terms of resource allocation [5]. Only recently the Colombian government acknowledged the need for evidence-based resource allocation, and in 2011 enacted by law its own health technology assessment agency [5]. To meet this challenge, more economic evaluations are needed to provide sufficient insights. Most of these analyses use quality-adjusted life-years (QALYs) to measure outcomes. To estimate QALYs, utility values for health states are needed. Health utilities result in one single value for health status ranging from 0 (corresponding to death) to 1 (corresponding to perfect health). Health utilities data for patients with HIV/AIDS have been reported mainly in the United States and in Western European countries [6,7]. Results from these studies are not easily transferable to developing countries such as Colombia.

In Colombia, we identified two studies with data on the health-related quality of life (HRQOL) of patients with HIV/AIDS. Using the Medical Outcome Study Short Form and the World Health Organization Quality of Life-Bref Scale (WHOQOL-BREF), the scores of HRQOL were estimated to range between 60.5 and

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90.2 for the HIV population in Medellín, Colombia [8]. Another study in Colombia showed an index score of 0.59 ± 0.178 measured via the HIV/AIDS-Targeted Quality of Life instrument, with higher results for patients receiving antiretroviral therapy [9]. Nevertheless, neither of these studies estimated the health utilities of patients with HIV/AIDS in Colombia using a utility instrument that could thereafter be used to estimate QALY. The EuroQol five-dimensional questionnaire (EQ-5D) is a utility instrument that is widely used in clinical trials (including those involving patients with HIV/AIDS) [10] and observational studies and has been translated into more than 20 languages. Recently, the EuroQol Group introduced a five-level version of the EQ-5D (EQ-5D-5L) [11]. This new version aims to improve the instrument's discriminatory potential [12] and has already been shown to have good psychometric properties for patients with HIV/AIDS [13]. The new version seems to be valid and reliable, and provides higher sensitivity to changes while remaining simple and user-friendly [12,14]. Several countries are at present developing a national EQ-5D-5L value set. Given the need for collecting health utilities data, the aim of this study was to collect health utilities data using the EQ-5D-5L and to estimate the EuroQol visual analogue scale (EQ-VAS) scores from people with HIV/AIDS in Bogotá, Colombia.

Methods

Population and Setting

A cross-sectional study was conducted with patients with HIV/AIDS at the Asistencia Científica de Alta Complejidad (Scientific Assistant of High Complexity) located in Bogotá, Colombia. All consecutive patients presenting with HIV/AIDS during the period of the survey were invited to participate. All patients were receiving antiretroviral therapy. Illiteracy or having limited cognitive abilities for filling in a questionnaire was a criterion for exclusion. The ethics committee of the Asistencia Científica de Alta Complejidad approved the study, and every participating patient signed the informed consent form before participating.

Data Collection

Two small pilot studies, with 4 and 12 patients, respectively, were conducted consecutively. The questions were easily understood by most of the participants, and physicians were available to answer any queries. The questionnaire was handed out to patients during their mandatory monthly visit, between May and June 2014. The patients filled out the questionnaire in the waiting room right before the consultation, or during it, making it possible to resolve any uncertainties immediately. The information provided by the completed questionnaires was complemented with information from the database of the clinic, covering information such as sex, age, and HIV/AIDS status. The patient's identification number was used to connect the information from the questionnaire with the database.

Measurement and Evaluation of HRQOL

The quality-of-life data were collected with the Spanish version (for Spain) of the EQ-5D-5L. This questionnaire has been validated for Spain and several other Spanish-speaking countries such as Colombia. It is a generic instrument and is the most widely used instrument for measuring HRQOL [15]. The questionnaire consists of five questions regarding mobility, self-care, usual activity, pain/discomfort, and anxiety/depression [11]. Every question has five possible answer options, from "no problems at all" to "severe problems." These questions are combined with the EQ-VAS. This

is basically a printed scale from 0 to 100, on which patients mark their perceived health state. The number marked is filled in a box afterward. The EQ-5D-5L allows the quality of life to be expressed in utilities. Nevertheless, although the EQ-VAS provides an individual score between the worst and the best imaginable health for the patient, the EQ-5D-5L provides a five-digit code on the basis of the response pattern. This was composed with the Spanish EQ-5D-5L value set to identify the utility of the answers [16]. The EuroQol Group provides a specific value set for Spanish-speaking countries, which was used for this study [17]. Because the value set is not yet available for the new EQ-5D-5L instrument, an interim scoring algorithm was derived from the three-level EQ-5D value set, which should be acknowledged as a temporary solution [18].

Data Reporting

Descriptive statistics (mean and SD) were used to report health utilities. The results of the questionnaire were reported in tables according to the EuroQol guidelines [16]. Subgroup analyses were performed according to age range, sex, and the Centers for Disease Control and Prevention (CDC) classification along with the corresponding utility. The CDC classification system assesses the severity of HIV disease by CD4 cell counts [19]. The mean age was used to dichotomize the sample into young and older groups. The Mann-Whitney *U*-test and the Kruskal-Wallis test were performed to assess statistical differences between subgroups. The data were conditioned and analyzed with Microsoft Office Excel 2007 and IBM SPSS 22.

Results

Patients' Characteristics

A total of 181 questionnaires were distributed to patients with HIV/AIDS. Of these, 14 were excluded because of lack of crucial information, such as the person's identification number, and 29 questionnaires were not fully completed. The final sample comprised 138 patients, including 31 female and 107 male participants. The mean age of the patients was 46.38 ± 11.44 years. Most of the patients (65.9%) were classified as being at stage 3 (CDC classification) of the disease, whereas stages 1 and 2 were almost equally represented, with 20 and 24 patients, respectively. The stage of three patients was unknown, also in 2 not applicable cases.

Quality of Life of Patients with HIV/AIDS

Using the EQ-5D-5L, the mean utility of the sample was estimated at 0.85 ± 0.21 . The mean EQ-VAS score was 84.38 ± 14.27 . Table 1 presents a more detailed description of the age distribution with central tendencies. The dimensions anxiety/depression and pain/discomfort had poorer outcomes than the mobility, self-care, and usual activity dimensions. Table 2 presents the results of the particular dimensions of the questionnaire separated into seven age groups. Rates generally decreased with increasing age, except for the pain/discomfort and anxiety/depression dimensions. A total of 57 patients (41%) reported full health state (11111 profile).

The subgroup analyses of age showed a higher utility value between the younger group (0.89 ± 0.18) and the older group (0.82 ± 0.24) for the utility measured with the EQ-5D-5L ($P = 0.112$). The EQ-VAS values followed the same pattern (85 ± 13 vs. 86 ± 17 ; $P = 0.363$) but neither had any significance.

On average, men reported a higher score (0.87 ± 0.19) than did women (0.76 ± 0.26). A statistically significant difference ($P = 0.002$) was found with the EQ-5D-5L, but not with the EQ-VAS ($P = 0.842$).

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