Correlates and Predictors of Virginity Among Heterosexual African American Young Adults

Antoinette M. Landor[1] · Leslie Gordon Simons[2]

Abstract

Research documents that African American adolescents and young adults engage in more sexual activity than other racial/ethnic groups, yet little is known about individuals who remain virgins into adulthood. Using data from the Family and Community Health Study of 554 African American young adults, we examined the individual, familial, interpersonal, and community-level correlates and predictors associated with their virginity status. A total of 82 (14.8%) reported never having had sex. Hence, sexual activity among African American young adulthood is not a universal experience. Multivariable analysis showed that, for males, virginity was associated with BMI, physical attractiveness, educational attainment, anxiety, self-esteem, religious salience, residing in a two-parent household, and neighborhood social disorder. Lower odds of virginity were associated with being in a relationship, higher cognitive performance, and more antisocial friends. Among females, higher odds of virginity were associated with educational attainment and parental quality while lower odds were associated with higher cognitive performance and cigarette use. Results demonstrate that some characteristics associated with virginity were not necessarily the converse of previously identified factors linked to sexual activity. It is important to consider multiple correlates of virginity and their implications for sexuality development of African Americans across the life course.

Keywords African Americans · Virginity · Sexual behavior · Young adults

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Introduction

Sexual activity during adolescence and young adulthood has been a significant public health issue due to associations with unintended pregnancies, STIs, and cervical cancer (D'Souza et al. 2007; Eaton et al. 2011). However, engagement in sexual activity during adolescence and prior to marriage is common for a majority of Americans and is considered a normative behavior (Centers for Disease Control 2016; Reese et al. 2014; Tolman and McClelland 2011). Recent national estimates from the National Longitudinal Study of Adolescent to Adult Health found that a large majority of males (92.2%) and females (91.9%) have had vaginal sex by young adulthood (Halpern and Haydon 2012). Similarly, Mosher et al. (2005)'s study of U.S. adults found that approximately 86% of men and 87% of women reported having had vaginal intercourse with the opposite-sex. Previous studies have also documented racial/ethnic differences in sexual activity. For example, African Americans report higher rates of sexual activity (e.g., had intercourse, first intercourse before age 13, multiple sexual partners) compared to other racial/ethnic groups (Dariotis et al. 2011; Eaton et al. 2011; Landor and Halpern 2015; Pflieger et al. 2013) and are disproportionately impacted by deleterious consequences of sex. Despite these statistics indicating that sexual activity is quite common, particularly among African Americans, we know little about *virginity* in the lives of African Americans. As stated by Halpern et al. (2006), "persons who defy the odds and delay sexual debut beyond adolescence represent an interesting minority group" (p. 926.e2). Most past research on the sexuality of African Americans has focused exclusively on issues related to first sexual experience or being sexually active (Bazargan et al. 2000; Boislard et al. 2016; Carpenter 2005). What about the other side of this coin? What are the characteristics of African Americans who remain virgins into young adulthood?

National estimates and empirical research on the virginity status of U.S. populations found that a small proportion of individuals remain virgins, as defined by individuals who have never engaged in vaginal-penile intercourse, even into young adulthood. Estimates from the National Survey of Family Growth indicated that 13.9% of men and 8.9% of women had not had vaginal intercourse, representing nearly 2 million individuals (Eisenberg et al. 2009). Another study found similar results. Approximately 11% of U.S. adults reported not having had sexual contact with the opposite-sex (Chandra et al. 2013). Among these studies, the prevalence of virginity among all African Americans, regardless of age, ranged from 5 to 12%. Despite these statistics representing an overlooked population in research on virginity—African American virgins—, previous virginity research has failed to explore characteristics that influence young adults' absence of sexual behavior. Such characteristics may be different for African Americans in light of their diverse cultural experiences (Mandara et al. 2003). Some studies, however, have examined whether race was associated with virginity status and found significant links. One study found race to significantly predict virginity status for females and not males. Black women were less likely to report being virgins compared to their white counterparts (Eisenberg et al. 2009), whereas other research

has found that race predicted virginity status for males and females. Asian males were less likely to report be sexually activity after age 18 compared to white men (Haydon et al. 2014). Though it is important to examine racial/ethnic variations in the prevalence of virginity status, less attention has focused on within-group variation in factors associated with virginity status. The present study explores the correlates and predictors of virginity among African American young adults. The results of this study could increase our understanding of sexual development among African American young adults and highlight heterogeneity of this population. Findings may also demonstrate how assumptions about the sexual activity of African Americans, often inherent in the research field, should be resisted in order to more adequately assess sexuality among African Americans throughout the life course.

Decades of literature have identified multiple individual-level, familial-level, interpersonal-level, and community-level factors associated with sexual activity among African American adolescents and young adults, including biological factors (e.g., gender, race/ethnicity, age, skin tone) (Landor and Halpern 2016; Newman and Zimmerman 2000), social factors (e.g., religiosity, cognitive performance, peer influence, neighborhood, academic achievement) (Landor et al. 2011; House et al. 2010; Ramirez-Valles et al. 2002), biosocial factors (e.g., BMI, physical attractiveness) (Wingood et al. 2002), psychological factors (e.g., depression, anxiety, self-esteem) (Brown et al. 2006; Longmore et al. 2004), family factors (e.g., family structure, parent–child relationship quality) (Simons et al. 2013, 2016), and factors associated with attitudes and beliefs including attitudes about marriage (Carroll et al. 2007). Past studies also show associations between sexual activity and sexual abuse (West et al. 2000). Yet previous research has not examined whether such factors are associated with *virginity* among African American young adults. Characteristics that predict virginity among African American young adults may be consistent with factors that contribute to their sexual activity but such factors are not inevitably the converse of these previously identified factors and may vary. We test these previously identified individual-level, familial-level, interpersonal-level, and community-level factors associated with sexual activity as correlates and predictors of virginity. Additionally, although prior studies have examined sexual activity in young adulthood (Landor and Halpern 2015), most of the literature on virginity has been based on samples of adolescents as this work attempted to better understand the protective and risk factors associated with STI acquisition and unintended pregnancy (Zimmer-Gembeck and Helfand 2008). Characteristics that influence virginity should not be simply applied across all developmental periods. It is also important to note that despite various classification of virginity ("technical virgins" vs "total abstainers") (Sewell and Strassberg 2015; Uecker et al. 2008; Woody et al. 2000), this study conceptualizes virgins as those who have never had vaginal sexual intercourse with an opposite-sex partner. This conceptualization is consistent with qualitative studies conducted with African American samples (Haglund 2003).

To fill gaps in our understating of African American young adults' virginity, the purpose of the current study is to examine the individual, familial, interpersonal, and community-level correlates and predictors of African American young adults' virginity to determine which (if any) of these previously identified characteristics

predict virginity status. As noted, the contextual and developmental issues that influence virginity in African American young adults is not fully understood. Moreover, if identifiable, such characteristics could provide the foundation for understanding African American sexuality beyond adolescence and into young adulthood. This study also allows us to examine virginity during a normative period of transitions in sexuality. Two theories guide our study. The ecological theory, and previous research discussed above, frames the individual, familial, interpersonal, and community-level correlates and predictors of virginity among African American young adults, and the life course theory emphasizes how social timing and sequences of life experiences and transitions (such as sexual development) impact trajectories (Bronfenbrenner 1979; Buhi and Goodson 2007; Carpenter 2010; Elder et al. 2003). By focusing on the correlates and predictors of virginity for African American young adults, a group most likely to engage in sexual activity, we may gain a more clear picture of influential factors that may be unique to this population. In addition, understanding virginity may help inform public health and policy efforts to address a broader range of issues related to sexually active and inactive young adults.

Methods

Participants and Procedures

This study analyzed data from the Family and Community Health Study (FACHS), a longitudinal, multisite investigation of over 800 African American families (475 in Iowa and 422 in Georgia) at study recruitment (Simons et al. 2002). FACHS is the largest in-depth panel study of African Americans in the U.S. and was designed to explore contextual effects on the health and development of African American youth and their parents. Recruited families lived in neighborhoods that varied on demographic characteristics such as racial composition (percentage African American) and economic level (percentage of families with children living below the poverty line). Neighborhoods were defined using 1990 census block group (BGs). Based on these criteria, 259 BGs were identified, 115 in Georgia and 144 in Iowa. Data from the Iowa and Georgia subsamples were merged due to considerable consistency in family demographic and family process characteristics (Cutrona et al. 2000; Murry et al. 2001). The study families were randomly selected and recruited from rosters of all African American families in these BGs that had a fifth grader. Data are secondary and completely de-identified therefore the project did not constitute research with human subjects and was exempt from Institutional Review Board review. The first wave of data was collected in 1998 ($M_{age} = 10.5$), wave 2-2001 ($M_{age} = 12.5$), wave 3-2004 ($M_{age} = 15.5$), wave 4-2007 ($M_{age} = 18.8$), wave 5-2009 ($M_{age} = 21.5$), and wave 6-2011 ($M_{age} = 23.5$). The current study sample is composed of 554 target individuals (219 males, 335 females) who participated in all waves used in the current study and reported heterosexual virginity or sexual activity. The current study uses data waves in which data were available on study variables and consistent with previous research and theory (see Table 1).

Table 1 Study variables and time collected

	Wave 1	Wave 3	Wave 4	Wave 6
Individual-level factors				
BMI				X
Physical attractiveness	X			
Skin tone	X			
Education				X
Self-reported cognitive performance		X		
General health status				X
Anxiety			X	
Depression			X	
Self-esteem				X
Self-image				X
Religious importance				X
Religious attendance				X
Sexual abuse			X	
Marital attitudes				X
Arrest				X
Incarceration				X
Cigarette use				X
Family-level factors				
Family structure			X	
Parental quality				X
Siblings				X
Interpersonal-level factors				
Relationship status				X
Currently married				X
Antisocial friends				X
Community-level factors				
Neighborhood social disorder				X

The current study uses waves in which data are available on study variables and consistent with previous research

Self-report questionnaires were administered in an interview format using a computer-assisted personal interview (CAPI). To enhance rapport and cultural understanding, African American college students and community members served as field researchers to collect data from the families (Graham et al. 2018; Sankare et al. 2015). The interviews required two visits to the family's home or a nearby location, each about 90 min, with two interviewers. Adolescents and their parents were interviewed at the same time in separate rooms. In addition, study participants took part in 20-min videotaped parent–child interaction tasks that were coded using the Iowa Family Interaction Rating Scales (see Melby and Conger 2001). Approximately 12 years following the initial video recordings in the first wave of data, 6 trained

female observers used these videotapes to rate targets and primary caregivers skin tone and physical attractiveness. All raters received approximately 8.0 h of initial training (e.g., personnel procedures, rating manual, rating practice, feedback on ratings, written quiz on rating system, and university assurance training). After it was determined that the team members achieved close agreement on skin tone ratings, coders independently scored the study videotapes. Using the intraclass correlation to evaluate interobserver agreement (Shrout and Fleiss 1979), the ICC for the videotape scoring for target skin tone was .82, which is acceptable for these types of data (Mitchell 1979).

Measures

Virginity status was assessed using a single item that asked participants "Have you ever had sex with an opposite-sex partner?" after informing them that "Next, we would like to ask you about your attitudes regarding sexual intercourse."

Individual-Level Factors

Body mass index (BMI) was computed using the standard formula of weight/height^2 (kg/m^2). We classified BMI into categories established by the CDC: *underweight* (BMI < 18.5), *normal/healthy weight* (BMI > 18.5 and < 24.9), *overweight* (BMI > 25.0 and < 29.9), and *obese* (BMI > 30.0). *Physical attractiveness* assessed whether participants were considered physically unappealing/appealing to a subjective rater. Responses ranged from 1 (*mainly unattractive*) to 3 (*mainly attractive*). Research has found attractiveness to be stable from approximately childhood to young adulthood (Alley 1993; Zebrowitz et al. 1993). *Skin tone* was coded from videotapes obtained as a part of the FACHS data collection process (Landor et al. 2013). Raters coded skin tone from 1 (*light skin*) to 3 (*dark skin*). *Education* was based on the question "What is the highest level of education completed?" Responses were 1 (*less than high school*), 2 (*high school graduate*), and 3 (*some college/college graduate*). *Self-reported cognitive performance* were based on 5 items such as "How well can you…learn reading and writing skills?" Responses ranged from 1 (*not well*) to 3 (*very well*). Cronbach's alpha was .60. *General health status* was measured using the item "How would you describe your health right now?" Responses ranged from 1 (*not very good*) to 5 (*excellent*). *Anxiety* was based on 12 items such as "In the last year, did you often worry a lot about being on time." Responses were 0 (*no*) to 1 (*yes*). Cronbach's alpha was .75. *Depression* was based on 20 items that asked "In the last year, was there a time when nothing was fun for you?" Responses were 0 (*no*) to 1 (*yes*). Cronbach's alpha was .89. *Self-esteem* was based on the Rosenberg Self-Esteem Scale (Rosenberg 1965) composed of 10 items such as "On the whole, I am satisfied with myself" Scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was .82. *Self-image* was based on 5 items such as "How popular are you?" Scale ranged from 1 (*not at all*) to 4 (*very*). Cronbach's alpha was .61. *Religious importance* was based on the question "How important is religious/spiritual beliefs to your day-to-day life?" Responses ranged from 1 (*not at all*

important) to 4 (*very important*). *Religious attendance* was based on the question "How often in the past month did you attend church services? Responses were 0 (*never*) and 1 (*at least once*). *Previous sexual abuse* included 3 items: "Prior to age 15, "did an adult/someone in charge of or responsible for you ever…touch you sexually?", "…persuade you to engage in a sexual act?" and "…force you to engage in a sexual act?" Participants who reported yes to any of these items were classified as having experienced sexual abuse. *Attitudes toward marriage* were assessed using 7 items such as "Marriage leads to a fuller life" Responses ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha was .66. *Arrest* was based on the question "How many times have you been arrested?" Responses were 0 (*never*) and 1 (*1 or more times*). *Incarceration* was based on 2 items "How many times have you been in jail?" and "…in prison?" Responses were 0 (*never*) 1 (*more than once*). Participants who reported yes to any of these items were classified as having been incarcerated. *Cigarette use* was measured based on the item "Have you ever smoked cigarettes?" Responses were 0 (*no*) to 1 (*yes*).

Family-Level Factors

Family Structure was coded so that 0 represents being in a single-parent household and 1 represents being in other family types (e.g., married—biological parent/step-parent, cohabitating-parent). *Parental quality* was assessed using the item "How satisfied are you in your relationship with your primary caregiver?" Responses ranged from 1 (*very dissatisfied*) to 4 (*very satisfied*). *Siblings* was based on the number of siblings: 0 (*no siblings*) and 1 (*yes siblings*).

Interpersonal-Level Factors

Relationship status was assessed using the question "What best describes your current relationship status?" Respondents were classified as 1 (*in a relationship*) and 0 (*not in a relationship*). *Currently married* was assessed using the question "What best describes your current relationship status?" Responses were 0 (*not currently married*) and 1 (*currently married*). *Antisocial friends* was assessed with 14 items such as "How many of participants' closest friends stolen something inexpensive?" Responses ranged from 1 (*none of them*) to 4 (*all of them*). Cronbach's alpha was .83.

Community-Level Factors

Neighborhood social disorder was based on 6 items that asked participants about their neighborhood in the past 12 months such as "How often was there a fight in which a weapon like a gun/knife was used?" Responses ranged from 1 (*never*) to 3 (*often*). Cronbach's alpha was .81.

Statistical Analysis

Descriptive statistics were used to show the correlates and predictors of virginity among African Americans young adults and, based on previous research literature and theoretical frameworks of ecological and life course theories, the individual, familial, interpersonal, and community-level correlates and predictors associated with their virginity status. Bivariate relationships of sample characteristics and virginity status were tested using Chi square and *t* test analysis. Next, multivariate analysis was performed using logistic regression to examine the individual, familial, interpersonal, and community-level correlates and predictors associated with virginity. We report the odds ratios (ORs) and 95% confidence intervals (CIs); no adjustment for multiple comparisons was made (see Feise 2002; Rothman 1990). All statistical analyses were conducted using IBM SPSS 24.

Results

Among 554 African American young adults who met study criteria, 82 (14.8%) reported never having had sexual intercourse. Among males, 14.2% reported never having had sexual intercourse; among females, 15.2% reported never having had sexual intercourse. Table 2 presents descriptive statistics and percentages of virginity status by individual, familial, interpersonal, and community-level characteristics. Bivariate analysis revealed that lower educational attainment, lower self-reported cognitive performance, family structure (e.g., being in a two-parent household), higher parental quality, and fewer antisocial friends were all significantly associated with sexual inactivity. For males, BMI, lower educational attainment, lower self-reported cognitive performance, sexual abuse, cigarette use, and family structure (e.g., being in a two-parent household) were significantly associated with being a virgin. Fewer significant characteristics were found between females who were sexually active and virgins. Females who reported lower educational attainment, lower self-reported cognitive performance, higher parental quality, and fewer antisocial friends were virgins in young adulthood.

Multivariate analysis is shown in Table 3. Significant results for male individual-level factors indicated that overweight males had higher odds of being virgins compared to underweight males (OR = 5.79) and males who were rated as "average" in their physical attractiveness were more likely to be virgins compared to males rated as "unattractive" (OR = 6.64). Compared to males with less than a high school education, males who graduated from high school and either reported some college or was a college graduate had higher odds of being virgins (OR = 5.62 and OR = 3.75, respectively). Males who reported higher self-reported cognitive performance had lower odds of virginity (OR = .21). Males with higher anxiety (OR = 5.48) or self-esteem (OR = 5.80) were more likely to be virgins. Compared to males who reported religion as not at all important, males who reported religion as very important were more likely to report being a virgin (OR = 4.55). In addition, there were trends toward being a virgin among males who attended religious services (OR = 3.41), reported being arrested (OR = 3.98), and used cigarettes (OR = 3.08).

Table 2 Sample characteristics, by gender and virginity status

Variable name	Total				Males (n=219)				Females (n=335)			
	Virgin (n=82)		Sex (n=472)		Virgin (n=31)		Sex (n=188)		Virgin (n=51)		Sex (n=284)	
	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean
Individual-level factors												
BMI[b]												
Underweight	3	3.70	5	1.10	2	6.50	0	0.00	1	2.00	5	1.80
Normal	25	30.90	164	35.70	15	48.40	82	44.80	10	20.00	82	29.70
Overweight	21	25.90	122	26.60	7	22.60	49	26.80	14	28.00	73	26.40
Obese	32	39.50	168	36.60	7	22.60	52	28.40	25	50.00	116	42.00
Physical attractiveness												
Unattractive	15	18.50	73	15.70	4	13.30	18	9.80	11	21.60	55	19.60
Average	26	32.10	162	34.80	9	30.00	63	34.20	17	33.30	99	35.20
Attractive	40	49.40	230	49.50	17	56.70	103	56.00	23	45.10	127	45.20
Skin tone												
Light	17	21.00	115	24.70	6	20.00	41	22.30	11	21.60	74	26.30
Medium	27	33.30	125	26.90	7	23.30	36	19.60	20	39.20	89	31.70
Dark	37	45.70	225	48.40	17	56.70	107	58.20	20	39.20	118	42.00
Self-reported education[abc]												
Less than HS	17	20.70	33	7.00	7	22.60	21	11.20	10	19.60	12	4.20
HS Grad	41	50.00	176	37.30	17	54.80	74	39.40	24	47.10	102	35.90
Some college/college grad	24	29.30	263	55.70	7	22.60	93	49.50	17	33.30	170	59.90
Cognitive performance[abc]	82	2.27	472	2.43	31	2.32	188	2.43	51	2.24	284	2.43
Health status												
Not very good/fair	25	30.90	118	25.10	8	25.80	39	21.00	17	34.00	79	27.80
Good	20	24.70	165	35.10	7	22.60	63	33.90	13	26.00	102	35.90
Very good/excellent	36	44.40	187	39.80	16	51.60	84	45.20	20	40.00	103	36.30
Anxiety	82	0.17	472	0.15	31	0.18	188	0.13	51	0.17	284	0.16
Depression	82	0.21	472	0.20	31	0.21	188	0.15	51	0.20	284	0.23

Table 2 (continued)

Variable name	Total				Males (n=219)				Females (n=335)			
	Virgin (n=82)		Sex (n=472)		Virgin (n=31)		Sex (n=188)		Virgin (n=51)		Sex (n=284)	
	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean
Self-esteem	82	4.15	472	4.28	31	4.11	188	4.27	51	4.17	284	4.28
Self-image	82	3.02	472	3.05	31	2.97	188	3.01	51	3.05	284	3.09
Religious importance												
Not at all important	2	2.50	18	3.80	1	3.40	9	4.80	1	2.00	9	3.20
Not too important	6	7.60	40	8.50	2	6.90	22	11.80	4	8.00	18	6.40
Fairly important	22	27.80	146	31.20	11	37.90	58	31.20	11	22.00	88	31.20
Very important	49	62.00	264	56.40	15	51.70	97	52.20	34	68.00	167	59.20
Religious attendance												
Never	30	38.00	199	42.30	13	43.30	100	53.30	17	34.70	99	35.00
At least once	49	62.00	271	57.70	17	56.70	87	46.50	32	65.30	184	65.00
Previous sexual abuse[b]												
No	75	91.50	437	92.60	27	87.10	181	96.30	48	94.10	256	90.10
Yes	7	8.50	35	7.40	4	12.90	7	3.70	3	5.90	28	9.90
Attitudes towards marriage	82	3.30	470	3.27	31	3.35	187	3.21	51	3.27	283	3.32
Arrest												
No	45	54.90	269	57.40	11	35.50	85	45.70	34	66.70	184	65.00
Yes	37	45.10	200	42.60	20	64.50	101	54.30	17	33.30	99	35.00
Incarceration (jail and/or prison)												
No	50	62.50	301	64.20	15	51.70	100	53.80	35	68.60	201	71.00
Yes	30	37.50	168	35.80	14	48.30	86	46.20	16	31.40	82	29.00
Cigarette use[bc]												
No	46	56.10	257	54.70	12	38.70	106	56.70	34	66.70	151	53.40
Yes	36	43.90	213	45.30	19	61.30	81	43.30	17	33.30	132	46.60

Table 2 (continued)

Variable name	Total				Males (n=219)				Females (n=335)			
	Virgin (n=82)		Sex (n=472)		Virgin (n=31)		Sex (n=188)		Virgin (n=51)		Sex (n=284)	
	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean	n	%/Mean
Family level factors												
Family structure[a,b]	82	0.63	472	0.51	31	0.65	188	0.48	51	0.62	284	0.52
Parental quality[a,c]	79	3.80	456	3.66	30	3.80	182	3.76	49	3.80	274	3.59
Siblings												
No	57	69.50	303	64.20	23	74.20	124	66.00	34	66.70	179	63.00
Yes	25	30.50	169	35.80	8	25.80	64	34.00	17	33.30	105	37.00
Interpersonal level factors												
Relationship status												
Not in relationship	42	51.20	202	42.80	17	54.80	82	43.60	25	49.00	120	42.30
In relationship	40	48.80	270	57.20	14	45.20	106	56.40	26	51.00	164	57.70
Currently married												
Not married	79	96.30	447	94.70	30	96.80	179	95.20	49	96.10	268	94.40
Married	3	3.70	25	5.30	1	3.20	9	4.80	2	3.90	16	5.60
Antisocial friends[a,c]	82	1.41	470	1.51	31	1.50	187	1.59	51	1.36	283	1.46
Community-level factors												
Neighborhood social disorder	79	1.27	456	1.29	30	1.32	182	1.29	49	1.24	274	1.29

N=554

[a]Statistically significant (*p* <.05) differences in virginity status in the total sample using *t* tests and Chi square tests

[b]Statistically significant (*p* <.05) differences in virginity status among males using *t* tests and Chi square tests

[c]Statistically significant (*p* <.05) differences in virginity status among females using *t* tests and Chi square tests

Table 3 Logistic regression examining the virginity status of African American young adults

Variable name	Males (n = 219)		Females (n = 335)	
	OR	95% CI	OR	95% CI
Individual-level factors				
BMI[b]				
Underweight (ref)	–	–	–	–
Normal	0.16	0.13–5.46	0.44	0.49–1.56
Overweight	5.79*	1.92–6.27	0.72	0.24–2.18
Obese	1.05	0.15–7.45	0.81	0.28–2.33
Physical attractiveness				
Unattractive (ref)	–	–	–	–
Average	6.64*	1.85–11.67	0.54	0.16–1.84
Attractive	3.03	0.75–12.27	0.70	0.26–1.84
Skin tone				
Light (ref)	–	–	–	–
Medium	0.44	0.08–2.41	1.20	0.41–3.45
Dark	3.52	0.73–16.94	1.54	0.60–3.96
Self-reported education				
Less than HS (ref)	–	–	–	–
HS grad	5.62*	1.78–4.33	11.25**	2.31–4.69
Some college/college grad	3.75*	1.85–6.58	3.44**	1.36–8.69
Cognitive performance	0.21*	1.04–1.21	0.12***	1.03–1.42
Health status				
Not very good/fair (ref)	–	–	–	–
Good	1.85	0.33–10.35	1.11	0.39–3.20
Very good/excellent	0.54	0.11–2.61	0.95	0.35–2.55
Anxiety	5.48*	5.13–8.55	8.47[†]	0.34–13.49
Depression	0.02	0.01–2.69	0.33	0.03–4.12
Self-esteem	5.80*	1.18–8.66	0.87	0.41–1.87
Self-image	0.45	0.10–2.04	0.67	0.27–1.67
Religious importance				
Not at all important (ref)	–	–	–	–
Not too important	0.31	0.16–8.15	1.37	0.08–24.48
Fairly important	0.60	0.04–9.06	1.52	0.32–7.33
Very important	4.55*	1.95–2.75	0.53[†]	0.21–1.37
Religious attendance	3.41[†]	0.79–14.78	1.71	0.67–4.39
Previous sexual abuse	0.75	0.04–13.42	0.38	0.07–2.25
Attitudes towards marriage	0.72	0.21–2.49	0.82	0.40–1.70
Arrest	3.98[†]	0.61–26.17	0.37	0.04–3.57
Incarceration (jail and/or prison)	0.32	0.04–2.43	2.12	0.21–21.26
Cigarette use	3.08[†]	0.80–11.79	0.27**	1.10–1.73
Family level factors				
Family structure	3.72*	1.85–6.32	0.97	0.43–2.19
Parental quality	0.83	0.22–3.13	2.49*	1.06–5.83

Table 3 (continued)

Variable name	Males (n=219)		Females (n=335)	
	OR	95% CI	OR	95% CI
Siblings	0.31	0.07–1.47	0.58	0.24–1.38
Interpersonal-level factors				
Relationship status (ln)	0.34*	1.09–1.22	0.97	0.40—2.35
Currently married	0.87	0.05–14.22	0.83	0.14–5.03
Antisocial friends	0.09*	1.01–1.82	1.84	0.32–10.43
Community-level factors				
Neighborhood social disorder	5.49*	1.77–9.37	0.52	0.15–1.77

CI confidence interval, *OR* odds ratio, *ref* referent category

[†]$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$

Fewer associations between individual-level factors and virginity were found among females. Nevertheless, similar to males, compared to females with less than a high school education, females who graduated from high school and either reported some college or was a collage graduate were more likely to be virgins (OR = 11.25 and OR = 3.44, respectively). Females who reported more self-reported cognitive performance had lower odds of virginity (OR = .12). Females who reported cigarette use had lower odds of being a virgin (OR = .27). A trend toward being a virgin was also found among females; females who reported more anxiety were more likely to be virgins (OR = 8.47).

Among familial-level factors, males who reported being from two-parent households had higher odds of being a virgin (OR = 3.72) whereas females who reported more parental quality were more likely to be virgins (OR = 2.49). Results for interpersonal-level factors show that males in a relationship (OR = .34) and with more antisocial friends (OR = .09) had lower odds of being a virgin. No significant associations were found among females. Lastly, among community-level factors, living in a neighborhood with social disorder increased the odds of males being virgins (OR = 5.49). No significant finding were shown among females.

Discussion

Virginity among African American young adults in our sample is consistent with national estimates (Chandra et al. 2013; Eisenberg et al. 2009) and show that *not all* African American young adults have engaged in sexual activity despite the exclusive focus on sexual activity of African Americans that has produced an incomplete picture of their sexuality. Our study is one of the first to expand the discourse on African Americans sexuality by examining sexual inactivity among African American young adults and exploring within-group variation in factors associated with their virginity status. Findings show that approximately 15% of African Americans remain virgins even into young adulthood. Moreover, this

study demonstrates that myriad individual-level, familial-level, interpersonal-level, and community-level correlates and predicators of virginity play a salient role in the lives of African American young adults.

Bivariate associations of individual-level, familial-level, interpersonal-level, and community-level correlates and predictors of virginity for young adults were mostly consistent with findings in adolescent studies. However, this past research failed to investigate within-group variations in characteristics that influence the virginity of African American young adults. Strong associations between individual-level factors (educational attainment and cognitive performance) and virginity add to a large body of research documenting the influence of individual characteristics on sexuality and sexual behavior (House et al. 2010). Findings are also consistent with longitudinal and cross-sectional studies with White samples (House et al. 2010; Lammers et al. 2000). Significant associations among familial-level factors (family structure and parental quality) and virginity suggests that family remains an important influence on sexuality even into young adulthood. Our findings of young adults are similar with other studies that show family structure (e.g., being in a two-parent household) as well as high parental quality to increase the likelihood of sexual abstinence among adolescents (Miller et al. 2001). Additionally, our results regarding an association between the interpersonal-level characteristic of having antisocial friends and virginity add to the literature showing that having fewer antisocial friends was associated with being a virgin (Jaccard et al. 2005). In sum, our findings suggest that factors associated with virginity status often documented during adolescence and or with less racially diverse samples may extend to African American young adults.

Bivariate results also underscore gender differences. For males, we found additional factors associated with being a virgin: BMI, sexual abuse, and cigarette use. Consistent with previous studies (i.e., Halpern et al. 2005), BMI was associated with a greater likelihood of being a virgin. However, past research has often only focused on White female populations. Our findings suggest that this association may extend to African American males. Sexual abuse was also associated with virginity for males. This adds to research documenting the impact of sexual abuse on the sexual activity of males (Homma et al. 2012), mainly African American males. While cigarette use has been linked to sexual activity, particularly high-risk sexual activities (Guo et al. 2002), our results regarding the association between cigarette use and virginity suggest that the direction of the association found in previous studies on sexual activity using White samples may be different when examining virginity of African American males. For females, cigarette use, parental quality, and fewer antisocial friends were identified as additional factors related to their sexual inactivity. Contrary to results of males, cigarette use was associated with sexual activity (not being a virgin) which is similar to the finding from Guo et al. (2002). Our finding that parental quality was associated with virginity is consistent with previous studies showing this significant association for females and not males using predominately White adolescent samples (Rose et al. 2005). Fewer antisocial friends were also associated with virginity which is consistent with a study by Mandara et al. (2003) of African American adolescents.

Furthermore, our multivariate analysis showed that while these factors remained significant, other factors became significant such as physical attractiveness, anxiety, self-esteem, and religion for males. Interestingly, males rated as average compared to unattractive, had a greater likelihood of being a virgin. A large body of research has documented that physically attractive males were more likely to become sexually active earlier and had more sexual partners (Rhodes et al. 2005). This research, however, has not explored the role of physical attractiveness of African American males on their virginity. Our findings suggest that this pattern may vary for African American young adult males. Anxiety also increased the likelihood that males would be virgins. This also relates to qualitative work that highlights the anxiety that males have about the potential loss of their virginity (Caron and Hinman 2013). Consistent with previous research, our findings demonstrate that self-esteem also increased the likelihood of being a virgin (Longmore et al. 2004). Our results that religious males had a greater likelihood of being virgins adds to decades of research documenting that role of religion in virginity status among African American and Whites adolescents and young adults (Rew and Wong 2006). Multivariate analysis for females revealed that while education, cognitive performance, cigarette use, and parental quality remained significant predictors of virginity, the association with antisocial friends was no longer significant.

Taken together, our findings extend research on sexuality among African American young adults and underscore the important variability that exist in the sexual experiences of African Americans as highlighted by the salience of myriad individual, familial, interpersonal, and community-level factors associated with their virginity. Our results demonstrate unique differences in the correlates and predictors of the virginity of African American young adults that are not necessarily in contrast with previously identified factors linked to sexual activity among this population and not always analogous to factors found in prior studies that combine all racial/ethnic groups rather than focusing on within-group variation.

Although we cannot ignore the high rates of sexual activity among African American adolescents and young adults and deleterious consequences of sex that disproportionately impacts this population, we should not simultaneously make assumptions that all African Americans engage in sexual activity. The results of this study challenge discourse on African Americans sexuality by increasing our understanding of sexual development among African American young adults and highlighting the heterogeneity of this population—*not all* African Americans engage in sexual activity. Additionally, we should not overlook within-group variation in factors associated with the virginity of African Americans. Such assumptions often inherent in the field should be considered in order to more adequately assess sexuality among African Americans throughout the life course.

There are a few limitations of the present study that should be noted. First, the subjective measure of physical attractiveness may not account for differences in perceptions of attractiveness, though research shows that ratings of physical attractiveness are stable from childhood to young adulthood (Alley 1993; Zebrowitz et al. 1993). In addition, we recognize the potential influence of the timing of study variables on outcomes though study variables were based on previous literature and theory. However, we believe that our findings demonstrate that strong significant

associations remain over time. We also note caution in the interpretation of our results as there may be a chance that our results could be false positives because we did not apply correction for multiple testing to our tests of significance. Future research should replicate and confirm the observed associations using African American samples. Lastly, we note that we may not have examined all potential factors that contribute to the virginity of African American young adults. Despite these limitations, better understanding the correlates and predictors of virginity among African Americans may have significant implications for future health behaviors. Future longitudinal research is needed to fully understand how the factors identified in young adulthood contribute to sexuality into middle to late adulthood. Studies should also examine the implication of the virginity of African Americans over time to better address health from a more broad perspective.

Compliance with Ethical Standards

Conflict of interest All authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the IRB of the University of Georgia and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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