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Expectancy and Readiness-Based Predictors of Treatment Uptake Among the Urban Poor Living With HIV

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Abstract

There is growing evidence that early treatment with antiretroviral therapy (ART) confers benefit to HIV-infected persons and may reduce the risk of transmission. Among an urban poor sample living with HIV who meet guidelines for but are not taking ART, we explored treatment beliefs at baseline and subsequent ART uptake over the following 12 months. Most demographic/background characteristics did not differ between ART initiators and non-initiators, but baseline beliefs of expectancies about treatment ease, efficacy, and readiness sensitively predicted ART initiation. Treatment-related stigma/social concerns did not. Results offer direction for interventions to optimize treatment among those most in need.

Keywords

Treatment uptake; readiness; expectancies; IDU

INTRODUCTION

Antiretroviral therapy (ART) for HIV disease is associated with increased survival and decreased morbidity, and is likely associated with reduced risk of transmission of HIV. However, there are a substantial number of people living with HIV who are not on ART, despite clinical indications for treatment. This includes a disproportionate number of the urban poor, who face challenging barriers to successful HIV management and thus do not optimally benefit from available treatments [1]. The list of obstacles to treatment is long and includes access to care, substance use, mental illness, housing and financial instability, concerns about the efficacy of treatment and one's ability to adhere to treatment, and fear of ART side effects. Furthermore, stigma and mistrust in healthcare can interfere with the initiation, maintenance, and adherence to appropriate treatment. As mounting evidence supports the primary and secondary prevention benefits of early initiation of ART [2, 3], there is an increasingly important need to understand facilitators and barriers to patients' acceptance of treatment, and optimal adherence and persistence with efficacious treatments. One such factor is treatment expectancy-related beliefs.

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Treatment expectancies can be broadly defined as treatment-related outcome expectations (i.e., beliefs that treatment will have positive or negative effects on health) and patient-related self-efficacy expectations (such as the belief that one can carry out the necessary actions for disease management or coping with treatment) [4]. Outcome expectancies have been studied in a number of disease/treatment contexts, including coronary artery bypass [5], hip fracture [6], substance abuse [7], chronic pain [8]; radiation therapy [9], and depression [10], among others. While some variability in research outcomes has been attributed to psychological adjustment, abstinence, ambulation, and functional/vocational status, the role of expectancies in predicting health behaviors and clinical outcome has been consistently supported. The purpose of the current study was to investigate the potential role of patients' treatment expectancies and treatment readiness on subsequent ART treatment uptake among a population meeting guidelines for therapy.

METHODS

As part of an ongoing clinical trial of a behavioral intervention, HIV-positive adults not on ART were recruited via flyers posted in clinics, neighborhood bulletin boards, and agencies offering services to low income and homeless persons. Screening was conducted in person at a drop-in community research site in the San Francisco Tenderloin neighborhood. The site is not connected to a local HIV clinic, and there are no medical, case management, or pharmacy services located on site. Eligibility included age 18 or older, English-speaking, HIV-positive serostatus (verified by rapid antibody test), reporting not taking ART for at least the prior six months, and meeting current guidelines for ART treatment (CD4<500; verified by laboratory assay). Following eligibility screening, an interview was conducted using a combination of audio computer-assisted self-interviewing (ACASI) and computer-assisted personal interviewing (CAPI). Enrolled participants were interviewed every three months for 12 months, and had additional monthly check-in visits to update contact information, to document whether they had initiated ART, and to record the details of new or altered ART regimens. Participants were paid US\$15 for study screening, US\$30–40 for quarterly assessments, and US\$10 for monthly check in visits. The current analyses were restricted to data from participants randomized to the waitlist control arm who received no active intervention during the 12 month follow-up period. The baseline interview included newly constructed measures of expectancies of treatment ease (4 items; e.g., “Taking HIV medications on schedule would be easy for me.” $\alpha = .81$), expectancies of treatment efficacy (4 items; e.g. “HIV medications would help me live longer.” $\alpha = .75$), treatment readiness (4 items; e.g. “I am ready to take HIV medications” $\alpha = .75$), and stigma/social concerns of treatment (5 items; e.g. “I would not want people to know that I am taking HIV medications” $\alpha = .85$). These measures were used to predict whether participants initiated ART post-baseline.

RESULTS

The sample of 88 was predominantly male (85%), 47% African-American, 36% white, and 10% identified as Hispanic. The mean age was 43.5 years, 61% reported high school or less education, and 84% reported an annual income of less than US \$20,000 per year with 47% reporting less than \$10,000 per year. Almost 75% reported ever being homeless or living in a shelter, and 80% reported a history of incarceration. Over 53% reported a lifetime history of injection drug use (IDU) and just fewer than 30% reporting IDU in the three months prior to baseline. Fifty-nine percent reported prior ART use.

Over the course of 12 month follow-up, we documented that 60.2% (n=53) initiated ART. The mean baseline CD4 count did not differ between those initiating therapy (237) and those who did not initiate therapy (248). There were no statistically significant differences

between initiators and non-initiators on prior ART use, age, race, gender, IDU or other demographic characteristics, but non-initiators were more likely to report a history of incarceration. Those who subsequently initiated therapy had significantly higher baseline scores on expectancies of treatment ease, treatment efficacy and for readiness to initiate therapy. There were no differences in baseline scores of treatment stigma and social concerns. See table 1.

DISCUSSION

Among this sample of the urban poor living with HIV, expectancies about ease of treatment, efficacy of treatment, and reports of readiness for treatment are sensitive predictors of treatment uptake. The current construction of treatment related stigma and social concerns was not related to subsequent ART initiation. These associations do not appear to be driven solely by CD4 levels, as there were no differences in baseline counts between those who subsequently started ART and those who did not. Findings parallel and extend prior work in which beliefs of treatment need versus treatment concerns successfully predicted acceptance of ART in a clinic-based sample [11]. These results also suggest that persons with a history of incarceration may have particularly challenging barriers to accessing treatment, although it is unclear whether incarceration history is a proxy for other factors (e.g. depression, history of trauma, substance abuse, difficulties securing employment and/or housing) that might be driving this relationship. Further, the sample size may limit the power to detect other meaningful patterns. For example, there is a trend toward lower ART initiation among those reporting IDU which mirrors that found in local public health surveillance [12]. However, the relatively small sample size may have been insufficient to detect a statistically-meaningful difference.

Findings should be generalized with caution. Although the sample had high rates of poverty, incarceration, and substance use histories, participants spoke English and resided in an urban area with a strong public health infrastructure providing low or no-cost HIV treatment. Next steps in this line of research are to determine whether expectancy-based beliefs predict subsequent ART adherence and persistence (staying on treatment over time), to see whether these beliefs are modifiable by interventions, and to test whether such interventions can alter the trajectory toward more timely initiation of stable, life-saving therapy for those who need it. This is particularly important given the personal benefit and potential reduced risk of transmission that appear to accompany early treatment of HIV [2, 3].

REFERENCES

- [1]. Riley ED, Bangsberg DR, Guzman D, Perry S, Moss AR. Antiretroviral therapy, hepatitis C virus, and AIDS mortality among San Francisco's homeless and marginally housed. *Journal of Acquired Immune Deficiency Syndromes*. Feb 1; 2005 38(2):191–5.
- [2]. DHHS. Guidelines for the use of antiretroviral agents in HIV-infected adults and adolescents: Department of Health and Human Services and the Henry J. Kaiser Family Foundation. Januray 10. 2011 2011
- [3]. McNeil, DG. Early HIV Therapy Sharply Curbs Transmission. *New York Times*: May 12. 2011 2011
- [4]. Crow R, Gage H, Hampson S, Hart J, Kimber A, Thomas H. The role of expectancies in the placebo effect and their use in the delivery of health care: A systematic review. *Health Technol Assess*. 1999; 3(3)
- [5]. Allen JK, Becker DM, Swank RT. Factors related to functional status after coronary artery bypass surgery. *Heart Lung*. Jul; 1990 19(4):337–43. [PubMed: 2370166]
- [6]. Borkan JM, Quirk M. Expectations and outcomes after hip fracture among the elderly. *Int J Aging Hum Dev*. 1992; 34(4):339–50. [PubMed: 1607220]

- [7]. Carver CS, Dunham RG. Abstinence expectancy and abstinence among men undergoing inpatient treatment for alcoholism. *J Subst Abuse*. 1991; 3(1):39–57. [PubMed: 1821274]
- [8]. de Craen AJ, Lampe-Schoenmaeckers AJ, Kraal JW, Tijssen JG, Kleijnen J. Impact of experimentally-induced expectancy on the analgesic efficacy of tramadol in chronic pain patients: a 2×2 factorial, randomized, placebo-controlled, double-blind trial. *J Pain Symptom Manage*. Mar; 2001 21(3):210–7. [PubMed: 11239740]
- [9]. Koller M, Lorenz W, Wagner K, Keil A, Trott D, Engenhart-Cabillic R, et al. Expectations and quality of life of cancer patients undergoing radiotherapy. *J R Soc Med*. Dec; 2000 93(12):621–8. [PubMed: 11193059]
- [10]. Meyer B, Pilkonis PA, Krupnick JL, Egan MK, Simmens SJ, Sotsky SM. Treatment expectancies, patient alliance, and outcome: Further analyses from the NIMH Treatment of Depression Collaborative Research Program. *Journal of Consulting & Clinical Psychology*. 2002; 70(4):1051–5. [PubMed: 12182269]
- [11]. Horne R, Cooper V, Gellaitry G, Date HL, Fisher M. Patients' perceptions of highly active antiretroviral therapy in relation to treatment uptake and adherence: the utility of the necessity-concerns framework. *Journal of Acquired Immune Deficiency Syndromes*. Jul 1; 2007 45(3): 334–41. [PubMed: 17514019]
- [12]. San Francisco Department of Public Health HIV/AIDS Epidemiology Annual Report. San Francisco Department of Public Health; San Francisco: 2009.

Table 1

Differences between initiators and non-initiators

	Total (N=88)	Initiated ART (n=53)	Not Initiated ART (n=35)	p
Age (Years) <i>m (SD)</i>	43.5 (8.8)	43.6 (8.0)	43.4 (10.1)	.84
Male gender -- n (%)	75 (85.2)	47 (88.7)	28 (80.0)	.36
Latino Ethnicity	9 (10.2)	6 (11.3)	3 (8.6)	.26
Race	--			.82
Black/African Am. -- n (%)	41 (46.6)	26 (49.1)	15 (42.9)	
White -- n (%)	32 (36.4)	18 (34.0)	14 (40.0)	
Other -- n (%)	15 (17.0)	9 (17.0)	6 (17.1)	
Sexual Orientation	--			.65
Heterosexual -- n (%)	23 (26.1)	12 (22.6)	11 (31.4)	
Homosexual -- n (%)	43 (48.9)	27 (50.9)	16 (45.7)	
Bisexual/Other-- n (%)	22 (25.0)	14 (26.4)	8 (22.9)	
Education	--			.92
< High School -- n (%)	17 (19.3)	9 (17.0)	8 (22.9)	
High School -- n (%)	37 (42.1)	23 (43.4)	14 (40.0)	
Some College -- n (%)	23 (26.1)	14 (26.4)	9 (25.7)	
College Grad. -- n (%)	11 (12.5)	7 (13.2)	4 (11.4)	
Income				.59
Less than US\$10K/year -- n (%)	41 (46.6)	23 (44.2)	18 (51.4)	
US\$10K-\$20K/year -- n (%)	33 (37.5)	22 (42.3)	11 (31.4)	
More than US\$20K/year -- n (%)	13 (14.8)	7 (13.5)	6 (17.1)	
History of homelessness or living in shelter				
Ever—n (%)	65 (74.7)	38 (73.1)	27 (77.1)	.67
Past 12 months —n (%)	21 (27.6)	11 (23.4)	10 (34.5)	.29
Ever incarcerated—n (%)	70 (79.6)	38 (71.7)	32 (91.4)	.02
Injection drug use				
Ever—n (%)	47 (53.4)	26 (49.1)	21 (60.0)	.31
Past 3 months—n (%)	26 (29.6)	14 (26.4)	12 (34.3)	.42
Prior ART use—n (%)	52 (59.1)	33 (62.3)	19 (54.3)	.51
Mos. since HIV+ <i>m (SD)</i>	125.4 (93.5)	121.9 (91.1)	130.7 (98.1)	.85
VL Detectable-- n (%)	81 (94.2%)	49 (92.5)	32 (97.0)	.38
CD4—Mean <i>m (SD)</i>	245 (126)	237 (123)	248 (134)	.81
Treatment Ease <i>m (SD)</i>	13.36 (4.67)	14.75 (4.23)	11.26 (4.58)	.0001
Treatment Efficacy <i>m (SD)</i>	16.35 (2.93)	16.92 (2.62)	15.49 (3.20)	.03
Treatment Readiness <i>m (SD)</i>	13.08 (4.85)	14.57 (4.24)	10.83 (4.89)	.0008
Treatment Stigma/Social Concerns <i>m (SD)</i>	13.55 (6.32)	14.06 (6.81)	12.80 (5.51)	.29

Test statistic is chi-square for categorical variables; Wilcoxon rank-sum test for continuous variables.