

Service Utilization Patterns of Youth in an HIV Risk Reduction Program

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Abstract

As part of a clinic-based comprehensive healthcare program for young people living with, and at risk for, HIV infection, transgender-specific services were developed. The present investigation describes the service utilization patterns of youth attending an HIV risk reduction clinic and examines whether these patterns differ based on Gender/Sexual Orientation Group and HIV status. A total of 400 youth were administered medical, psychosocial, and case management services in the outpatient clinic setting. Findings show that, controlling for the total number of clinic visits, several types of sessions attended, topics discussions, and referrals received differed as a function of Gender/Sexual Orientation Group, HIV Status, and their interaction. Two risk indices, one based on client demographic characteristics and the second based on client risk behaviors, related only modestly to the services received. These findings can suggest ways that services might be specifically designed to maximize the benefit of such programs to this population. Youth-attractive, youth-relevant services, coupled with an active outreach strategy throughout the most-affected communities, can attract high-need, historically underserved youth into care.

Service Utilization Patterns of Youth in an HIV Risk Reduction Program

This study examines the ways in which characteristics of youth in an HIV risk reduction program predict their utilization of various health, psychosocial, and ancillary support services. By understanding how client characteristics impact the use of various youth-focused interventions, a model of service utilization among adolescents and young adults living with HIV, or at high risk for HIV infection, can be developed.

HIV infection in adolescents and young adults has been well documented as a syndrome comprised of multiple vulnerabilities and risk factors. Youth living with HIV, and those at high risk for HIV infection, face a number of issues placing them at risk for impaired health and psychosocial functioning, including drug abuse (e.g., Smart & Stoduto, 1997), high risk sexual activities (e.g., Friedman & Goodman, 1992; Morey & Friedman, 1993; Sondheimer, 1992), mental illness (e.g., Levine, 1995; Stiffman *et al.*, 1997), and homelessness (e.g., Johnson *et al.*, 1996; Kipke *et al.*, 1996). As many of these issues tend to co-occur in young people (e.g., Jenson *et al.*, 1995; Piazza, 1996), services for adolescents and young adults need to be comprehensive (e.g., Huba & Melchior, 1998; Berger & Levin, 1993; Brindis *et al.*, 1997; VanDenBerg & Grealish, 1996), as well as developmentally appropriate and youth-friendly (e.g., Ehrhardt, 1996; Henry-Reid *et al.*, 1998; Joseph, 1991).

In addition, sexual minority youth who seek interventions for HIV and related health conditions face a number of additional challenges. Gay, lesbian, and bisexual youth tend to be uncomfortable discussing issues related to sexual orientation and identity with healthcare providers (Allen *et al.*, 1998) and may experience barriers in accessing the traditional healthcare system (Nelson, 1997); given that practitioners are usually not extensively trained in addressing sexual orientation and identity (East & El Rayess, 1998), these barriers should not be surprising.

Gender and sexual orientation are important factors to consider in designing interventions for HIV and other health conditions, as there are likely to be differences in risk behaviors and service needs among Gender/Sexual Orientation groups (Garofalo *et al.*, 1998; Saewyc *et al.*, 1998). With appropriate training for healthcare providers and programs designed specifically to meet the needs of sexual minority youth, the needs of such young people can be better met (Kreiss & Patterson, 1997; Phillips *et al.*, 1997).

An Innovative Service Model for Youth at Risk

The Division of Adolescent Medicine at Childrens Hospital Los Angeles (CHLA) established its HIV Risk Reduction Program in 1988. The program has grown to include community-based HIV prevention and skills-building programs targeting youth (particularly homeless youth and teen parents), HIV antibody testing, comprehensive healthcare, case management, psychological services for HIV-infected youth, and research activities examining the course of HIV infection in youth.

As part of a national service demonstration initiative, CHLA developed and tested a model of HIV care for youth who traditionally lacked access to healthcare and treatment. This model included 1) targeted outreach to youth living with HIV and those at highest risk; 2) enhancement of youth-specific and youth-sensitive health services providing the full scope of services from HIV testing to HIV care; 3) provision of youth-specific case management and allied health professional services; 4) development of a youth empowerment program; and 5) development of community trainings and workshops to enhance the expertise of community agency staff (Schneir *et al.*, 1998).

Within its Risk Reduction Clinic, CHLA developed services specifically for transgender youth. In addition to their unique psychosocial needs, these young people engage in multiple

high-risk behaviors and have significant medical, mental health, and case management needs. At the Risk Reduction Clinic, transgender youth receive both a medical and a psychological evaluation. A physician conducts a medical history, evaluates hormone use history, collects specimens for routine STD checks, and evaluates hormone levels. A psychologist evaluates the history of gender dysphoria. Together, the physician and psychologist develop and implement a care plan to meet the unique needs of the young person.

Purpose

As part of the evaluation of this innovative service model, the present study examines service utilization patterns among clients in the CHLA Risk Reduction Program. In the present study, we compare these patterns to client risk factors, as well as examine the effects of Gender/Sexual Orientation Group, HIV serostatus, and the interaction between Gender/Sexual Orientation Group and HIV status on service utilization patterns.

Method

Participants

Data were analyzed from 400 youth enrolled in services at an HIV risk reduction clinic for adolescents and young adults. The youth were ethnically-racially diverse (62.0% Latino, 16.0% Caucasian, 13.5% African American, 3.0% Asian American, 0.5% Native American, 2.0% multiracial, and 3.0% with unknown ethnicity) and ranged from 12 to 25 years of age (mean age = 19.24 years, SD = 2.61 years). In this sample, 45 of the 400 youth were known to be HIV-positive, either from testing provided at the clinic or from another source. The present analyses include participants in five mutually exclusive Gender/Sexual Orientation Groups: 51 transgender (male-to-female) youth, 49 gay/bisexual males, 118 heterosexual males, 163 heterosexual females, and 19 lesbian/bisexual females.

Measures

Instruments. Data were collected using the Contact Form (Huba, Melchior, & the HRSA SPNS Program Adolescent Care Projects, 1994a) and the Intervention Form (Huba, Melchior, & the HRSA SPNS Program Adolescent Care Projects, 1994b) from the cross-cutting evaluation of ten national HIV service models for youth. Contact Forms were used to document characteristics of clients, including demographics and HIV risk behaviors. Intervention Forms were used to record services provided to a given individual enrolled in care. This form coded services provided during the encounter, who provided the services, referrals made, and topics discussed. Program staff completed an Intervention Form for each client, each day that he or she attended the clinic.

Needs and risk indices. Two measures of risk for HIV and other related health problems were derived from information coded on the Contact Form at the time the youth was enrolled into the program. The Demographic Needs Index represents a composite of whether the youth was under 18 years of age, a person of color, homeless, known to be a runaway, involved with the criminal justice system, and/or involved with the mental health service system. One point was given for every attribute a client had. Scores on the composite Demographic Needs Index ranged from zero to six, with a mean score of 1.52 demographic “needs” ($SD = .79$). Considering the individual elements in the Demographic Needs Index, 40.5 percent of the participants were under the age of 18, 84.0 percent were persons of color, 8.5 percent were identified as homeless, 3.8 percent were known to have run away from home, 2.5 percent were involved with the criminal justice system, and 13.0 percent were involved with mental health services at the time of enrollment into this project. The Risk Behavior Index represents a composite of the youth’s known involvement in sex with men, sex with women, sex with an injection drug user, sex with

an HIV-positive partner, survival sex, having an STD, substance abuse, and/or injection drug use. Again, clients were given one point for each behavior they reported. Scores on the composite Risk Behavior Index ranged from zero to eight, with a mean score of 1.80 needs ($SD = 1.26$). The individual indicators comprising the Risk Behavior Index showed that 6.0% of the clients had sex with an injection drug user, 5.3% had sex with an HIV-positive partner, 11.5% were known to have engaged in survival sex, 17.8% had a history of an STD, 41.3% were known to be substance abusers, and 7.5% were known to be injection drug users. Based on Gender/Sexual Orientation, the following percentages of youth were sexually active with male partners: 11.0% of the heterosexual males, 89.8% of the gay/bisexual males, 80.4% of the transgender youth, 94.5% of the heterosexual females, and 10.5% of the lesbian/bisexual females. For female partners, 90.7% of the heterosexual males, 46.9% of the gay/bisexual males, 21.6% of the transgender youth, 3.1% of the heterosexual females, and 89.5% of the lesbian/bisexual females were known to be sexually active with female partners. The Demographic Needs Index and the Risk Behavior Index are uncorrelated with each other ($r = .05$).

Measures of service utilization. Ten indices were developed to operationalize the level of clinic service utilization (Huba *et al.*, 1999). These indices are broadly categorized as Types of Sessions, Topics Discussed, and Referrals Made. Each of the 10 indicators, described in detail below, represents the total number of times a particular type of service was provided to youth in the clinic. For example, the Medical Services utilization variable represents the total number of times an individual received any of the components within the category of Medical Services, including medical examinations, medical lab work (not HIV testing), medical walk-in services,

medical appointments, and medical emergency visits. These indicators are thus summaries of service utilization over the course of the entire service episode.

A. Types of Sessions. Four composite indicators were developed to capture the nature of the interventions provided at the Risk Reduction Clinic. The variable HIV Testing Services represents the total number of HIV risk assessments, HIV pre-test counseling sessions, HIV testing sessions, HIV post-test counseling sessions, and HIV prevention sessions were provided. Psychosocial Counseling and Peer Support Services represents the total number of individual counseling sessions, group counseling sessions, family counseling sessions, crisis intervention sessions, alternative therapy sessions, information and referral sessions, practical support sessions, HIV support groups, peer support groups, 12-step groups, and recreational sessions were provided. Medical Services represents the total number of visits that included medical examinations, medical lab work (not HIV), medical walk-in services, medical appointments, and medical emergencies. The Case Management indicator represents the total number of case management visits provided by the program. Although the number of HIV testing services was relatively unrelated to the other three service types (largest correlation is $r = .18$), the number of medical, psychosocial, and case management sessions were highly related (correlations range from $r = .63$ to $.87$).

B. Topics Discussed. Three composite indicators were derived to summarize the issues discussed during clinic visits. The measure of Psychosocial Issues represents the number of times that assertiveness, youth empowerment, emotional problems, self identity, substance abuse, hassles, housing/jobs, living with HIV, alternative therapies, and public assistance were discussed. The measure of Medical Service Issues represents the number of times that medical services, health status, and family planning issues were discussed. The measure of HIV-Related

Issues represents the number of times that HIV risk factors, safer sex, HIV testing, risk reduction barriers, dating/sex, and HIV services were discussed in the context of clinic visits. Correlations among these three indicators ranged from $r = .59$ to $r = .74$.

C. Referrals Made. Three composite indicators were derived to summarize the types of referrals made in the context of clinic visits. The measure of Psychosocial Service Referrals represents the number of referrals to educational/vocational training, mental health services, substance abuse services, self-help groups, food/drop-in centers, shelter/housing programs, and social services made on behalf of the client. The measure of Medical Service Referrals represents the number of referrals made to STD clinics, HIV testing, medical services, and family planning. The measure of Collateral Service Referrals represents the number of referrals made to case management (in contrast to direct case management services). These three indicators were highly correlated. The number of psychosocial service referrals was correlated $r = .58$ with the number of medical service referrals and $r = .72$ with collateral service referrals. Medical service referrals and collateral service referrals were also highly correlated, $r = .66$.

Analyses

In a preliminary analysis, the Demographic Risk Index and the Risk Behavior Index were correlated with measures of service utilization: Sessions Attended (four indicators), Topics Discussed (three indicators), and Referrals Made (four indicators).

A second set of analyses examined how Gender/Sexual Orientation, HIV Status, and the interaction between Gender/Sexual Orientation and HIV Status predict each of the service use indicators. There are two issues of note for these analyses. First, because there were no HIV-positive lesbians in this sample, 11 lesbians of unknown HIV status were excluded so that the effects of Gender/Sexual Orientation and HIV Status could be considered simultaneously.

Second, before examining the impact of Gender/Sexual Orientation, HIV Status, and their interaction, it was important to first partial from the model an index of the intensity of services that the client experienced. By accounting for the service intensity effect (operationalized as the total number of service dates in the episode) before evaluating the effects of the three predictors of interest, we have statistically “removed” the effects due to the total number of service dates. These effects were examined using a series of ANCOVAs with Gender/Sexual Orientation Group (male-to-female transgender, gay/bisexual males, heterosexual males, heterosexual females), HIV Status (HIV-unknown, HIV-positive), and their interaction as between-subjects factors and the total number of service dates as a covariate. The outcome variable in each case was the number of service units received by a client in each of the 10 specified areas.

Results

Demographic Needs and Risk Behavior Indices by Service Types

Table 1 presents the means for the Demographic Needs Index and the Risk Behavior Index by Gender/Sexual Orientation Group and HIV Status. Correlations between these two indices and the service utilization variables are, for the most part, close to zero. Thus, relations among the major service domains examined in this investigation with these risk indices show a very clear theme: there are few associations between demographic needs and risk behavior and the specific amounts of services received. The largest associations are between the Risk Behavior Index and the number of psychosocial issues discussed ($r = .20$) and the number of psychosocial referrals made ($r = .23$). The Demographic Needs Index correlated $r = .17$ with the number of occasions on which educational materials were distributed. In sum, demographic risk factors (e.g., being a person of color) or prior sexual or drug abuse behaviors did not relate in a simple fashion to the number of services that youth received in this program.

Insert Table 1 About Here

Gender/Sexual Orientation Group and HIV Status by Service Types

The effects of Gender/Sexual Orientation and HIV Status on measures of service utilization in four major categories were evaluated: Types of Sessions Attended (four variables), Topics Discussed (three variables), and Referrals Made (three variables). Analyses of variance were performed to test the effects of Gender/Sexual Orientation, HIV Status, and their interaction on the 10 measures of service utilization – having removed or controlled for the effects of the overall intensity of the service episode. Means for each major domain, separated by Gender/Sexual Orientation Group and HIV Status, are shown in Table 2. The table also shows four specific effects for each of the models tested (number of service dates, Gender/Sexual Orientation, HIV Status, and the two-way interaction between Gender/Sexual Orientation and HIV Status).

Insert Table 2 About Here

A. Types of Sessions

Effects of the covariates. The total number of service dates was strongly related to number of sessions attended for all services except for HIV Testing (effect sizes range from .78 to .92). Thus, the total number of service dates is an important covariate in understanding the role of Gender/Sexual Orientation and HIV Status in the types of interventions clients received.

The effects of Gender/Sexual Orientation Group, HIV Status, and their interaction are interpreted having controlled for this service intensity variable.

HIV Testing Services. There were statistically significant effects for Gender/Sexual Orientation Group and HIV Status, but not for the interaction between these two variables. Transgender clients received the fewest HIV testing sessions (mean = .51) compared to heterosexual females (mean = 1.50). HIV-positive clients received fewer HIV Testing Services (mean = .25) compared to clients of unknown HIV status (mean = 1.98), a function of the fact that most HIV-positive youth entered the program after testing positive elsewhere.

Psychosocial Counseling and Peer Support Services. Only the effect of HIV Status was statistically significant such that relative to the total number of clinic visits, HIV-positive clients (mean = 17.88) received more psychosocial counseling and peer support sessions than clients with unknown HIV status (mean = 4.51).

Medical Services. The two-way analysis of covariance revealed a statistically significant Gender/Sexual Orientation Group effect, as well as an interaction between Gender/Sexual Orientation Group and HIV Status. Relative to the total number of clinic visits, HIV-positive heterosexual females (mean = 18.53) and HIV-positive transgender clients (mean = 13.00) received more services than either gay/bisexual males of unknown HIV status (mean = 2.37) or heterosexual males of unknown HIV status (mean = 2.29).

Case Management. For the number of case management sessions that clients received, there were statistically significant effects for all key predictors: Gender/Sexual Orientation Group, HIV Status, and the interaction between these two variables. Relative to the total number of clinic visits, heterosexual males (mean = 7.10) and heterosexual females (mean = 6.57) received the most case management sessions, and HIV-positive clients received these sessions

more frequently (mean = 6.66) than clients of unknown HIV status (mean = 4.95). The interaction occurs because there is a large discrepancy between the number of services received for heterosexual males due to HIV Status, but no discrepancy occurs for transgender clients due to HIV Status. Transgender clients receive relatively few case management sessions (mean = 3.77).

B. Topics Discussed

Effects of the covariate. For the three types of topics discussed, there were large and statistically significant effects due to the covariate of service intensity (with effect sizes ranging from .43 to .85). Findings, reviewed below, for Gender/Sexual Orientation Group, HIV Status, and their interaction have already removed the effects of service intensity.

Psychosocial Issues. For this set of topics, there were statistically significant effects for both Gender/Sexual Orientation Group and HIV Status, but no significant interaction effect. Relative to the total number of clinic visits, transgender clients (mean = 19.08) and heterosexual females (mean = 16.02) discussed these topics more frequently than did gay/bisexual males (mean = 11.29) or heterosexual males (mean = 8.94). HIV-positive youth discussed psychosocial issues at more sessions (mean = 20.56) than clients with unknown HIV status (mean = 7.10).

Medical Service Issues. The number of times that clients discussed medical services at their sessions was predicted by Gender/Sexual Orientation Group, HIV Status, and the Gender/Sexual Orientation Group by HIV Status interaction. The effect was particularly large for Gender/Sexual Orientation Group. Whereas heterosexual females and transgender clients discussed these topics more frequently relative to the total number of clinic visits, as did HIV-positive clients compared to clients of unknown HIV status, the interaction is of particular interest. Heterosexual females who were HIV-positive discussed these issues four times as often

as their counterparts with unknown HIV status (mean = 27.76 versus mean = 6.08). Smaller ratios were obtained in the other Gender/Sexual Orientation groups.

HIV-Related Issues. Gender/Sexual Orientation Group and HIV Status each predicted the number of times clients discussed HIV-related issues in their clinic sessions relative to their overall level of participation in the clinic. Heterosexual females (mean = 9.90) discussed these issues more times than heterosexual males (mean = 7.75), transgender clients (mean = 7.01), or gay/bisexual males (mean = 6.69). HIV-positive clients discussed these issues more times (mean = 9.63) than clients with unknown HIV status (mean = 6.04).

C. Referral Services

Effects of the covariate. Next, we turn to an evaluation of the number of referrals of a particular type that a youth received. We identified three types of referrals: psychosocial, medical, and collateral service referrals. For referrals made, the effect of the number of service dates as a covariate was not as strong as for the number of sessions, but it was still significant for all models with effect sizes ranging from .17 to .37. Discussion of findings effects below concentrate only on Gender/Sexual Orientation Group, HIV Status, and interaction effects, having controlled for the intensity of service.

Psychosocial service referrals. HIV Status significantly predicted the number of psychosocial referrals given with HIV-positive clients (mean = 3.29) receiving more referrals than clients of unknown HIV Status (mean = 1.58) relative to the total number of clinic visits. There was not a statistically significant Gender/Sexual Orientation Group effect or a Gender/Sexual Orientation Group by HIV Status interaction.

Medical service referrals. Gender/Sexual Orientation Group, HIV Status, and the Gender/Sexual Orientation Group by HIV Status interaction were not statistically significant predictors of medical service referrals.

Collateral service referrals. This category includes referrals to case management (a single item). While there were no significant main effects for Gender/Sexual Orientation or HIV Status, a significant interaction emerged such that heterosexual males, regardless of HIV Status, were referred infrequently. Clients with unknown HIV status who were transgender clients (mean = .57), gay/bisexual males (mean = .96), or heterosexual women (mean = .97) were referred more frequently, relative to the total number of clinic visits. However, gay/bisexual males who were HIV-positive were referred proportionally most frequently out of the different Gender/Sexual Orientation groups.

Discussion

In this paper we examined the service utilization patterns of 400 young people who participated in an HIV risk reduction program targeted toward youth, especially transgender youth. The youth had a variety of HIV treatment and prevention needs. The ways in which those needs were addressed and services were matched to the client characteristics were shown.

We consistently found service intensity effects in the service utilization levels clients exhibited in the 10 service types examined. The only major exception to this was for HIV Testing Services. The predominance of service intensity predicting the dosage of services received is not unexpected, as more service dates should lead to higher levels of any of the specific services that were examined in this investigation. By including service intensity first in each of the analyses, these effects are controlled for statistically and other effects are considered having removed the effects of intensity.

Across all analyses, it is clear that service use patterns systematically related to the HIV status of the client, the client's Gender/Sexual Orientation Group, and for some services their interaction.

Gender/Sexual Orientation Group significantly predicted the number of sessions a client received for HIV Testing, Medical Services, and Case Management. It also predicted how many times psychosocial issues, medical issues, and HIV-related issues would be discussed, but was unrelated to the types of referrals made.

HIV-positive clients received more Psychosocial Counseling/Peer Support Services and Case Management Sessions, whereas youth of unknown HIV status received more HIV Testing Sessions. They also discussed psychosocial issues, medical service issues, and HIV-related services more frequently. They received more psychosocial referrals and more basic medical support needs than youth with unknown HIV status. The greater intensity of the service episode for youth living with HIV is consistent with studies of retention in care among this population (Huba, Melchior, Schneir, Radzik, Belzer, & Panter, 1999), suggesting that the model program was successful in providing interventions to its clients proportional to their level of need.

In some cases, interactions between Gender/Sexual Orientation Group and HIV Status emerged. There were significant interaction effects for the number of medical services received, the number of case management sessions received, the number of medical service issues discussed, and the number of collateral referrals made.

The differences based on HIV status support the validity of the service model. HIV-positive youth tended to receive more intensive services than youth of unknown HIV status. Two noteworthy exceptions to this pattern emerged, however. First, HIV-positive youth received fewer HIV testing interventions than youth of unknown HIV status. Given that youth were

generally testing positive in other settings (e.g., anonymous test sites) and receiving referrals to the Risk Reduction Program, HIV testing services in this setting were largely provided to youth not identified as positive at enrollment. Second, no differences emerged based on HIV status for medical services, medical service referrals, and collateral service referrals. Because the medical services provided at the Risk Reduction Clinic included HIV specialty as well as primary care, youth were able to meet their healthcare needs equally, regardless of HIV serostatus.

In considering the results presented in this paper, it is important to remember that the statistical models have specifically been designed to emphasize findings having controlled for differences due to the number of service dates that the client had. Nonetheless, even after accounting for the number of service dates, there are statistically significant findings that suggest that the youth received services in a systematic manner matched to their HIV status and the needs of their Gender/Sexual Orientation Group. Consistent with previous research (e.g., Aten *et al.*, 1996; Wolk & Kaplan, 1993), young heterosexual women tended to have higher rates of medical service utilization, and discussion of medical service issues, especially those who were HIV-positive. With respect to psychosocial services, there were fewer pronounced differences based on gender/sexual orientation. The groups did not differ in the number days in which psychosocial counseling services were provided. However, gay/bisexual males and transgender youth had significantly more discussion of psychosocial issues. Thus, it appears that these youth availed themselves of the range of psychosocial supports provided through the Risk Reduction Program to a greater degree than young people who were heterosexual. Because sexual minority youth may be especially vulnerable to stigma, isolation, and distress, the supportive services available through this model program are an important element in the continuum of care for this population.

A number of findings related to case management bear further discussion. In the present study, transgender youth received fewer case management sessions than youth of other gender/sexual orientation groups. Although the transgender youth did receive a particularly intensive set of medical and psychosocial counseling services through the Risk Reduction Clinic, they did not tend to use the case management resources available through this program. There may be a number of reasons for this finding. First, transgender youth may have had a need for coordination of services by a case manager, but were less likely to have wanted it, and thus did not utilize it to the same extent as other clinic participants. Second, the transgender youth were more likely than other youth in this population to engage in survival sex (Melchior, Huba, Schneir, Radzik, Belzer, & Panter, 1999). As a result, they may have felt that their immediate needs (e.g., housing, food) were cared for, and further, may not have been ready to address other needs (e.g., linking to other services) that would be handled by a case manager. Third, transgender youth, as well as young gay-bisexual men, may have already been receiving case management from another agency in the linked service continuum that specifically targeted such youth. To avoid duplication of services for the youth, direct case management and collateral service referrals were not made if it was ascertained that the young person was already being case managed by another provider. Finally, because there were other studies being conducted in the clinic population, those youth who received more case management services may have done so because those visits were provided in the context of another study intervention.

The present findings should be considered in light of the fact that the youth were recruited into the clinic using various methods, which are somewhat related to gender/sexual orientation. Consequently, the service utilization patterns of youth in these groups may differ because they attended the Risk Reduction Program for different reasons. Young gay men tended

to already have tested HIV-positive and enrolled in the clinic through referrals from a tightly linked consortium of youth-serving agencies in the catchment area. Transgender youth were mainly identified through word of mouth and agency referrals. Although having a diagnosis of Gender Identity Disorder was not a requirement for enrollment in transgender services, most of the transgender youth did meet DSM-IV diagnostic criteria. Women of unknown HIV status tended to be recruited through outreach in at-risk communities of color, whereas young women living with HIV were likely to have been referred to the clinic from community-based HIV testing sites. Finally, young heterosexual men were also identified through outreach and continuing involvement in outpatient healthcare services provided by the Risk Reduction Clinic and its linked continuum of care. These groups do not serve as natural controls, and in fact, were not selected for participation in the project to be comparable to one another. Youth come to the clinic for different reasons, depending on their needs and risk factors. For example, youth living with HIV tend to have a continuing need for high-intensity, youth-specific HIV care. Transgender youth, regardless of HIV serostatus, have a number of very unique service needs. Given that most of the transgender youth in this project were not HIV-positive, the present results inform the unique HIV prevention needs in this hidden population. As a group, these male-to-female transgender youth have high rates of a number of HIV risk behaviors, but also need access to a continuum of healthcare services in general that are provided in a sensitive, non-judgmental manner.

The measures of “service needs” did not significantly predict service utilization patterns in this setting. These findings suggest that need level may not be a relevant consideration in this clinical population. While the level of need or risk is relative, all youth in this sample were recruited into the clinic because of a high risk for HIV and other related issues. In the Risk

Reduction Clinic, the youth had already been screened to have a high level of need for admission. In a general adolescent medicine setting, the range of risk factors and clinical “needs” may be broader, and consequently more predictive of service utilization patterns than in this tightly focused program for high-need youth.

The present study is intended to be a broad one, designed to capture major patterns of service utilization in an HIV risk reduction program as they are influenced by youthful client characteristics. Additional work is underway to examine more explicitly patterns of retention in care for these youth, as well as investigating the impact of using one type of intervention (such as case management or psychosocial support services) on the utilization of other services within the model.

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Table 1

Distribution of Demographic Needs and Risk Behavior Indices by Gender/Sexual Orientation

Group and HIV Status

| Gender/Sexual Orientation Group | HIV Status | n | Demographic Needs Index | | Risk Behavior Index | |
|---------------------------------|------------|-----|-------------------------|----------------------------|---------------------|----------------------------|
| | | | Mean | Standard Error of the Mean | Mean | Standard Error of the Mean |
| Transgender Youth | Positive | 6 | .83 | .27 | 2.33 | .35 |
| | Unknown | 45 | 1.29 | .07 | 2.67 | .10 |
| Gay/Bisexual Males | Positive | 14 | .79 | .19 | 1.64 | .25 |
| | Unknown | 35 | 1.71 | .15 | 2.86 | .26 |
| Heterosexual Males | Positive | 8 | 1.00 | .31 | 1.13 | .42 |
| | Unknown | 110 | 1.62 | .09 | 1.87 | .26 |
| Heterosexual Females | Positive | 17 | 1.53 | .12 | 2.18 | .29 |
| | Unknown | 146 | 1.62 | .07 | 1.59 | .07 |
| Lesbian/Bisexual Females | Positive | 0 | -- | -- | -- | -- |
| | Unknown | 19 | 1.37 | .14 | 2.53 | .23 |

Note. Scores on the Demographic Needs Index range from 0 to 6; scores on the Risk Behavior Index range from 0 to 8.

Table 2

Amount of Specific Services Received as a Function of Gender/Sexual Orientation Group and HIV Status, Controlling for the Number of Service Dates (N = 381)

A. Type of Sessions

| Variable | HIV Status | Heterosexual Males | Gay/Bisexual Males | Transgender | Heterosexual Females | Statistic |
|---|------------|--------------------|--------------------|-------------|----------------------|---|
| HIV Testing Services | Positive | 0.38 | 0.14 | 0.17 | 0.29 | Gender/Sexual Orientation: $F(3, 372) = 8.03^{***}$, effect size = .06 HIV Status: $F(1, 372) = 54.14^{***}$, effect size = .13 Interaction: $F(3, 372) = 1.80$, effect size = .01 Number of Service Dates: $F(3, 372) = 2.26$, effect size = .01 |
| | Unknown | 2.10 | 2.26 | 0.84 | 2.71 | |
| Psychosocial Counseling and Peer Support Services | Positive | 17.50 | 13.93 | 15.17 | 29.94 | Gender/Sexual Orientation: $F(3, 372) = .36$, effect size <.01 HIV Status: $F(1, 372) = 7.62^{**}$, effect size = .02 Interaction: $F(3, 372) = 2.57$, effect size = .02 Number of Service Dates: $F(3, 372) = 4543.48^{***}$, effect size = .92 |
| | Unknown | 1.87 | 4.97 | 7.11 | 4.08 | |
| Medical Services | Positive | 8.50 | 9.43 | 13.00 | 18.53 | Gender/Sexual Orientation: $F(3, 372) = 9.77^{***}$, effect size = .07 HIV Status: $F(1, 372) = 1.87$, effect size = .01 Interaction: $F(3, 372) = 2.80^*$, effect size = .02 Number of Service Dates: $F(3, 372) = 717.64^{***}$, effect size = .66 |
| | Unknown | 2.29 | 2.37 | 3.87 | 4.08 | |
| Case Management Sessions | Positive | 13.71 | 10.26 | 9.33 | 16.17 | Gender/Sexual Orientation: $F(3, 372) = 8.79^{***}$, effect size = .07 HIV Status: $F(1, 372) = 18.14^{***}$, effect size = .05 Interaction: $F(3, 372) = 2.82^*$, effect size = .02 Number of Service Dates: $F(3, 372) = 1279.17^{***}$, effect size = .78 |
| | Unknown | 3.85 | 4.66 | 4.39 | 4.64 | |

Table 2 (continued)

Amount of Specific Services Received as a Function of Gender/Sexual Orientation Group and HIV Status, Controlling for the Number of Service Dates (N = 381)

B. Topics Discussed

| Variable | HIV Status | Heterosexual Males | Gay/Bisexual Males | Transgender | Heterosexual Females | Statistic |
|------------------------|------------|--------------------|--------------------|-------------|----------------------|---|
| Psychosocial Issues | Positive | 2.95 | 14.86 | 25.17 | 7.85 | Gender/Sexual Orientation: $F(3, 372) = 6.61^{***}$, effect size = .05 HIV Status: $F(1, 372) = 46.92^{***}$, effect size = .11 Interaction: $F(3, 372) = .84$, effect size = .01 Number of Service Dates: $F(1, 372) = 1495.79^{***}$, effect size = .80 |
| | Unknown | 2.01 | 7.71 | 13.00 | 5.69 | |
| Medical Service Issues | Positive | 13.88 | 14.93 | 18.17 | 27.76 | Gender/Sexual Orientation: $F(3, 372) = 17.40^{***}$, effect size = .12 HIV Status: $F(1, 372) = 7.35^{***}$, effect size = .02 Interaction: $F(3, 372) = 3.52^*$, effect size = .03 Number of Service Dates: $F(3, 372) = 2093.21^{***}$, effect size = .85 |
| | Unknown | 2.41 | 3.60 | 5.60 | 6.08 | |
| HIV-related Issues | Positive | 10.38 | 7.07 | 8.83 | 12.24 | Gender/Sexual Orientation: $F(3, 372) = 7.45^{***}$, effect size = .06 HIV Status: $F(1, 372) = 26.50^{***}$, effect size = .07 Interaction: $F(3, 372) = 1.50$, effect size < .01 Number of Service Dates: $F(3, 372) = 285.35^{***}$, effect size = .43 |
| | Unknown | 5.13 | 6.31 | 5.18 | 7.55 | |

C. Service Referrals Made

| Variable | HIV Status | Heterosexual Males | Gay/Bisexual Males | Transgender | Heterosexual Females | Statistic |
|--------------------------------|------------|--------------------|--------------------|-------------|----------------------|--|
| Psychosocial Service Referrals | Positive | 2.38 | 2.86 | 4.50 | 1.81 | Gender/Sexual Orientation: $F(3, 372) = 1.51$, effect size = .01 HIV Status: $F(1, 372) = 15.82^{***}$, effect size = .04 Interaction: $F(3, 372) = 1.95$, effect size = .02 Number of Service Dates: $F(3, 372) = 218.42^{***}$, effect size = .37 |
| | Unknown | .66 | 1.80 | 2.24 | 1.62 | |
| Medical Service Referrals | Positive | 1.50 | 2.07 | 2.83 | 3.18 | Gender/Sexual Orientation: $F(3, 372) = 1.75$, effect size = .01 HIV Status: $F(1, 372) = 2.22$, effect size < .01 Interaction: $F(3, 372) = .74$, effect size = .01 Number of Service Dates: $F(3, 372) = 99.15^{***}$, effect size = .21 |
| | Unknown | 1.05 | 1.26 | 1.36 | 1.62 | |
| Collateral Service Referrals | Positive | .39 | 1.50 | 1.33 | 1.01 | Gender/Sexual Orientation: $F(3, 372) = 2.30$, effect size = .17 HIV Status: $F(1, 372) = 10.52$, effect size = .03 Interaction: $F(3, 372) = 3.21^*$, effect size = .03 Number of Service Dates: $F(3, 372) = 75.64^{***}$, effect size = .17 |
| | Unknown | .39 | .57 | .96 | .99 | |

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. Table entries are means.