

Demographic, socio-economic and psychological determinants of HIV treatment: A community out-patient experience

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Abstract

Objective: To find out basic understanding of HIV infection, degree of awareness regarding the ongoing treatment and reasons behind irregular follow-up visits of our HIV patients in the out-patient clinic.

Participants and Methods: 75 patients of our inner city community hospital HIV clinic (J.E. Wood Clinic of Pennsylvania Hospital, Philadelphia) were given an anonymous, survey questionnaire. 68 of them were sufficiently completed to be evaluated for the study. We collected information related to patients' demographic and social status, knowledge about their HIV disease and compliance with follow-up appointments. Completed questionnaires were evaluated and comparative data was tallied using Microsoft excel sheet. We also reviewed relevant literature to understand our findings in the light of previous related studies.

Results: Patients who had completed high school education or equivalent were 2.5 times more likely to remember the names of their HIV medications (95 % confidence interval CI=1.42 to 4.98) and 1.75 times more likely to remember their last CD4 count (95 % confidence interval CI=1.12 to 4.38). Women patients in our practice were 2.0 times more likely to practice use of protective measures during sexual activity (95 % confidence interval CI=1.22 to 4.67). 7 patients mentioned significant psychological problems in their daily life as the reason for non-adherence to medication or follow-up appointments.

Conclusion: Identifying socio-economic, behavioral and psychological variables that intervene treatment of HIV patient is important as it can help us to provide patient specific support and guidance to improve treatment compliance.

ABBREVIATIONS: AIDS = Acquired Immunodeficiency Syndrome; CD4 = Cluster of Differentiation antigen 4; CI = Confidence Interval; HIV = Human Immunodeficiency Virus; HAART = Highly Active Anti Retroviral Therapy; WHO = World Health Organization.

The acquired immunodeficiency syndrome (AIDS) was first recognized among homosexual men in the United States in 1981^{1,2}. While initially limited, infection with the human immunodeficiency virus (HIV) has immensely increased over the past two decades to become the biggest epidemic of the twentieth century. However, we have witnessed dramatic improvement in prevention of disease progression and long-term survival in the era of Highly Active Anti Retroviral Therapy (HAART).

Apart from biological factors associated with the virus and host which play a role in the transmission and progression of HIV infection, several demographic and social variables have been studied and described in different studies worldwide. Understanding the variety of non-biological factors and behavioral patterns which can affect care and prognosis of HIV patients gives us the opportunity to design non-pharmacological interventions and where possible, to facilitate better care for our HIV positive population.

BACKGROUND:

J.E. Wood clinic of Pennsylvania Hospital in Philadelphia is a teaching outpatient care facility where Internal Medicine residents of Pennsylvania Hospital acquire their ambulatory care experience under supervision of teaching attendings. We have once a week clinic sessions dedicated to the care and follow-up of HIV/AIDS patients under close supervision of

Infectious Disease specialists. Our patients have diverse socio-economic, educational and stages of HIV infection.

OBJECTIVE:

We aimed at finding out basic understanding of HIV infection, degree of awareness regarding the ongoing treatment and reasons behind irregular follow-up visits of our HIV patients who attend J.E. Wood outpatient clinic of Pennsylvania Hospital, Philadelphia for treatment of HIV/AIDS.

PARTICIPANTS AND METHODS:

In order to collect relevant information from our patients, a two paged, anonymous, study questionnaire was given to all patients who attended the clinic during January 2007 to December 2007. The questionnaire looked into three different areas of patient related factors which can influence the disease outcome: demographic and social information (Age, Sex, level of education), patients' knowledge about their HIV disease (source of the infection, duration of HAART, individual recent CD4 count, names of current medications, duration of therapy, medication side-effects) and their behavior (sexual precautions, reasons for medication and follow-up non-compliance). Out of the 75 patients who were given the questionnaire, 7 questionnaires were rejected from the study because of the information received was incomplete, illegible or not related to the questions. 68 completed questionnaires were evaluated and comparative data was tallied using Microsoft excel sheet. We

also reviewed relevant literature in pubmed to understand our findings in the light of previous studies related to demographic, socio-economic and psychological aspects of HIV treatment.

RESULTS:

We analyzed the information which was obtained from 68 patients by means of the questionnaire. Our patients consisted of 35 male, 33 female (Table 1). We had a wide range of patients regarding distribution of their age as shown in Table 2 below. Significant numbers of our patients (36%) were diagnosed with HIV for >10 years ago and more than 60% had the diagnosis at least for 5 years (Table 3).

Table 1: Socio-demographic characteristics of patients (n=68)

Variables	Percentage
Gender	
Male	51.5%
Female	48.5%
Education	
<High school	34%
High school graduate	50%
>High school	16%

Table 2: Age distribution of patients (n=68)

Age group	Percentage
Upto 30 years	19%
31 to 40 years	22%
41 to 50 years	37%
51 to 60 years	18%
61 years and above	4%

Table 3: Duration of diagnosis (in years)

Duration of diagnosis (years)	Percentage of total patients (n=68)
Unknown	3%
< 5	36%
>5 to 10	25%
>10	36%

Half of our patients (n= 68) completed high school education or equivalent. About 34% quit education before attaining high school diploma. Roughly, 10% of our patients went to college for further education and 6% acquired some vocational training after high school.

We tried to establish the level of our patients' participation in their treatment by gathering information through the questionnaire whether they could recall the names of their HIV medicines and the last CD4 count. We found that 74% of our patients, who are on HIV medicines, could recall the names of their medicines but only about 45% of our patients remembered their last CD4 count. Our patients who had completed high school education or equivalent were 2.5 times more likely to remember the names of their HIV medications(95 % confidence interval CI=1.42 to 4.98) and

1.75 times more likely to remember their last CD4 count(95 % confidence interval CI=1.12 to 4.38).

We asked our patients whether they knew that HIV medications need to be taken life long and we also enquired about their knowledge about their safe sexual practices. Only 48% patients of our study group knew that HIV medicines are for life. About 50% of all our patients mentioned that they ensure use of condom during sexual activity and another 40% claimed they practice sexual abstinence. Women patients in our practice were 2.0 times more likely to practice use protective measures during sexual activity (95 % confidence interval CI=1.22 to 4.67).

In our study, only 32 patients (47%) attempted to answer the question where we asked about reason behind not turning up for their follow up appointments as scheduled. Eight patients could not specify a cause, 7 mentioned transport related problems and 2 had insurance issues. Five patients thought their appointments were too often whereas 3 just forget to keep the appointment. Although we did not specifically ask questions on psychological state of our patients, 7 out of the 32 patients mentioned significant psychological problems in their daily life as the reason for non-adherence to medication or follow-up appointments. The responses included responses like "still dealing with the diagnosis mentally", "feel lack of energy in life", "life seems to have too many problems", "been drinking heavy lately" etc.

DISCUSSION:

Interestingly, our small patient cohort roughly reflects the sex ratio of HIV patients globally in 2007 as published by World Health Organization (WHO). In our study the ratio was Male : Female = 51.5% : 48.5% and in the WHO worldwide survey it was 50% : 50%; At the end of 2007, estimated total global HIV positive adults = 33 million (30million – 36 million) ³.

Rates of progression of HIV disease appear to be similar by sex and race category if adjusted for the quality of care ^{4,5}. Multiple studies on chronic disease management showed that patients' level of education and health literacy has direct influence on the treatment compliance. Moreover, limited health literacy is thought to be a strong contributing factor to racial disparities in health care. A study was published in 2007 which examined the mediating effect of limited health literacy on the relationship between race and HIV-medication adherence. For the study, a total of 204 patients infected with HIV were recruited and structured in-person interviews were conducted to obtain information. In an adjusted analysis that excluded literacy, African Americans were 2.40 times more likely to be non-adherent to their HIV-medication regimen than whites (95% confidence interval [CI]=1.14-5.08). When literacy was included in the final model, the effect estimates of race diminished from 25% to insignificant level. Therefore, health care providers need to consider the potential utility of

responding to literacy and communication barriers in health care as part of interventions to reduce racial disparities⁶. In our study, we found that patients who had completed high school education or equivalent were more conscientious regarding their HIV care as demonstrated by the fact that they were more likely to remember their last CD4 count and current HIV medications.

Multiple studies have demonstrated that increasing age at the time of HIV infection is associated with more rapid progression to AIDS in the absence of antiretroviral therapy. In one series, for example, the median time from seroconversion to AIDS without therapy was 15 years for patients aged 16 to 24 years at seroconversion, compared to 6 years for those 35 years or older at seroconversion⁷. In our study, it is notable that 36% of patients were diagnosed with HIV >10 years ago and more than 60% had the diagnosis at least for 5 years. The reason behind the high survival rate is clearly attributable to HAART. Fifty-four patients out of the 68 are currently on HAART and 25 of them are on it for more than last 5 years.

Patients' knowledge of their HIV condition and its treatment has been recognized as a factor that influences adherence to antiretroviral therapy. Patients' knowledge & perception of the disease and participation in the treatment can be improved through targeted educational programs and support groups. One study done in Nigeria found that individuals living with HIV/AIDS who belonged to a support group and had availed themselves of relevant literature were more knowledgeable and positive about their illness than those who did not belong to support groups. The study concluded that HIV/AIDS support group membership is an important component of psycho-social care in HIV/AIDS patients⁸. Another study done in France showed that an educational intervention improves adherence to antiretroviral regimens and health status and suggests that it should be initiated early in therapy⁹. Communicating with patients about adherence issues is important issue, although this may not have an immediate impact on patients' behaviors. Health care professionals should play a pro-active role in this regard. The use of multi-disciplinary adherence teams to ensure that each HIV-positive patient receives the optimal amount of information and support for adherence is a practical approach. Health literacy should be provided in the context of different ethnicity, cultural sensitivity and individual needs associated with HIV, like any other chronic diseases. Epidemiological researches have shown that injection drug abusers and younger patients tend to have worse compliance, as well as subjects with depression and lack of self-perceived social support¹⁰. Therefore, special care should be taken by health care providers to ensure treatment compliance and health literacy in these patients. In our J.E. Wood clinic, we have dedicated psychologist and social worker to for care of our HIV patients.

Psychological impact associated with treatment of any chronic illness is often neglected in clinical practice but indeed carries a huge significance in terms of long-term treatment compliance

and outcome. We identified 7 of our patients who clearly expressed psychological issues related to their HIV infection and it was evident enough that those psychological problems were adversely affecting their treatment compliance. Formal and regular counseling sessions should be arranged for HIV/AIDS patients to promptly identify and manage any psychological or psychiatric disturbance that HIV patients might suffer from. We know that presence of a preexisting psychiatric disorder can increase the risk of HIV acquisition and can also complicate HIV treatment. Moreover, HIV infection can produce a number of psychiatric conditions and exacerbate many others; there is an intense co-morbidity and linkage between HIV and various types of psychiatric conditions. Personality disorders are more prevalent among HIV-infected (19 to 36 percent) and HIV at-risk (15 to 20 percent) individuals^{11,12} than the general population (10 percent). Antisocial personality disorder (ASPD) is the most common personality disorder among HIV infected individuals, and has been shown to significantly increase risk of HIV infection¹³. Successful treatment can be achieved with even the most difficult patients by applying a comprehensive diagnostic formulation that includes psychiatric disease syndromes such as major depression, personality vulnerabilities, behavioral disorders such as addiction, and problems of life experiences such as trauma. With regards to anti-retroviral treatment of HIV positive or AIDS patients, nearly perfect compliance seems to be indispensable to obtain the maximum benefit from HAART. There is a clear relation between high adherence levels and virologic success. We reviewed relevant published literatures to understand the adverse effects and possible interventions of psychological problems in HIV patients. A prospective, randomized, two-arm controlled study was published in 2000 which included 116 patients starting their first-or second-line HAART who were randomized to receive psychoeducative intervention to implement adherence (experimental group [EG]) or a usual medical follow-up (control group [CG]). The study showed that specific and maintained psychoeducative interventions based on excellence on clinical practice are useful to keep high levels of adherence and therefore, high levels of viral suppression¹⁴.

CONCLUSION:

Human Immunodeficiency Virus infection is one of the most serious disease entities in our modern time. We have witnessed dramatic improvement of long-term survival rate of HIV positive patients due to use of HAART in clinical practice. By identifying the demographic, socio-economic, behavioral and psychological variables which significantly influence patients' adherence to treatment and understanding of the disease process, we can further improve treatment compliance and the long term prognosis of our HIV patients. These factors may not have very significant role individually, but collectively can dictate the course of success of HAART treatment in patients. Increasing awareness of these factors by practitioners caring for HIV-infected persons, recognizing and potentially treating

some of them, should indirectly improve the effectiveness of antiretroviral therapy.

COMPETING INTERESTS

None Declared

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