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*Journal of Health and Social Behavior*, Vol. 39, No. 2. (Jun., 1998), pp. 108-123.

Stable URL:

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*Journal of Health and Social Behavior* is currently published by American Sociological Association.

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# Athletic Participation and Sexual Behavior in Adolescents: The Different Worlds of Boys and Girls\*

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Journal of Health and Social Behavior 1998, Vol 39 (June): 108–123

*Using multivariate analysis of covariance to test hypotheses about the effects of sports and sexual behavior on a sample of 611 Western New York adolescents, this study concludes that athletic participation and gender interact to influence adolescent sexual outcomes. Female athletes report significantly lower rates of sexual activity than female nonathletes; male athletes report slightly (though not significantly) higher rates than male nonathletes. The gender-specific effect of sports on sexual behavior remains, net of the impacts of race, age, socioeconomic status, quality of family relations, and participation in other extracurricular activities. This paper introduces cultural resource theory to explain how athletic participation influences both traditional cultural scripts and exchange resources, which, in turn, condition the sexual bargaining process and its outcomes for adolescents.*

Over the past two decades, policymakers have expressed concern regarding adolescent sexuality and its consequences (e.g., National Campaign to Prevent Teen Pregnancy 1997). Much of the disquiet revolves around the perception that the age of onset of sexual behavior has fallen: five to ten percent of 12-year-olds and 15 percent of 13-year-olds report hav-

ing had intercourse (Alan Guttmacher Institute 1994). At least half of all American women and more than 75 percent of all American men report having had intercourse by age 18 (Abma et al. 1997; Alan Guttmacher Institute 1994). Adolescent girls in particular are growing more sexually active as double standards in both opportunity for sexual intercourse and attitudes against engaging in sexual behavior wane. In addition, early and frequent sexual relations among teenagers are associated with both unwanted pregnancies and sexually transmitted diseases (Harvey and Spigner 1995).

Intervention programs to reduce teen sexual activity and pregnancy risk now operate throughout the United States. However, with a few notable exceptions—such as Teen Outreach (Allen et al. 1997) and New York City's "In Your Face" pregnancy prevention program (Tiezzi et al. 1997)—most programs have yielded results that are disappointing at

\*This research was funded by the Women's Sports Foundation with funds from the Packard Foundation, the Turner Foundation, the RGK Foundation, and the Sara Lee Foundation, and by NIAAA grants AA06925 and AA09425. The authors wish to thank Dr. Tom Nochajski for his assistance with data interpretation. Please direct correspondence to: Dr. Kathleen E. Miller, Department of Sociology, 430 Park Hall, University at Buffalo, State University of New York, Buffalo, NY 14260 (millerk@ria.org).

best (Males 1993). While intervention programs commonly employ laudable strategies to raise self-esteem and to educate teens, particularly girls, regarding sexuality and its consequences, they overlook the possibility that certain structured activities in the youth culture may reduce sexual activity. While a number of peer activities such as drug and alcohol use are associated with increased sexual activity, few researchers have explored the potential deterrent effect of routine extracurricular activity.

One adolescent activity that may reduce sexual behavior among teens is playing sports, particularly for girls. In 1971, only one in 27 American girls engaged in high school sports; by 1994, the ratio had jumped to one in three. Females now comprise approximately 40 percent of all high-school athletes (National Federation of State High Schools Association 1997) and 38 percent of college athletes (Acosta and Carpenter 1996). While not yet comparable to the participation levels of boys (about half of whom play sports in high school), girls' growing athletic participation has been viewed by many as an indicator of changing cultural attitudes regarding femininity and fitness (Messner and Sabo 1990).

Only three recent studies have addressed the impact of sports on adolescent sexual behavior. Dealing only with girls and not assessing the impact of sports participation per se, Brown et al. (1997) found that the greater the frequency of physical exercise, the older the adolescent girl at first intercourse. In addition, Zill, Nord and Loomis (1995) concluded that female varsity athletes were about a third less likely than female nonathletes to report being a parent by the twelfth grade; male athletes, on the other hand, were a third more likely to become a teen parent than their nonathletic counterparts. And in a preliminary analysis, Sabo et al. (1997) found sports participation to be associated with less sexual activity and lower pregnancy risk among western New York high school girls.

Yet there are several problems with the extant research in this area. The above-mentioned studies of the relationship between sports participation and adolescent sexual behavior are largely descriptive and atheoretical. Furthermore, neither Brown et al. nor Sabo et al. distinguished between sports and other extracurricular activities, leaving open the possibility that athletic participation was

merely a proxy for social participation in general, nor do any of these studies examine whether the association between sports and sexual behavior is spurious. If athletic participation and sexual activity are affected by the same factors—such as race, socioeconomic status, and quality of family interaction—then it may be that, once these factors are controlled, the relationship between sports participation and sexual behavior is diminished if not altogether eliminated. Finally, with the exception of Sabo et al.'s preliminary analysis, the differential effects of sports on boys' and girls' sexual behavior have not been adequately addressed.

In the present study, we examine survey data from a longitudinal study of a random sample of 699 adolescent females and males from western New York families to analyze the relationships among gender, athletic participation, and sexual behavior. We review three theoretical frameworks relevant to the question of whether sports participation has different effects on the sexual behavior of girls and boys, deriving from each a set of testable hypotheses. Taking into account the impact of race, age, socioeconomic status, quality of family interactions, and involvement in other extracurricular activities, we examine the impact of athletic participation on adolescent sexual activity, including (1) overall number of sex partners, (2) frequency of intercourse over one's lifetime, (3) frequency of intercourse during the past year, and (4) age of first intercourse.

#### THEORIZING ATHLETIC PARTICIPATION, GENDER, AND SEXUAL BEHAVIOR

Below we employ three conceptual frameworks in order to ground hypotheses about adolescent sexuality and sports. To sort out the unique effects of sports, we pay particular attention to the question of whether the effects of athletic activity may differ from the effects of other extracurricular activities.

##### *Control Processes*

The old saying "idle hands are the devil's workshop" has implications for deviance in general and sexual behavior in particular.

Some researchers (e.g., Benda and DiBlasio 1994; Lauritsen 1994) have employed control theory (Hirschi 1969) to explain adolescent sexual behavior, though none have chosen to incorporate athletic participation in their analyses. Adolescents with substantial amounts of unstructured, unsupervised time are more likely to engage in risky behavior than those who are constructively engaged (Zill et al. 1995). Part of the logic behind midnight basketball and youth centers is that adolescents are most likely to stay out of trouble if they are given something else to do—that is, if they are provided with acceptable alternative activities that keep them off the streets. The largest window of opportunity for delinquency, and presumably teen sexual experimentation as well, occurs in the afternoon after school closes and before parents return home from work (Sabo and Melnick 1996). Participation in school-sponsored sports programs commonly fills that time slot with regularly scheduled activities. Adolescents who participate in sports may very well have fewer opportunities to be delinquent because their time is more structured than that of other teens and because coaches act in loco parentis.

Control theory suggests that involvement (devotion of time and energy to conventionally acceptable activities) is only one part of the picture. Affective attachment to coaches and teammates may also help to suppress deviance. Furthermore, student athletes may have more incentive not to be delinquent, since they have access to highly valued reward structures through sports and thus much to lose by being delinquent. Athletes may avoid behaviors (such as sexual intercourse that puts them at risk for unintended pregnancy) that they see as potentially threatening to their continued participation, ability to compete, or long-range goals to earn an athletic scholarship and play in college. Athletes presumably also experience a stronger connection to a sports ethic that emphasizes fair play, rule conformity, and self-discipline.

Control theory yields several hypotheses germane to the present investigation. Since sports participation requires similar time commitments from both female and male athletes, no significant gender differences should exist in the direction or magnitude of athletic effects on sexual behavior. Athletic involvement should be associated with lower frequency of sexual intercourse, fewer sex partners, and

later age at onset of sexual activity for both sexes. Furthermore, the “idle hands” thesis recognizes no special power of the playing field. Any structured extracurricular activity should have essentially the same impact; thus formal participation in arts-based and academic-based extracurricular activities are also expected to be associated with lower levels of sexual activity.

### *Cultural Processes*

A variety of recent works have examined the connections among athletic participation, gender, and sexuality from the perspectives of critical sociology, culture, and gender theory. Sports are viewed as a cultural site for the construction of traditional or hegemonic masculinity (Messner and Sabo 1990), serving as an institutional training ground for manhood. In fact, building on the work of Caron, Carter and Brightman (1985) and Houseworth, Peplow and Thirer (1989) on male college students, Andre and Holland (1995) found that younger athletes of both genders score higher on self-reported “masculine” traits (BEM Sex Role Inventory) than do their nonathletic counterparts, and male athletes display more traditional attitudes toward women (Attitudes Towards Women Scale).

As adolescence progresses, sexual identity emerges as an extension of an already formed gender identity; thus sexual behavior becomes scripted in accordance with the wider cultural norms that pattern gender relations (Sabo and Messner 1993). Cultural expectations attached to “masculinity” may encourage boys to initiate sex, to be sexually aggressive with girls, and to regard sexual conquest as a validation for male adequacy (Zilbergeld 1993). Cultural expectations may also encourage male involvement with risky behaviors such as use of alcohol and other substances, delinquency, and sexual promiscuity (Pleck, Sonenstein, and Ku 1993; Skolnick 1993).

But research and theory concerning the sexual behavior of female athletes are scarce. We speculate that high school sports may influence girls’ psychosexual development and sexual choices in ways different from boys. While sport amplifies traditional gender scripts for males, it de-emphasizes or even contradicts conventional scripts for females.

Gender identity formation for girls who participate in high school athletics may therefore result in a less traditional feminine orientation to dating and sexual relations. Female athletes, conditioned to view themselves and their surroundings in a more proactive way, should be less passive, less subservient, and, most importantly, less emotionally dependent on boys for attention and the establishment of self-worth. Girls entering the sports arena now may even feel empowered by challenging male privilege and chauvinistic beliefs concerning athletic ability. In addition, female athletes often derive social support from being a member of a team which, in turn, may furnish girls with networking opportunities to discuss their dating relationships or the sexual reputations and motives of boys. The homosocial ambience and esprit d'corps of the girls' locker room provides opportunities for female bonding and sport talk, thus rendering other popular topics like boys, sex, and dating less salient. Consequently, the pursuit of heterosexual appeal and engagement in sexual activity may become less important for female athletes, and, thus, more a matter of deliberate choice than scripted normative expectations.

In short, whereas boys' gender identity formation vis-a-vis athletics has been largely consistent with hegemonic masculinity, it has been the female athlete's resistance to a traditional cultural script dictating passive femininity that has largely informed her gender identity development. Though male and female athletics share many structural properties, the cultural processes active for boys and girls differ profoundly, producing potentially differential patterns of gender identity formation and approaches to sexual behavior.

This cultural framework suggests that athletic participation should increase sexual activity for boys, but female athletes should actually experience lower rates than female nonathletes. Furthermore, owing to the uniqueness of the sport subculture, other extracurricular activities—which are not so deeply colored by cultural expectations regarding masculinity—should not show the same pattern of interaction effects.

#### *Exchange Processes*

Control theory and the cultural processes explanation both focus on the direct effects of

sports on individual behavior. However, sexual behavior inherently depends upon interaction with at least one other person. As such, sport may affect adolescent sexual activity through its effects on the bargaining process that occurs in dating relationships. For example, Waller (1951) explicitly linked social status with dating behavior, suggesting that, following traditional scripts, females exchange beauty, affection, and sex for status gains associated with dating prestigious males.

Participation in sports has consistently proven to be one way for adolescent boys to gain status; male athletes may therefore trade their status for affection and sexual favors. There is some evidence to suggest that girls also gain status through participation in sports, possibly affecting the balance of exchange. Both Kane (1988) and Holland and Andre (1994) found that participation in "sex-appropriate" sports (e.g., tennis, as opposed to basketball) increases status for high school girls. Though sports have remained primarily a male status enhancement vehicle, both female and especially male students are now more likely to identify sports as a way for girls to gain prestige as well (Suitor and Reavis 1995). Indeed, Sabo, Melnick and Vanfossen (1989) found that a national probability sample of females and males derived significantly popularity gains from athletic participation.

Within the conceptual framework of exchange theory, we speculate that the popularity gains that both females and males derive from high school athletic participation influence their sexual behavior. Where cultural factors affect adolescents' preferences regarding sexual activity, exchange considerations affect their power to act on these preferences within dyadic relationships. Because athletic participation increases boys' social position within the high school status hierarchy, it may be easier for them to request or even demand sex from girls. Athletic participation also augments the social status of girls, but in contrast to boys, the status enhancement provides them with the power to resist male pressures. Social status accrued in this manner gives girls an alternative to trading sex for popularity or self-esteem. Athletic participation enhances the value of the package of resources that both girls and boys bring to the sexual bargaining table.

We assume here that, as a general rule, girls and boys bargain with very different goals in

mind. Where possible, boys pressure girls for sex whereas girls seek to resist this pressure. While exceptions no doubt abound, it is axiomatic in exchange theory that—all other things being equal—people try to act in their own best interests. While both genders have the capacity to enjoy sexual experimentation, girls experience two costs that boys do not: first, the centuries-old stigma against female promiscuity, and, second, the risk of pregnancy. Girls may also be more viscerally aware of the potential negative social and economic consequences of an unplanned pregnancy and thus assign such consequences greater priority in weighing the potential costs of sexual involvement.

This framework generates hypotheses similar to those associated with the cultural processes approach. Male athletes are expected to use their status to bargain for sex, and, thus, to have higher rates of sexual activity, more partners, and earlier onset of intercourse than male nonathletes. Female athletes, following the same logic, should display depressed rates of activity compared to their nonathletic counterparts. Other status-enhancing extracurricular activities should have substantially the same effect, increasing male sexual activity and decreasing female sexual activity. Adolescents presumably make use of all status resources available to them, including participation in athletics, music, clubs, and so on. The greater the prestige gains associated with a given activity, the more participation in that activity should mediate sexual outcomes. Thus, we would expect the same interactions between gender and other extracurricular activities as we expect for sports and gender.

#### PREDICTORS OF ADOLESCENT SEXUAL ACTIVITY: CONTROLS

Several factors have been documented as predictors of teen sexual behavior and should be taken into account in this research, particularly those factors that might correlate with both sexual activity and participation in sports. Not surprisingly, a strong relationship has been documented among age of first intercourse, number of partners, and frequency of sexual activity (Koyle et al. 1989; Thornton 1990).

#### *Demographic Factors*

As children move into the teen years, their interest in sex increases, and as they are granted more autonomy, opportunities for sexual experimentation simultaneously proliferate. Hence, age is associated with several measures of sexual behavior, including early first intercourse (Miller et al. 1997); ever having had sex (Harvey and Spigner 1995); and lifetime frequency of sexual intercourse (Benda and DiBlasio 1994). Whether measured by parental educational attainment (Harvey and Spigner 1995; Miller et al. 1997) or poverty status (Males 1993), lower socioeconomic status is related to increased adolescent sexual activity (Miller and Moore 1990). Race also correlates with frequency of sexual activity and age of first intercourse. Even after controlling for low socioeconomic status, black adolescents engage in intercourse earlier and more often than white adolescents (Furstenberg et al. 1987; Miller and Moore 1990).

#### *Family Relationships*

Findings regarding the effect of quality of family relations on sexual behavior are mixed (Miller and Moore 1990). Previous studies have focused on a variety of types of familial interaction, including communication, control, and cohesion. Though open communication between parent and child is often viewed as a critical factor in delaying or reducing adolescent sexual activity, White and White (1991) found that such communication did not consistently have the expected effect. No consensus exists regarding the effect of parental discipline and control, either. Some scholars argue that the impact of control is curvilinear, with moderate levels of parental strictness yielding lower rates of adolescent sexual activity than high or low levels (Miller et al. 1986); however, these findings may reflect a failure to adequately specify type of parental control (Barnes and Farrell 1992; Voydanoff and Donnelly 1990). In addition, high levels of parental support and monitoring have been shown to be associated with lower rates of sexual activity (Barnes and Farrell 1992; Benda and DiBlasio 1994). Family support and cohesion, or the degree of bonding among family members, also influence the frequency of

delinquent behavior among adolescents (Barnes and Farrell 1992; Farrell and Barnes 1993; Barnes, Farrell and Dintcheff 1997). However, researchers have not isolated sexual behavior from aggregate measures of delinquency (Farrell and Barnes 1993; Farrell, Barnes and Banerjee 1995). Weighing these findings, family cohesion seems to be our best indicator of family process factors that might influence sexual behavior.

#### *Other Extracurricular Activities*

While substantial effort has been devoted to exploring the antecedents of adolescent sexual activity, surprisingly little attention has been paid to the impact of extracurricular school activities. Control theory suggests that teens with too much time on their hands can end up in trouble, but the proposition has not been applied empirically to sexual/reproductive outcomes—with one notable exception. Zill et al. (1995) found that female students who reported spending time in nonathletic extracurricular activities (band, orchestra, chorus, school play or musical) were at less risk for pregnancy than those who did not, though they found even stronger effects of athletic participation on childbearing.

Despite the paucity of research on the linkage between extracurricular activity and sexual behavior, there is good reason to pursue this association. In assessing the effect of sports participation on girls' and boys' sexual activity, it is important to establish whether sports really do have a unique impact. It may be that, as Marsh (1992) suggests, both sports and other kinds of extracurricular activity are part of a more general pattern of social participation, heightening involvement in and commitment to school and conventional behavior patterns. Thus, in addition to controlling for demographic and family interaction variables, we analyze the effects of both athletic and nonathletic extracurricular activity in this study.

#### HYPOTHESES

In this analysis, we test two sets of hypotheses. Control theory yields the following hypotheses:

H<sub>1</sub>: Female athletes have lower rates of sexual activity (including lower frequency

of intercourse, fewer partners, and later coital onset) than female nonathletes.

H<sub>2</sub>: Male athletes have lower rates of sexual activity (including lower frequency of intercourse, fewer partners, and later coital onset) than male nonathletes.

Although the cultural processes and exchange frameworks are conceptually different, they suggest the same adolescent sexual outcomes:

H<sub>3</sub>: Female athletes have lower rates of sexual activity (including lower frequency of intercourse, fewer partners, and later coital onset) than female nonathletes.

H<sub>4</sub>: Male athletes have higher rates of sexual activity (including higher frequency of intercourse, more partners, and earlier coital onset) than male nonathletes.

#### METHODS

Random-digit-dial procedures were used on a computer-assisted telephone network to obtain a representative household sample of 699 adolescents and their families in a large northeastern metropolitan area. In order to be included in the sample at time one, households had to have at least one adolescent aged 13 to 16 and at least one biological or surrogate parent. Black families were oversampled (N = 211) in order to permit more detailed analysis. Characteristics of the overall sample closely matched the census distributions in the area. Each eligible family was offered \$50.00 to participate. Stringent follow-up procedures yielded a completion rate of 71 percent in the first year, and retention rates of over 90 percent in subsequent years (see Barnes et al. 1991; Barnes and Farrell 1992 for a more detailed description of the sampling procedures and sample characteristics). The present analysis used the third wave of data, containing data on sexuality; wave three included 611 adolescent subjects aged 15 to 18. A team of two trained interviewers conducted face-to-face interviews with the target adolescent and one or both parents. Questions about sensitive issues such as sexual behavior were reported through a self-administered portion of the interview.

#### *Dependent Measures*

Measures of adolescent sexual behavior

included self-reports of overall number of sex partners, lifetime frequency of sexual intercourse, frequency of intercourse in the past twelve months, and age of first sexual intercourse. Respondents were asked how many different people they had had sexual intercourse with in their lives, with response categories of none, one, two or three, and four or more. For both lifetime sexual experience and experience within the past twelve months, reported frequency of intercourse was divided into six categories: (1) never, (2) once, (3) two or three times, (4) four or five times, (5) six to nine times, and (6) ten or more times. The respondent's age when she or he first had intercourse was categorized as early (age 10–14), late (age 15–18), or never (respondent had never had sexual relations).

### *Independent Measures*

Four demographic variables were included in the present analysis: (1) race, (2) gender, (3) age, and (4) family income. Race was coded into two categories: black and white/other. Black respondents comprised 30 percent of the unweighted sample and 14 percent of the weighted sample. Respondents ranged in age from 14 to 19. Family income served as an indicator of socioeconomic status. Family income was reported by the adolescent's parents: where the father was unavailable, the mother provided an estimate of his income. Income categories (recoded to midpoint) ranged from under \$7,000 to \$100,000 or more, with an overall sample mean of approximately \$41,000.

To measure family cohesion, we employed Olson, Portner, and Lavee's 1985 FACES III scale, for which response choices range on a 6-point Likert scale from "almost never" to "almost always." Respondents were asked to describe their families with respect to the following statements: (1) "Family members ask each other for help;" (2) "We approve of each other's friends;" (3) "We like to do things with just our immediate family;" (4) "Family members feel closer to other family members than to people outside the family;" (5) "Family members like to spend free time with each other;" (6) "Family members feel very close to each other;" (7) "When our family gets together for activities, everybody is present;" (8) "We can easily think of things to do together

as a family;" (9) "Family members consult other family members on their decisions;" and (10) "Family togetherness is very important." Alpha reliability of the cohesion scale was .82 for the sample as a whole.

Athletic participation was measured by the question, "Do you participate in sports at school?" For a small number of cases ( $N = 26$ ) where the respondent was no longer in school, wave four responses (i.e., responses from the following year) to the question "How often did you actively participate in sports, athletics, or exercising (other than during school hours) in the last year?" were recoded dichotomously (yes or no) and substituted.

Respondents were asked to indicate whether they participated in seven extracurricular activities: (1) sports, (2) music, (3) drama, (4) literary organizations, (5) academic clubs, (6) sororities/fraternities, and (7) "other activities." Sorority/fraternity involvement was discarded due to the small number of participants ( $N = 21$ ); "other activities" was likewise eliminated as theoretically meaningless. Factor analysis was used to establish whether the remaining activities could be grouped into meaningful subcultures. The analysis yielded three factors, which accounted for 32.9 percent of the variance. After varimax rotation, school participation in music and drama loaded on factor one, the "arts" factor (eigenvalue = 1.65), with loadings of .84 and .77 respectively. School participation in literary organizations (e.g., yearbook, school newspaper) and/or academic clubs comprised factor two, the "academic" factor (eigenvalue = 1.07), with loadings of .81 and .75 respectively. Athletic participation constituted factor three, the "sports" factor. Although the eigenvalue for this factor was only .90, we retained it because sports alone loaded .97 on the factor. Bivariate correlations among the three factors were low: .23 (arts/academic), .16 (academic/sports), and .03 (sports/arts).

## RESULTS

Sociodemographic characteristics of the weighted sample approximated those of the general population (Barnes et al. 1991; Barnes and Farrell 1992).<sup>1</sup> (See Table 1 for sample descriptives.) Sport appeared to be the extracurricular activity of choice: while fewer than one in four respondents participated in the



**TABLE 1. Weighted Descriptive Statistics: Sociodemographics, Family Interaction, Extracurricular Activities, and Sexual Behavior Variables**

	All	Females		Males	
	(N = 611) %	Athletes (N = 153) %	Nonathletes (N = 183) %	Athletes (N = 181) %	Nonathletes (N = 94) %
<i>Race (unweighted)<sup>a</sup></i>					
White/other	70.4	74.5	65.6	69.6	74.5
Black	29.6	25.5	34.4	30.4	25.5
<i>Gender</i>					
Female	54.8	NA	NA	NA	NA
Male	45.2				
<i>Age</i>					
15 or younger	21.6	24.1	19.3	22.8	19.8
16	27.1	25.5	24.7	34.3	20.1
17	26.4	33.8	23.1	24.3	24.6
18 or older	24.9	16.6	32.9	18.5	35.4
Mean	16.6	16.4	16.7	16.4	16.8
<i>Mean Family Income, in thousands (3.5–100)</i>					
	40.9	44.6	39.3	44.0	32.1
<i>Mean Family Cohesion (10–50)</i>					
	31.6	32.4	30.7	32.7	30.8
<i>Arts (music, drama)</i>					
No	73.0	59.6	70.0	79.9	86.8
Yes	27.0	40.4	30.0	20.1	13.2
<i>Academic (clubs, literary organizations)</i>					
No	70.9	51.2	75.3	75.7	84.2
Yes	29.1	48.8	24.7	24.3	15.8
<i>Athletic Participation</i>					
Yes	55.0	NA	NA	NA	NA
No	45.0				
<i>Partners<sup>b</sup></i>					
None	38.3	48.1	36.8	32.8	33.8
One	20.5	28.0	24.2	10.9	18.6
Two or three	22.7	14.7	25.9	26.9	22.8
Four or more	18.5	9.2	13.0	29.4	24.8
<i>Frequency Sex, life<sup>b</sup></i>					
Never	41.1	53.6	40.6	33.8	34.7
1–3 times	13.1	12.2	6.6	18.2	16.8
4–9 times	10.4	8.4	8.9	11.2	15.3
10+ times	35.3	25.8	43.8	36.7	33.2
<i>Frequency Sex, past year<sup>b</sup></i>					
Never	43.3	53.7	41.9	38.9	36.7
1–3 times	16.7	15.7	8.7	23.1	20.5
4–9 times	11.9	9.7	13.5	10.7	14.5
10+ times	28.1	20.9	35.8	27.3	28.2
<i>Age at Onset (ordinal)</i>					
Early (10–14)	24.3	11.2	24.1	33.5	28.9
Late (15–18)	39.1	41.5	40.8	34.8	41.0
Never had sex	36.6	47.2	35.1	31.8	30.2

<sup>a</sup> Percentages provided here for race are based on the unweighted sample. After weighting to correct for oversampling of black families, 86% of the sample was white/other and 14% was black. Percentages provided for all other descriptive statistics are weighted. The unweighted sample was used for the multivariate analysis.

<sup>b</sup> Excludes some missing cases recoded to the mean value in later analysis.

arts or academic extracurricular activities, over half (55 percent) reported athletic involvement. Nearly two thirds of the boys reported sports participation, while almost half of the girls engaged in sport activity of some kind.

In order to provide unbiased estimates of sexual behavior, the weighted descriptive statistics were used. While over a third of the adolescents reported having never had a sex partner, nearly two thirds had at least some sexual experience, and nearly a fifth (18.5 percent) reported having four or more partners. For both lifetime and recent sexual experience, responses were bimodal: while more than 40 percent had never had sex, over a third had had sex ten or more times overall, and over a quarter reported this frequency within the past year alone. Nearly a quarter of respondents (well over a third of those who had at least some sexual experience) reported that their first sexual encounter had occurred before age fifteen.

Males were more likely to participate in sports than females (65 percent versus 47 percent). When comparisons were made across gender and athletic-involvement categories, several differences were noted. Compared to females, males reported greater sexual experience overall, more partners, and an earlier onset of sexual behavior. The relationships between sports and sexual behavior differed by gender: while athletic participation was associated with lower rates of sexual activity for females, the reverse was true for males.

An examination of the bivariate correlations yielded some initial insights into the relationships involved. Number of sex partners, life-

time and past-year frequency of intercourse, and age of first intercourse were all highly intercorrelated, ranging from .67 to .93. Table 2 shows the bivariate correlations among the extracurricular and sexual behavior variables. These relationships are of particular interest, since—unlike the demographic and interaction variables—the impact of participation in extracurricular school activities on sexual behavior has not been tested previously. No clear difference between sports and other group activities emerged for the sample as a whole. There was a weak negative association between each type of activity and sexual activity, an effect that was weakest for sports. However, when separated out by gender, it became clear that different processes were operating for boys and girls. Where all three types of activities were associated with lower sexual activity for females, for males, only arts involvement had this effect. In fact, male sports participation—while not a significant outcome—showed a modest positive correlation with sexual activity.

Because the dependent measures were highly correlated, we employed multivariate analysis of covariance to explore the gender-differentiated impacts of sports participation on adolescent sexual behavior (Table 3). As predicted, sociodemographic factors played a significant role in predicting teen sexual activity. Respondents' race significantly affected the multivariate factor, as well as a majority of the univariate indicators of sexual activity: whites were less sexually active on the whole. Gender as a main effect was important in predicting number of sex partners and age at first coitus, though not frequency of intercourse. Females

**TABLE 2. Bivariate Correlations of Dependent Variables and Extracurricular Activities, by Gender**

	# of Partners	Lifetime Sex	Past Year Sex	Early Onset
<i>All</i>				
Arts	-.18***	-.15***	-.15***	-.14***
Academic	-.16***	-.14***	-.12**	-.12**
Sports	-.01	-.08*	-.10*	-.05
<i>Females</i>				
Arts	-.11*	-.14*	-.13*	-.12*
Academic	-.21***	-.18***	-.16**	-.18**
Sports	-.14**	-.17**	-.17**	-.17**
<i>Males</i>				
Arts	-.19**	-.15*	-.17**	-.12*
Academic	-.03	-.06	-.06	-.01
Sports	.04	.01	-.02	.02

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ; (two-tailed tests).

had fewer partners and initiated sex at a later age. Not surprisingly, older adolescents reported more partners and more frequent intercourse, though they were no more likely to have initiated sexual activity at an early age than were younger respondents. While family income had no significant effect on the dependent variables taken separately or as a factor, family cohesion was clearly a consideration in the sexual behavior of adolescents, significantly reducing frequency of intercourse and number of partners, and increasing age of first intercourse on both the multivariate and univariate levels. In fact, only in the case of this variable can a genuine if cautious claim be made regarding causality, since family cohesion was measured several years prior to reported frequency of intercourse.

Yet the relationship between extracurricular activity and sexual behavior remains a tangled one. None of the three factors (arts, academic, sports) proved significant for the multivariate

factor as a whole; in fact, neither sports nor academic participation had significant main effects for any of the univariate or multivariate analyses. However, the univariate impacts of arts participation on sexual behaviors were significant, indicating that adolescents who participated in activities such as music and drama were less likely to be sexually active than those who did not participate in these activities. The effect of arts involvement on number of sex partners differed by gender: though musical or dramatic extracurricular pursuits were associated with lower rates of sexual activity for both girls and boys, the effect for boys was significantly stronger. Other than this specific interaction, though, the relationships between nonathletic extracurricular activities and sexual behavior were not significantly affected by gender.

The interaction between athletic participation and gender constitutes the pivotal finding of this analysis. The interaction was signifi-

**TABLE 3. Multivariate Analysis of Covariance Predicting Adolescent Sexual Behavior (Sequential Method<sup>a</sup>)**

Independent Variables	Multivariate F	Standardized Beta Coefficients			
	Four Dependent Variables Taken Together	# of Partners	Lifetime Sex	Past Year Sex	Early Onset
<i>Demographic Factors</i>					
Race	8.96***	.45***	.40*	.32	.28***
White/other (= 0)					
Black (= 1)					
Gender	15.68***	-.51***	-.29	-.19	-.26**
Male (= 0)					
Female (= 1)					
Age	31.12***	.23***	.47***	.43***	.02
Income	NS	-.00	-.00	-.00	-.00 <sup>+</sup>
<i>Family Interaction</i>					
Family cohesion	5.66***	-.03***	-.03**	-.03**	-.02***
<i>Extracurricular Activity</i>					
Arts (1 = yes)	NS	-.26*	-.45*	-.50*	-.16*
Academic (1 = yes)	NS	-.12	-.28	-.20	-.02
Sports (1 = yes)	NS	.07	-.03	-.10	-.05
<i>2-way Interactions</i>					
Gender*Arts	NS	.48*	.48	.54	.18
Gender*Academic	NS	-.20	-.05	.02	-.07
Gender*Sports	1.95 <sup>+</sup>	-.43*	-.87*	-.72*	-.35**
<i>Cell Comparisons for Gender*Sports</i>					
<i>Interaction: Effects of Athletic Participation Within Genders</i>					
Males	NS	.28 <sup>+</sup>	.21	.04	.15
Females	3.62**	-.32*	-.80***	-.77***	-.29**

<sup>a</sup> Contrasts are simple, reference category is first

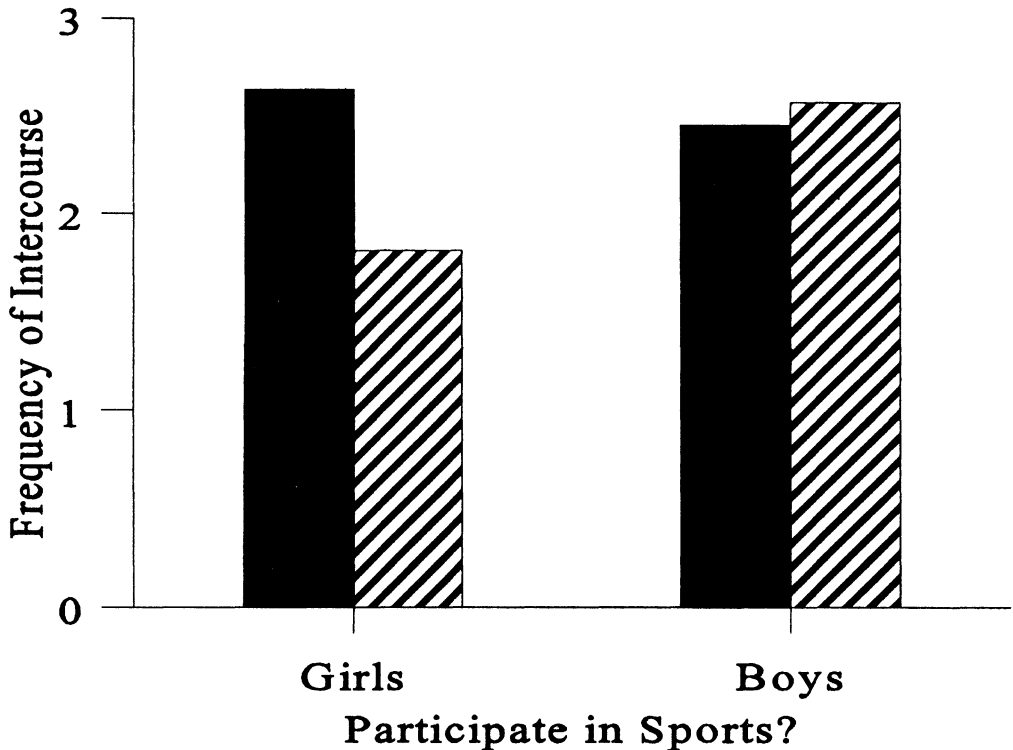
\*p < .05; \*\*p < .01; \*\*\*p < .001; +p < .10; ++p = .101

cant for the univariate tests of each of the four dependent measures of sexual activity. Clearly, sports had a very different impact on boys' and girls' sexual behavior. Main effects for sports (all measures) and for gender (two measures) were absent due to the conflation of these categories; as the cell comparison for the gender\*sports interaction demonstrates, sports participation was associated with lower sexual activity levels for females only. The effect was particularly striking when athletic participation was contrasted with participation in other extracurricular activities, which manifestly did not interact with gender in the same way.

Comparing adjusted means for each of the four gender/sport categories confirms that

girls who participated in sports reported evidence of less sexual activity on all measures. Female athletes had substantially fewer sex partners, engaged in less frequent intercourse on both temporal scales, and began having sex at a later age. Figure 1 shows the plotted adjusted means for lifetime frequency of sexual intercourse, which are typical of the dependent variables. The directions of the effects for each of these four behaviors were consistent: sports involvement for girls resulted in lower levels of sexual activity. For boys, however, the effects were decidedly weaker and reversed in direction. That is, to the extent that sports made a difference in boys' sexual behavior at all, male adolescent athletes actu-

**FIGURE 1. Adjusted Means of Dependent Variables: Lifetime Frequency of Intercourse, by Gender and Athletic Participation**



no
  yes

- 0 never had sex
- 1 had sex once
- 2 had sex two or three times
- 3 had sex four or five times
- 4 had sex six to nine times
- 5 had sex ten or more times

ally reported more partners, more sexual experience overall, and earlier sexual onset than did their noninvolved peers.

## DISCUSSION

This work shows that sports have unique and gender-specific effects on adolescent sexual behavior. Our findings indicate that, even after accounting for the effects of race, age, family income, family cohesion, and involvement in other extracurricular activities, athletic participation for girls was associated with: (1) lower frequency of sexual intercourse; (2) fewer sex partners; and (3) higher age at coital onset. For boys, these effects were very slight and in the opposite direction. What, then, are the implications of these results for the theories examined earlier?

The control or "idle hands" explanation received little support. Contrary to our findings, this theory predicts no significant gender differences in magnitude or direction of effects of sports on sexual behavior. Furthermore, control theory implies that sports should act to suppress sexual activity in more or less the same fashion as other extracurricular activities, a conclusion tentatively supported for girls but clearly not for boys. The interaction of gender and athletic participation raises doubts about the relevance of control theory for this analysis.

The cultural explanation fared better. After controlling for demographic and family relationship variables, the anticipated gender differences in the magnitude and direction of effects of sport on sexual behavior were borne out, as were clear differences between sports and other extracurricular activities. Whereas the effects of athletic participation on sexual activity were gender-specific, involvement in the arts (music or drama) had a depressive impact on the sexual activity of both genders. Academic extracurricular participation had little effect at all. These findings are consistent with the existence of diverse subcultures. Unlike sport, which for boys often enhances a sexually aggressive ethic of masculinity and, for girls, weakens their commitment to a sexually passive cultural script, arts involvement is less likely to promulgate a message of machismo.

Like the cultural explanation, the exchange framework suggests different sexual outcomes for female and male athletes. Girls who play

sports do in fact report less frequent sexual intercourse, fewer partners, and later age at coital onset than those not involved in sports. These findings are consistent with the contention that social status gained through athletic participation is being used to resist sexual pressure. Though the difference is not statistically significant, male athletes report slightly more sexual activity than nonathletes, suggesting that they may employ sports-based resources to bargain for sex. Of course, the weakness of this tendency argues in favor of caution before accepting such an explanation. However, our descriptive analysis shows that boys in sports tend to polarize into two groups (those who are sexually inactive, and those who are very active), and this division may cloud somewhat the pattern of male athletic sexual behavior.

Furthermore, if the impact of sports on sexual behavior is largely mediated by a sexual bargaining process, the same dynamic presumably applies to other status-enhancing extracurricular activities. Any personal resources gained through involvement in academic or arts activities should have bargaining implications, with differences in the magnitude of the effect reflecting the status of the activity. Yet arts participation decreased sexual activity for boys as well as girls, an inconsistency that is difficult to explain using exchange theory alone unless participation in music or drama actually decreases social status.

Our findings do not negate control theory, which has proven highly effective in explaining other adolescent risky behaviors (Barnes and Farrell 1992), but suggest instead that there is something unique about the intersection of sports and sexual behavior which calls for an alternative theoretical approach. We suggest that athletic participation and sexual activity are distinct from the more general concepts of social participation and problem behavior. Unlike other extracurricular activities, the culture of sport is steeped in a tradition rooted in deeply cherished notions of discipline, manhood, and structured aggression. And unlike other risky behaviors, sexual activity involves negotiated patterns of interaction and resource exchange with others.

### *Cultural Resource Theory*

We have developed an integrated frame-

work called cultural resource theory to explain the apparent interface between the cultural and exchange processes at work here, wherein culture dictates the value of the resources brought to bear and resource availability influences adherence to cultural norms. Cultural resource theory explicitly recognizes the interaction of gender-specific cultural scripts and bargaining resources in the negotiation of sexual outcomes for adolescents. Sport provides both a set of cultural prescriptions and a set of bargaining resources that play key roles in determining an adolescent athlete's sexual behavior. Thus athletic status translates into bargaining power (to exploit or resist exploitation) for both genders. Sport resources, along with a sport culture antithetical to normative expectations of passive femininity, allow girls to discard aspects of the traditional gender script that prioritize heterosexual appeal and vicarious status aggrandizement through social and/or sexual bonding with boys. The arts, conversely, provide girls with enhanced status which may be used in the bargaining process, but either confer little status on boys or, more likely, shake boys loose from a cultural script which equates masculine worth with sexual accomplishment.

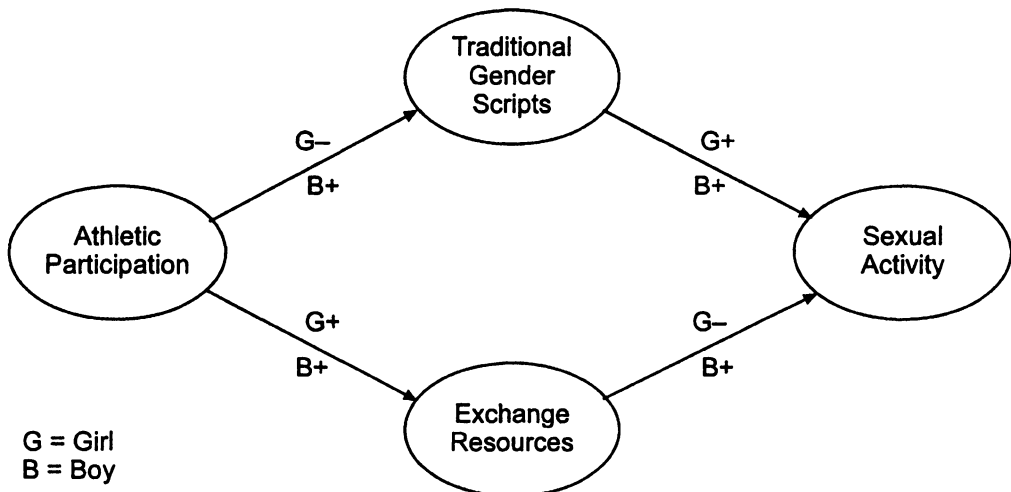
Figure 2 provides a conceptual schematic of cultural resource theory. Athletic participation confirms traditional gender scripts for boys, while disconfirming traditional scripts for girls. Since these scripts promote (if not overtly) the exchange of female sexual favors for male prestige, athletic participation indirectly increases sexual activity for boys and decreases

it for girls. Sports also enhance social status for both genders, giving male and female athletes greater power in negotiating sexual outcomes in their relationships.

Of course, care must be taken in attributing causality to any of the reported associations. As Frey and Eitzen (1991) point out, there is a powerful process of selection at work when children and adolescents enter the sports milieu. Spreitzer (1994) found that athletic participation is nonrandomly distributed: students who come from a higher socioeconomic family background, who have higher grades and score better on standardized tests, and who report higher levels of self-esteem are more likely to become athletes. Similarly, we found that athletes in the present analysis reported higher family incomes and higher levels of family cohesion. Still, selection and socialization are most likely mutually reinforcing processes. Selective recruitment into sports, then, does not mean that differences between athletes and nonathletes entirely predate their participation; it does, however, mandate the careful control of potential selector variables. We posit that the filtering processes involve both structural (e.g., race, age, socioeconomic status) and interactional (e.g., quality of family interaction) inputs. Even when these variables are controlled, however, a gender-differentiated effect of sports on adolescent sexual behavior remains.

Several additional caveats are in order. The foregoing discussion has focused exclusively on heterosexual adolescent sexual activity. Cultural resource theory emphasizes both the

**FIGURE 2. Cultural Resource Theory: Conceptual Model**



acquisition of resources that permit girls to diverge from traditional gender scripts if they so choose, and exposure to a nontraditional, androgynous gender script. While this theory might lead one to predict same-sex sexual activity among female athletes, the data in this study did not permit empirical evaluation of this hypothesis. We have accordingly discussed only the heterosexual implications of the effects of athletic participation on adolescent sexual behavior.

In addition, parts of the preceding argument for cultural resource theory are based on deduction. Because we have little empirical evidence regarding the relative popularity associated with various extracurricular activities, we are unable to state unequivocally that popularity and sexual outcomes are related in a linear fashion. Nor can we entirely rule out a sociobiological explanation for these findings. For example, increased physical activity can delay menarche, deterring sexual interest and readiness among adolescent females (Freedson and Bunker 1997). It is also possible that females who reach sexual maturity at an early age tend to drop out of sports (Malina 1983), while boys who develop early are tracked into sports and enjoy greater athletic success because of their size and strength advantages.

Furthermore, within the rubric of cultural resource theory, we cannot assign greater or lesser importance to either the culture or exchange process in explicating the relationships among sports, gender, and sexual behavior. It may be, for example, that female athletes are less invested in the dating game altogether (culture), or just less likely to see sex as a necessary part of the game (exchange). They may be viewed by boys or perceive themselves as less desirable partners because of their divergence from conventional scripts; or, perhaps, they see themselves or are viewed by boys as more desirable partners, and thus in a better position to dictate the terms of their relationships. High school sports may also be a cultural milieu in which platonic friendships between female and male athletes can be developed, bypassing the sexual bargaining process altogether. To some extent, these distinctions might be illuminated by comparing dating behavior and sexual outcomes. Ultimately, however, qualitative exploration of the gendered world of sport may be necessary in order to understand the meanings, and

therefore the value, that adolescents assign their own activities.

The current study opens a window to an area of inquiry previously unexamined. Currently, intervention programs to combat adolescent behaviors leading to unwanted pregnancy operate in every state, and much research activity has been devoted to evaluating their efficacy. However, the results to date are varied, and many, if not most, of these programs appear to have no appreciable returns (Males 1993). None of these prevention programs, or the supportive research generated so far, address the contributions of athletic participation. While further research is needed to clarify the nature and nuances of the relationships found here, it is clear that involvement in sports affects girls and boys differently, and that for girls, athletic participation is associated with lower frequency of heterosexual intercourse, fewer partners, and later onset of intercourse. In light of the concern in contemporary America over adolescent sexuality, this promising connection would seem deserving of continued research attention.

## NOTES

1. Because black families were disproportionately sampled in order to allow for more detailed race comparisons, the frequencies provided here have been weighted to correct for oversampling. However, since race is controlled for in the multivariate analysis, the unweighted sample is used in this procedure.

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