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Psychosocial Factors Associated with Successful Transition into HIV Case Management for those without Primary Care in an Urban Area

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Abstract The purpose of this study was to identify the psychosocial factors which influence transitioning HIV positive clients without primary medical care to a case management agency within 6 weeks by a city brokerage agency. People living with HIV who reported being in a social support group and those who requested assistance with meeting their basic needs were significantly more likely to attend their first case management appointment within 6 weeks (adjusted OR 1.91 95% CI 1.22–2.97 and OR 1.24 95% CI 1.01–1.54, respectively). Individuals requesting medical care or substance abuse treatment were less likely to accomplish transitioning (adjusted OR 0.75 95% CI 0.59–0.95 and adjusted OR 0.70 95% CI 0.53–0.91, respectively). The implications of this study for improving the effectiveness of brokering case management for those with HIV are discussed.

Keywords AIDS · HIV · Case management · Substance abuse · Social support · Medical assistance

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Introduction

HIV/AIDS is a major public health problem in the United States that disproportionately affects marginalized populations, including drug users, gay men, and members of racial/ethnic minorities [1]. In addition to pre-existing conditions, such as poverty, those with HIV/AIDS face multiple barriers to accessing high-quality health and medical care, including AIDS-related stigma [2], substance abuse, homelessness, and poor emotional and physical well being [3, 4]. Case management can decrease the psychosocial and physical barriers preventing those with HIV/AIDS from obtaining needed services [5, 6]. However, the barriers for clients transitioning from not receiving case management to contacting a case management agency are only just beginning to be understood. In this study, we explore the psychosocial factors affecting the linking of clients to a case management agency within 6 weeks by the Philadelphia Department of Public Health, AIDS Activities Coordination Office (AACO). Our study population included all individuals with HIV/AIDS who contacted AACO for case management and who were not receiving medical care at the time of contact. AACO considers a client to have successfully transitioned from being without case management to being in contact with a case management agency if the first face-to-face session between client and case manager occurs within 6 weeks of their intake evaluation.

HIV case management services are comprised of the same core functions as is case management for other vulnerable populations. These functions include "client identification outreach and engagement; medical and psychosocial assessment; links to appropriate referrals; development, implementation, and monitoring of service and care plans" [5]. Case management for HIV, focuses particularly on the many medical and social services directly related to HIV/AIDS (i.e. assistance with medication adherence, substance abuse treatment, and requiring assistance with securing medical care).

Previous research on the benefits of HIV specific case management has found that this specialized case management improves access to social services, medical care services, and decrease risk behaviors for HIV. Katz et al. [7] conducted a large longitudinal study of HIV-infected adults and found that contact with a case manager was associated with decreased unmet need for income assistance, health insurance, home health care, and emotional counseling. Other studies have shown that individuals who receive case management services are more likely to have ongoing medical care with a primary care doctor [8–10] and are more likely to see a HIV clinician [11]. Those receiving case management have higher CD4 cell counts [12, 13] and lower HIV viral loads [12]. The beneficial effects of case management may derive from improved adherence to medication regimens as a result of case management [13].

Case management has also been found to be associated with decreases in HIV transmission risk behavior. Prevention Case Management, a hybrid of HIV prevention interventions and case management [14], has been found to decrease sexual risk behavior [15, 16] resulting in more positive attitudes towards condom use and higher self-efficacy for condom use [17] and promote safer injection practices [18]. The barriers to HIV case management services have only recently begun to be understood due to the complexity and range of approaches of case management. Evens and colleagues state HIV/AIDS case management suffers from "the lack of a standard and comprehensive system of care making it difficult to measure outcomes and capture barriers to case management" [19]. Factors which have been suggested to be barriers to HIV prevention counseling are being members of sexual or racial/ethnic minority groups; using illegal substances or abusing alcohol; HIV/AIDS related stigma; difficultly finding transportation to services; and discrepancies between program and personal goals [20, 21]. Substance abuse is very common among individuals living with HIVAIDS and it is one of the most difficult barriers to case management to overcome. Adults infected with HIV/AIDS are twice as likely to have a history of substance abuse than HIV-negative individuals and one-third of all AIDS cases in the United States are from active or former injection drug users [22]. Substance abuse reduces the effectiveness of case management because it interferes with the use of the services provided by the case manager [23].

The factors which impede/support a client transitioning into case management through a brokerage agency have not been previously studied. In this study we investigated the psychosocial barriers to transitioning within 6 weeks time period for those whose case management services were brokered by the Philadelphia AIDS Activity Coordinating Office (AACO). AACO uses a brokerage case management system in which they refer clients to an appropriate agency for case management after an initial intake. HIV positive individuals who had not seen a primary care clinician within the past 3 months were included in the study. Primary care clinicians could also refer clients to appropriate agencies for obtaining social services. Individuals in contact with a clinician may not keep their case management appointment because they are already in contact with the appropriate agency for obtaining services and may no longer require case management so this would not represent a failure of placement. We included only the clients' first intake with AACO as some clients have more than one intake because the barriers to transition may differ for repeat intakes.

Methods

Participants

The majority of individuals requesting case management contact AACO because it is the major source of publicly funded HIV case management in Philadelphia. Those requesting case management comprise about 10% of all those with HIV in Philadelphia. When clients call AACO for case management services an intake is conducted. The intakes are completed in person or by phone with the majority of intakes being administered over the phone. College educated staff trained by AACO administer the intakes which take approximately 30 min on average. Intakes include questions about demographic and socio-economic factors, resource/service needs, and a case management agency preference if they have one. After completing the intake, the client is referred to an agency which can provide him/her with the case management services he/she has requested. AACO's policy is to require that the case management agency schedule the first in person appointment with the client within 6 weeks of their intake evaluation. AACO subsequently contacts the case management agency to determine the date of the first visit.

Our eligible study population was identified from 7848 intakes administered by AACO between 2001 and 2005. Of

the 7848 intakes, 3443 intakes were for those who reported that they did not have a primary care clinician. Of the 3443 intakes, 431 intakes (10%) were missing 50% or more of the information on the intake form and were excluded. 696 intakes were excluded because there was an earlier intake done for the same person (i.e. it was not a 'first' intake). Our study population therefore included 2316 clients and the data from their initial (or only) intake.

Measures

The primary outcome variable for the study was beginning case management within 6 weeks of AACO's intake. AACO has found that approximately 30% of clients who do not initiate case management within 6 weeks of their intake do not initiate case management at all. AACO has made it their policy to require that clients are given an appointment within 6 weeks to decrease clients dropping out during transitioning in this time frame because many clients will not receive case management if their appointment is delayed.

As there is little research on the psychosocial barriers specific to clients contacting a case management agency for HIV/AIDS services, we used questions from the intake regarding psychosocial factors which have been found or suggested to affect the successfulness of case management (retention and receipt of needed services). These factors include age, race-ethnicity, income, source of HIV infection and types of requests for social services (social service needs). Age was analyzed as a continuous variable in the multivariate analyses, but was categorized in decades for descriptive analyses. Race/ethnicity was categorized as: Hispanic, white, black, or other (including Asian, Hawaiian, Native American and 'other'). The client's belief as to how they contracted HIV was categorized as: men having sex with men (MSM), injection drug use, heterosexual sex, other (e.g. blood transfusion) or unknown. Types of service needs were categorized as need for food, housing, medical care, mental health services, substance abuse treatment, and/or risk education. Sources of income were categorized as: employment income, social security disability (SSD), public assistance, other (e.g. VA), or no income. Source of social support was characterized as being from a partner, family, group, 12-step program or no support. Our primary outcome was a client transitioning into case management at the referred to case management agency within 6 weeks of the intake by AACO.

Data Analysis

Cross-tabulations were used for descriptive purposes and to assess the univariate associations among the psychosocial factors, requests for social/medical services, and clients transitioning to the case management agency within 6 weeks. Multiple logistic regression was used to assess the affects of the psychosocial factors and requests for assistance for clients who have been in contact with a case management agency within 6 weeks of their initial intake. Two additional logistic regression models were conducted: one with request for assistance with substance abuse treatment as the dependent variable and the other with request for assistance with medical care as the dependent variable. The psychosocial variables included in these additional models were the same as those in the main model (exclusive of the dependent variable). SPSS 13 for Windows was used to perform the statistical analyses.

Results

Description of the Study Population

The study sample was approximately two-thirds male and one-third female. The majority of clients were Black (67.9%). White and Hispanic were the next most represented race/ethnicity categories (15.8 and 11.6% respectively). A large percentage of clients were between the ages of 30–49 (73.0%). The most common sources of income were social security disability (SSD) and public assistance (39.5 and 19.3% respectively). The most often reported needs for assistance in decreasing order were: housing (58.5%), food assistance (27.3%), mental health care (16.9%), basic needs (22.9%), and finding substance abuse treatment (12.4%). The modes of HIV transmission most often reported included heterosexual sex (44.2%), injection drug use (20%), and men having sex with men (19.8%). A fifth of the clients did not know how they acquired HIV. The most commonly reported sources of social support were family support and partner support (48.1 and 11.5% respectively). A small percentages of clients reported the use of a support group (5.1%) or participating in a 12-step program (3.1%). No support was also reported by almost one-fifth of the clients (18.0%) (Table 1).

Multivariate Analyses

Participation in a support group emerged as the strongest predictor of a client making the transition to the case management agency within 6 weeks of their initial intake evaluation. Clients who reported participating in a support group were almost twice as likely to transition to the case management agency as those who were not in support groups (adjusted OR 1.91 95% CI 1.22–2.97). Clients who reported needing help with basic needs were also more likely to transition to the case management agency than those not reporting this need (adjusted OR 1.24 95% CI

Table 1 Comparison of sample characteristics for individuals requesting HIV/AIDS case management ($N = 2,316$)

Variables	Sample population (% of population)	% Successfully brokered into case management		% Requesting substance abuse assistance		% Requesting medical assistance	
		Percent	Statistic *P*-value, (X^2, df)	Percent	Statistic *P*-value, (X^2, df)	Percent	Statistic *P*-value, (X^2, df)
Race/Ethnicity			0.14 (5.44, 3)		0.04 (8.25, 3)		<0.01 (29.21, 3)
Non-hispanic white	365 (15.8)	65.8		14.2		22.2	
Non-hispanic black	1,572 (67.9)	67.1		12.6		15	
Hispanic	268 (11.6)	64.2		9		17.2	
Other	63 (2.7)	60.3		12.7		28.6	
Sex			0.31 (1.05, 1)		0.58 (0.3, 1)		<0.01 (6.89, 1)
Male	1,458 (63.0)	67		12.3		18.4	
Female	837 (36.1)	64.3		12.7		14.2	
Age			0.17 (7.66, 5)		0.52 (4.23, 5)		0.04 (11.45, 5)
Under 20	12 (0.5)	66.6		10		16.3	
20–29	258 (11.1)	61.2		10.5		20.9	
30–39	794 (34.3)	66.8		12.3		19.5	
40–49	897 (38.7)	66.8		13.6		14.9	
50–59	301 (13.0)	68.1		12		12	
60 and older	48 (2.1)	66.7		6.3		12.5	
Method of HIV transmission			0.27 (6.32, 5)		<0.01 (57.78, 5)		0.06 (10.89, 5)
MSM	458 (19.8)	66.8		8.1		19.3	
Drug use	463 (20.0)	66.1		21.6		17.3	
Heterosexual sex	1,024 (44.2)	66.9		13.8		16.1	
MSM and Drug use	13 (0.6)	61.5		15.4		30.8	
Contact with blood	38 (1.6)	76.3		2.6		10.5	
Other	44 (1.9)	59.1		9.1		9.1	
Unknown	465 (20.1)	67.7		8.4		17.6	
Need assistance							
Basic	530 (22.9)	69.1	0.12 (2.45, 1)	17	<0.01 (13.04, 1)	24.3	<0.01 (27.23, 1)
Risk education	224 (9.7)	66.1	0.32 (0.97, 1)	23.7	<0.01 (28.70, 1)	27.7	<0.01 (20.60, 1)
Food	632 (27.3)	64.7	0.84 (0.04, 1)	13.1	0.53 (0.39, 1)	15.8	0.40 (0.69, 1)
Housing	1,356 (58.5)	60.9	0.07 (3.23, 1)	16.3	<0.01 (44.82, 1)	16	0.18 (1.80,1)
Medical care	391 (16.9)	64.4	0.02 (6.06, 1)	16.6	<0.01 (7.58, 1)	N/A	N/A
Mental health	634 (27.4)	65.9	0.24 (1.38, 1)	23.7	<0.01 (101.00,1)	20.3	<0.01 (7.47, 1)
Substance treatment	288 (12.4)	58.7	<0.01 (8.39, 1)	N/A	N/A	22.6	<0.01 (7.58,1)
Source of income			0.16 (6.52, 4)		<0.01 (19.9, 4)		<0.01 (120.13,4)
Employed	258 (11.1)	68.60		4.7		17.1	
Social security disability	914 (39.5)	66.50		12		11.4	
Public assistance	446 (19.3)	64.80		14.3		7.4	
Veteran's benefits	26 (1.1)	73.10		11.5		7.7	
No income	458 (19.8)	65.90		14.4		35.4	
Social support							
Partner	267 (11.5)	68.50	0.39 (0.72, 1)	7.1	<0.01 (7.84, 1)	18.4	0.49 (0.46, 1)
Family	1,115 (48.1)	67.80	0.11 (2.36, 1)	17.6	0.03 (4.40, 1)	16.1	0.36 (0.83, 1)
Support group	119 (5.1)	77.30	<0.01 (6.89, 1)	10.9	0.08 (3.13, 1)	10.1	0.04 (4.13, 1)
12-Step	72 (3.1)	69.40	0.56 (0.34, 1)	19.4	0.07 (3.35, 1)	15.3	0.71 (0.14, 1)
None	417 (18.0)	62.80	0.10 (2.64, 1)	14.1	0.24 (1.37, 1)	19.9	0.06 (3.31, 1)

1.00–1.54). Clients who reported needing assistance with medical care were less likely to transition into case management (adjusted OR 0.75 95% CI 0.59–0.95). Reporting the need for substance abuse treatment was also negatively associated with successfully transitioning to the referred to case management agency (adjusted OR 0.70 95% CI 0.53–0.91) (Table 2).

Two supplementary logistic regression models were used to further investigate the association between clients successfully transitioning into case management and a clients request for substance abuse treatment and medical care. A clients request for substance abuse treatment was found to be significantly associated with an increase in requesting mental health assistance (adjusted OR 3.43 95% CI 2.61–4.50), requesting risk education (adjusted OR 2.20 95% CI 1.51–3.21), requesting housing assistance (adjusted OR 2.47 95% CI 1.81–3.36) and requesting assistance with basic needs (adjusted OR 1.42 95% CI 1.05–1.91). Clients were more likely to request substance abuse treatment if they believed that they contracted HIV from either drug use or heterosexual sex rather than from men having sex with men (MSM) (adjusted ORs of 2.74 95% CI 1.70–4.41 and 1.65 95% CI 1.05–2.57, respectively). Hispanic ethnicity was negative associated with requesting substance abuse treatment (adjusted OR 0.48 95% CI 0.28–0.84). This multivariate analysis indicates that those reporting needing substance abuse treatment have diverse needs and are a very vulnerable group (Table 3).

Table 2 Multivariate predictors of entering case management after 6 weeks

Variables	Adjusted OR	95% CI	*P*-value
Race/Ethnicity			
Non-hispanic white	–	–	
Non-hispanic black	1.12	0.88, 1.43	0.85
Hispanic	0.91	0.65, 1.27	0.77
Other	1.05	0.65, 1.69	0.59
Gender			
Male	–	–	
Female	1.10	0.90, 1.34	0.93
Age	1.01	0.99, 1.02	0.17
Income			
Employed	–	–	
Social security disability	0.96	0.70, 1.32	0.89
Public assistance	1.02	0.74, 1.40	0.97
No income	1.02	0.74, 1.41	0.91
Other	0.96	0.60, 1.53	0.80
Method of HIV transmission			
MSM	–	–	
Drug use	0.98	0.72, 1.36	0.07
Heterosexual sex	1.05	0.80, 1.80	0.06
Unknown	1.11	0.83, 1.49	0.10
Other	1.38	0.98, 1.94	0.22
Support			
Partner	1.12	0.84, 1.49	0.49
Family	1.15	0.96, 1.37	0.12
Group	1.91	1.22, 2.97	0.003
Client's request for assistance			
Risk education	1.29	0.94, 1.76	0.14
Basic needs	1.24	1.00, 1.54	0.03
Food	0.96	0.79, 1.17	0.58
Housing	0.86	0.71, 1.04	0.82
Medical services	0.75	0.59, 0.95	0.02
Substance abuse treatment	0.70	0.53, 0.91	0.01
Mental health services	0.96	0.79, 1.18	0.69

Table 3 Multivariate predictors of needing substance abuse assistance among individuals seeking case management

Variables	Adjusted OR	95% CI	*P*-value
Race/Ethnicity			
Non-hispanic white	–	–	
Non-hispanic black	0.71	0.50, 1.01	0.09
Hispanic	0.48	0.28, 0.84	0.01
Other	0.99	0.50, 1.97	0.31
Gender			
Male	–	–	
Female	1.11	0.83, 1.50	0.48
Age	1.01	0.99, 1.02	0.42
Income			
Employed	–	–	
Social security disability	2.05	1.08, 3.90	0.03
Public assistance	1.87	0.95, 3.66	0.78
No Income	2.08	1.09, 3.97	0.03
Other	1.89	0.80, 4.50	0.19
Method of HIV transmission			
MSM	–	–	
Drug use	2.74	1.70, 4.41	0.01
Heterosexual sex	1.65	1.05, 2.57	0.04
Unknown	0.96	0.57, 1.59	0.20
Other	2.02	1.21, 3.36	0.01
Support			
Partner	0.64	0.39, 1.07	0.09
Family	0.77	0.59, 1.01	0.06
Group	1.46	0.86, 2.47	0.16
Client's request for assistance			
Risk education	2.20	1.51, 3.21	0.001
Basic	1.42	1.05, 1.91	0.02
Food	1.13	0.84, 1.51	0.42
Housing	2.47	1.81, 3.36	0.003
Medical	1.33	0.95, 1.88	0.10
Mental	3.43	2.61, 4.50	0.001

A client's request for assistance accessing medical care was negatively associated with receiving income from public assistance compared to clients who were employed (adjusted OR 0.37 95% CI 0.22–0.61). Clients with no income were more likely to requested assistance accessing medical care than the employed (adjusted OR 1.91 95% CI 1.30–2.80). The likelihood of requesting medical care was greater for those requesting assistance meeting basic needs (adjusted OR 1.68 95% CI 1.30–2.17) and needing risk education (adjusted OR 1.54 95% CI 1.10–2.17). Women were more likely than men to request assistance accessing medical care (adjusted OR 1.32 95% CI 1.01–1.73). Non-Hispanic African Americans and those who were older were less likely to request medical assistance (adjusted OR 0.67 95% CI 0.50–0.91 and adjusted OR 0.98 95% CI 0.96–0.99, respectively) (Table 4).

Table 4 Multivariate predictors of requesting assistance accessing medical care among individuals seeking case management

Variables	Adjusted OR	95% CI	*P*-value
Race/Ethnicity			
Non-hispanic white	–	–	
Non-hispanic black	0.67	0.50, 0.91	0.29
Hispanic	0.71	0.46, 1.10	0.02
Other	1.34	0.78, 2.03	0.36
Gender			
Male	–	–	
Female	1.32	1.01, 1.73	0.04
Age	0.98	0.96, 0.99	0.001
Income			
Employed	–	–	
Social security disability	0.70	0.47, 1.06	0.58
Public assistance	0.37	0.22, 0.61	0.05
No Income	1.91	1.30, 2.80	0.001
Other	1.17	0.66, 2.08	0.08
Method of HIV transmission			
MSM	–	–	
Drug use	0.95	0.62, 1.45	0.59
Heterosexual sex	1.07	0.75, 1.51	0.77
Unknown	1.03	0.71, 1.49	0.38
Other	0.89	0.57, 1.37	0.51
Support			
Partner	0.95	0.67, 1.37	0.79
Family	0.87	0.69, 1.10	0.23
Group	0.60	0.32, 1.13	0.11
Client's request for assistance			
Risk education	1.54	1.10, 2.17	0.02
Basic	1.68	1.30, 2.17	0.001
Food	0.87	0.67, 1.14	0.32
Housing	0.93	0.73, 1.19	0.60
Substance abuse	1.35	0.96, 1.89	0.08
Mental	1.22	0.94, 1.58	0.13

Discussion

The purpose of this study was to identify psychosocial factors associated with successful transitioning to a case management agency brokered by a central referring agency. We compared self-reported psychosocial needs of individuals who began case management at their referred agency within 6 weeks of their initial intake to those who did not transition to the referred agency within 6 weeks.

Unmet Basic Needs as Motivation for Case Management

We found that clients who requested basic assistance were more likely to transition into case management after adjusting for other needs and psychosocial factors. To our knowledge this is the first study of the relationship between requesting basic needs and transitioning into case management. Katz and colleagues [7] studied the inverse relationship and found that case management aided clients in meeting their basic needs, such as the payment of utilities and access to transportation. Taken together, brokered case management may have potential to address basic needs of those with HIV.

Increasing Perceived Need for Medical Care and Case Management Utilization

Of concern is the large number of those contacting AACO for case management who did not have a primary care clinician (43.9%) as ongoing medical care is necessary for medically managing HIV/AIDS. Few of those without a primary care clinician felt the need for one (only 17%). The importance of having a primary care clinician should be emphasized to the client during both the intake and case management sessions. During the intake, interviewers could ask clients if they would like assistance with finding a primary care clinician if they do not already have one.

In our supplementary analysis with requesting medical assistance as the dependent variable we found that clients who requested medical assistance had other needs as well. They were much more likely to have no source of income and were much more likely to need assistance with basic needs. Thus, greater efforts should be made to enroll these clients in case management so as they obtain the medical and social services which are so needed.

Previous researchers have found that the lack of case management is a barrier to obtaining medical care [24]. This study has found that the converse is also true, that the

lack of medical care is a barrier to case management. Clients reporting needing case management to help obtaining medical care were less likely to successfully transition to the case management agency. As medical care is essential for good health for those living with HIV, we expected that not having medical care would have been a strong motivation for transitioning into case management. A possible explanation for this opposite finding is that those requesting medical care already were experiencing incapacitating health problems. Their incapacitation would be a physical barrier to their getting to their appointments. Major health problems also can be a psychological barrier to keeping HIV care appointments [25]. Another contributing factor to unsuccessful transitioning could be lack of transportation [26, 27]. Alternatively, lack of medical care might be a marker for those who do not easily follow through with obtaining services be these medical or case management services.

Substance Abuse and the Need for an Effective Case Management

We found that clients who reported the need for substance abuse treatment also were less likely to keep their appointment with the case manager These clients had a plethora of other needs as well. They requested assistance with basic needs, housing, risk education and mental health care more often than those who did not request substance abuse treatment. They more often attributed their contracting of HIV to drug use and heterosexual sex. Those requesting substance abuse treatment also reported having no source of income and receiving SSD more often. Lack of social support was also more prevalent in this group.

Our findings are consistent with those of other researchers. The inadequate support structures which prevent people from accessing needed services have been found to be associated with substance abuse and mental illness [28]. Substance abuse is also highly correlated with mental disorders such as depression [29, 30]. It is estimated that over 50% of drug users who seek treatment have a coexisting psychiatric disorder, which could impede efforts in accessing services such as case management [31].

Case management has been found to improve HIV outcomes and enhance the effectiveness of treatments for substance abuse. Case management was found to promote health care utilization among HIV positive injection drug users [3]. Case management has also been found to improve retention and effectiveness of treatments for substance abuse [32, 33, 23]. Therefore, overcoming the barriers to case management for substance abusers is a priority.

There have been a number of theories proposed for why substance abuse complicates HIV/AIDS management [34, 35]. One is that illegal drugs inhibit the motivation to change, particularly in individuals with multiple problems [36]. The more severe the substance abuse problems, the more dysfunctional are the thought processes and more impaired the decision-making skills. These cognitive impairments interfere with the individual's ability to recognize the need for medical treatment [37].

Attachment disorders [38] can lead to addiction and co-occur with addictions [39–43]. Those with attachment disorders are distrustful in general including of those who attempt to help them. It has been found that those with attachment disorders are unable to effectively utilize help offered by health and mental healthcare/social service providers [44, 45]. Hence, attachment disorders among those with addictions in our study may have contributed to their not keeping their appointments for case management.

Social Support and Transitioning into Case Management

Our study found that clients who participated in support groups were almost twice as likely to transition into case management. As there is social stigma associated with participating in support groups and other therapies for psychological problems [46] there may be under-reporting of this activity value and the effectiveness of support groups in facilitating transition may be greater than it appears based on our data. The value of social support for initiation of case management is consistent with findings of other researchers of the importance of social support for all aspects of the health and psychological wellbeing of those with HIV. Social support can help alleviate the psychological distress experienced when first learning of their HIV status, which has been found to impede disease management [47]. Even after someone diagnosed with HIV is informed of the improvements in health which can be expected from antiretroviral therapy, significant emotional distress persists [48].

Unfortunately, support systems often become weakened from HIV. There may be decreased emotional and practical support from family members and those closest to them [49]. Non-family social support networks can also become strained [50]. Many individual living with HIV report receiving more open support from friends than from family members [51]. Those with HIV/AIDS also find that others forgo long-term relationships with them for fear of having to assume care-giving responsibilities [52]. Support groups may provide an alternative/supplemental social support system for those who lack adequate social support. There have been a number of studies of group based interventions for psychological issues related to living with HIV with promising results regarding their effectiveness [53–56]. Specialized approaches for engaging patients with attachment disorders in support groups and other supportive

services need to be developed. Their attachment disorders leave them most vulnerable to lack of support, yet this subgroup of clients are also most wary of joining groups and forming therapeutic relationships. Case management and counseling in and of itself can be very socially supportive for clients with HIV.

Requesting assistance with substance abuse treatment and requesting assistance with medical care had several predictors in common. Lack of income, requesting basic needs assistance, and requesting risk education were positively associated with both requesting substance abuse treatment and requesting medical care. However, clients requesting assistance with substance abuse treatment had more additional needs and negative psychosocial factors suggesting that those with addictions are the most vulnerable of all. Additionally, our study showed that requesting medical care and substance abuse treatment were not associated, further supporting that these are different subgroups of HIV infected individuals and they may require different approaches to case management.

Study Limitations

This study is an observational study and as such it has the limitation that only associations and not causality can be determined. Thus, the association of social support with successful transitioning may be due to characteristics of those choosing to participate in social support groups rather than true benefits of social support groups. Another limitation of our study is that it relies on self-reported highly sensitive personal information. Self-reported HIV transmission among men having sex with men is likely to be an underestimate of the true rate of this mode of infection because of the stigma associated with homosexual behavior [57, 58]. Substance use is under-reported due to stigma and legal concerns [59]. Consequently, we are likely to have underestimated the extent to which these psychosocial factors are barriers to brokered case management.

Conclusion

Almost all those seeking or referred to publically funded case management in Philadelphia have their case management brokered by AACO. Thus, our study population is highly representative of HIV + individuals who are attempting to obtain publically funded case management in Philadelphia. The centralized nature of linking clients with case management and monitoring them resulted in more systematic and complete information on service utilization (initiating case management) for an entire metropolitan area than would otherwise have been available. Because of this, the results of this study may be generalizable to other major metropolitan areas.

HIV case management can significantly improve the quality of life for people living with HIV [60]. Our study identified clients who are at highest risk for failing to transition to the referred to case management agency and who are, therefore, likely not to receive the social services which are critical for their health and well being. Because we found that social support is associated with successful placement, brokerage agencies may need to maintain contact with clients to "support them" while they are waiting for their first appointment with the referred to agency. Lastly, as medical needs were also found to be a barrier to successful placement, it may also be necessary for a public brokerage agency to address the medical needs of clients in the interim. Drug addiction may be the most difficult issue for a brokerage agency to manage. Further research is needed to determine how to provide effective case management for this population.

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