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Behaviorally and perinatally HIV-infected young women: targets for preconception counseling

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Abstract

This study aimed to describe demographic and psychological characteristics among HIV-infected young women, and to identify knowledge, attitudes, and behaviors associated with conception, with the goal of informing interventions or programmatic decisions regarding preconception counseling methods for young women living with HIV. Behaviorally and perinatally HIV-infected young women ($n = 34$) were conveniently sampled in Miami, Florida. Participants were asked to complete measures of reproductive knowledge, attitudes toward conception, and risk behaviors, as well as measures of depression and cognitive functioning. Perinatally and behaviorally HIV-infected young women were very similar in important areas of health preconception practices such as conception-related health literacy and conception-related communication with providers. Behaviorally infected women, however, were somewhat more likely to have been pregnant in the past, and had greater knowledge of healthy contraception practices and family planning. Despite the difference among groups, both the perinatally and behaviorally acquired women demonstrated having adequate overall knowledge. Depression was higher and consistent with moderate depression among the behaviorally HIV-infected women in comparison to perinatally infected women. This study found that despite adequate reproductive knowledge, most young HIV-infected women were not using contraception. Given the consequences of presentation of advanced HIV during pregnancy, the need for both treatment adherence and preconception counseling is essential. Results suggest that interventions or programmatic decisions regarding preconception counseling methods for young women living with HIV are necessary and potentially transferrable between populations.

Keywords

HIV; preconception counseling; women; perinatal HIV; reproductive healthcare

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Adolescents and young adults accounted for 26% of new HIV infections in 2010 (CDC, 2015). Adolescence is exceptionally challenging for those with HIV, as increased engagement in risk-taking behaviors and bodily changes can negatively affect treatment (MacDonnell, Naar-King, Huszti, & Belzer, 2013). Similarly, though all individuals with HIV face health-related issues, women must also confront the risk of mother-to-child transmission of HIV when considering pregnancy (Voronin et al., 2014).

Perinatal HIV infection can occur during pregnancy, delivery, or breastfeeding. As of 2010, the majority of perinatally HIV-infected (PHIV+) youth were of reproductive age (CDC, 2014; Kacanek et al., 2015). Antiretro-viral (ARV) medication effectiveness and side effects must be monitored while PHIV+ youth transition from pediatric to adult HIV care (Mellins & Malee, 2013). Because behaviorally acquired HIV is typically acquired through high-risk sexual behavior, behaviorally HIV-infected (BHIV+) youth face the additional distress of being diagnosed with HIV during adolescence. Both PHIV+ and BHIV+ women report unprotected sex and unplanned pregnancies (Koenig, Espinoza, Hodge, & Ruffo, 2007; Koenig, Nesheim, & Abramowitz, 2011), suggesting the potential risk of sexual HIV transmission. Furthermore, the increasing demands of work, college, and interpersonal relationships may affect HIV care (Kacanek et al., 2015; Mellins & Malee, 2013). PHIV+ youth may face long-term ARV side effects, such as the risk of developing cardiovascular and neurocognitive diseases (Deeks, Lewin, & Havlir, 2013). However, adherence is required to prevent adverse HIV-related health outcomes (Agwu & Fairlie, 2013).

In comparison to BHIV+ youth, PHIV+ youth experience protracted exposure to HIV treatment, multiple changes in medical regimen, suboptimal adherence, medication resistance, and physical and behavioral challenges (MacDonnell et al., 2013; Malee et al., 2011; Mellins et al., 2011; Mofenson & Cotton, 2013). Though previous studies have examined adherence and cognition among PHIV+ and BHIV+ youth (MacDonnell et al., 2013; Malee et al., 2011), few studies have explored sexual behavior (Tassiopoulos et al., 2013). This study aimed to describe demographic and psychosocial characteristics among PHIV+ and BHIV+ young women, and identify knowledge, attitudes, and behaviors associated with conception, to inform interventions or programmatic decisions regarding preconception counseling for young women with HIV.

Method

Participants and procedures

PHIV+ ($n = 21$) and BHIV+ ($n = 13$) young women (ages 16–29) were recruited from the University of Miami Pediatric Immunology Clinic and the Women's Interagency HIV Study. Informed consent was obtained from women aged 18+; guardian consent and participant assent were obtained from those aged 16–17. Participants were compensated USD \$40.

Measures

An audio computer-assisted self-interview (ACASI) system presented all materials and provided audio transcript of each question to ensure comprehension. ACASIs have been previously used with adolescents and young adults (Brown et al., 2006).

Knowledge—The Fog Zone (Kaye, Suellentrop, & Sloup, 2009) was used to assess knowledge of condoms, birth control, intra-uterine devices, other hormonal methods, and pregnancy. Knowledge of safer conception practices was also assessed.

Attitudes—Individual items were used to assess whether women had discussed a future pregnancy with their partner, family member, or provider.

Behaviors—Medical history behavior items included adherence to treatment, disclosure, condom use, and birth control.

Depression and cognitive performance—The Beck Depression Inventory-II (BDI-II; Beck, Steer, Ball, & Ranieri, 1996) was used to assess depression, and the Montreal Cognitive Assessment (Nasreddine et al., 2005) scale was used to measure cognitive performance.

Data analysis

Descriptive data were first examined and described. Bivariate analyses (chi-square or Fisher's exact tests, *t*-tests or Mann–Whitney Z-tests) were used to compare BHIV+ and PHIV+ groups by demographic characteristics, knowledge, attitudes, and behaviors, depression, and cognitive performance. A threshold of $p < .05$ was used to determine statistical significance. SPSS v18 for Windows (SPSS Inc., Chicago, IL, USA) was used for analyses.

Results

Demographic characteristics

Women were, on average, 22 years old ($SD = 3.27$). Most were African American, one-third were in a relationship, half had completed high school, and 41% had an income of less than \$600. Approximately half had never been pregnant, and one-third had at least one child. BHIV+ and PHIV+ women were mostly similar demographically, although more BHIV+ women reported a prior pregnancy and completed less than high school (see Table 1).

Knowledge, attitudes, and behaviors

Knowledge—BHIV+ and PHIV+ women had similar knowledge of condom use, birth control, intra-uterine, other hormonal methods, pregnancy, and safer conception practices (see Table 2).

Attitudes—Nearly half reported of women discussing pregnancy with their partner, slightly less than one-third with family, and less than one-third with a healthcare provider. More BHIV+ women reported discussing preventing pregnancy with their provider (see Table 2).

Behaviors—Nearly all women had been prescribed ARVs, though only three-fourths were actually on ARVs; rates indicated a non-significant trend to being higher among PHIV+ women compared to BHIV+ women. Nearly one-third of the women reported medication adherence in the past 7 days, and had disclosed their HIV serostatus to their partner. Two-

thirds reported consistent condom use and one-fourth reported using birth control (see Table 2).

Depression and cognitive performance—Approximately half of the women reported experiencing moderate to severe depression; more BHIV+ women reported moderate to severe depression. Scores for both BHIV+ and PHIV+ women were consistent with mild cognitive impairment, and were similar between groups (see Table 2).

Discussion

This study compared reproductive knowledge, sexual behavior, pregnancy intentions, as well as cognitive functioning and depression between BHIV+ and PHIV+ women. BHIV+ and PHIV+ women were similar in conception-related health literacy and patient–provider communication, although more BHIV+ women had a prior pregnancy and had greater knowledge of safer contraception practices.

Though all women had adequate knowledge of contraception, their knowledge and behaviors were not consistent, as only a quarter used birth control despite not wanting to conceive. Pregnancy intentions and contraception may not always correspond (Bader, Kelly, Cheng, & Witt, 2014). Relative to young adults in the general population, women in this sample had much higher knowledge scores (Kaye et al., 2009) – this may be due, in part, to HIV-infected women's greater exposure to the healthcare system. In addition, just under half of the young women reported nondisclosure of HIV serostatus to their partners; nondisclosure is associated with concerns about its negative consequences to the relationship (Phillips et al., 2011). Healthcare providers may consider exploring opportunities for disclosure.

Few women had discussed pregnancy with family or providers, suggesting a potential fear of being judged for wanting to conceive when living with HIV (Greenhalgh, Evangelini, Frize, Foster, & Fidler, 2013; Sutton, Patel, & Frazier, 2014). Lack of trust and communication in a patient–provider relationship may adversely affect HIV-infected women, as unprotected sex and pregnancy without proper care increases HIV transmission risk (Sutton et al., 2014). Additionally, more than one-third of women were nonadherent to ARVs, suggesting an increased risk for pregnancy complications and HIV transmission. Programs for HIV-infected women should incorporate patient–provider communication beyond condom use, for example, dual contraception, adherence during conception, and pregnancy (Coll et al., 2015; Finocchiaro-Kessler et al., 2012; Sutton et al., 2014). Partners and family attitudes impacting HIV-infected women's reproductive decision-making must be considered in tailoring interventions (Jean, Coll, Monda, Potter, & Jones, 2015; Rodriguez, Spence, Monda, Potter, & Jones, 2015).

Consistent with previous studies on HIV and depression, almost half of the women reported mild to moderate depression (Morrison et al., 2002). Interestingly, the primary difference between the two groups was depression; levels of depression were higher among BHIV+. Several factors could explain this finding, for example, managing distress associated with a recent HIV diagnosis (Nightingale, Sher, & Hansen, 2010), or lack of consistent healthcare more typically available to PHIV+ women. Given that a generic measure was used to

measure depression as opposed to a disease-specific measure, differences in rates of depression may be related to other factors specific to this population (Patrick & Deyo, 1989), although the BDI-II has been validated among HIV-infected patients (Hobkirk et al., 2015). Nevertheless, HIV healthcare should facilitate provision of psychological treatment to optimize treatment adherence (Sheth et al., 2015). Surprisingly, little difference was observed in cognitive performance between groups. However, cognitive functioning remains an important issue to consider when developing interventions tailored to HIV-infected women.

Limitations

Although study findings provide valuable insight, the small sample size and cross-sectional design limits the generalizability of study findings. However, women in this study comprised various racial and ethnic groups, representative of the minority community in Miami, Florida. Results were derived entirely from self-report but ACASI was used to reduce social desirability bias. Recruitment of BHIV+ proved challenging given the age limit of the study and sampling strategy. As such, unequal sample sizes may have affected statistical power but not the conclusions reached, as none of the statistical tests used made assumptions of equal group or cell sizes and accounted for unequal sample sizes.

Conclusions

Despite adequate reproductive knowledge, most BHIV+ and PHIV+ women were not using contraception. Given the consequences of presentation of advanced HIV during pregnancy, both treatment adherence and preconception counseling are essential. Interventions or programmatic decisions regarding preconception counseling methods for young women living with HIV are potentially transferrable between BHIV+ and PHIV+ infected women, and remain an important element of HIV clinical care.

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Table 1Sociodemographic characteristics ($N = 34$).

Characteristic	All n (%) Mean (SD)	Behavioral ($n = 13$) Mean (SD) n (%)	Perinatal ($n = 21$) Mean (SD) n (%)	$Z/t/\chi^2, p$
Age	22.09 (3.27)	22.69 (3.50)	21.71 (3.15)	0.84, 0.405
Ethnicity				
Hispanic	3 (8.8%)	2 (15.4%)	1 (4.8%)	
African American	24 (70.6%)	8 (61.5%)	16 (76.2%)	
Haitian/Haitian American/Haitian Bahamian	4 (11.8%)	1 (7.7%)	3 (14.3%)	
Non-Hispanic White	1 (2.9%)	1 (7.7%)	0 (0.0%)	
Other	2 (5.9%)	1 (7.7%)	1 (4.8%)	3.30, 0.627 ^a
Relationship status				
Never married	21 (61.8%)	8 (61.5%)	13 (61.9%)	
In relationship, not married	11 (32.4%)	4 (30.8%)	7 (33.3%)	
Married	2 (5.9%)	1 (7.7%)	1 (4.8%)	0.13, 1.000 ^a
Educational level				
Less than high school	17 (50.0%)	9 (69.2%)	8 (38.1%)	
High school	17 (50.0%)	4 (30.8%)	11 (61.9%)	3.11, 0.078
Employment status				
Not working	29 (85.3%)	11 (84.6%)	18 (85.7%)	
Yes, working	5 (14.7%)	2 (15.4%)	3 (14.3%)	0.01, 1.000 ^a
Monthly personal income (USD)				
Less than \$300	20 (58.8%)	10 (76.9%)	10 (47.6%)	
More than \$600	14 (41.2%)	11 (52.4%)	11 (52.4%)	2.85, 0.153
Ever pregnant				
No	18 (52.9%)	1 (7.7%)	11 (52.4%)	
Yes	16 (47.1%)	12 (92.3%)	10 (47.6%)	7.02, 0.011^a
Number of children				
None	21 (61.8%)	7 (53.8%)	14 (66.7%)	
One or more	13 (38.2%)	6 (46.2%)	7 (33.3%)	0.56, 0.491 ^a

^aFisher's exact test was used.

Table 2Knowledge, attitudes, and behaviors of behaviorally and perinatally HIV-infected women ($N = 34$).

Knowledge, attitudes and behaviors	All $n(\%)$ Mean (SD)	Behavioral ($n = 13$) Mean (SD) $n(\%)$	Perinatal ($n = 21$) Mean (SD) $n(\%)$	$t/\chi^2, p$
Knowledge				
FOG zone	21.38 (3.43)	21.85 (3.89)	21.10 (3.18)	0.70, 0.487 ^a
Safer conception practices knowledge	8.38 (3.14)	9.54 (3.26)	7.67 (2.92)	1.74, 0.092
Attitudes				
Discussed pregnancy with partner				
No	16 (47.1%)	5 (38.5%)	11 (52.4%)	
Yes	18 (52.9%)	8 (61.5%)	10 (47.6%)	0.62, 0.497 ^b
Discussed pregnancy with family				
No	23 (67.6%)	7 (53.8%)	16 (76.2%)	
Yes	11 (32.4%)	6 (46.2%)	5 (23.8%)	1.83, 0.262
Discussed pregnancy with healthcare provider				
No	23 (67.6%)	9 (69.2%)	14 (66.7%)	
Yes	11 (32.4%)	4 (30.8%)	7 (33.3%)	0.02, 1.000 ^b
Discussed preventing pregnancy with healthcare provider				
No	6 (17.6%)	0 (0.0%)	6 (28.6%)	
Yes	28 (82.4%)	13 (100.0%)	15 (71.4%)	4.51, 0.042^b
Behaviors				
Prescribed ARVs				
No	5 (14.7%)	5 (38.5%)	0 (0.0%)	
Yes	29 (85.3%)	8 (61.5%)	21 (100.0%)	9.47, 0.005^b
On ARVs				
No	9 (26.5%)	6 (46.2%)	3 (14.3%)	
Yes	25 (73.5%)	7 (53.8%)	18 (85.7%)	4.19, 0.057 ^b
Adherent to medications				
No	13 (38.2%)	6 (46.2%)	7 (33.3%)	
Yes	21 (61.8%)	7 (53.8%)	14 (66.7%)	0.56, 0.491 ^b
HIV status disclosure				
No	13 (38.2%)	3 (23.1%)	10 (47.6%)	
Yes	21 (61.8%)	10 (76.9%)	11 (52.4%)	2.05, 0.276 ^b
Consistent condom use				
No	11 (32.4%)	5 (38.5%)	6 (28.6%)	
Yes	23 (67.6%)	8 (61.5%)	15 (71.4%)	0.36, 0.549 ^b
Currently using birth control				
No	26 (76.5%)	10 (76.9%)	16 (76.2%)	
Yes	8 (23.5%)	3 (23.1%)	5 (23.8%)	0.00, 1.000 ^b
Birth control type other than condoms				
Short-term (pill)	3 (8.8%)	1 (7.7%)	2 (9.5%)	

Knowledge, attitudes and behaviors	All <i>n</i> (%) Mean (SD)	Behavioral (<i>n</i> = 13) Mean (SD) <i>n</i> (%)	Perinatal (<i>n</i> = 21) Mean (SD) <i>n</i> (%)	<i>t</i> / χ^2 , <i>p</i>
Long-term (IUD, injection)	5 (14.7%)	2 (15.4%)	3 (14.3%)	0.04, 1.000 ^b
Condoms only	26 (76.5%)	10 (76.9%)	16 (76.2%)	
Depression and cognitive performance				
BDI				
Minimal to mild depression	18 (52.9%)	4 (30.8%)	14 (66.7%)	4.15, 0.042
Moderate to severe depression	16 (47.1%)	9 (69.2%)	7 (33.3%)	
MOCA Total	20.53 (3.88)	20.38 (4.79)	20.62 (3.33)	0.16, 0.867

Note: ARVs, antiretrovirals.

^a Mann–Whitney *Z*-test was used for comparison of groups.

^b Fisher's exact test was used.