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Monitoring Knowledge Among Family, Sexually Transmitted Infections, and Sexual Partnership Characteristics of African American Adolescent Females

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Abstract

Among 284 African American girls aged 14 to 17 years, frequent family monitoring knowledge was associated with a reduced likelihood of sexually transmitted infections (STIs) and having a casual sex partner but was not associated with other partnership characteristics. Family monitoring may offer an additional STI prevention opportunity for this vulnerable population.

Approximately half of the annual 20 million incident sexually transmitted infections (STIs) in the United States occur among young people aged 15 to 24 years, and African American females are disproportionately affected.¹ Many factors influence adolescents' STI risk, including individual risk behavior, sexual partnership characteristics,² and family factors such as parental monitoring.³ Protective effects of parental monitoring have been demonstrated for early sexual debut, contraceptive use, condom use, and STI acquisition among adolescents, including African Americans.⁴

Parental monitoring incorporates both parental supervision of and communication with adolescents regarding their whereabouts, friends, and activities.³ This concept is often assessed by asking adolescents about their parents' knowledge,^{5,6} a measure commonly referred to as monitoring knowledge. Although the literature on monitoring knowledge generally focuses on parental figures, resident family members not recognized as primary caregivers, such as siblings, may have extensive knowledge about adolescents' activities. This knowledge could exceed parents' information because adolescents feel more comfortable disclosing to nonparental figures who also may be better able to actively monitor adolescents' activities. However, the influence of family monitoring knowledge has not been explored extensively to date and may be particularly salient when older siblings and

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extended family participate in rearing children, as is often the case in low-income African American families.⁷

In addition, the mechanism(s) for the protective effects of parental monitoring, particularly after sexual initiation, has not been well studied.^{8,9} Some research suggests that adolescents with better parental monitoring are less likely to associate with antisocial peers or be negatively influenced by them.^{10,11} Despite evidence that certain partnership characteristics may increase risky sexual behavior and STIs among adolescents,² few analyses have examined if monitoring knowledge influences adolescents' sexual partnerships, including relationship context (e.g., casual sex partner) and partner attributes (e.g., older partner age). The current study aims to address these research gaps by considering monitoring knowledge among family broadly and STIs and sexual partnership characteristics of African American adolescent females.

This study used baseline data provided by 701 African American adolescent females aged 14 to 20 years participating in an HIV/STI prevention trial in Atlanta, Georgia. Trial procedures and methods have been described elsewhere.¹² The current analysis includes participants aged 14 to 17 years who did not live alone and indicated that a resident family member knew the most about their activities (n = 284).

The key variable of interest was perceived monitoring knowledge frequency among family, measured using 2 items about the resident family member with the most knowledge of the participant's activities. Participants were asked the following: (1) "When you are away from home and not at school or work, does this person know where you are?" and (2) "When you are away from home and not at school or work, does this person know who you are with?" Each item included a 5-point response scale ranging from *never or almost never* to *almost always*. Participants reporting *usually* or *almost always* to both items were categorized as perceiving frequent monitoring knowledge among family; all others were categorized as perceiving infrequent monitoring knowledge.

The outcomes included STIs and sexual partnership characteristics. Participants were classified as being infected with chlamydia, gonorrhea, and chlamydia and/or gonorrhea (both or either infection) based on laboratory test results. Seven sexual partnership characteristics were assessed by self-report: (1) currently having a boyfriend (2) perception of whether her current boyfriend had vaginal sex with another woman during the relationship (3) currently having a casual sex partner, (4) perception of whether her current casual partner had vaginal sex with another woman during the relationship, (5) partners generally at least 4 years older, (6) partner substance use during sex in the past 90 days, and (7) vaginal sex in the past 90 days with a partner recently released from incarceration. Each outcome was treated as a dichotomous (yes/no) variable.

Selected sociodemographic characteristics, family-level factors, and individual-level risk factors were considered as potential confounders. Parent-adolescent communication about sex was assessed with a 5-item index ($\alpha = 0.90$) that asked participants about frequency of communication in the last 6 months. Participants who reported using alcohol and marijuana on at least 1 day (s) in the past 90 days were categorized as users of that substance.

Participants who reported usually having at least 3 drinks on one occasion were categorized as heavy alcohol users.¹³

χ^2 statistics and *t* tests compared selected participant characteristics and study outcomes among participants who reported frequent and infrequent monitoring knowledge. Unadjusted and adjusted logistic regression models examined associations between monitoring knowledge frequency and the outcomes of interest, with separate models for each sexual partnership characteristic and STI. Adjusted models controlled for age and bivariate differences significant at $P < 0.1$. Analyses were conducted using SAS version 9.3 (SAS Institute Inc, Cary, NC).

More than half of participants, 57% ($n = 162$), indicated their mother as the resident family member with the most knowledge of their activities; 26% ($n = 73$), a brother or sister; 8% ($n = 23$), a grandmother; 6% ($n = 18$), an aunt; and 3% ($n = 8$), their father. Most respondents (61%) reported that the family member who knew the most about their activities was the same person as their primary caregiver. However, 18% ($n = 50$) of respondents indicated that although their mother was their primary caregiver, their siblings knew the most about their activities. Most participants, 57% ($n = 161$), reported frequent monitoring knowledge. Table 1 compares potential covariates, STI outcomes, and sexual partnership characteristics according to infrequent and frequent perceived monitoring knowledge.

In unadjusted and adjusted analyses (Table 2), greater monitoring knowledge frequency was associated with a reduced likelihood of gonorrhea. Frequent monitoring knowledge was also associated with a decreased likelihood of being infected with chlamydia and/or gonorrhea in adjusted analyses.

In unadjusted analyses, frequent monitoring knowledge was associated with a reduced likelihood of having a casual sex partner and having partners generally at least 4 years older. In adjusted analyses, frequent monitoring knowledge remained associated with lower odds of having a casual sex partner only. None of the other partnership characteristics considered were associated with monitoring knowledge frequency in either unadjusted or adjusted analyses.

To our knowledge, this is the first study to examine the associations between monitoring knowledge among family and adolescents' sexual partnership characteristics and STI risk. Frequent monitoring knowledge was associated with a 75% and 45% decreased likelihood of gonorrhea and chlamydia/gonorrhea infection, respectively. These results are consistent with longitudinal studies among African American adolescent females which found decreased odds of STI acquisition among adolescents with more frequent parental monitoring.^{5,6} Moreover, given that gonorrhea may spread through particularly high-risk sexual networks,¹⁴ the findings support the role of sexual partnerships as potential mediators of the protective association between monitoring and STIs.

Frequent monitoring knowledge was associated with a nearly 50% reduction in the likelihood of reporting a casual sex partner. This finding is consistent with some of the few published studies on parental monitoring and adolescent casual partnerships,^{15,16} including a cross-sectional analysis that reported a 2-fold increased likelihood of casual sex among

African American adolescent females whose parental figure infrequently knew who they were with.¹⁵ Despite evidence that the proportion of condom use may be greater in casual partnerships compared with “main” partnerships,¹⁷ research has shown associations between engaging in casual sex and STIs.¹⁸ Thus, decreased engagement in casual partnerships may reduce adolescents’ STI risk.

Monitoring knowledge was not associated with other partnership characteristics considered. This finding was unexpected, particularly given evidence that parental monitoring is associated with decreased involvement with deviant peers.¹¹ However, several plausible explanations exist. Other factors known to influence sexual partnerships, such as perceived availability of partners,¹⁹ may be more salient determinants of partner selection in this population than monitoring knowledge among family. The lack of observed associations may also reflect several study limitations. Our analysis was underpowered to detect small differences in several outcomes. In addition, risky characteristics may be underreported because of either social desirability bias or lack of knowledge (or accurate knowledge) about their partners.

This analysis is subject to several additional limitations. First, this study was unable to compare the unique effects of parental and nonparental knowledge given limited statistical power. In addition, as a secondary data analysis, this study was limited to data already collected. For example, data were not available to examine violence perpetration as a partnership characteristic. As a cross-sectional study, temporality between monitoring knowledge and the outcomes cannot be established. Although data were collected in 2005 to 2007, we would expect more recent data to indicate similar associations.

Despite these limitations, our results suggest that enhancing monitoring by resident family may offer an additional STI prevention opportunity for this vulnerable population; however, additional research is needed. Longitudinal research may be useful to examine sexual partnership characteristics as mediators of the protective associations between monitoring knowledge and STIs. Studies could also consider the independent effects of parental and nonparental monitoring knowledge. If studies suggest that monitoring knowledge by resident, nonparental family may be causally protective, family-level interventions to enhance monitoring may offer an additional STI prevention strategy, particularly in contexts where competing demands or other stressors limit parental monitoring efforts. Ultimately, a better understanding of the ways in which monitoring knowledge protects against sexual risk may help inform effective prevention interventions that improve the lives of young people.

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TABLE 1.
Selected Characteristics Among African American Adolescent Females by Perceived Monitoring Knowledge Frequency

	Infrequent Monitoring Knowledge (n = 123), n (%)		Frequent Monitoring Knowledge (n = 161), n (%)		P
Sociodemographic characteristics					
Age, mean (SD), y	16.1 (1.0)	16.1 (1.0)	16.1 (1.0)	16.1 (1.0)	0.892
Lives in a household which received government assistance in the past year	76 (61.8)	76 (61.8)	102 (63.4)	102 (63.4)	0.787
Family-level factors					
Currently resides in household with both parents	66 (53.7)	66 (53.7)	96 (60.0)	96 (60.0)	0.341
Parental communication about sex, mean (SD)	13.8 (5.0)	13.8 (5.0)	15.2 (4.3)	15.2 (4.3)	0.010
Father part of life while growing up*	54 (46.6)	54 (46.6)	73 (46.8)	73 (46.8)	0.968
Sexual behavior in past 90 d					
Vaginal sex without a condom	94 (76.4)	94 (76.4)	119 (73.9)	119 (73.9)	0.628
Substance use in the past 90 d					
Alcohol use	54 (43.9)	54 (43.9)	53 (32.9)	53 (32.9)	0.058
Heavy alcohol use	7 (5.7)	7 (5.7)	11 (7.8)	11 (7.8)	0.696
Marijuana use	57 (46.3)	57 (46.3)	60 (37.3)	60 (37.3)	0.124
Lifetime violence victimization					
Emotional abuse	69 (56.1)	69 (56.1)	83 (51.6)	83 (51.6)	0.447
Physical abuse	56 (45.5)	56 (45.5)	55 (34.2)	55 (34.2)	0.052
Sexual abuse	30 (24.4)	30 (24.4)	34 (21.1)	34 (21.1)	0.513
STIs					
Chlamydia	27 (22.0)	27 (22.0)	27 (16.8)	27 (16.8)	0.270
Gonorrhea	18 (14.6)	18 (14.6)	8 (5.0)	8 (5.0)	0.005
Chlamydia and/or gonorrhea	35 (28.5)	35 (28.5)	31 (19.3)	31 (19.3)	0.069
Sexual partnership characteristics					
Current boyfriend	102 (82.9)	102 (82.9)	142 (88.2)	142 (88.2)	0.206
Boyfriend ever had sex with another woman during relationship [†]	23 (25.8)	23 (25.8)	36 (28.8)	36 (28.8)	0.633
Current casual sex partner	51 (41.5)	51 (41.5)	43 (26.7)	43 (26.7)	0.009
Casual partner ever had sex with another woman during relationship [‡]	23 (45.1)	23 (45.1)	21 (48.8)	21 (48.8)	0.717
Partners generally 4 y older	21 (17.1)	21 (17.1)	13 (8.1)	13 (8.1)	0.021
Partner recently drunk or high during sex	57 (46.3)	57 (46.3)	63 (39.1)	63 (39.1)	0.223

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	Infrequent Monitoring Knowledge (n = 123), n (%)	Frequent Monitoring Knowledge (n = 161), n (%)	P
Partner recently released from incarceration	23 (18.7)	18 (11.2)	0.074

* n = 272.

† n = 214.

‡ n = 94.

Associations Among African American Adolescent Females Between Perceived Monitoring Knowledge Frequency and (a) STIs and (b) Sexual Partnership Characteristics

TABLE 2.

STIs	OR	95% CI	P	AOR*	95% CI	P
Chlamydia	0.72	0.40–1.30	0.271	0.67	0.36–1.24	0.201
Gonorrhea	0.31	0.13–0.73	0.007	0.25	0.10–0.63	0.003
Chlamydia and/or gonorrhea	0.60	0.35–1.04	0.070	0.55	0.31–0.99	0.045
Sexual partnership characteristics						
Current boyfriend	1.54	0.79–3.01	0.208	1.59	0.80–3.16	0.186
Boyfriend ever had sex with another woman during relationship [†]	1.16	0.63–2.14	0.633	1.48	0.77–2.84	0.240
Current casual sex partner	0.51	0.31–0.85	0.009	0.49	0.29–0.82	0.007
Casual partner ever had sex with another woman during relationship [‡]	1.16	0.52–2.62	0.718	1.24	0.52–2.96	0.625
Partners generally 4 y older	0.43	0.20–0.89	0.023	0.53	0.25–1.12	0.097
Partner recently drunk or high during sex	0.74	0.46–1.20	0.223	0.89	0.54–1.49	0.667
Partner recently released from incarceration	0.55	0.28–1.07	0.077	0.61	0.31–1.22	0.164

* Adjusted for age, parental communication about sex, history of physical abuse, and alcohol use.

[†] n = 214.

[‡] n = 94.

OR indicates odds ratio; CI, confidence interval; AOR, adjusted odds ratio.