

**Athletic Participation and Intimate Partner Violence Victimization: Investigating Abuse  
Patterns for Women and Men**

**Abstract (155 words)**

This study used representative, quantitative data from The National Longitudinal Study of Adolescent Health (Add Health) and explored the relationship between young adults' sport participation and experiences of intimate partner violence victimization (IPVV) for both women and men. Past research has suggested that sports participation, especially among women, results in increased self-esteem, a prominent protective factor against experiencing IPV. We found that sports participation was associated with a lower prevalence of experiencing IPV, but only for women. Additionally, this pattern held after controls for race, mother's education, age, number of relationships and the hypothesized pathways of self-esteem and alcohol consumption. However, controls for the young adult's own education completely mediated the association between sports participation and IPV. Additional analyses indicated that higher education reduced the risk of experiencing IPV and increased the likelihood of sports participation. Nonetheless, even among women with the highest educational attainment, sports participation was associated with lower prevalence of experiencing IPV.

**Keywords**

dating violence; domestic violence and cultural contexts; predicting domestic violence

**Introduction**

A great deal of media attention is currently devoted to the relationship between men participating in hyper-masculine sports and domestic violence. Specifically, the high profile cases of NFL players Ray Rice and Adrian Peterson have drawn public awareness to issues

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surrounding how participation in aggressive sports may influence the likelihood of perpetration. Although many studies have documented the relationship between men's athletic participation and violence against women (Bachin, Sokal-Katz, & Braddock, 1999; Crosset, Benedict, & MacDonald, 1995; Crosset, MacDonald, & Benedict, 1996; Fritner & Rubinson, 1993; Welch, 1997), a gap exists in the literature that explores the association between women's and men's athletic participation and intimate partner violence (IPV) victimization (IPVV).

IPV involves the physical, sexual, emotional, and/or psychological abuse of those in a close relationship often categorized by cohabitation, marriage, or dating. In the United States, more than 1 in 3 women (35.6%) and more than 1 in 4 men (28.5%) have experienced rape, physical violence, and/or stalking by an intimate partner in their lifetime (CDC, 2011). Furthermore, most female and male victims of this type of violence (69% of female victims and 53% of male victims) experienced some form of IPVV for the first time before they were 25 years old (CDC, 2011). Because IPVV often results in re-victimization later (Acevedo, et al., 2013; Bonomi et al., 2012), it is important that researchers explore and better understand risk factors and deterrents against IPVV, especially among young adult women and men, in order to decrease its occurrence.

Sport may be an understudied influence in young peoples' lives that serves as a protective factor against experiencing IPVV. Sport is more than a form of recreation; sport is also an established social structure that is meaningful to individuals and society. Social science literature has investigated the significance of sport from a number of theoretical perspectives and has found that sport provides an important and unique context through which broad patterns of societal relations can be investigated. Sport is also one of the last remaining sex-segregated institutions, so it is a valuable framework for examining sex differences in terms of returns on

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participation. Miller et al. (1998) found important sex differences in terms of the cultural resources gained through sports participation. Among boys, sports often reified sexist social norms that deem men the primary initiators and consumers of sex, but athletic participation among girls provided them with cultural resources, such as empowerment, social support, and a less traditional feminine orientation, that may have enabled them to resist sexual pressure (Miller et al., 1998).

Based on the work of Miller et al. (1998) that sports provided different sex scripts for girls and boys that perhaps may enable them to avoid IPVV, this paper examines athletic participation as a possible protective factor against IPVV among both women and men. As previously mentioned, though many studies have found a relationship between men's sport participation and violent perpetration, research has indicated that among women, athletic participation was mostly beneficial (Broh, 2002; Deianey & Lee, 1995; Dodge & Jaccard, 2002; Lindgren, 2000; Sundgot-Borgen et al., 2003). However, few quantitative studies (for exceptions see: Taylor, Wamser, & Sanchez, 2010; Taylor et al., 2012) have explored the association between athletic participation and IPVV outcomes. Taylor et al. (2010) found that rural high school girls who participated in sports experienced less physical and sexual IPVV than non-participants, but not less IPVV of all types overall. Additionally, Taylor et al. (2012) examined African American high school girls and found that athletic participation reduced IPVV and this relationship was mediated through self-competence, a component of self-esteem. The current research expands on past research that relied on non-random regional samples of high school girls by using a nationally representative sample of young adults to assess IPVV patterns. Additionally, we examine risk and protective factors of experiencing IPVV for both women and men. Though risk and protective factors of experiencing IPVV are often studied in women, this

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study is the first to examine sports participation as a protective factor for men and the first to use representative data to examine this relationship for women. We use data from the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative longitudinal sample of middle and high school students in the U.S. We use Wave III data when the respondents were in between the ages of 18 and 28 and examine how sports participation in young adulthood influences IPV and the role of self-esteem and alcohol consumption as possible pathways linking sports participation to IPV.

### **Review of Related Literature**

#### **Intimate Partner Violence and Sex**

Sex and gender are multidimensional and have consequences for individuals' identities, social interaction, and structural position (Anderson, 2005). Female athletes break traditional gender norms simply by partaking in athletics (Griffin, 1998), which may influence their susceptibility to experiencing IPV. Similarly, female athletes obscure the way in which the issue of IPV and sport has been framed to suggest that first, "athlete" is synonymous with "male" and second, that athletes are likely perpetrators of violence against women because of their socialization into hyper-masculinity and violence (Coakley, 1981; Kidd, 1990; Messner, 1990; Messner, 1992; Nelson, 1994; Sabo & Runfola, 1980; Sanday, 1996).

Research on men's experience of IPV is more limited than that of women's. However recent studies have begun to explore sex similarities and differences. For example, in a sample of primarily minority, low-income, urban young adults, Acevedo et al. (2013) found that lifetime violence-related behaviors, number of lifetime sexual partners, and number of children were significant risk factors for experiencing IPV. Shorey et al. (2011) found that in undergraduate IPV victims, men reported more physical IPV than women, and among sexual IPV victims,

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men had greater anxiety than women. Fasting et al. (2008) also found that male and female student-athletes were significantly less likely than non-athletes to report sexual victimization in their later high school and early college years. Additionally, IPVV, both physical and psychological, was associated with more negative outcomes, in terms of anxiety and depressive symptoms, for men compared to women. While past research has suggested that IPVV rates are higher for women than men, results from recent research have indicated that this may not be the case, especially among adolescents and young adults, where women may be the perpetrators of IPV at similar or even higher rates than men (Bonomi et al, 2012; Rothman & Xuan, 2014; Teten et al. 2009; Whitaker, 2007). Research which utilized a sample of young adults from Wave III of the Add Health found that in relationships where only one partner was violent (either threatened violence or hit, slapped, or kicked their partner) women were the perpetrators in 70% of the relationships. However, in relationships where both partners were violent, women experienced more frequent violence and more serious IPVV, in the form of greater number of IPVV related injuries than men (Whitaker et al., 2007). Indeed, self-reports of victimization from adolescents and adults (age 12 or older) indicated that an estimated 50% of women compared to 44% of men suffered an injury as a result of IPVV in 2002–11 (DOJ, 2013).

### **Athletic Participation, Self-Esteem, and Victimization**

Previous research has demonstrated an association between IPVV, re-victimization, and staying in an abusive relationship and low self-efficacy and self-esteem (Anderson, 2002; Carlson et al., 2002; Jezl, Molidor, & Wright, 1996; Papadakaki et al., 2008; Umberson et al., 1998). For example, Carlson et al.'s (2002) study emphasized the importance of self-esteem and found not only was low self-esteem a risk factor for IPVV, but high self-esteem served as a protective factor against IPVV. Interestingly, Edwards, Gidycz, & Murphy (2011) found an

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association between higher self-esteem and the likelihood of perception of quality alternative partners among college women who experienced at least one instance of abuse in their relationship . In their review, Lewis & Fremouw (2001) explained that high self-esteem was often viewed as a protective factor for IPVV because those with high self-esteem tended to have the most secure relationships characterized by positive coping strategies, longer involvement with partners, and rare instances of physical and emotional abuse. Athletic participation may serve as a protective factor for IPVV through its positive association with self-esteem and self-efficacy (Dodge & Jaccard, 2002; Sundgot-Borgen, 2003; Taylor et al., 2012).

The pathway of self-esteem linking sports participation and positive outcomes has been well documented for adolescents. Broh (2002) found that athletic participation benefited secondary-school students academically because it enhanced their self-esteem. Shakib et al. (2011) also found that among youth, regardless of sex, race, socioeconomic status, and other key control variables, athletes were more likely than non-athletes to report being very popular. Additionally, studies on female athletes (Deianey & Lee, 1995; Lindgren, 2000) have produced similar results and found that sports participation was positively associated with women's self-esteem because sports participation allowed adolescents to develop a self-concept that was less limited by social expectations of gender appropriateness than non-athletes. In addition, research has found that the positive association between adolescent girls' sports participation and positive outcomes in the form of psychological well-being and health remain in young adulthood (Lindgren, 2000) and poor psychological health is a risk factor for experiencing IPVV (Lehrer et al., 2006).

Although previous research has shown positive associations between female athletic participation and self-esteem, educational success, gender equality, psychological well-being,

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sexual behavior, and susceptibility to abuse, studies have also provided evidence that female adolescent sports participation had no effect or may even be detrimental to outcomes related to IPV. Bendolph (2005) found no significant difference in the number of IPV-related instances by sports participation. However, this outcome may have resulted from her small, homogeneous sample of only 30 African American women. In addition, Fasting et al. (2004) found that while incidences of sexual harassment were lower among female college athletes than non-athletes, women who participated in more 'masculine' sports had higher prevalence of sexual harassment than women in less masculine sports. Furthermore, Leahy et al. (2002) found that 31% of the female athletes in their study had experienced sexual abuse at some point in their lives and 41% had been sexually abused within the sports environment.

Athletic participation may also lead to unhealthy behaviors such as eating disorders, alcohol abuse, and steroid use that could put individuals at risk for IPV (Foran & O'Leary, 2007; Sundgot-Borgen et al. 2003; Wallet et al., 2012). Sundgot-Borgen et al. (2003) found that female athletes with eating disorders were more likely to experience sexual harassment and victimization than other athletes. Furthermore, Foran & O'Leary's (2007) meta-analysis of 50 quantitative studies found that there is a positive association between alcohol consumption and sports participation for both women and men. The greater alcohol consumption among athletes may be due to the availability of alcohol during socializing events for athletes and the greater pressure on athletes to attend parties and events (Hoffman, 2006).

In addition to sports participation increasing women's risk of experiencing IPV through negative health behaviors, sports participation may also place women at risk for IPV by increasing their contact with male athletes. Because past research has linked sports contexts with male-perpetrated IPV, female athletes could be at risk because of their proximity to male

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athletes and the sexist ideologies surrounding athletics. In his study of initiation practices in college sports, Johnson (2002) found that sexist and homophobic themes existed in both female and male athletics, teams, and individuals. For instance, women's sports teams often degraded recruits by forcing them to perform tasks that involved nudity and sexually explicit content which served to perpetuate and replicate masculine and heterosexual identities and reinforced patriarchal and homophobic ideology (Johnson, 2002).

Sawyer, Thompson, & Chicorelli (2002) also examined how systems of sexism and homophobia operated in college athletics. Specifically, they focused on how rape cultures were manifested among college athletes through the examination of rape myth acceptance attitudes (such as the belief that rape victims were to blame or that victims lied about being raped). Although higher rates of rape myth acceptance were identified in male athletes than female athletes, higher rape myth acceptance rates were also seen in female athletes who participated in Division I versus Division II athletic programs. This result suggested that Division I women—who were more immersed in highly competitive athletics—were more likely to possess sexist beliefs. In this sense, the underlying sexist framework of organized sport may be more detrimental than beneficial to women in terms of IPVV outcomes. In addition, Miller et al. (2006) demonstrated that perhaps it's not organized sport, but rather athletic identification that is associated with violent behavior. In this research, jock identity (but not necessarily athletic participation) was associated with more frequent violence, predicted nonfamily violence (but not family violence), and the link between jock identity and nonfamily violence was stronger for boys than for girls.

### **Hypotheses**



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The overall empirical evidence on whether sport serves as a risk or protective factor for susceptibility to IPV is mixed because of discrepancies in the specific behaviors studied as well as differences in populations and sport types and levels examined. In addition, sex, race, ethnicity, and socioeconomic status, as well as type of violence all influence IPV outcomes. The present study seeks to examine sport participation and IPV by analyzing women and men separately and controlling for key covariates of sports participation and IPV (race/ethnicity, socioeconomic status, age, and number of past relationships). Additionally, we examine whether self-esteem or alcohol consumption serve as potential pathways linking sports participation to IPV as well as examine multiple types of IPV. Given the discrepancies in past research we develop two competing hypotheses.

Hypothesis 1: Sports participation reduces the likelihood of experiencing IPV for both women and men. A potential pathway through which sports participation impacts IPV is through increases in self-esteem, which is known to be positively associated with sports participation and negatively associated with IPV. We examine this pathway in Hypothesis 1a which states that self-esteem mediates the association between sports participation and IPV.

Hypothesis 2: Sports participation increases the likelihood of experiencing IPV and this is especially true for women. The higher likelihood of women's IPV is through their closer contact with male athletes, which past research has shown is a known correlate for IPV perpetration, and through their increased participation in other risk behaviors, particularly alcohol consumption (a risk factor for both women and men). We examine this pathway in Hypothesis 2a which states that alcohol consumption mediates the positive association between IPV and sports participation.

### **Methodology**

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## **Sample**

In order to explore whether athletic participation influences the likelihood of being victimized by an intimate partner and how self-esteem and alcohol consumption influence this relationship, we drew from The National Longitudinal Study of Adolescent Health (Add Health) which was a multistage stratified cluster design longitudinal study that was representative of U.S. adolescents. Wave I of Add Health was first administered in 1995 to a sample of 18,924 middle and high school students. The current study utilized the Wave III data collected in 2001-2002 when respondents were between 18-28 years old. Wave III was collected from 77.4% of the original Wave I respondents (n=14,322). Past research has shown that this nonresponse and attrition had a minimal impact on the sample's representativeness (Udry, 2003).

Respondents were asked to list an inventory of all sexual and romantic relationships for the last five years and answer questions about each. From this inventory more detailed information, including experiences of IPVV were asked for some relationships, primarily important ones (see Udry, 2003 for a more detailed description of the methodology). This yielded a total of 8,506 respondents who had valid Wave III weights and information about relationships (18% of the original sample was excluded because they had no relationships to report). An additional 5% of cases were excluded due to lack of information on the other study variables, yielding a total sample size of 8,043.

## **Variables**

IPVV was a dichotomous variable and measured whether the respondent experienced any of the following four types of IPVV in the last year: threats of violence (respondent was threatened with violence, pushed or shoved by their partner, or partner threw something at respondent that could hurt them); physical violence (respondent was slapped, hit, or kicked by

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their partner); sexual violence (respondent was forced to have sex with their partner); and experiences of injury (respondent obtained an injury because of a fight they had with their partner).

Sports participation was a dichotomous measure, which indicated whether the respondent participated in either a team or individual sport in the last seven days.

Self-esteem was derived using four different indicators: respondent has a lot of good qualities; has a lot to be proud of; likes themselves just the way they are; and feels like they are doing everything right. Respondents were asked on a 5 point scale the extent they agreed with those statements from 1=strongly agree to 5=strongly disagree. These were reverse coded and averaged to create the self-esteem measure ranging from 1 to 5 (Cronbach's alpha=.771).

Alcohol consumption was measured as how many days the respondent got drunk or high on alcohol over the last 12 months: 0=never; 1=one or two days; 2=once a month or less; 3=two or three days a month; 4=1 or 2 days a week; 5=3 to 5 days a week; 6=every day or almost every day.

Demographic correlates of IPV including self-reported measure of race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, Native American/Alaskan native (NAAN), Asian, and a residual other category), mother's education<sup>1</sup> (1=less than high school; 2=high school/GED/vocational school; 3=some college, 4=college degree), number of previous relationships in the past five years, and age in years were also included as controls in the analysis. Additionally, we measured two aspects of the young adults' socioeconomic status, own education<sup>2</sup> and employment. Education was measured as less than high school, high school, and at least some college and employment was a dichotomous indicator that represented whether the respondent worked full-time, at least 35 hours in the last week.

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## **Data Analyses**

Initial analyses examined the means and percentages of the study variables by sex and athletic participation. Bivariate analyses (chi-square or t-tests) were conducted on all study variables to examine whether significant differences existed between those who did and did not play sports within sex categories and whether significant differences existed between women and men. Next, our multivariate analyses employed nested logistic regression and examined whether sports participation influenced the risk of experiencing IPVV net of controls. Model 1 controlled for socio-demographic background characteristics, Model 2 added self-esteem and alcohol consumption as potential pathways through which sports participation influenced IPVV, and Model 3 added young adults' own education and employment. All multivariate analyses were conducted separately for women and men and significant sex differences in the impact of the predictor variable were also examined in further analyses. This was done by pooling women and men, including a dummy variable representing sex, and interacting this dummy variable with all the predictor variables. Lastly, additional analyses examined whether there were differences in the types of IPVV experienced, either threats of violence, physical violence, sexual violence, or experiences of injury, by sports participation and sex. Chi-square tests were used to examine whether significant differences existed by sports participation within sex categories and whether significant differences existed between women and men. All analyses employed trimmed grand sample weights calculated for cross-sectional analysis of Wave III (Udry, 2003).

## **Results**

We first tested our hypotheses by examining descriptives for our study variables by sports participation and sex (see Table 1). Bivariate analyses indicated significant differences by sports participation and sex. For both women and men, we found that sports participation was

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associated with a lower prevalence of experiencing any IPV, which provided initial support for Hypothesis 1. However, this difference was only significant among women (30.5% of women who played sports experienced IPV compared to 35.9% of women who did not play sports). When the potential pathways were examined, we found that sports participation was associated with higher self-esteem, but only for men, and greater alcohol consumption for women and men. Additionally, we found that sports participation was more common among those with higher social status. Having a more highly educated mother or being more highly educated oneself increased the likelihood of sports participation. Working full-time was associated with less sports participation among women and men. Lastly, among women in our sample, Whites were more likely to participate in sports (75.2% played sports versus 65.5% did not), but in men we found that Blacks (13.7% played sports versus 11.2% did not) and Hispanics (14.4% played sports versus 12.6% did not) were more likely to participate in sports.

[Table 1 about here]

Next, these patterns were examined using multivariate nested logistic regressions (Table 2 for women and Table 3 for men). Model 1 included our main predictor variable, sports participation, along with controls. For women, Model 1 confirmed the bivariate analyses and supported Hypothesis 1. Women who played sports had 0.82 ( $p < 0.05$ ) the log odds of experiencing IPV compared to women who did not play sports. Examining the controls, we found that compared to non-Hispanic Whites, Hispanics and NAAN had higher log odds of experiencing IPV (OR: 1.25,  $p < 0.05$  for Hispanics and OR: 1.79,  $p < 0.05$  for NAAN). Those with less educated mothers were also at greater risk of experiencing IPV. Lastly, number of relationships increased the likelihood of experiencing IPV. Examining men (Table 3 Model 1), we found that only race and number of relationships were significant predictors of experiencing

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IPVV. We failed to find support for Hypothesis 1, that sports participation was a protective factor against IPV, or Hypothesis 2, that sports participation was a risk factor for experiencing IPV. Compared to Whites, Hispanics had over one and a half times the log odds of experiencing IPV (OR: 1.68,  $p < 0.01$ ) and greater number of relationships increased the likelihood of experiencing IPV.

[Table 2 about here]

[Table 3 about here]

Model 2 included the potential pathways of self-esteem and alcohol consumption. Focusing on women (Table 2), we found that including these pathways did little to influence the association between sports participation and IPV; sports participation remained a significant predictor (OR: 0.81,  $p < 0.05$ ), though self-esteem was negatively associated with IPV, such that every additional one unit increase in self-esteem was associated with a 12% ( $p < 0.001$ ) decrease in the log odds of experiencing IPV. Turning next to men (Table 3), we found that self-esteem was also negatively associated with experiencing IPV; each unit increase in self-esteem was associated with a 14% ( $p < 0.001$ ) decrease in the log odds of IPV. Additionally, alcohol consumption was also positively associated with IPV (OR: 1.10,  $p < 0.01$ ).

Model 3 included the young adults' own characteristics of education and employment. Examining women, we found that including these factors fully mediated the association between sports participation and IPV found in Model 2. Additional analyses (not shown), suggested that this was due to including own education in the model. Those who attended college were the most likely to participate in sports and the least likely to experience IPV. This association is explored further in the Discussion section and in the Appendix and suggested that even among those who attended college, sports participation was associated with lower odds of experiencing IPV.

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among women. When examining the association between own education and IPVV we found that those with at least some college had about half the log odds of experiencing IPVV compared to those who did not have a high school degree (OR: 0.51,  $p < 0.001$ ). Additionally, we found that full-time employment was associated with higher log odds of experiencing IPVV (OR: 1.22,  $p < 0.05$ ). Similar to the findings for women, among men (Table 3), we found that education was negatively associated with IPV and full-time employment was positively associated with IPVV. Lastly, we examined whether sex differences in the association between the predictor variables and IPVV existed by pooling women and men and including an indicator for sex and interactions between sex and all the predictor variables for each model. None of the interactions were significant, suggesting that the predictor variables of experiencing IPVV had similar associations for both women and men.

In addition to examining whether the respondents experienced any IPVV, we also examined types of IPVV by sports participation and sex (see Table 4). We found that sports participation was associated with a lower prevalence of experiencing physical violence, threats of violence, and experiences of injury for both women and men. However, this difference was only significant for women in experiencing threats of violence. Among women who played sports, 23.4% had experienced threats of violence compared to 28.8% of women who did not play sports ( $p < 0.05$ ). Interestingly, we found a slightly elevated risk of experiencing sexual abuse among women and men who participated in sports, though differences by sports participation were not significant for either sex. Turning next to overall sex differences, we found that women were at a much higher risk of experiencing threats of violence (27.4% of women versus 19.8% of men,  $p < 0.001$ ), sexual violence (14.9% of women versus 9.2% of men,  $p < 0.001$ ), and injuries (6.4% of women versus 4.3% of men,  $p < 0.05$ ) compared to men. However, we found that men

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were at a slightly higher risk of experiencing physical violence compared to women, though this difference failed to reach significance (16.6% of women compared to 18.7% of men,  $p=0.1$ ).

[Table 4 about here]

### **Discussion**

The current study used a nationally representative sample of young adults to explore the relationship between sports participation and IPV. Previous research (Bendolph, 2005; Taylor et al., 2010; Taylor et al., 2012) on women's sports participation and IPV has been inconclusive and has not utilized nationally representative samples. In addition, past studies have yet to examine possible associations between men's sports participation and IPV outcomes.

For both women and men, we found support for Hypothesis 1, that sports participation was associated with a lower prevalence of experiencing IPV; however, this difference was only statistically significant among women. In terms of types of IPV, we found that sports participation was associated with a lower prevalence of experiencing physical violence, threats of violence, and experiences of injury for both women and men, though this difference was only significant for women in experiencing threats of violence. These results were consistent with Miller et al.'s (1998) research that sports contexts may provide more cultural resources for women than men, such as empowerment and social support, that may enable them to resist IPV, whereas for men, sports contexts may reify sexist social norms that prevent them from gaining the same returns on participation in this area.

In the models focusing on women, we found that sports participation was associated with a lower likelihood of experiencing IPV, even after controlling for race, mother's education, age, and number of relationships. Similarly to previous research (Anderson 2002; Carlson et al., 2002; Jezl, Molidor, and Wright, 1996; Papadakaski et al., 2008), we found that self-esteem was



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negatively related to IPVV for both women and men. However, contrary to previous research that found that the returns from sport participation are mediated through self-esteem (Broh, 2002; Taylor et al., 2012), including the potential pathway of self-esteem did little to influence the association between sports participation and IPVV in the present study; sports participation remained a significant predictor and we failed to support Hypothesis 1a. However, the variable of own education fully mediated the association between sports participation and IPVV for women, suggesting that those who attended college are the most likely to participate in sports and the least likely to experience IPVV. As a result, the lower likelihood of experiencing IPVV among women who participated in sports was due to their greater likelihood to have had some college. This is not surprising given that many respondents in this sample were currently attending college and colleges are often equipped with athletic facilities and provide an organized and institutional setting to participate in sports in young adulthood. Among young adults with less education, leisure time sport activity is relatively rare (Gidlow et al., 2006). However, even among those attending college, sports participation may protect against experiencing IPVV for the same reasons listed above. Additional analyses (presented in Table A1), confirmed this assumption and we found that even among women with at least some college, sports participation was associated with a lower likelihood of experiencing IPVV, even in models that included all the controls and the potential pathways of self-esteem. As a result, we suggest that sports participation was associated with lower incidences of IPVV for women; however, there were likely structural factors that impeded less educated women from participating in sports, specifically the lack of an organized institutional setting.

While our study was the first to use representative data to examine the relationship between sports participation and IPVV for young adults, there were a few limitations that should

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be noted. First, there were measurement limitations in operationalizing the predictor variable of sport participation. The type and level of sport was unspecified and there may have existed differences in victimization outcomes according to whether participants played individual vs. team sports or more traditionally feminine sports (e.g. cheerleading) vs. more traditionally masculine sports (e.g. ice hockey). Unfortunately, the type of sport played and the level of sport (i.e. unorganized, intramural, or varsity) were not available in the Wave III data. Second, although our study included measures of self-esteem, it did not include indicators of self-efficacy or competence, a key predictor in Taylor et al.'s 2012 study, which was one of the only other studies to examine sports and IPV and found these factors to be key pathways.

Future research focusing on whether or not individual characteristics deter victimization should include indicators of self-efficacy and empowerment in order to develop a more comprehensive understanding of how sports participation may decrease IPV. In addition, such research could extend the current study by examining the concept of intersectionality in relation to athletic participation, self-esteem, and victimization by using interaction variables with sex, race, and socioeconomic status. In our study, we found that compared to their white counterparts, both Hispanic women and men were at increased risk of IPV. Future studies may want to explore this association intersectionally, as well as examine how the possibility of mutual violence may have influenced this finding. Future studies may also benefit from controlling for other variables not examined in the present study, such as body mass index and drug use.

Notwithstanding these limitations, the finding that sport participation served as a significant protective factor against IPV for women but not for men is an important result. Not only does it support past research findings that sports participation is beneficial to women (Deianey and Lee, 1995; Dodge & Jaccard, 2002; Lindgren, 2000; Sundgot-Borgen et al., 2003),

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it also complicates the traditional association with male athletes as perpetrators of violence.

Women and girls have made large gains in terms of sports participation over time, where women participated at only 8% of the rate of men in 1971 vs. 69% in 2001 (Pickett, Dawkins & Braddock, 2009); however female involvement presently remains far below that of men. The present study highlights the importance of reducing disparities in this area, where increased women's sports participation may decrease women's IPVV outcomes. In addition, the link between sports participation and lower IPVV among women in our study suggests that the rejection of traditional gender norms by female athletes may provide positive benefits in terms of minimizing experiences of IPVV. This finding has implications for exploring other male-dominated contexts that may provide similar benefits for women participating in them, such as the STEM (science, technology, engineering, and math) fields.

The result that sports participation did not serve as a significant protective factor against IPVV for men is also important. Because recent research shows that there is evidence to suggest that adolescent and college-age women are perpetrators of physical violence at similar or higher rates to men (Bonomi et al, 2012; Rothman & Xuan, 2014; Teten et al. 2009; Whitaker, 2007; 2014), more research is necessary in order to understand why sport did not produce the same positive outcomes for men in this area, and other possible avenues to decrease men's IPVV. In addition, there were 523 men who participated in sports that were also victims in our sample. The notion of male athletes as perpetrators of violence may prevent male sports participants who are victims of IPV from comprehending, leaving, or seeking help in situations of abuse. This was the first study to examine male sports participation and IPVV, more research in this area may provide valuable information for IPV prevention and intervention.

### Footnotes

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<sup>1</sup> For respondent's who did not have a mother or there was no information on the mother's education (n=320), father's education was used.

<sup>2</sup> Only a few respondents had not either formally dropped out of high school or had not finished high school (n=32), these respondents are coded as high school. Additionally, respondents either attending college currently, finished college, or have taken at least one semester of college courses are coded as having at least some college.

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# ATHLETIC PARTICIPATION AND INTIMATE PARTNER VIOLENCE VICTIMIZATION

**Table 1. Percentages and Means for Study Variables by Sports Participation and Sex, National Longitudinal Study of Adolescent Health, Wave III**

	Women			Men			Total
	Plays sports	No sports	Total	Plays sports	No sports	Total	
Past year IPVV	30.5	35.9 *	34.6 +	27.4	29.3	28.3	31.5
Sex							
Women	-	-	-	-	-	-	
Men	-	-	-	-	-	-	
Plays sports	-	-	25.2 +	-	-	48.6	36.6
Race			*			*	
White	75.2	65.5	67.9	64.4	69.5	67.0	67.5
Black	10.2	11.4	11.1	13.7	11.2	12.4	11.8
Hispanic	6.4	16.8	14.2	14.4	12.6	13.4	13.8
Native American	2.5	2.2	2.3	1.7	2.8	2.3	2.3
Asian	5.0	3.2	3.6	4.1	3.1	3.6	3.6
Other	0.6	1.0	0.9	1.7	0.9	1.3	1.1
Parent's education			* +			*	
Less than high school	13.5	19.3	17.9	19.3	15.5	14.8	16.4
High school	38.4	46.4	44.4	46.4	46.7	43.6	44.0
Some college	13.1	13.1	13.1	13.1	12.4	13.3	13.2
College	35.0	21.2	24.7	21.2	25.3	28.3	26.4
Number of relationships	3.2	3.2	3.2	3.2	3.1	3.2	3.2
Age	14.8	15.1 *	15.0	15.1	15.3 *	15.2	15.1
Self-esteem scale	16.6	16.7	16.7 +	17.2	16.9 *	17.0	16.9
Alcohol consumption	1.5	1.0 *	1.1 +	1.8	1.5 *	1.7	1.4
Own education			* +			*	
Less than high school	5.8	14.2	15.8	13.5	17.9	12.1	13.9
High school	18.3	29.1	29.5	23.6	35.1	26.4	27.9
At least some college	75.9	56.7	54.7	62.9	47.0	61.5	58.2
Works full-time	48.4	56.4 *	54.4 +	64.8	72.6 *	68.8	61.5

+ Indicates significant difference between women and men

\* Indicates significant difference by sports participation within gender

## ATHLETIC PARTICIPATION AND INTIMATE PARTNER VIOLENCE VICTIMIZATION

**Table 2. Logistic Regression Predicting Intimate Partner Violence Victimization for Women using the National Longitudinal Study of Adolescent Health Wave III, Odds Ratios (OR) and Standard Errors (Std Error)**

	Model 1		Model 2		Model 3	
	OR	Std Error	OR	Std Error	OR	Std Error
Plays sports	0.82 *	0.10	0.81 *	0.10	0.86	0.10
Race						
(White)						
Black	1.13	0.12	1.18	0.12	1.13	0.12
Hispanic	1.25 *	0.11	1.38 **	0.11	1.41 **	0.12
Native American	1.79 *	0.28	1.69	0.28	1.62	0.28
Asian	0.98	0.29	0.98	0.29	1.02	0.30
Other	0.50	0.44	0.53	0.41	0.53	0.39
Parent's education						
(Less than high school)						
High school	0.82	0.11	0.83	0.11	0.93	0.11
Some college	0.75 *	0.15	0.75 *	0.15	0.88	0.15
College	0.71 *	0.14	0.73 *	0.14	0.91	0.14
Number of relationships	1.10 ***	0.02	1.09 ***	0.02	1.09 ***	0.02
Age	0.99	0.03	0.99	0.03	0.98	0.03
Self-esteem scale			0.88 ***	0.02	0.89 ***	0.02
Alcohol consumption			1.03	0.02	1.04	0.02
Own education						
(Less than high school)						
High school					0.63 **	0.17
At least some college					0.51 ***	0.17
Works full-time					1.22 *	0.08

\*p<0.05, \*\* p<0.01, \*\*\* p <0.001

# ATHLETIC PARTICIPATION AND INTIMATE PARTNER VIOLENCE VICTIMIZATION

**Table 3. Logistic Regression Predicting Intimate Partner Violence Victimization for Men using the National Longitudinal Study of Adolescent Health Wave III, Odds Ratios (OR) and Standard Errors (Std Error)**

	Model 1		Model 2		Model 3	
	OR	Std Error	OR	Std Error	OR	Std Error
Plays sports	0.91	0.08	0.92	0.08	0.82	0.17
Race						
(White)						
Black	1.24	0.17	1.27	0.17	1.26	0.17
Hispanic	1.68 **	0.16	1.93 ***	0.16	1.82 ***	0.15
Native American	1.32	0.47	1.56	0.46	1.51	0.46
Asian	0.96	0.23	0.96	0.24	1.06	0.25
Other	1.29	0.39	1.33	0.43	1.53	0.44
Parent's education						
(Less than high school)						
High school	0.88	0.16	0.84	0.17	0.92	0.17
Some college	0.79	0.21	0.74	0.21	0.86	0.21
College	0.80	0.17	0.75	0.18	0.93	0.18
Number of relationships	1.05 **	0.02	1.04 ***	0.02	1.04 *	0.02
Age	0.99	0.04	0.99	0.04	0.98	0.04
Self-esteem scale			0.86 ***	0.02	0.87 ***	0.02
Alcohol consumption			1.10 **	0.03	1.11 **	0.03
Own education						
(Less than high school)						
High school					0.79	0.13
At least some college					0.59 ***	0.14
Works full-time					1.10 *	0.15

\*p<0.05, \*\* p<0.01, \*\*\* p <0.001

# ATHLETIC PARTICIPATION AND INTIMATE PARTNER VIOLENCE VICTIMIZATION

**Table 4. Types of Intimate Partner Violence by Sports Participation and Sex, National Longitudinal Study of Adolescent Health Wave III**

	Women			Men			Total
	Plays sports	No sports	Total	Plays sports	No sports	Total	
Types of intimate partner violence							
Threats of violence	23.4	28.8 *	27.4 +	18.7	20.8	19.8	23.7
Physical violence	15.6	17.0	16.6	17.4 :0.	19.9	18.7	17.6
Sexual violence	14.8	15.0	14.9 +	9.7	8.8	9.2	12.1
Experiences of injury	6.1	6.4	6.4 +	3.5 :0.	5.1	4.3	5.4

+ Indicates significant difference between women and men

\* Indicates significant difference by sports participation within gender