



Published in final edited form as:

J Interpers Violence. 2006 January ; 21(1): 105–120.

Jocks, Gender, Binge Drinking, and Adolescent Violence

Kathleen E. Miller, Ph.D.,

Research Institute on Addictions, University at Buffalo

Merrill J. Melnick, Ph.D.,

Department of Physical Education and Sport, S.U.N.Y. College at Brockport

Michael P. Farrell, Ph.D.,

Department of Sociology, University at Buffalo

Donald F. Sabo, Ph.D., and

Center for Research on Physical Activity, Sport, and Health, D'Youville College

Grace M. Barnes, Ph.D.

Research Institute on Addictions, University at Buffalo

Abstract

Previous research has suggested a link between athletic involvement and elevated levels of adolescent violence outside the sport context. The present study expanded on this literature by positing differences in the sport/violence relationship across dimensions of athletic involvement (athletic participation vs. jock identity), type of violence (family vs. nonfamily), and gender, as well as examining the impact of binge drinking on the sport/violence relationship. Regression analyses using a sample of 608 Western New York adolescents indicated that (1) jock identity (but not athletic participation) was associated with more frequent violence; (2) jock identity predicted nonfamily violence (but not family violence); and (3) the link between jock identity and nonfamily violence was stronger for boys than for girls. Binge drinking predicted family violence among nonjocks only.

Jocks, Binge Drinking, and Adolescent Violence

In recent years, public concern over adolescent violence—gang members, youthful predators, school bullies and the victims who retaliate against them—has surged, even though the actual prevalence of adolescent fighting and weapons-carrying has declined steadily since the early 1990s (Brener, Simon, Krug, & Lowry, 1999; Grunbaum et al., 2002). Conversely, normative aggression on the playing field has long been not only tolerated but actively encouraged for its character-building and cathartic effects. There is some evidence to suggest that in fact athletic involvement may be associated with elevated levels of aggression outside the sport setting (e.g., Bloom & Smith, 1996; Frintner & Rubinson, 1993; Huang, Cherek, & Lane, 1999; Jackson, Keiper, Brown, Brown, & Manuel, 2002; Nixon, 1997; Segrave, Moreau, & Hastad, 1985). Other researchers have found only weak or inconsistent associations (Brown, Sumner, & Nocera, 2002; Koss & Gaines, 1993) or none at all (Ellis & Janelle, 2000).

In the current study, we address three questions not fully answered by previous research. First, athletic involvement has several dimensions (Miller, Farrell, Barnes, Melnick, & Sabo, in press; Miller et al., 2003), including a behavioral component (e.g., what people do with respect to sports participation, such as team membership or frequency of athletic activity) and a

This study was supported by research grant DA 13570-01 from the National Institute on Drug Abuse. We would like to extend our appreciation to Mr. Joseph Hoffman for his statistical expertise and Mrs. Barbara Dintcheff for her data management efficiency. Corresponding author: Dr. Kathleen Miller, Research Institute on Addictions, University at Buffalo, 1021 Main Street, Buffalo, NY 14203 (e-mail: kmiller@ria.buffalo.edu).

psychosocial component (e.g., how they subjectively perceive themselves and are perceived by others, as “athletes” or “jocks”)¹. Most previous work has examined the behavioral component only (e.g., Bloom & Smith, 1996; Frintner & Rubinson, 1993; Huang et al., 1999). In this study we ask: Is there a difference in how these two dimensions of athletic involvement are linked to adolescent violence, and in particular, is there a relationship between jock identity and violence?

Second, most studies have been restricted to only one type of violence, providing no opportunities for comparison. For example, little empirical overlap exists between the literatures on sexual (Brown et al., 2002; Frintner & Rubinson, 1993; Koss & Gaines, 1993) and nonsexual aggression (Bloom & Smith, 1996; Ellis & Janelle, 2000; Huang et al., 1999; Nixon, 1997; Segrave et al., 1985). Likewise, adolescent violence is not monolithic; it may be predatory (intended for criminal gain) or, more commonly, relational, involving interpersonal conflicts with acquaintances, friends, or family members. The antecedents of adolescent violence are type-specific. Boys are far more likely than girls to assault someone outside the family, while girls and boys are equally likely to engage in violent acts against family members; early drug use and peer drug use are better predictors of predatory violence than relational violence; and poor grades increase the odds of relational violence by girls and predatory violence by boys (Ellickson, Saner, & McGuigan, 1997; Ellickson & McGuigan, 2000). Thus the present study addresses the question: Does the relationship between adolescent jock identity and violence vary by type of violence—specifically, violence against family members or violence against nonfamily members?

Third, prevalence rates for both athletic involvement (National Federation of State High Schools Association, 1997) and adolescent violence (Ellickson & McGuigan, 2000; Grunbaum et al., 2002) are subject to marked gender differences, with boys occupying the center stage on both counts. With one notable exception (Nixon, 1997), most extant research on the relationship between sports participation and aggressive behavior outside the athletic context has focused exclusively on male athletes. Following Nixon’s groundbreaking work, the question arises: Is the relationship between athletic involvement and violent behavior the same for girls and boys?

The primary goal of this study was to answer the three research questions identified above. However, a secondary goal was to examine how or if binge drinking moderates the relationships among athletic involvement, gender, and adolescent violence. Both athletic involvement (Aaron et al., 1995; Carr, Kennedy, & Dimick, 1996; Hildebrand, Johnson, & Bogle, 2001; Miller et al., 2003) and violence (Collins & Messerschmidt, 1993; Dukarm, Byrd, Auinger, & Weitzman, 1996; Giancola, 2002; White, Brick, & Hansell, 1993) are correlated with adolescent alcohol use. Inconsistent findings regarding relationships among college fraternity or athletic team affiliation, alcohol, and sexual aggression (e.g., Frintner & Rubinson, 1993; Koss & Gaines, 1993) give rise to the speculation that violent behavior may derive less from membership in certain social groups than from the tendency toward heavy or binge drinking that those groups sponsor, with its attendant consequences for judgment and disinhibition of aggressive impulses (Brown et al., 2002). In his critique of the debate on male athletic affiliation and violence against women, Crosset (1999) noted researchers’ common failure to assess the role of alcohol. Thus we ask: Is the relationship between athletic involvement and violence attributable to binge drinking?

In sum, previous research has indicated that athletic involvement may be associated with elevated levels of violence outside the sport context, but the nature and parameters of that

¹The colloquial use of the term “jock” as synonymous with “athlete” may mask important differences in meaning. A jock (usually, but not always, an active sports participant) is markedly enthusiastic about sport, either for its own sake or as a route to popularity, status, or belonging.

relationship remain unclear. Moreover, the cross-sectional rather than prospective nature of most extant studies has left open the possibility that these relationships are selective rather than causal. The purpose of the present study was to illuminate some of the nuances of the relationship, with particular attention paid to the understudied role of jock identity in promoting violent behavior.

Hypotheses

H₁: The relationship between sports and adolescent violence will differ by dimension of athletic involvement: Jock identity will be associated with more frequent violence but athletic participation will not.

H₂: The relationship between jock identity and adolescent violence will differ by type of violence (family vs. nonfamily).

H₃: The relationship between jock identity and adolescent violence will differ by gender: Jock identity will be associated with more frequent adolescent violence for boys but not girls.

Methods

Data

The analysis derives from the longitudinal Family and Adolescent Study (Barnes & Farrell, 1992). Trained interviewers conducted face-to-face interviews with a randomly selected sample of 699 Western New York adolescents (aged 13 to 16 at wave one) in six waves spanning the period from 1989 to 1996. Questions about sensitive issues such as alcohol use were privately reported via an accompanying self-administered questionnaire. In order to facilitate hypothesis testing of racial differences, black families were deliberately oversampled (N=211). Participating families were paid \$50 at wave one and \$75 at waves two and three; in subsequent waves, each individual was paid \$25 per interview. The initial response rate was 71 percent, with stringent follow-up procedures yielding retention rates of over 90 percent in each subsequent wave (see Barnes, Farrell, & Dintcheff, 1997; Barnes, Reifman, Farrell, & Dintcheff, 2000 for details on sampling procedures and sample characteristics). Independent variables were taken from wave one of the data; dependent measures were taken from wave three (unweighted sample n=608).

Dependent measures (wave three)

Two measures of adolescent violence were chosen for analysis. The Family Violence Scale summed responses to two questions about how often in the past year the respondent “pushed, shoved or hit a parent or another adult in your family” or “threw something at someone in your family when you were angry.” The Nonfamily Violence Scale also summed responses to two questions about how often the respondent had “beaten up someone on purpose” or “been involved in a physical fight with a gang or group of friends.” Responses for each of the four component questions, recoded to the midpoint for each value, included “never” (=0), “once” (=1), “2–3 times” (=2.5), “4–5 times” (=4.5), “6–9 times” (=7.5), or “10 or more times” (=15). Each scale had a potential range from 0 (if both questions in the scale were answered “never”) to 30 (if both questions were answered “10 or more times”). Few respondents reported very high frequencies of either family or nonfamily violence, resulting in a non-normal distribution of these variables. In order to conform to the assumptions of linear regression, we performed log transformations on both scales, reducing skewness and kurtosis to acceptable levels (respectively, .964 and $-.877$ for family violence; 1.082, $-.617$ for nonfamily violence). Examination of the standardized residuals revealed no evidence of a large departure from normality (skewness=.903, kurtosis= $-.760$ for family violence residuals; skewness=.719, kurtosis= $-.475$ for nonfamily violence residuals).

Independent Measures (wave one)

Because neither athletic involvement nor adolescent violence are randomly distributed, we corrected for possible selection effects by including four sociodemographic variables in the analysis: gender, age, race, and socioeconomic status. Race was coded into two categories: black and white/other, with black respondents comprising 30 percent of the sample. Family socioeconomic status was derived by calculating the mean of three measures reported by the respondent's parent(s): family income, mother's highest level of education, and father's highest level of education. Each of these measures was coded into four categories. Family income categories included \$0–\$14,999; \$15,000–\$34,999; \$35,000–\$49,999; and \$50,000+. Parental education categories included 0–11 years; 12 years; 13–15 years; and 16 or more years of formal education.

In order to measure the frequency of binge drinking, respondents were asked how often during the past year they had consumed five or more drinks of a single type of alcoholic beverage (beer, wine, or liquor) in one sitting. Responses included “never,” “less than once a month, but at least once during the past year,” “about once a month,” “three or four days a month,” “one or two days a week,” “three or four days a week,” or “every day” for each type of beverage. Each response was coded to its midpoint value; for example, “three or four days a week” translated to an average of 182 days a year and was thus coded as 182 (Reifman, Barnes, Dintcheff, Farrell, & Uhteg, 1998). The highest frequency of the three beverage types was used as the final measure.

Finally, athletic involvement was measured in two ways. First, respondents indicated whether they participated in any school sports, such as football, basketball, baseball, swimming, or track (athletic participation=1; nonparticipation=0). Second, they were asked, “Teenagers sometimes characterize one another on the basis of their attitudes toward school, clothes, music, partying, and so forth. Some people give names to these types, such as jocks, preps, air heads, burnouts and so forth. How well does each type fit you?” Those who responded that the “jock” label fit them “very well” or “somewhat” were coded as having a jock identity, or “jocks” (=1); those who responded “a little,” “not at all,” or “never heard of this group” were coded as not having a jock identity, or “nonjocks” (=0).

Analysis

This analysis included three steps. First, we compared jocks and nonjocks, testing for significant mean differences on demographics as well as measures of violence. Second, we conducted multiple regression analyses to predict family violence, including product terms to test for interactions of jock identity with gender, race, binge drinking frequency, and athletic participation. Significant interactions were probed using separate regression equations. Third, the previous step was duplicated in order to predict nonfamily violence.

Results

Descriptive analyses

Nearly a third of respondents identified themselves as jocks (see Table 1). Compared to those who did not identify with this label, jocks were disproportionately likely to be male (47% of boys, compared to 20% of girls) and white (37% of whites, compared to 22% of blacks) and to report higher average family socioeconomic status. Jocks were also more heavily represented among school athletic participants than nonjocks, but not exclusively so; that is, many adolescents who reported participation in school sports did not view themselves as jocks. With respect to the outcome variables, jocks reported significantly more frequent incidents of nonfamily violence (including beating someone up and fighting with a gang or group of friends)

than nonjocks. However, no significant differences were found between jocks and nonjocks in mean levels of violence against family members.

Multiple regression analyses

Table 2 shows the results of the hierarchical regression analyses predicting family violence. Age was a significant predictor of adolescent family violence, with younger respondents reporting higher frequencies of assaulting a family member. Binge drinking frequency also predicted family violence. Net of the effects of gender, age, race, socioeconomic status, binge drinking, and athletic participation, however, jocks did not engage in significantly more family violence than nonjocks (Model 1).

Little is known about the dynamics of subjective athletic involvement and violent behavior. Therefore, although no specific hypothesis was developed, we also conducted exploratory tests for interactions of jock identity with binge drinking and athletic participation (Model 2) and for an interaction among gender, race, and jock identity (Model 3). A significant interaction of binge drinking and jock identity was probed by running separate regressions for jocks and nonjocks. Unexpectedly, these analyses indicated that binge drinking frequency was positively associated with family violence for nonjocks only.

Table 3 shows the results of the hierarchical regression analyses predicting adolescent nonfamily violence, including beating someone up and fighting with a gang or group of friends. Male respondents reported more nonfamily violence, as did those who were younger and lower in family socioeconomic status (Model 1). Binge drinking frequency was positively associated with this form of violence as well. Athletic participation did not predict nonfamily violence; however, jock identity was a strong and significant predictor. Based on probes of significant two-way (Model 2) and three-way (Model 3) interactions, we found that the link between jock identity and nonfamily violence was largely a male (and in particular, white male) phenomenon. Furthermore, among jocks only, school athletic participation was found to be associated with less frequent violence. That is, jocks who reported no participation were more violent than jock athletes, but no such distinction could be made among adolescents who did not identify with the jock label.

Discussion

In this study, we have expanded on the extant research literature on sports and adolescent violence by assessing whether the relationship differs across dimensions of athletic involvement (H_1), types of violence (H_2), and gender (H_3). All three hypotheses were supported.

This analysis supports Nixon's (1997) and Ellis and Janelle's (2000) conclusions that athletic participation, by itself, does not lead people to be physically aggressive in nonsport contexts. Adolescents who participated in school sports reported no more family or nonfamily violence than those who did not. Yet identification with the jock label was clearly associated with elevated levels of nonfamily violence. Two avenues of further research are suggested by this finding. First, future study should be devoted to untangling the disparate consequences of sport behavior (what one does) and sport identity (whom one is perceived to be). Second, although separate research literatures have evolved around the constructs of athletic identity (e.g., Brewer, Van Raalte, & Linder, 1993; Horton & Mack, 2000; Webb, Nasco, Riley, & Headrick, 1998) and jock identity (e.g., Ashmore, Del Boca, & Beebe, 2002; Brown, Eicher, & Petrie, 1986; Eckert, 1989), no research to date has unambiguously defined the differences between them. The distinction between jocks and athletes has only begun to draw the attention of researchers interested in deconstructing the multifaceted nature of athletic involvement (e.g., Miller et al., in press; Miller et al., 2003).

The beliefs, values, and behavioral dispositions associated with a jock identity must be examined more closely in order to identify those elements that may promote problem behavior. Other studies may provide clues in this regard. Weinstein, Smith, & Wiesenthal (1995) found that boys' endorsement of traditional masculinity predicted violent behavior within sport; Nixon (1997) found that boys' (but not girls') attitudes about "toughness" were predictive of aggression outside sport; and Brown et al. (2002) linked male sexual aggression to conservative attitudes toward women. However, Brown and her colleagues found that sports ideology (the perceived importance of sports in one's life) did not significantly predict sexual aggression. Positive associations between jock identity and problem drinking (Miller et al., 2003) and between male jock identity and sexual risk-taking (Miller et al., in press) are also telling. It may be that jock identity is less about a narrow, focused commitment to athleticism than it is about the wider embrace of a dominant vision of masculinity and the imperatives associated with it. Organized team sports have long been a major cultural site for the construction and perpetuation of hegemonic masculinity, including pervasive messages that valorize toughness, violence, recklessness, rigid hierarchies of social domination, and the denigration and subordination of both women and marginalized masculinities (Connell, 1995; Dunning, 1994; Harvey, 1999; Sabo & Runfola, 1980). Our findings raise the specter of a jock identity that, by reinforcing already strong pressures to adopt the least healthy facets of hegemonic masculinity, is particularly toxic for adolescent boys.

Does jock identity operate in parallel ways for girls and boys? Our findings suggest not. While female athletes value physicality and aggression within the sport context (e.g., Theberge, 2003, 1997), they are less likely than their male counterparts to engage in violent behavior in nonathletic settings (Nixon, 1997). Whether girls and women who participate in sports tend to adopt an ideology reflective of hegemonic masculinity is subject to ongoing debate (Messner, 1988; Theberge, 1997). For example, Birrell and Richter (1987) described the active rejection of such an ideology by feminist members of a recreational women's softball league, who chose to emphasize a participatory and skills-developmental model of sports rather than the "male" model based on winning and domination. On the other hand, others have argued that female athletes are not immune to the pervasive influence of hegemonic masculinity; the more women's sports challenge the prevailing paradigm, the more they tend to be marginalized, diminishing their impact (Bryson, 1994; Hughes & Coakley, 1991; Theberge, 1997).

The racial implications of these findings also invite further study. We found that jock identity was most closely associated with nonfamily violence among white male adolescents. Jackson et al. (2002) also found that aggression in a sport context was associated with the self-reported likelihood of using aggression in personal relationships among whites, but not blacks. It may be that, when male adolescents of color identify themselves as "jocks," they mean something quite different from what their white counterparts mean. For example, Miller et al. (in press) found that frequency of athletic activity and identification with the jock label were significantly correlated for white boys but not black boys. One possible explanation is that black adolescents interpret being a "jock" more as a matter of physical competence (e.g., being strong, fit, or able to handle oneself well) than participation in a sport-centered and violence-tolerant subculture. At present, however, in the absence of measures tailored to address the question at hand, the race-specific (and for that matter, gender-specific) meaning that adolescents assign to the term "jock" must remain a matter for speculation.

Bloom and Smith (1996) have suggested a process of "cultural spillover" to explain the relationship between adolescent athletic participation and violence in nonsport settings. This perspective posits that the more a society sanctions violence for approved ends, the greater the likelihood of illegitimate violence as well. Bloom and Smith argued that, at the individual level, behavior associated with violent, highly competitive sports "spills over" into less appropriate arenas of adolescents' lives such as interpersonal relationships. Our findings with respect to

nonfamily violence are consistent with this supposition. However, spillover does not occur indiscriminantly; we found no significant relationship between athletic involvement and family violence. It may be that jocks tend to engage in nonfamily violence against their peers in order to both reinforce group cohesion and establish status hierarchies, consistent with the demands of hegemonic masculinity (Harvey, 1999). Since within-family violence serves neither of these purposes, there is no such behavioral imperative for jocks to carry out.

It is also notable that jock identity conditioned the relationship between binge drinking and family violence. Binge drinking positively predicted family violence by nonjocks, but not jocks. While the reasons for this difference require further study, we speculate that this finding too may be related to the ways in which “jocks” negotiate and interpret their identity. We did not find any significant differences in the frequency of binge drinking by jocks and nonjocks (Table 1), but this measure did not consider the context within which drinking occurs. It may be, for example, that nonjocks tend to drink in isolation or as an adjunct to other problem behaviors, whereas jocks are more likely to drink as a bonding ritual with other jocks. If so, then excessive drinking that occurs in an athletic context may be perceived as a normative or even requisite part of being a jock, and thus less deviant than similar behavior by nonjock. If this interpretation is accurate, then among nonjocks, binge drinking may be part of a larger adolescent problem behavior syndrome that includes violent family conflict; whereas among jocks, binge drinking constitutes a subcultural or psychosocial imperative.

Several limitations of this research stem from the measures used. The data upon which this secondary analysis was based were originally collected for other purposes, and thus did not include comprehensive measures of adolescent violence. Our family and nonfamily violence scales were limited to two component items each, and were unable to distinguish among specific violence contexts (e.g., in dating or intimate relationships), levels (e.g., violence causing physical harm), or types (e.g., verbal vs. physical aggression). Only one of the four violence measures was available in the first wave of data collection, precluding a prospective analysis controlling for initial violence levels. Nor were we able to incorporate a measure of approval of violence, as recommended by Bloom and Smith (1996). Since any or all of these distinctions may be crucial in sorting out the gendered nature of the relationship between sport and adolescent violence, data collection for future studies of adolescent sport, gender, and violence should account for them.

Like most previous research, our analysis was also limited by noncomprehensive indicators of athletic involvement. Our measure of jock identity offered a tantalizing glimpse of the dynamic of sport, masculinity, and violence, but its ambiguous and self-referential operationalization did not permit more than informed speculation. Unlike athletic identity, which is well-defined by the Athletic Identity Measurement Scale (Brewer et al., 1993), there exists to date no direct means of assessing the meaning that adolescents themselves associate with the term “jock.” Also limiting was our inability to distinguish between contact and noncontact sports participation (Brown et al., 2002; Huang et al., 1999; Nixon, 1997) or team and individual sports participation (Nixon, 1997). The absence of a measure of sport combativeness is particularly regrettable, since it may have obscured significant, sport-specific differences in the relationship between athletic participation and adolescent violence. For example, membership on the football team, with its obvious implications for hypermasculinity, might well generate behavioral outcomes that membership on the tennis or swim teams would not (see Welch, 1997 for an excellent discussion of hypermasculinity and violence in professional football). Finally, the Family and Adolescent Study from which our sample was derived was regionally representative only and cannot be generalized to adolescents outside western upstate New York. Future research might profitably extend the present study to other adolescent populations.

Aggression, used in socially acceptable ways and in the pursuit of culturally defined goals, is a highly valued trait in American society. Many sports incorporate structured aggression or even sanctioned violence as part of the game. In part because of this fact, athletic participation has long been viewed as a valuable training ground for success in other competitive social milieus including the military, business, and politics. However, if the findings of this study can be replicated with improved measures and a wider geographical sample, it will be clear to researchers and policymakers interested in understanding and ameliorating adolescent violence that they must examine not only athletic participation but jock identity as a possible concomitant of violent behavior. The greatest challenge, particularly with respect to adolescent boys, may be finding ways to encourage athletic participation while simultaneously discouraging the development of a jock identity.

References

- Aaron DJ, Dearwater SR, Anderson R, Olsen T, Kriska AM, Laporte RE. Physical activity and the initiation of high-risk behaviors in adolescents. *Medicine & Science in Sports & Exercise* 1995;27:1639–1645. [PubMed: 8614320]
- Ashmore RD, Del Boca FK, Beebe M. 'Alkie,' 'frat brother,' and 'jock': Perceived types of college students and stereotypes about drinking. *Journal of Applied Social Psychology* 2002;32:885–907.
- Barnes GM, Farrell MP. Parental support and control as predictors of adolescent drinking, delinquency, and related problem behaviors. *Journal of Marriage and the Family* 1992;54:763–776.
- Barnes, GM.; Farrell, MP.; Dintcheff, BA. Family socialization effects on alcohol abuse and related problem behaviors among female and male adolescents. In: Wilsnack, RW.; Wilsnack, SC., editors. *Gender and alcohol*. New Brunswick, NJ: Rutgers Center of Alcohol Studies; 1997. p. 156-175.
- Barnes GM, Reifman AS, Farrell MP, Dintcheff BA. The effects of parenting on the development of adolescent alcohol misuse: A six-wave latent growth model. *Journal of Marriage and the Family* 2000;62:175–86.
- Birrell S, Richter D. Is a diamond forever? Feminist transformations of sport. *Women's Studies International Forum* 1987;10:395–409.
- Bloom GA, Smith MD. Hockey violence: A test of cultural spillover theory. *Sociology of Sport Journal* 1996;13:65–77.
- Brener ND, Simon TR, Krug EG, Lowry R. Recent trends in violence-related behaviors among high school students in the United States. *JAMA, The Journal of the American Medical Association* 1999;285(5):440–446. [PubMed: 10442659]
- Brewer BW, Van Raalte JL, Linder DE. Athletic identity: Hercules' muscles or Achilles' heel? *International Journal of Sport Psychology* 1993;24:237–54.
- Brown BB, Eicher SA, Petrie S. The importance of peer group ('crowd') affiliation in adolescence. *Journal of Adolescence* 1986;9:73–96. [PubMed: 3700780]
- Brown TJ, Sumner KE, Nocera R. Understanding sexual aggression against women: An examination of the role of men's athletic participation and related variables. *Journal of Interpersonal Violence* 2002;17:937–952.
- Bryson, L. Sport and the maintenance of masculine hegemony. In: Birrell, S.; Cole, CL., editors. *Women, sport, and culture*. Champaign, IL: Human Kinetics; 1994. p. 47-64.
- Carr CN, Kennedy SR, Dimick KM. Alcohol use among high school athletes. *Prevention Researcher* 1996;3:1–3.
- Collins JJ, Messerschmidt PM. Epidemiology of alcohol-related violence. *Alcohol Health and Research World* 1993;17:93–100.
- Connell, RW. *Masculinities*. Cambridge: Polity Press; 1995.
- Crosset T. Male athletes' violence against women: A critical assessment of the athletic affiliation, violence against women debate. *Quest* 1999;51:244–257.
- Dukarm CP, Byrd RS, Auinger P, Weitzman M. Illicit substance use, gender, and the risk of violent behavior among adolescents. *Archives of Pediatric and Adolescent Medicine* 1996;150:797–801.

- Dunning, E. Sport as a male preserve: Notes on the social sources of masculine identity and its transformations. In: Birrell, S.; Cole, CL., editors. *Women, sport, and culture*. Champaign, IL: Human Kinetics; 1994. p. 47-64.
- Eckert, P. *Jocks and burnouts: Social categories and identity in the high school*. New York: Teachers College, Columbia University; 1989.
- Ellickson PL, McGuigan KA. Early predictors of adolescent violence. *American Journal of Public Health* 2000;90:566–572. [PubMed: 10754971]
- Ellickson PL, Saner H, McGuigan KA. Profiles of violent youth: Substance use and other concurrent problems. *American Journal of Public Health* 1997;87:985–991. [PubMed: 9224181]
- Ellis SR, Janelle CM. Legitimacy judgments of perceived aggression and assertion by contact and noncontact sport participants. *Research Quarterly for Exercise and Sport* 2000;71:A88–A89.
- Frinter MP, Rubinson L. Acquaintance rape: The influence of alcohol, fraternity membership, and sports team membership. *Journal of Sex Education and Therapy* 1993;19:272–284.
- Giancola PR. Alcohol-related aggression during the college years: Theories, risk factors and policy implications. *Journal of Studies on Alcohol, Suppl* 2002;14:129–139.
- Grunbaum JA, Kann L, Kinchen SA, Williams B, Ross JG, Lowry R, et al. Youth risk behavior surveillance—United States, 2001. *Journal of School Health* 2002;72:313–328. [PubMed: 12389372]
- Harvey SJ. Hegemonic masculinity, friendship, and group formation in an athletic subculture. *Journal of Men's Studies* 1999;8:91–108.
- Hildebrand KM, Johnson DJ, Bogle K. Comparison of patterns of alcohol use between high school and college athletes and nonathletes. *College Student Journal* 2001;35:358–365.
- Horton RS, Mack DE. Athletic identity in marathon runners: Functional focus or dysfunctional commitment? *Journal of Sport Behavior* 2000;23:101–19.
- Huang DB, Cherek DR, Lane SD. Laboratory measurement of aggression in high school age athletes: Provocation in a nonsporting context. *Psychological Reports* 1999;85:1251–1262. [PubMed: 10710982]
- Hughes R, Coakley J. Positive deviance among athletes: The implications of overconformity to the sport ethic. *Sociology of Sport Journal* 1991;8:307–325.
- Jackson, JS.; Keiper, S.; Brown, KT.; Brown, TN.; Manuel, W. Athletic identity, racial attitudes, and aggression in first-year black and white intercollegiate athletes. In: Gatz, M.; Messner, MA.; Ball-Rokeach, SJ., editors. *Paradoxes of Youth and Sport*. Albany: SUNY Press; 2002. p. 159-172.
- Koss MP, Gaines JA. The prediction of sexual aggression by alcohol use, athletic participation, and fraternity affiliation. *Journal of Interpersonal Violence* 1993;8:94–108.
- Messner M. Sports as male domination: The female athlete as contested ideological terrain. *Sociology of Sport Journal* 1988;5:197–211.
- Miller KE, Farrell MP, Barnes GM, Melnick MJ, Sabo D. Gender/racial differences in jock identity and adolescent sexual risk. *Journal of Youth and Adolescence*. (in press)
- Miller KE, Hoffman JH, Barnes GM, Farrell MP, Sabo D, Melnick M. Jocks, gender, race, and adolescent problem drinking. *Journal of Drug Education* 2004;33(4):445–462. [PubMed: 15237868]
- National Federation of State High Schools Association. *NFHS handbook, 1997–1998*. Kansas City, MO: NFSHSA; 1997.
- Nixon HL. Gender, sport, and aggressive behavior outside sport. *Journal of Sport & Social Issues* 1997;21:379–391.
- Reifman AS, Barnes GM, Dintcheff BA, Farrell MP, Uhteg L. Parental and peer influences on the onset of heavier drinking among adolescents. *Journal of Studies on Alcohol* 1998;59:311–317. [PubMed: 9598712]
- Sabo, D.; Runfola, R. *Jock: Sports and male identity*. Englewood Cliffs, NJ: Prentice Hall; 1980.
- Segrave J, Moreau C, Hastad DN. An investigation into the relationship between ice hockey participation and delinquency. *Sociology of Sport Journal* 1985;2:281–299.
- Theberge N. 'No fear comes': Adolescent girls, ice hockey, and the embodiment of gender. *Youth & Society* 2003;34:497–516.
- Theberge N. 'It's part of the game': Physicality and the production of gender in women's hockey. *Gender & Society* 1997;11:69–87.

- Webb WM, Nasco SA, Riley S, Headrick B. Athlete identity and reactions to retirement from sports. *Journal of Sport Behavior* 1998;21:338–62.
- Weinstein MD, Smith MD, Wiesenthal DL. Masculinity and hockey violence. *Sex Roles* 1995;33:831–847.
- Welch M. Violence against women by professional football players: A gender analysis of hypermasculinity, positional status, narcissism, and entitlement. *Journal of Sport and Social Issues* 1997;21:392–411.
- White HR, Brick J, Hansell S. A longitudinal investigation of alcohol use and aggression in adolescence. *Journal of Studies on Alcohol, Suppl* 1993;11:62–77.

Table 1
Descriptive Characteristics of the Wave 3 Sample, by Jock Identity.

	No Jock Identity (n=412)	Jock Identity (n=196)
Control variables (wave 1)		
Female	.65	.34***
Black	.34	.20***
Age	14.47	14.36
SES	2.43	2.63**
Binge drinking frequency	4.98	6.84
Athletic participation	.54	.85***
Violence variables (wave 3) ^a		
Nonfamily Violence Scale, past year	1.08	2.62***
--Beat up someone	.45	1.21***
--Fought w/gang	.63	1.42***
Family Violence Scale, past year	1.15	1.26
--Hit/pushed/shoved adult family member	.40	.39
--Threw something at family member	.76	.87

* p<.05

** p<.01

*** p<.001

^a Means are shown for the dependent variables prior to log transformation.

Table 2
Regressions Predicting Adolescent Family Violence^a in Whole Sample and by Jock Identity.

Independent Variables ^b	Whole Sample (N=608)		Nonjocks Only (n=412)		Jocks Only (n=196)	
	B	R ²	B	R ²	B	R ²
Model 1: Main Effects Only ^c		.04		.06		.06
Female	.12		.21		-.03	
Age	-.13**		-.11*		-.15*	
Black	-.16		-.14		-.29	
SES	-.11		-.08		-.18	
Binge drinking frequency	.01**		.01***		-.00	
Athletic participation	.00		.08		-.25	
Jock identity	.09					
Model 2: 2-Way Interactions Added ^c		.06				
Female by jock	-.24					
Black by jock	-.08					
Binge drink by jock	-.01**					
Athletic participation by jock	-.36					
Model 3: 3-Way Interaction Added ^c		.06				
Female by black by jock	.05					

* p<.05

** p<.01

*** p<.001

^aThe dependent variable has been log-transformed to reduce skewness and kurtosis.

^bThe dependent variable is wave 3; independent variables are wave 1.

^cThree whole-sample regression analyses were performed. The first model included only main effects; the second included main effects and 2-way interactions; and the third model included main effects, 2-way interactions, and 3-way interactions. For the sake of both clarity and brevity, only the unstandardized coefficients for the highest-order results from each model are presented here.

Table 3
Regressions Predicting Adolescent Nonfamily Violence^a in Whole Sample and by Gender.

Independent Variables ^b	Nonfamily Violence (N=608)		Female (n=336)		Male (n=272)	
	B	R ²	B	R ²	B	R ²
Model 1: Main Effects Only ^c		.18		.12		.10
Female	-.61***					
Age	-.15***		-.13**		-.19**	
Black	.19		.31**		-.00	
SES	-.22***		-.23***		-.22*	
Binge drinking frequency	.01**		.00		.01*	
Athletic participation	-.08		-.02		-.16	
Jock identity	.37***		.11		.59***	
Model 2: 2-Way Interactions Added ^c		.20				
Female by jock	-.55**					
Black by jock	-.01					
Binge drink by jock	-.00					
Athletic participation by jock	-.60*					
Model 3: 3-Way Interaction Added ^c		.21				
Female by black by jock	1.02*					

* p<.05

** p<.01

*** p<.001

^aThe dependent variable has been log-transformed to reduce skewness and kurtosis.

^bThe dependent variable is wave 3; independent variables are wave 1.

^cThree whole-sample regression analyses were performed. The first model included only main effects; the second included main effects and 2-way interactions; and the third model included main effects, 2-way interactions, and 3-way interactions. For the sake of both clarity and brevity, only the unstandardized coefficients for the highest-order results from each model are presented here.