Parenting Desires Among Individuals Living With Human Immunodeficiency Virus in the United States

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Background. In 1988, 1 of 3 women (W) and heterosexual men living with human immunodeficiency virus (HIV) reported wanting children, but little is known about parenting desires of men who have sex with men (MSM) living with HIV. We examined parenting desires among persons initiating antiretroviral therapy (ART).

Methods. Of 1809 participants in the AIDS Clinical Trials Group (ACTG) Study 5257, 1425 W aged ≤45 years or men completed questionnaires about parenting desires at baseline and 96 weeks after initiating ART. Self-reported desires for children in the future (yes/unsure vs no) and associations between baseline sociodemographics and parenting desires at 96 weeks were examined using multivariable logistic regression, overall and within subgroups.

Results. The 1425 participants were as follows: 36% white, 39% black, 22% Hispanic; median age 36 (interquartile range, 28–44); 70% MSM, 13% men reported sex only with W (MSW), 17% W. At baseline, 42% may want children in the future (42% MSM, 37% MSW, 43% W); at 96 weeks, 41% may want children (41% MSM, 37% MSW, 43% W). At follow-up, approximately 10% of responses changed in each direction. In multivariable analyses, education greater than high school, <30 years, and having no children were significantly associated with future parenting desires among all subgroups. Among MSM, being black was associated with desiring children.

Conclusions. Approximately 40% of MSM, W, and MSW with HIV may want children, both at baseline and 96 weeks after ART initiation. These results highlight the need to regularly assess parenting goals, provide access to comprehensive reproductive services, and address prevention of vertical and heterosexual HIV transmission.

Keywords. ART; HIV; parenting; reproductive health; women.

Little is known about parenting desires among individuals currently living with human immunodeficiency virus (HIV) in the United States, making it difficult to address their parenting goals. Furthermore, despite limited information regarding parenting intent, assumptions of lack of interest in having children are common among people living with HIV (PLWH), particularly for men who have sex with men (MSM). Parenting intention may be influenced by many factors, including perceived well being, life expectancy, fear of perinatal HIV transmission, and attitudes about pregnancy among HIV care providers, families, and communities.

Recent data on parenting intent among HIV-positive heterosexual men who have sex with women (MSW) and women in the modern combination antiretroviral therapy (ART) era are limited, and even less is known for MSM living with HIV. In the early years of highly effective ART, Chen et al [1] studied a nationally representative probability sample of women and men living with HIV aged 20–44 in the United States in 1998, but men who only have sex with men were not included. Overall, 28%–29% of this population living with HIV receiving care desired children in the future. For MSM living with HIV, a recent qualitative study reported that men wanted more discussions with providers and services available to address their parenting desires [2]. More recent studies have suggested that among women receiving HIV care in the modern ART era, parenting intent may be more prevalent than these prior estimates suggest [3–6].

Because individuals are living longer, healthier lives with modern ART, their parenting goals may change to become more similar to those of uninfected individuals. In the United States, pregnancy and live-birth rates among women living with HIV have increased, with rates now being similar to those of uninfected women [7]. Furthermore, higher pregnancy rates among women living with HIV are associated with ART use and improved immune status. These results suggest that current
parenting intent may be similar to uninfected counterparts and highlight the need for understanding the drivers of parenting desire among women and men with HIV to appropriately address their healthcare needs. Data from a nationally representative sample of childless lesbian, gay, and heterosexual individuals not living with HIV found that heterosexual men and women desired children in the future at higher rates than their gay counterparts [8]. Because provider discussions on parenting goals are often neglected in HIV care [9], there are many missed opportunities to target contraceptive or safe conception counseling, which are effective in reducing both unintended pregnancy and HIV transmission to uninfected partners and children.

To optimize the reproductive health of this population, we sought to understand key factors affecting parenting goals. We examined the parenting desires among men and women living with HIV initiating 1 of 3 modern ART regimens as part of an open-label clinical trial. Focusing on the ART-naive adults enrolling into a prospective antiretroviral study can provide a window in which to explore the impact of ART initiation and early use within a prospective longitudinal study on parenting intentions.

**METHODS**

Study Population, Design, and Data Collection

We included 1425 (women aged ≤45 years and all men who completed necessary questionnaires) of the 1809 participants enrolled between May 22, 2009 and June 9, 2011 in the AIDS Clinical Trials Group (ACTG) Study 5257, a Phase 3, randomized, open-label trial of 3 modern ART regimens enrolling ART-naive men and women 18 years and older from 57 clinical sites across the United States and Puerto Rico [10]. Study evaluations were completed before entry, at entry, at weeks 4, 8, 16, 24, and 32 and every 16 weeks thereafter. Self-reported, prospectively collected data were analyzed from baseline to 96 weeks after initiating ART, including detailed questions on parenting desires and reproductive choices as well as sociodemographic, clinical, and psychosocial factors collected at baseline, week 48, and week 96.

Objectives, Variable Definitions, and Statistical Analysis

The primary objective was to describe parenting desires among women (W), MSM, and MSW enrolled in ACTG 5257. We defined MSM as men who reported ever having had sex with a man; MSW as men who have never had sex with a man; and W as all women enrolled. The primary outcome was desire to have more children (for example, make a baby or adopt/foster a baby/child) in the future (yes/unsure versus no), as reported at baseline and also at 96 weeks after ART initiation. Because approximately half of pregnancies in the United States (and globally) are unintended [11], we chose to compare those participants who did not want to have children in the future to those who either did want children or may want children in the future (no versus yes/unsure). Potential correlates of parenting desire were evaluated, including self-reported sociodemographic factors (age, education, race/ethnicity, income, insurance, housing, prior children), alcohol and substance use, self-perceived perceptions of infectiousness (visual analog scale from 0 (non-infectious) to 100 [highly infectious]), and HIV viral suppression. Binge drinking was defined as consuming ≥2 drinks of alcohol for men and ≥4 drinks of alcohol for women at least once in the prior month.

For this analysis, the proportion of participants reporting parenting desires was estimated at baseline and at follow-up week 96 after ART initiation; asymptotic 95% confidence intervals (CIs) for the corresponding 96-week outcome percentages were calculated. These respective outcomes were examined overall and stratified by MSM, MSW, and W groups. Proportions of participants reporting parenting desires at baseline, and later at 96 weeks, were compared pairwise among MSM, MSW, and W subgroups using χ² tests, without adjustment of significance levels for multiple testing.

The χ² tests were used to explore univariate associations between predictors and covariates of interest (continuous variables were categorized for analysis) and the primary outcomes (described above) at baseline and at 96 weeks. Multivariable logistic regression models were used to evaluate associations between baseline sociodemographic variables and parenting desires at 96 weeks after ART initiation overall, and for MSM, MSW, and W subgroups separately.

All statistical modeling first examined univariate (unadjusted) associations. Any potential covariates of interest with moderate evidence of association (P < .20) were then incorporated into a final multivariable (adjusted) model, along with any potentially important variables identified a priori from the literature. We included all individuals who met our inclusion criteria for all analyses. All analyses were done using the SAS statistical analysis software programs.

**RESULTS**

A total of 1425 of 1809 (79%) individuals enrolled in ACTG 5257 met the enrollment criteria for this study (eg, women aged ≤45 years and all men completing necessary questionnaires) and were included in this analysis; 992 (70%) were MSM, 189 (13%) MSW, and 244 (17%) W (Table 1). Approximately 30% of participants were under the age of 30, with a median age of 36 years (interquartile range, 28–44). Thirty-nine percent were non-Hispanic black and 36% were non-Hispanic white. Most participants had some post high school education (64%), approximately half had incomes below $20000 per year, and most had government insurance coverage (58%). Although 86% of MSM had no children, only 27% of both MSW and W, respectively, had no children. At pre-ART baseline, most participants were not virologically suppressed (viral load >200 copies/mL), and 30% had baseline CD4 cell counts <200 cells/mm³. At
baseline, 34% reported binge drinking in the prior 30 days and 24% reported substance abuse in the prior year, although fewer women had reported binge alcohol or substance use (25% and 20%, respectively).

Overall, 41% of participants (95% CI, 38%–43%) wanted or may want children in the future (yes/unsure) at baseline and at 96 weeks, respectively. At baseline, 42%, 37%, and 43% of MSM, MSW, and W, respectively, desired children in the future. At 96
weeks, 41%, 37%, and 43% of MSM, MSW, and W, respectively, desired children in the future. There were no statistically significant differences in the desire for children in the future among MSM, MSW, and W at baseline and at 96 weeks (Figure 1). After 96 weeks of follow-up, approximately 10% of each group who initially desired children changed their preferences, and an equal percentage who initially did not desire children became unsure or desired children in the future (Figure 1).

In univariate analysis, factors significantly associated with parenting desires in the future (Appendix Table 1) included being younger, not having prior children, and being black non-Hispanic race. In multivariable analysis among all participants, there was an increased odds of considering having children in the future among participants whose age was <30 years, were black, had more than a high school degree, and had no children (Table 2). In the MSM group, participants whose age was <30 years and were black were more likely to desire children in the future, whereas for MSW group, participants whose age was <30 years were more likely to desire children in the future compared to those whose age was ≥40 years. Women aged <30 years and who had fewer than 3 children were more likely to desire children in the future. It is notable that CD4 count, viral load at week 48, or self-perceived infectiousness were not associated with desire for children in the future, nor were income, insurance status, substance abuse, or binge drinking. Despite the fact that 95% of participants overall had HIV viral suppression at 48 weeks, the proportion of participants desiring children did not change appreciably after starting ART (from baseline to 96 weeks) among all participants and within each subgroup.

**DISCUSSION**

This study examined the parenting desires among a diverse group of ART-naive persons living with HIV who entered a large ART clinical trial conducted across the United States [10]. We found a surprisingly similar desire to have children in the future (yes/unsure) both before and 2 years after successful treatment with ART. These parenting desires did not differ among MSM, MSW, or W. Although previous studies have reported on parenting desires among women and MSW living with HIV both before and after suppressive ART, this study is the first to report on the desire of MSM living with HIV to have children in the future. Approximately 40% of MSM, MSW, and W living with HIV were considering having children at each visit before and 96 weeks after starting ART, with a similar proportion who changed from not wanting to considering having children and the reverse. Across all 3 groups, younger people and those with fewer children were more likely to consider having children in the future.

There are several important implications of our findings for improving the care of persons living with HIV. Healthcare providers should assess reproduction desires and contraception needs of all of their patients routinely while providing HIV care.

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**Figure 1.** Parenting desires (%) at baseline/96 weeks after antiretroviral therapy initiation among (a) all participants, (b) men who have sex with men (MSM), (c) men reported sex only with women (MSW), and (d) Women*. *There were no statistically significant differences in parenting desires (yes/unsure versus no) among all participants, or in the MSM, MSW, and W subgroups at baseline, week 96 or the change between baseline and week 96. (NOTE: “Yes” in the above charts refers to “Yes/Unsure” responses to the parenting desire questions.)
### Table 2. Multivariable Logistic Regression Models for Baseline Factors Associated With Parenting Desires at 96 Weeks Among All Participants, MSM, MSW, and Women Participating in ACTG Study 5257*

| Desires Children ** | All (N = 1425) | MSM (N = 992) | MSW (N = 189) | Women (N = 244) |
|---------------------|----------------|--------------|---------------|-----------------|
| Entire Sample       | 580 (41%) (38%–43%) | 406 (41%) (38%–44%) | 70 (37%) (30%–44%) | 104 (43%) (36%–49%) |

#### Age Categories

| Age Categories | All | MSM | MSW | Women |
|----------------|-----|-----|-----|-------|
| 18–29 REF      | 0.32 (0.22–0.48)a | 0.35 (0.22–0.54)a | 0.38 (0.09–1.59) | 0.17 (0.06–0.49)a |
| 30–39          | 0.11 (0.07–0.17)a | 0.09 (0.05–0.15)a | 0.12 (0.03–0.50)b | 0.09 (0.03–0.27)a |

#### Education

| Education      | All | MSM | MSW | Women |
|----------------|-----|-----|-----|-------|
| High School Grad/GED | 1.25 (0.64–2.44) | 1.67 (0.69–4.06) | 1.07 (0.28–4.04) | 0.70 (0.22–2.19) |
| Post-High School | 1.93 (1.08–3.44)c | 2.12 (0.99-4.55) | 2.93 (0.85–10.09) | 0.91 (0.34–2.46) |

#### Race/Ethnicity

| Race/Ethnicity | All | MSM | MSW | Women |
|----------------|-----|-----|-----|-------|
| White Non-Hispanic REF | 2.20 (1.45–3.34)b | 2.33 (1.46–3.74)a | 1.04 (0.16–6.96) | 0.93 (0.31–2.78) |
| Hispanic (regardless of race) | 1.07 (0.64–1.79) | 1.12 (0.64–1.97) | 0.82 (0.09–7.22) | 0.83 (0.20–3.47) |

#### Income Category

| Income Category | All | MSM | MSW | Women |
|-----------------|-----|-----|-----|-------|
| $20–$49,999 K   | 0.82 (0.54–1.25) | 0.81 (0.50–1.31) | -- | 1.08 (0.44–2.66) |
| ≥$50K           | 0.75 (0.44–1.26) | 0.72 (0.40–1.30) | -- | 3.07 (0.81–11.57) |

#### Insurance Category

| Insurance Category | All | MSM | MSW | Women |
|--------------------|-----|-----|-----|-------|
| Government         | 0.97 (0.65–1.45) | 1.04 (0.65–1.64) | 0.47 (0.12–1.80) | -- |
| Self-pay           | 1.22 (0.66–2.24) | 1.12 (0.55–2.28) | 2.18 (0.35–13.72) | -- |

#### Number of Children

| Number of Children | All | MSM | MSW | Women |
|--------------------|-----|-----|-----|-------|
| No Children REF    | 0.50 (0.31–0.82)b | 0.49 (0.23–1.03) | 0.56 (0.17–1.91) | 0.41 (0.16–1.09) |
| 1–2 Children       | 0.47 (0.23–0.94)c | 0.42 (0.09–2.03) | 0.52 (0.12–2.23) | 0.21 (0.07–0.64)b |

#### Housing Status

| Housing Status | All | MSM | MSW | Women |
|----------------|-----|-----|-----|-------|
| Owned/rented home REF | 0.98 (0.4–2.39) | 0.87 (0.29–2.55) | -- | 0.45 (0.08–2.53) |
| Lives with friends or family | 1.61 (0.78–3.33) | 1.46 (0.61–3.52) | -- | 0.09 (0.01–1.16) |
| No stable housing | 0.87 (0.29–2.55) | 0.45 (0.08–2.53) | -- | 0.45 (0.08–2.53) |

#### Week 96 Self-Perceived Infectiousness

| Week 96 Self-Perceived Infectiousness | All | MSM | MSW | Women |
|---------------------------------------|-----|-----|-----|-------|
| Low (0%–33%) REF                       | 0.93 (0.64–1.37) | 0.96 (0.61–1.51) | -- | -- |
| Medium (34%–66%)                       | 0.71 (0.46–1.11) | 0.73 (0.44–1.22) | -- | -- |

#### Baseline CD4 Cell Count

| Baseline CD4 Cell Count | All | MSM | MSW | Women |
|-------------------------|-----|-----|-----|-------|
| >200 cells/mm³ REF      | 0.78 (0.53–1.14) | 0.88 (0.56–1.39) | -- | 0.58 (0.24–1.40) |
| ≤200 cells/mm³          | 1.65 (0.69–3.99) | 1.57 (0.55–4.45) | -- | -- |

#### Week 48 HIV VL

| Week 48 HIV VL | All | MSM | MSW | Women |
|----------------|-----|-----|-----|-------|
| VL <200 copies/mL REF | 1.16 (0.84–1.70) | 1.08 (0.72–1.61) | 3.01 (0.99–9.18) | -- |

#### Baseline Binge Drinking

| Baseline Binge Drinking | All | MSM | MSW | Women |
|-------------------------|-----|-----|-----|-------|
| Nonbinge Drinker REF    | 0.90 (0.58–1.40) | 0.99 (0.60–1.63) | 1.49 (0.38–5.89) | 0.51 (0.16–1.60) |

#### Baseline Substance Use

| Baseline Substance Use | All | MSM | MSW | Women |
|------------------------|-----|-----|-----|-------|
| Never used REF         | 0.76 (0.51–1.14) | 0.82 (0.52–1.31) | 0.25 (0.05–1.24) | 1.45 (0.57–3.70) |

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Abbreviations: ACTG, AIDS Clinical Trials Group; CI, confidence interval; GED, General Education Diploma; HIV, human immunodeficiency virus; MSM, men who have sex with men; MSW, heterosexual men who have sex with women; OR, odds ratio; REF, reference; VL, viral load.

*a* P < .001, *b* P < .01, *c* P < .05.

*, Only covariates with a univariate association with parenting desires (yes/unsure versus no) (P < .2) were included in the multivariable models.

**, Parenting desires variable is characterized as “Yes/Unsure” versus “No.”**
They should be prepared to provide information on safer conception practices with the highest likelihood of pregnancy success, to give thoughtful and tailored preconception counseling, and to support persons living with HIV to enable them to have children safely while minimizing the risk of transmitting HIV to uninfected partners and future children [12]. In contrast, those who do not want to have children currently should be offered safe and appropriate contraception, including highly effective methods such as long-acting contraceptive methods. If men and women living with HIV are interested in considering effective methods such as long-acting contraceptive methods, offered safe and appropriate contraception, including highly effective methods such as long-acting contraceptive methods. In contrast, children safely while minimizing the risk of transmitting HIV and to support persons living with HIV to enable them to have children, they should be prepared to provide information on safer conception, to give thoughtful and tailored preconception counseling, counseling about methods of contraception, and understanding how to prevent transmitting HIV to their uninfected partners or to their future children. Effective strategies for safe conception for men and women living with HIV are important for the prevention of vertical and horizontal transmission. Regular ongoing assessment of parenting goals for both men and women in HIV care settings is critical because many individuals, regardless of sexual orientation, may desire having children, and some individuals who did not want children may change their minds over time.

CONCLUSIONS

Our data showed that overall, MSM, MSW, and W have similar parenting desires. Hence, all of these populations would benefit from preconception counseling, counseling about methods of contraception, and understanding how to prevent transmitting HIV to their uninfected partners or to their future children. Effective strategies for safe conception for men and women living with HIV are important for the prevention of vertical and horizontal transmission. Regular ongoing assessment of parenting goals for both men and women in HIV care settings is critical because many individuals, regardless of sexual orientation, may desire having children, and some individuals who did not want children may change their minds over time.
Furthermore, to reduce barriers, HIV care services should include integrated comprehensive reproductive health, fertility, and contraceptive services available to men and women.

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**Appendix Table 1. Univariable Logistic Regression Models for Baseline Factors Associated with Parenting Desires (Yes/Unsure Versus No) at 96 Weeks Among All Participants, MSM, MSW, and WOMEN Participating in ACTG 5257**

|                        | ALL             | MSM             | MSW             | WOMEN            |
|------------------------|-----------------|-----------------|-----------------|------------------|
|                        | (N = 1425)      | (N = 992)       | (N = 189)       | (N = 244)        |
| **Desire Children**    |                 |                 |                 |                  |
|                        | (95% CI)        | (95% CI)        | (95% CI)        | (95% CI)         |
| **Entire Sample**      | 580 (41%)(38%–43%) | 406 (41%)(38%–44%) | 70 (37%)(30%–44%) | 104 (43%)(36%–49%) |
| **Age Categories**     |                 |                 |                 |                  |
| 18–29                  | ≤0.05 (0.00–0.10) | ≤0.05 (0.00–0.10) | ≤0.08 (0.06–0.10) | ≤0.09 (0.05–0.19) |
| 30–39                  | 0.23 (0.18–0.31) | 0.22 (0.15–0.30) | 0.41 (0.15–1.09) | 0.23 (0.12–0.45) |
| 40+                    | 0.08 (0.06–0.10) | 0.06 (0.04–0.09) | 0.13 (0.05–0.33) | 0.09 (0.04–0.19) |
| **Education**          |                 |                 |                 |                  |
| ≤High School           | ≤0.05 (0.00–0.10) | ≤0.05 (0.00–0.10) | ≤0.08 (0.06–0.10) | ≤0.09 (0.05–0.19) |
| High School Grad/GED   | 1.39 (0.97–1.98) | 1.63 (1.00–2.66) | 0.91 (0.40–2.05) | 1.08 (0.52–2.23) |
| Post-High School       | 1.35 (1.01–1.79) | 1.11 (0.75–1.65) | 2.05 (1.04–4.05) | 1.99 (1.09–3.84) |
| **Race/Ethnicity**     |                 |                 |                 |                  |
| White Non-Hispanic     | ≤0.05 (0.00–0.10) | ≤0.05 (0.00–0.10) | ≤0.08 (0.06–0.10) | ≤0.09 (0.05–0.19) |
| Black Non-Hispanic     | 2.04 (1.60–2.62) | 3.11 (2.30–4.21) | 0.61 (0.25–1.48) | 0.83 (0.40–1.73) |
| Hispanic (Regardless of Race) | 1.23 (0.91–1.65) | 1.41 (0.99–2.00) | 0.89 (0.34–2.34) | 0.44 (0.19–1.03) |
| Other                  | 1.54 (0.82–2.93) | 1.40 (0.68–2.87) | 1.91 (0.27–13.49) | 2.00 (0.17–24.07) |
| **Income Category**    |                 |                 |                 |                  |
| <20K                   | ≤0.05 (0.00–0.10) | ≤0.05 (0.00–0.10) | ≤0.08 (0.06–0.10) | ≤0.09 (0.05–0.19) |
| ≥20K                   | 0.97 (0.75–1.26) | 0.82 (0.60–1.12) | 1.22 (0.56–2.66) | 1.39 (0.71–2.72) |
| ≥50K                   | 0.68 (0.50–0.93) | 0.52 (0.40–0.74) | 0.58 (0.18–1.91) | 3.71 (1.33–10.40) |
| **Insurance Category** |                 |                 |                 |                  |
| Government             | ≤0.05 (0.00–0.10) | ≤0.05 (0.00–0.10) | ≤0.08 (0.06–0.10) | ≤0.09 (0.05–0.19) |
| Private                | 0.81 (0.64–1.02) | 0.68 (0.52–0.90) | 1.27 (0.59–2.73) | 1.24 (0.67–2.29) |
| Self-pay               | 1.24 (0.82–1.88) | 1.01 (0.61–1.67) | 2.67 (0.87–8.17) | 1.43 (0.51–4.01) |
Appendix Table 1. Continued

|                      | ALL (N = 1425) | MSM (N = 992) | MSW (N = 189) | WOMEN (N = 244) |
|----------------------|----------------|---------------|---------------|-----------------|
| **Desire Children**  |                |               |               |                 |
| Number of Children   |                |               |               |                 |
| No Children          | REF            | REF           | REF           | REF             |
| 1–2 Children         | 0.60 (0.45–0.81)<sup>b</sup> | 0.49 (0.30–0.78)<sup>a</sup> | 0.54 (0.26–1.14) | 0.26 (0.13–0.52)<sup>c</sup> |
| 3+ Children          | 0.26 (0.18–0.40)<sup>c</sup> | 0.09 (0.02–0.31)<sup>c</sup> | 0.2 (0.08–0.49)<sup>c</sup> | 0.14 (0.07–0.29)<sup>c</sup> |
| Housing Status       |                |               |               |                 |
| Owned/ rented home   | REF            | REF           | REF           | REF             |
| Lives with friends or family | 1.51 (1.01–2.25)<sup>a</sup> | 2.13 (1.25–3.61)<sup>b</sup> | 1.54 (0.69–3.43) | 0.33 (0.09–1.23) |
| No stable housing    | 0.76 (0.43–1.36) | 1.16 (0.56–2.42) | 0.37 (0.08–1.76) | 0.41 (0.11–1.55) |
| **Week 96 Self-perceived Infectiousness** |                |               |               |                 |
| Low (0–33%)          | REF            | REF           | REF           | REF             |
| Medium (34–66%)      | 0.77 (0.60–0.99)<sup>a</sup> | 0.75 (0.56–1.01) | 0.89 (0.44–1.81) | 0.80 (0.44–1.46) |
| High (67–100%)       | 0.97 (0.72–1.30) | 0.98 (0.69–1.40) | 1.47 (0.62–3.47) | 0.70 (0.34–1.46) |
| **Baseline CD4 cell count** |                |               |               |                 |
| >200 cells/mm³       | REF            | REF           | REF           | REF             |
| ≤200 cells/mm³       | 0.74 (0.59–0.94)<sup>a</sup> | 0.81 (0.61–1.08) | 0.70 (0.39–1.28) | 0.57 (0.31–1.02) |
| **Week 48 HIV viral load (VL)** |                |               |               |                 |
| VL ≤200 copies/mL    | REF            | REF           | REF           | REF             |
| VL >200 copies/mL    | 2.46 (1.49–4.06)<sup>b</sup> | 2.61 (1.36–4.98)<sup>b</sup> | 7.15 (0.78–65.32) | 1.70 (0.70–4.09) |
| **Baseline Binge Drinking** |                |               |               |                 |
| Non-Binge Drinker    | REF            | REF           | REF           | REF             |
| Binge Drinker        | 1.31 (1.01–1.70)<sup>c</sup> | 1.29 (0.96–1.74) | 1.92 (0.86–4.25) | 1.11 (0.54–2.30) |
| **Baseline Substance Use** |                |               |               |                 |
| Never used           | REF            | REF           | REF           | REF             |
| Past use             | 0.70 (0.52–0.93)<sup>a</sup> | 0.74 (0.53–1.05) | 0.58 (0.23–1.43) | 0.57 (0.28–1.17) |
| Used within past year | 0.74 (0.57–0.97)<sup>a</sup> | 0.84 (0.61–1.16) | 0.28 (0.10–0.77)<sup>c</sup> | 0.65 (0.33–1.31) |

*P < .001, <sup>b</sup>P < .01, <sup>c</sup>P < .05

*Parenting desires variable is characterized as "Yes/Unsure" versus "no."