Published in final edited form as:

AIDS Care. 2012 ; 24(5): 618–625. doi:10.1080/09540121.2011.630344.

Clinical depression and HIV risk-related sexual behaviors among African American adolescent females: Unmasking the numbers

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Abstract

Clinically depressed and non-depressed African American adolescent females aged 13-19 (N = 131) were interviewed and surveyed to determine the relationship between depression and HIV risk-related sexual behaviors. Narratives indicate that the psychopathology of depression may create situations where the target population could become exposed to HIV. Specifically, depressed participants described feelings of loneliness, isolation and wanting somebody to “comfort them” as aspects of depression that affect the decisions they make about sex and relationships. In essence, sex was viewed as a stress reliever, an anti-depressant and a way to increase self-esteem. They shared that even if they didn't feel like having sex, they might just “git it over wit” so they're partners would stop asking. Some also discussed financial and emotional stability offered by older, more sexually experienced partners. These age-discordant relationships often translated into trusting that their partners knew what was best for their sexual relationships (i.e. having unprotected sex). Sixty-nine percent (n = 88) of the sample reported engaging in sexual activity. Given their mean age (16 ± 1.9) participants had been sexually active for 2 ± 1.8 years. The adolescents reported an average of 2 ± 1.8 sexual partners within the past three months. Depressed participants reported a higher frequency of having ever had sex (78% vs. 59%, $X^2 = 5.236$, $p = .022$), and had a higher mean number of sexual partners (2 vs. 1, $t = -2.023$, $p = .048$) and sexual encounters under the influence of drugs and alcohol (8 vs. 2, $t = -3.078$, $p = .005$) in the past three months. The results of this study can guide the modification and/or development of tailored HIV/STI prevention programs. The findings provide explicit, psychologically and culturally relevant information regarding the interaction between depression, self-medicating behaviors and risk for HIV/STIs among clinically depressed African American adolescent females.

Keywords

HIV/AIDS; depression; adolescents; African American; mixed methods

Women, minorities, and adolescents are the fastest growing groups of new HIV/AIDS cases (Centers for Disease Control and Prevention, 2008). African American women are the third

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largest subpopulation of new HIV infections (Centers for Disease Control and Prevention, 2009). Further, African American adolescents aged 13 to 19 accounted for 72% of adolescent HIV/AIDS diagnoses in 2007 (Centers for Disease Control and Prevention, 2007). Adolescents with psychiatric disorders are at greater risk for HIV/STIs than their peers because of increased rates of unsafe sexual practices, cognitive deficits, and increased substance use (Brown, Danovsky & Lourie, 2001; Donenberg, Emerson, Bryant, Wilson, & Weber-Shifrin, 2001; Khan et al., 2009).

Approximately 2 million adolescents aged 12 to 17 (8.3%) experienced at least one major depressive episode during the previous year; prevalence rates among females were three times those among males (Substance Abuse and Mental Health Services Administration, 2009). Research indicates that depressive symptoms are associated with increased HIV risk-related sexual behaviors (Brown et al., 2006; Holden et al., 2008; Lee, O'Riordan, & Lazebnik, 2009; Mazzaferro et al., 2006; Rubin, Gold, & Primack, 2009). The majority of published studies, however, examine depression and sexual risk behaviors through cutoff scores for depressive symptoms (Lehrer, Shrier, Gortmaker, & Buka, 2006; Mazzaferro, et al., 2006; Shrier, 2002; Smith, Buzi, & Weinman, 2010; Williams & Latkin, 2005). Few studies included clinical samples (M. P. Carey, Carey, Maisto, Gordon, & Vanable, 2001; Meade & Sikkema, 2007); moreover, the voice of adolescents is largely absent from this research. The purpose of this mixed methods study was to explore the relationship between clinical depression and HIV risk-related sexual behaviors among an urban sample of African American adolescent females aged 13 to 19 years old.

Theoretical Framework

The Theory of Planned Behavior (TPB) (Ajzen, 1991) guided this research. Key constructs include attitude toward the behavior, subjective norms, perceived behavioral control, and behavioral intention (Ajzen). The theory posits that an individual's attitude toward a given behavior is shaped by his/her behavioral beliefs and evaluations of behavioral outcomes; subjective norms are shaped by normative beliefs and motivation to comply; and perceived behavioral control is influenced by control beliefs and perceived power (Ajzen). These beliefs guide an individual's behavioral intentions, and behavioral intentions are the ultimate determinant of behavior (Fishbein & Ajzen, 1975). The TPB has demonstrated success in the study of HIV/STIs (Armitage & Conner, 2001; John B. Jemmott, 3rd, Jemmott, Braverman, & Fong, 2005; Villarruel, Jemmott, Jemmott, & Ronis, 2004).

Methods

Design

A sequential exploratory (QUAL→QUAN) mixed methods design was used (Creswell & Plano Clark, 2007). Phase I, the descriptive qualitative arm, occurred from April 2008 through February 2009. Phase II, the cross-sectional survey arm, occurred from February 2009 through March 2009. See Figure 1.

Recruitment

Recruitment occurred in metropolitan areas in the Mid-Atlantic region. In Phase I, a snowball, purposeful sample of depressed participants ($n = 24$) was recruited from outpatient mental health treatment programs. In Phase II, we recruited an additional convenience sample of depressed participants ($n = 40$) from outpatient mental health treatment programs, as well as a comparative sample of non-depressed participants ($n = 67$) from complementary settings (i.e. beauty salons and areas of public transportation). Thus, 24 adolescents participated in Phase I and 107 adolescents participated in Phase II. In the sample ($N = 131$), 64 were depressed and 67 were non-depressed.

Participants

In both phases, study inclusion criteria were: 1) self-identify as African American, 2) ages 13 to 19, 3) biologically female, and 4) heterosexual. Phase I participants were also eligible if they were proficient in English, and if under age 18, resided with at least one parent or legal guardian who would provide consent for participation. All depressed participants were receiving outpatient mental health treatment by a licensed mental health professional for clinician confirmed diagnosis of a depressive disorder. Adolescents were excluded if they were diagnosed with co-morbid psychosis, had current suicidal ideation, or were receiving treatment under court order. Data from Phase I and Phase II participants were combined for the analyses, therefore Phase I participants were excluded from Phase II to prevent data duplication. In Phase II, we excluded non-depressed adolescents who reported diagnosis of a depressive disorder, or screened > 10 on the Patient Health Questionnaire 9 (PHQ-9) (Kroenke, Spitzer, & Williams, 2001).

Procedures

Following Institutional Review Board approval, Phase I adolescents were screened for eligibility. At the time of enrollment, participants were also recruited to attend one semi-structured focus group discussion to provide feedback on the study instruments and procedures, and recruitment approaches for Phase II. After informed consent/assent and parental permission procedures, the Phase II questionnaire was piloted. One 1-hour, semi-structured interview immediately followed questionnaire administration. Once data reached theoretical saturation, no new concepts emerged (Bradley, Curry, & Devers, 2007), the interviews concluded. At that time, the focus group was held with four of the ten focus group volunteers. Each interview and the focus group were audio-taped, externally transcribed verbatim, and put in line-numbered form. Phase I participants were compensated with \$20 cash.

Phase II participants were screened for eligibility as Phase I completed. Parental consent was waived and verbal consent was obtained. The self-administered questionnaire data were collected anonymously and placed in sealed envelopes. Phase II participants received \$10 cash.

Measures

There were three instruments in Phase I; semi-structured interview and focus group guides, and a questionnaire. Phase II only included the questionnaire.

Semi-Structured Interview Guide—The interview guide included open-ended questions with probes developed from the theoretical framework. The questions targeted participants' beliefs, knowledge, and personal experience. Items included, "What are some things that might be easy to do in a relationship if a girl is feeling (depressed)?" and "Who is at risk for getting HIV?" To debrief following the sensitive discussion, the guide concluded with items that focused on participants' strengths and future plans.

Semi-Structured Focus Group Guide—The focus group guide was developed similarly to the interview guide. The questions were used to gather participant feedback on the study questionnaire's validity, as well as the study proceedings. Questions included "What did you think about the study?" and "Were there any questions that made you feel uncomfortable or that were difficult to answer?"

Questionnaire—Data were collected on sociodemographics, condom use beliefs and intentions (J. B. Jemmott, 3rd, Jemmott, & Fong, 1998), sexual behaviors (John B. Jemmott, 3rd, et al., 2005; J. B. Jemmott, 3rd, Jemmott, Fong, & McCaffree, 1999), protective factors, substance use (Metzger, Nalvaline, & Woody, 2001), and AIDS knowledge (Koniak-Griffin & Brecht, 1995). The Cronbach's α reliability estimates calculated for the condom use hedonistic, impulse control, negotiation, normative, technical skills and intentions scales were .83, .81, .85, .69, .75 and .86 respectively. The Cronbach's α reliability estimate calculated for the AIDS knowledge scale was .61.

PHQ-9: Depression was assessed with the well validated, 9-item PHQ-9 (Lowe, Kroenke, Herzog, & Grafe, 2004; Martin, Rief, Klaiberg, & Braehler, 2006). Each of the nine DSMIV depression diagnostic criteria (American Psychiatric Association, 2000) are scored from "0" (not at all) to "3" (nearly every day); total scores range from 0 to 27. Respondents rate how often they were bothered by specified problems (i.e., little interest or pleasure in doing things) over the last two weeks and are categorized based on the severity of their depression: 0-4= "none", 5-9= "mild depression", 10-14= "moderate depression", 15-19= "moderately severe depression", and 20-27= "severe depression" (Kroenke, et al., 2001). The Cronbach's α reliability estimate calculated for this sample was .89.

Data Analysis

Atlas/ti version 5.5 was used for thematic content analysis. An integrated approach to code structure development was elected to allow for inductive and deductive conceptualization and organization of the code list (Bradley, et al., 2007). The units of analysis included the entire interviews and focus group discussion, and the interactions between the interviewer and participants. An audit trail, including transcripts, field notes, and quantitative data, was presented to a group of qualitative researchers to confirm the accuracy of the interpretations of the data (Creswell & Miller, 2000). Additionally, five of the 24 interviews were independently randomly reviewed for validity with the original recording and transcript. Quotes from several participants were selected for this paper that represented typical participant responses, or provided new and innovative information.

Questionnaire data from three non-depressed Phase II participants were excluded because less than 1% of the items were completed. The sample of completed data was 128—64 depressed and 64 non-depressed participants. Descriptive statistics and frequency counts were used to describe the study sample. Bivariate comparisons used Chi-square tests to compare proportions and t-tests were also calculated. SPSS version 17 (SPSS Inc., Chicago, IL) was used for data analyses.

As shown in Figure 1, the qualitative and quantitative data were mixed during data analysis and interpretation. The investigators were immersed in data gathering and analysis, simultaneously reviewing the audio recordings, interview transcripts and notes, and survey data allowing the weaknesses in each method to be minimized by the strengths of the other. First, data from Phase I were used to validate the survey for Phase II (Tashakkori & Teddlie, 1998), which explored the prevalence of attitudes, beliefs and behaviors in a larger sample. Second, these data were then integrated to provide context for sexual risk behaviors among depressed African American adolescent females (Elford et al.2004).

Results

Questionnaire Pilot

Pilot data indicated that no revisions were required. Focus group participants and a research review committee provided positive feedback on the construct and content validity of the items. Lastly, there were favorable psychometrics (Cronbach's α reliability estimates ranged from .60 to .96). Resultantly, questionnaire data from Phase I participants were combined with data from Phase II participants in the final analyses ($N = 128$).

Sample

Participants were 16 ± 1.9 years old. Majority (93%, $n = 119$) were currently in school and did not live with their mother and father in the same household (78%, $n = 87$). The average PHQ-9 score was 7.6 ± 6.6 (range = 26) indicative of mild depression. See table 1. In the subsequent text, all qualitative narrative accounts reflect Phase I participants ($n = 24$), and quantitative data reflect the entire sample ($N = 128$).

Sexual Behaviors

Interview participants had varying definitions of “real sex.” Some talked about vaginal/penile or anal-penile penetration, and others talked about oral sex and kissing. When surveyed about what it means to be a virgin, majority of sexually active participants selected “you don't engage in any sexual activity at all” (76%, $n = 88$). More depressed participants indicated that being a virgin means “you only have oral sex, there's no type of penetration” (6%, $n = 5$ vs 3%, $n = 3$) and “you do everything but vaginal sex” (9%, $n = 8$ vs. 1%, $n = 1$); this difference, however, was not statistically significant ($X^2 = 5.885$, $p = .208$).

Sixty-nine percent ($n = 88$) reported engaging in sexual activity (vaginal, anal or oral intercourse); of these, 97% ($n = 83$) had vaginal intercourse, 33% ($n = 28$) had anal intercourse, and 71% ($n = 61$) had oral intercourse. More depressed participants reported engaging in sexual activity ($X^2 = 5.236$, $p = .035$). Among sexually active participants ($n =$

88), more depressed participants reported vaginal ($X^2 = 4.117, p = .042$) and anal sex ($X^2 = 5.832, p = .016$). See table 2.

The mean age of initiating vaginal, anal and oral sexual activity among all sexually active participants ($n = 88$) was 14 ± 1.8 , 14 ± 2.1 and 14 ± 2.3 respectively; two depressed participants reported initiating oral sexual activity at age 9. Given the mean age of the study sample (16 ± 1.9) participants had been sexually active for 2 ± 1.8 years. Sexually active participants reported an average of 4 ± 3.7 lifetime vaginal partners, 1 ± 2.4 lifetime anal partners, and 3 ± 4.9 lifetime oral partners. Further, these participants reported an average of 2 ± 1.8 sexual partners within the past three months.

Depressed participants were younger at first vaginal ($t = 3.669, p = .001$) and oral sex ($t = 2.884, p = .005$). They reported a greater number of lifetime oral sexual partners ($t = -2.234, p = .030$); a greater number of sexual partners in the past three months ($t = -2.023, p = .048$); and more accounts of having sex under the influence of drugs and alcohol ($t = -3.078, p = .005$). Further, depressed participants reported a higher frequency of feeling depressed and subsequently having sex during the past three months ($t = -2.959, p = .006$). Non-depressed participants also reported an average of 3 ± 2 of these encounters. Interview participants provided insight into reasons for engaging in sexual activity by stating that they were “looking for love”, trying to “get attention”, or wanted a “man's touch.”

Interview participants expressed positive attitudes toward and reported the benefits of condom use. Most agreed that condoms should always be used during sex, unless someone “wanted to get pregnant.” Some also shared that they were comfortable talking to their partners about condom use, and would refuse sex if their partner did not have a condom. The survey data, however, showed discrepancies between the attitudes expressed in the participants' narratives and their actual behaviors. On average, 12 ± 27 unprotected lifetime sexual encounters were reported in Phase I.

An average of 10 ± 22 unprotected lifetime sexual encounters were reported in the sexually active sample and 48% ($n = 43$) indicated a condom was not used during their last sexual encounter. Depressed participants reported higher unprotected encounters ($t = -2.033, p = .021$). Interview participants indicated that they relied on their partners for condom availability and that condoms “don't really matter” with steady partners because of trust. Negative attitudes associated with condom use mainly stemmed from hedonistic beliefs and the idea of condoms breaking, “sometimes it just take out the feelin'” and “but that don't always mean it can't pop.”

Nearly three-fourths ($n = 62$) of sexually active participants reported testing for an STI in their lifetime; 37% ($n = 25$) had tested positive for one or more STIs. Chlamydia (69%, $n = 18$) and gonorrhea (39%, $n = 10$) were the most common diagnoses. Depressed participants reported testing positive for an STI at a higher frequency, and this difference approached statistical significance ($X^2 = 3.795, p = .051$).

Sexual Decision-Making

One interview participant equated a male having sex with a female who was depressed to rape. She believed that if a girl was depressed she “wasn’t in her right mind” to make decisions about sex; she paralleled it to being under the influence of alcohol. In the survey responses, 70% (n = 89) of depressed and non-depressed participants also believed that being depressed affects the choices adolescent females make about sex. Eighty-seven percent (n = 111) believed being depressed would make them want to have sex, 39% percent (n = 49) believed that it would make them want to have sex more frequently, and 25% (n = 32) believed that being depressed would make it harder to talk to partners about sex and condom use. In the open-ended survey responses, “because of the feeling of loneliness”, “you need something in life to make you feel good”/“to feel better”, and “you probably want it to take your mind off stuff” were identified as reasons being depressed would increase sexual desire.

Interview participants also described feelings of loneliness, isolation and wanting somebody to “comfort them” as aspects of depression that might impact the decisions girls make about sex and relationships.

“... it's like you wanna give your feelings up to somebody, you just don't know who to give ‘em to so you'll just do anything that'll make your feeling more better...you'll try anything”

Many talked about sex as a stress reliever and a way to increase self-esteem.

“Or like sometimes for me sex is like, you know how the song be like ‘sex is like Tylenol’ [laughter] well for me its [sex is] like whatever them meds is to make depression go away.”

Some also shared that even if they didn't feel like having sex, they might just “git it over wit” so they're partners would stop asking them. They recounted being taken care of financially and emotionally by their older and more sexually experienced partners. This also translated into trusting that their partners knew what was best for their sexual relationships.

“well he's a old head [older man], he know what he doin’ and I need to listen to him cause I'm a young buck [younger girl] and I ain't trying to ruin nothin’ wit dis old head, so if he don't wanna use a condom then we ain't usin’ no condom cause dat's my old head...and I'm his youngin...he puttin’ me under the wing...”

At their last vaginal sexual encounter, the average partner age was 19 ± 5 and 19 ± 6 in the depressed and non-depressed samples respectively; this difference was not statistically significant ($t = 0.123$, $p = .902$).

Discussion

The results of this study move our understanding beyond the relationship between *depressive symptoms* and HIV risk-related sexual behaviors (Michael P. Carey et al., 2004; Holden, et al., 2008; Rubin, et al., 2009). The findings reveal attitudes, beliefs and behaviors that may place *clinically depressed* African American adolescent females at greater risk for acquiring HIV. For some depressed participants, sexual activity provides validation,

acceptance and comfort. Narratives illuminate how depression creates situations where African American adolescent females may acquiesce to non-condom use and undesired sexual activity. Data integration provides context for links between attitudes, beliefs, and HIV risk when factors such as condom use negotiation and early sexual debut are involved. Thus, HIV risk-related sexual behaviors should be viewed in the spectrum of psychopathologic behaviors.

According to these data, the quest for emotional/psychological release may supersede the desire to prevent unintended sexual outcomes, such HIV/STIs and pregnancy. Interventions designed to decrease HIV risk in the target population should therefore include strategic components which validate emotional/psychological needs while promoting preventive behaviors. If sexual activity is a method of physical release and self-medication among depressed African American adolescent females, strategies are needed to encourage other means to meet these needs, or to facilitate the enactment of safer sexual practices. These study findings offer preliminary data on attitudes, beliefs and behaviors which can subsequently be targeted in HIV/STI prevention science in a psychologically and culturally relevant manner.

Longitudinal studies with larger samples are needed to determine explicit associations between depression and HIV risk-related sexual behaviors within the target population. The use of structured clinical interviews instead of clinician diagnoses in future studies will provide more rigorous diagnostic case ascertainment (Hughes et al., 2000). Selection bias may also have been introduced through the convenience sample and data exclusion. Therefore, findings from this study may not generalize to individuals that do not mirror the study sample. Employing probability sampling techniques, at the individual and/or recruitment site level, may provide more representative data. Effect sizes within this sample, however, can be used to provide preliminary sample size estimates for conducting a larger trial. Further research is necessary to design/modify and evaluate evidence-based strategies which address the psychopathology of depression in this population.

Acknowledgements

Funding for this research was provided by:

1. The Substance Abuse and Mental Health Services Administration at the American Nurses Association Minority Fellowship Program [5 SM058566-02].
2. The Hampton-Penn Center for Health Disparities Research [NINR P20NR008361]
3. The Fontaine Society Fellowship at the University of Pennsylvania.

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Figure 1.
Sequential exploratory design schema.

Note: The total sample was 131, however, questionnaire data from three non-depressed Phase II participants were excluded because less than 1% of the items were completed. The total sample for analysis therefore was 128—64 depressed and 64 non-depressed participants.

Table 1

Comparison of sample demographics.

	Participants N = 128	Clinically Depressed n = 64	Non-depressed n = 64	Test Statistic
	M(SD)	M(SD)	M(SD)	t-test
Age	16(1.9)	16(1.7)	16(2)	1.237
Mean # of adults/household	2(1)	2(1.1)	2(1)	0.085
Mean # of children/household	2(2)	3(1.8)	2(1.9)	-0.853
PHQ-9 total score	7.6(6.6)	12.28(6.07)	2.97(2.83)	-11.126 [*]

	%(n)	%(n)	%(n)	X ²
Currently in school	93% (119/128)	97% (62/64)	89% (57/64)	2.988
Live with mother and father	22% (24/111)	18% (10/56)	26% (14/55)	0.945

Note

*
 $p < .05$

Table 2

Differences in HIV risk-related sexual behaviors among sexually active participants.

	Participants N = 128	Clinically Depressed n = 50	Non-Depressed n = 38	Test Statistic
	M(SD)	M(SD)	M(SD)	t-test
Age at first vaginal sex	14(1.8)	14(1.5)	15(1.9)	3.669 **
Age at first anal sex	14(2.1)	14(2.2)	14(2.2)	-0.454
Age at first oral sex	14(2.3)	14(2.4)	15(1.9)	2.884 **
Sexual partner's age at last vaginal sexual encounter	19(5.2)	19(5)	19(6)	0.123
Number of sex partners in past 3 months	2(1.8)	2(2.4)	1(0.6)	-2.023 *
Lifetime vaginal sex partners	4(3.7)	4(3.8)	3(3.4)	-1.849
Lifetime anal sex partners	1(2.4)	2(2.9)	1(1.4)	-1.870
Lifetime oral sex partners	3(4.9)	4(6.1)	2(1.6)	-2.234 *
Number of times had sex under the influence of drugs and alcohol during the past 3 months	6(7)	8(7.4)	2(1.6)	-3.078 **
Number of times felt depressed then had sex during the past 3 months	7(7)	8(8)	3(2)	-2.959 **
Number of lifetime unprotected sexual encounters	10(22)	14(28)	3(4)	-2.033 *

	% (n)	% (n)	% (n)	χ^2
Ever engaged in any sexual activity (vaginal, anal or oral sex)	69% (88)	78% (50)	59% (38)	5.236 *
Ever engaged in vaginal sex	97% (83)	100% (49)	92% (34)	4.117 *
Ever engaged in anal sex	33% (28)	44% (21)	19% (7)	5.832 *
Ever engaged in oral sex	71% (61)	65% (32)	78% (29)	2.962
Condom use at last sex	52% (45)	50% (25)	54% (20)	0.140
Ever tested for an STI	71% (62)	74% (37)	66% (25)	0.699
Ever tested positive for an STI	37% (25)	47% (18)	24% (7)	3.795
Chlamydia	69% (18)	68% (13)	71% (5)	0.022
Gonorrhea	39% (10)	47% (9)	14% (1)	2.365
Genital Warts	19% (5)	26% (5)	0%	2.281
Trichomonas	19% (5)	16% (3)	29% (2)	0.538
Herpes	15% (4)	21% (4)	0%	1.742
Syphilis	15% (4)	21% (4)	0%	10.540
Bacterial Vaginosis	12% (3)	16% (3)	0%	1.249
Human papillomavirus	0.04% (1)	0.05% (1)	0%	12.923
Crabs	0.04% (1)	0.05% (1)	0%	12.923

Note

*
 $p < .05$ **
 $p < .001$