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Title Page
Master of Public Health Research Project

The Determinants of Physical Dating Violence Victimization among High School Adolescents in the United States

by

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Abstract

Background: Physical Dating Violence (PDV) victimization is a major public health concern among adolescents in the United States. Research has shown that determinants of PDV victimization are different for male and female adolescents. However, inconsistent findings entail that further research needs to be done using a representative sample of male and female adolescents.

Objective: To identify gender-specific determinants of PDV victimization utilizing a nationally representative sample of high school adolescents.

Methods: Data from the 2005 National Youth Risk Behavior Survey was used for this analysis. The study population included 6,951 male and 6,807 female students in grades 9 through 12. Bivariate and multivariate analyses were conducted and three predictor models were generated. The first model examined predictors of PDV in the total population. The second and third models identified predictors of PDV in male and female participants, respectively.

Results: PDV affects approximately 1 in every 11 youth in the United States, with males and females exhibiting similar prevalence rates (males: 9.0%, females: 9.2%). Being currently sexually active, using alcohol, engaging in a physical fight, experiencing sexual victimization, and having suicidal thoughts were significant predictors of PDV for both male and female participants. Poor body image was found to be a significant predictor among females but not in males. On the other hand, illicit drug use was a significant predictor among males but not in females.

Conclusions: This study provided evidence that there is some gender difference in the determinants of PDV. It is essential that counselors and care providers give particular attention to female adolescents with poor body image and male adolescents who report illicit drug use.

Introduction

Dating abuse is defined as physical, sexual, or psychological violence perpetrated within the context of a dating relationship. According to the Centers for Disease Control and Prevention, Physical Dating Violence (PDV) victimization affects approximately one in every 11 youth in the United States.¹ The 2003 Youth Risk Behavior Surveillance Survey (YRBSS) indicates that the prevalence of PDV victimization is similar for both males and females (8.8% of females and 8.9% of males),¹ however, few studies have examined the gender differences in the determinants of PDV.

Physical dating violence is a growing public health concern. Approximately 70% of female and 52% of male adolescents who report dating abuse have sustained injuries as a result.² The problem of PDV has also been linked to Intimate Partner Violence (IPV), HIV and STD diagnoses, and teen pregnancy. IPV, which is defined as violence perpetrated by a current or ex-boyfriend, girlfriend, wife, or husband, affects approximately 25% of adult females and 7.6% of adult males in the U.S.³ A study conducted by Smith *et al.* found that women who experienced PDV victimization during adolescence were 2.96 times more likely to be victims of dating violence during their first year of college than their peers.⁴ In addition, PDV and IPV victimization has been linked to HIV and other sexually transmitted infections.⁵⁻⁷ A recent study found that female adolescents who have experienced PDV were 2.18 times more likely to be diagnosed with HIV or other sexually transmitted infections than females who have not experienced PDV.⁷ Finally, adolescent females who are currently in physically abusive dating relationships were 3.33 times more likely to report a history of pregnancy than their unabused peers.⁸

Physical dating violence has been associated with demographic factors,⁹⁻¹² sexual risk behaviors,^{1,8,10,12-15} substance use behaviors,^{1,11-13,15} suicidal thoughts and/or attempts,^{1,10-13,15,16} and other forms of violence among adolescents.^{1,10,12,15} However, studies examining gender differences in risk factors have yielded inconsistent results and are subject to significant limitations.^{1,10-13,15-17}

A recent study found that race was a significant predictor of PDV victimization among male adolescents, but not among female adolescents.⁹ Other studies, however, have indicated that race is an important predictor of PDV among female adolescents only.^{10,12} A recent study reported that male and female adolescents who are currently sexually active are at a similar risk for experiencing PDV victimization,¹⁵ while other studies have reported that currently sexually active male adolescents are at a slightly higher risk for PDV victimization than females.^{1,10,12} Studies examining gender differences in substance use behaviors associated with PDV victimization have shown that cigarette use is not significantly associated with PDV among males and females,^{1,10,12} while other studies have shown that cigarette use is a significant predictor of PDV among male and female adolescents.^{11,13} A recent study found that alcohol use is significantly associated with PDV among both genders,¹¹ however, other studies have indicated that alcohol use is only a significant predictor of PDV among female adolescents.^{1,10,12} Similar inconsistencies have been reported when examining the relationship between illicit drug use and PDV.^{9-11,14} Most studies have reported that illicit drug use is significantly associated with PDV among females but not among males,^{10,12,15} however, one study indicated that male and female adolescents were more likely to experience PDV victimization if they had used illicit drugs during the previous 30 days.¹¹ While many studies have found that having considered or attempted suicide is associated with PDV victimization among female and male adolescents,^{1,10-}

^{13,15,16} a recent study reported that this factor was only a significant predictor of PDV among female students.¹⁵ Research examining the relationship between PDV victimization and engaging in a physical fight during the 12 months, similarly, has yielded inconsistent results.^{1,10,12,15} A recent study reported that males and females who have reported being in a physical fight over the past 12 months were more likely to experience PDV,¹ while other studies have reported this relationship among male students only.^{10,12} Studies have also shown that sexual victimization is a significant predictor of PDV among male and female adolescents; however studies have reported inconsistencies in the strength of this association by gender. A recent study reported that male and female adolescents who had experienced sexual victimization during their lifetime were at a similar risk for PDV victimization,¹⁵ while one study reported that this association was stronger among male adolescents than female adolescents.¹⁷

These differences in previous research findings are likely the result of differences in research methodology. These methodological inconsistencies may be due to researchers utilizing different surveys of adolescent health risk to assess the predictors of PDV,^{9,11,16} researchers defining the exposure and outcome variables using different definitions,^{1,9-16,18} and/or researchers limiting their study population to one gender, primarily females.^{4-8,10,12-14}

While many of the studies assessing the relationship between various risk factors and PDV victimization have utilized the Youth Risk Behavior Surveillance Survey,^{1,10,12-15,17,20} other studies have utilized data from the National Longitudinal Study of Adolescent Health,⁹ or other state or national survey data.^{11,16} Methodological differences in administration procedures and the wording of survey items may create inconsistencies in results. Because the National Longitudinal Study of Adolescent Health includes respondents who are up to 21 years of age, the results of studies utilizing this data may not be generalizable to high school students in the U.S.

While the studies that have utilized the YRBSS data define PDV victimization as being hit, slapped, or physically hurt by a boyfriend or girlfriend during the past 12 months, studies utilizing other survey data have defined PDV victimization as: 1.) being pushed, shoved, or having something thrown at them by any of three previously identified romantic partners during the past 18 months;⁹ 2.) ever being threatened or physically hurt by a boyfriend, girlfriend, or date;¹¹ and 3.) ever being a victim of violence on a date.¹⁶ Although the results of these surveys provide important information, these differences in defining PDV victimization may lead to over- or under-estimations of the association between various risk factors and PDV, and may lead to inconsistencies when comparing studies.

Inconsistencies in the association between risk behaviors and PDV victimization may also exist due to differences in the way researchers define exposure variables. Among studies that have utilized the YRBSS data, different survey questions have been utilized to assess sexual risk,^{1,10,12-15} and substance use behaviors.^{1,10-13,15,18} Some studies have defined sexual risk as sexual intercourse with 2 or more partners during the past 3 months,^{10,12} while others have defined sexual risk as sexual intercourse with three or more partners during the past 3 months.^{13,14} Still others have defined sexual risk among this age group as having sexual intercourse with one or more partners in the last 3 months.^{1,15} Smoking, alcohol, and illicit drug use have also been defined differently among studies utilizing the YRBSS.^{1,10-13} For cigarette use, some studies have defined this measure as the use of any cigarette during the past 30 days,¹ while others have defined this measure as smoking more than 10 cigarettes per day.¹³ Alcohol use has been assessed as consuming five or more drinks in one sitting during the past 30 days,^{1,10,12,13} or consuming any alcohol during the past 30 days.^{11,15,18} Finally, illicit drug use has

been defined as cocaine use,¹³ cocaine or inhalant use,^{10,12} any illicit drug use during the past 30 days,¹¹ or lifetime history of injecting illicit drugs.¹⁵

Many previous studies have used narrow definitions of sexual risk and substance use behaviors, which assess only heavy or recent involvement. Further research is needed to assess this relationship using definitions of risk behaviors that include low levels of exposure and lifetime involvement in such behaviors.

Inconsistencies across previous research may also be the result of methodological differences in selecting the study population. Some researchers have limited their study population to one gender, primarily females, when assessing gender-specific predictors of PDV victimization.^{4-8,10,12-14} Among these studies, only one has assessed the risk factors associated with PDV among males;¹⁰ the researchers of this study, however, published a recent study using similar methodologies assessing the factors associated with PDV victimization among females.¹² Some studies examining the gender differences in determinants of PDV victimization have generated separate predictive models to measure associations by gender.^{9,11,15} Among these studies, one examined demographic determinants of PDV only,⁹ one did not utilize data from the YRBSS,¹¹ and one utilized YRBSS data from the state of Vermont only.¹⁵ In addition, one previous study generated only one predictive model for the study population and compared results between males and females.¹ Additional research assessing a variety of risk behaviors while also utilizing a nationally representative sample of male and female adolescents is needed. Separate predictive models for male and female adolescents should be generated to assess these gender differences in determinants of PDV victimization.

Previous studies utilizing state-level data, are subject to additional limitations because the results may not be generalizable to high school adolescents in the U.S.^{4-7,13, 15,16,18-20} The YRBSS

surveys administered at the state level include additional questions not included on the national survey. For this reason, it is difficult to compare studies that utilize state specific YRBSS data to studies that utilize nationally representative surveys.^{13,15,20} For example, a study conducted by Krieter et al, which utilized data from the Vermont YRBSS, assessed sexual risk through the number of male sexual partners during the past 3 months among both male and female adolescents.¹⁵ Because of this state-specific question, the results can not be compared to other studies because the measure assessed heterosexual relationships among female adolescents and homosexual relationships among male adolescents.

Although previous studies demonstrate gender differences in the determinants of PDV victimization, additional research is needed to mitigate the inconsistencies in survey methodology and results. The current study will utilize data from the YRBSS, a nationally representative sample of high school male and female adolescents, in which the primary outcome variable, PDV victimization, has been consistently defined through the use of a single-survey item. The present study will define predictor variables more broadly than in previous research in an effort to assess lifetime involvement in risk behaviors that are of public health concern at low levels of exposure among adolescents. The present study will also generate predictive models of PDV victimization separately for male and female adolescents. In addition, since some previous research studies have used adolescent involvement in unhealthy weight control behaviors as a surrogate for body image,^{11,16} this study will utilize self-described weight to assess body image.

The literature provides important information to aid in the development of PDV victimization prevention programs; however, further research, which utilizes data from a recent, nationally representative sample of female and male high school students, is needed in order to more fully understand the gender-specific predictors of PDV victimization. The purpose of this

study is to examine the gender-specific determinants of physical dating violence using a nationally representative sample of high school adolescents in the United States.

Methods

The Youth Risk Behavior Surveillance Survey (YRBSS) is a self-report written survey, administered to 9th through 12th grade students. The survey is administered every two years to assess the major causes of morbidity and mortality among high school adolescents in the United States. The survey utilizes a three-stage cluster sampling methodology to produce a nationally representative sample of students in both public and private schools. The probability of a specific school being selected for the sample is proportional to its enrollment size.

The Centers for Disease Control and Prevention obtained Institutional Review Board approval for the 2005 YRBSS and parental permission procedures were followed at the local level. Participation is voluntary for students, thus students had the option to not participate in the survey if they so desired. Students who were absent from school on the day the survey was administered did not complete the survey.

The 2005 YRBSS national dataset includes surveys collected from 159 of the 203 sampled schools, representing a response rate of 78% of schools. Of the 16,262 students sampled, 13,953 students (86%) submitted questionnaires and 13,917 student surveys (86%) were available for analysis after excluding those with multiple responses and those for which the student answer was not provided as an answer option. The overall response rate (school participation rate X student participation rate) for the 2005 YRBSS was 67%. After excluding those students who did not answer the dating violence question, n=13,808 (99.2%) student surveys were available for analysis.

Measures

The primary outcome variable was physical dating violence victimization, defined as a response of “yes” to the question, “during the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose”. Exposure variables included demographic factors and substance use behaviors, as well as indicators of sexual risk, violent behavior, sexual victimization, suicidal thoughts, and body image.

Demographic variables include race, age, and gender. Race was classified as white, black or African American, Hispanic or Latino, and “other”, which included those students who were American Indian, Asian, native Alaskan, native Hawaiian or Pacific Islander, and those students who were classified as multiple race Hispanic and multiple race non-Hispanic. The age variable was classified into five distinct categories: 14 years of age or younger, 15 years old, 16 years old, 17 years old, and 18 years of age or older.

Substance use behaviors include those associated with tobacco, alcohol, and other drug use. Tobacco use was defined as an answer of “yes” to the question, “have you ever tried smoking, even one or two puffs.” Alcohol use was assessed by utilizing student responses to the question, “during your lifetime, how many days have you had at least one drink of alcohol.” For this measure, students who responded “0 days” were assigned a “no” for ever using alcohol, while students who responded that they had used alcohol on one or more days were classified as “yes”. Drug use, a dichotomous composite variable, was calculated through the use of survey questions assessing lifetime marijuana, cocaine, methamphetamine, ecstasy, heroin, and hallucinogenic drug use. If a student responded that he or she had tried any of the aforementioned illicit drugs, he or she was assigned a “yes” for drug use. If a student responded

“no” to all of the aforementioned substance use questions, he or she was assigned a “no” for ever using illicit drugs.

Current sexual activity was used as an indicator for sexual risk. Students who reported sexual intercourse with one or more partners during the past three months were assigned a “yes” for this measure. Variables assessing other forms of violent behavior and victimization included having been in at least one physical fight in the past 12 months, and having ever been forced to have sexual intercourse. Suicidal thoughts were assessed using student responses to the question, “during the past 12 months, did you ever consider attempting suicide.” Finally, body image was defined using student responses to the question, “how do you describe your weight.” Students who described their weight as “very overweight” or “very underweight” were classified as having a poor body image, while students who described their weight as “slightly overweight”, “slightly underweight”, or “about the right weight” were classified as not having a poor body image.

Statistical analysis

Youth Risk Behavior Surveillance Survey data was analyzed for n=13,808 students using SPSS version 14.0. Factors associated with PDV victimization among high school adolescents were determined utilizing the total study population. Gender specific predictors were identified after the data was stratified by gender. Descriptive analysis was used to describe characteristics of the study population. The prevalence of PDV victimization among students engaging in high risk behaviors was calculated. A bivariate logistic regression was utilized to calculate the crude odds ratios and 95% confidence intervals among the total study population and among males and females, respectively.

The presence of interaction effects was assessed by entering all possible combinations of two-way interactions on PDV victimization into the cross-tabulations function of SPSS. The chi square test of homogeneity and associated p-values were used to identify all statistically significance interactions. A stepwise multivariate logistic regression was conducted by entering all significant factors from the bivariate logistic regression analysis and significant interaction terms. The best predictor models were identified by examining the -2 log likelihood. Three predictor models were generated. The first examined predictors of PDV among the total study population, while the second and third models examined predictors of PDV among male and female adolescents, respectively. Associations between predictors and PDV were determined utilizing the adjusted odds ratios and 95% confidence intervals. Because of the complex sampling method utilized for data collection, the data was weighted in all analyses.

Results

Characteristics of the 2005 YRBSS Survey Participants are shown in Table 1. The study population included 62.3% white students, 14.4% black or African American students, 9.5% Hispanic or Latino students, and 13.8% students classified as “other”. The age distribution of the population consisted of 10.6% age 14 years or younger, 25.4% age 15 years, 26.0% age 16 years, 23.4% age 17 years, and 13.6% age 18 years or older. Gender was equally distributed in the study population. Current sexual activity was reported by n=4314 (33.9%) of students, illicit drug use was reported by n=5439 (43.0%) students, and sexual victimization was reported by n=1002 (7.4%) students. The study population consisted of n=1263 (9.1%) students who reported PDV victimization. PDV victimization was reported by n=715 (64.0%) students who were currently sexually active, n=779 (67.3%) students who had used illicit drugs during their

lifetime, and n=340 (28.2%) students who had been sexually victimized during their lifetime. The proportion of students having used cigarettes, used alcohol, engaged in a physical fight during the past 12 months, seriously considered suicide during the past 30 days, and a poor body image were also higher among students reporting PDV victimization than those in the study population (see Table 1).

Table 2 shows the distribution of the study population stratified by gender. There were marked gender differences in the proportion of students reporting PDV who also had engaged in a physical fight and had experienced sexual victimization. Overall, males were more likely than females to have engaged in a physical fight during the past 12 months (males: 43.4%; females: 28.1%). Among students having experienced PDV victimization, the proportion of males who had engaged in a physical fight was 66.2% and the proportion of females who had engaged in a physical fight was 49.0%. Among students who reported PDV, 22.4% of males and 33.6% of females also reported having experienced sexual victimization during their lifetime. Similar gender differences were seen among students who had suicidal thoughts and students who had a poor body image (see Table 2).

Tables 3 and 4 show the prevalence PDV victimization among students engaging in high risk behaviors. Overall, the prevalence of PDV victimization was 9.1% with males and females exhibiting similar prevalence rates (males: 9.0%, females: 9.2%). The prevalence of PDV among male students reporting current sexual activity, sexual victimization, suicidal thoughts, and a poor body image were higher than the prevalence rates observed among females. Alternatively, the prevalence of PDV victimization among female students reporting tobacco use, alcohol use, illicit drug use, and physical fighting were higher than those observed among males (see Table 4).

The crude analysis indicated that PDV victimization was significantly associated with current sexual activity, cigarette use, alcohol use, illicit drug use, having engaged in a physical fight, sexual victimization, having seriously considered suicide, and having a poor body image (see Table 5). Students who were currently sexually active were 3.95 times more likely to report PDV than students who were not currently sexually active [95% CI: 3.47, 4.49]. Similar results were found among students who reported cigarette use [OR=2.53; 95% CI: 2.21, 2.89], alcohol use [OR=2.31; 95% CI: 2.64, 3.91], and illicit drug use [OR=3.02; 95% CI: 2.65, 3.43]. Students who had engaged in a physical fight over the past 12 months were more likely to experience PDV than those who had not engaged in a physical fight [OR=2.69; 95% CI: 2.39, 3.03], as were students who had been sexually victimized when compared to students who did not report sexual victimization [OR=6.87; 95% CI: 5.92, 7.96]. Having considered suicide during the past 30 days and having a poor body image were also significant predictors of PDV victimization in the crude analysis, [OR=2.81; 95% CI: 2.48, 3.19] and [OR=1.74; 95% CI: 1.43, 2.12], respectively.

Demographic factors, such as race and age, were significantly associated with PDV victimization in the crude analysis. Gender, however, was not associated with PDV. The bivariate analysis of PDV and associated factors stratified by gender shows similar results in terms of the strength and direction of the associations for all variables except for sexual victimization. Male students who reported PDV were 11.76 times more likely than those who did not to report sexual victimization [95% CI: 9.14, 15.13]. Female students who reported PDV were 5.45 times more likely than those who did not to report sexual victimization [95% CI: 4.50, 6.60].

Findings from the multivariate logistic regression models are shown in Table 4. Significant predictors of PDV victimization in Model 1, which included both male and female student participants, were gender, current sexual activity, alcohol use, illicit drug use, having engaged in a physical fight, sexual victimization, having seriously considered suicide, and having a poor body image.

Although sexual victimization was a significant predictor of PDV victimization, the association between sexual victimization and PDV victimization was modified by both gender and illicit drug use. While gender was not significantly associated with PDV [OR=1.02; 95% CI: .87, 1.20], gender was an effect modifier of the relationship between sexual victimization and PDV. Female adolescents who had experienced sexual victimization were less likely than male adolescents who had experienced sexual victimization to report PDV [OR=.45; 95% CI: .31, .67]. Although students who used illicit drugs were 50% more likely to experience PDV than students who had not used illicit drugs [OR=1.5; 95% CI: 1.25, 1.81], illicit drug use also modified the relationship between sexual victimization and PDV. Adolescents who reported sexual victimization were less likely than those who did not report sexual victimization to experience PDV victimization if they had used illicit drugs [OR=.63; 95% CI: .42, .94].

The stratified multivariate regression analysis showed that the factors that significantly predict PDV victimization were different for male and female adolescents. The results indicated that among male students, current sexual activity, alcohol use, illicit drug use, having engaged in a physical fight, sexual victimization, and having seriously considered suicide were significant predictors of PDV victimization in the regression model. These significant predictors in regression model 2, were all significantly associated with PDV victimization.

Among female students, however, current sexual activity, alcohol use, having engaged in a physical fight, sexual victimization, having seriously considered suicide, and having a poor body image were significant predictors of PDV victimization. While these factors were significant contributors to the variance of regression model 3, having engaged in a physical fight [OR=1.2; 95% CI: .85, 1.67] and having a poor body image [OR=1.39; 95% CI: .98, 1.98] were not significantly associated with PDV victimization.

In addition, having engaged in a physical fight and having seriously considered suicide were effect modifiers in the relationship between current sexual activity and PDV victimization among females. Currently sexually active females were more likely to experience PDV if they reported having been in a physical fight during the past 12 months [OR=1.97; CI: 1.29, 2.99], and currently sexually active females were less likely to report PDV if they had seriously considered suicide during the past 30 days [OR=.46; 95% CI: .30, .70].

Discussion

The results indicated that PDV affects approximately 1 in every 11 (9.1%) youth in the United States, with males and females exhibiting similar prevalence rates of PDV (males: 9.0%, females: 9.2%). Overall, gender, current sexual activity, alcohol use, illicit drug use, having engaged in a physical fight, sexual victimization, having seriously considered suicide, and having a poor body image were significant predictors of PDV victimization among adolescents.

This study did not find a significant difference in risk for PDV victimization between males and females; however, the results indicated that the predictors of PDV victimization differed by gender. Previous research has similarly found that there are differences in the predictors of PDV victimization among male and female adolescents.^{1,9-11,15,16,18} In the present

study, current sexual activity, having used alcohol, having used illicit drugs, having engaged in a physical fight over the past 12 months, sexual victimization, or having seriously considered suicide during the past 30 days were important predictors of PDV victimization among male adolescents. Important predictors of PDV victimization among female students were current sexual activity, having ever used alcohol, having engaged in a physical fight, sexual victimization, having seriously considered suicide, and having a poor body image. Furthermore, having considered suicide and having engaged in a physical fight over the past 12 months modified the relationship between current sexual activity and PDV among female adolescents.

Many previous research studies have indicated that illicit drug use was a significant predictor of PDV only among female adolescents.^{10,12,15} One study, however, indicated that male and female adolescents were more likely to experience PDV victimization if they had used illicit drugs during the previous 30 days.¹¹ The current finding that illicit drug use was only a significant predictor of PDV among male adolescents is likely due to the broad definition used in assessing this behavior. In addition, no other previous research studies assessing PDV have examined lifetime use of all illicit substances measured in the YRBSS. Our finding that body image was only a significant predictor of PDV victimization among females also differed from previously published research. Some previous studies have utilized unhealthy weight control behaviors as a surrogate for body image.^{11,16} Unhealthy weight control behaviors have been identified as significant predictors of PDV among both male and female adolescents.^{11,13,16} This difference in research findings is likely because the current study assessed body image using self-described weight. Since research indicates that female adolescents are more likely than male adolescents to misperceive their weight, it is not surprising that this measure only significantly predicted PDV among females.²¹⁻²³

Our finding that tobacco use was not a significant predictor of PDV victimization among all of the study groups is similar to many previous research studies.^{1,10,12} In addition, our finding that the strength of the association between sexual victimization and PDV victimization was stronger among males than females is similar to the research of Basile et al.¹⁷ Although inconsistent findings have been reported, one previous research study suggests that the strength of the association between suicidality and PDV victimization is stronger among females than among males.¹⁵ This finding is similar to the current findings.

Finally, our findings that: 1) gender and illicit drug use modified the relationship between sexual victimization and PDV victimization among the total study population; and 2) having been in a physical fight and having considered suicide modified the relationship between current sexual activity and PDV victimization among female adolescents, are unique findings that have not previously been reported.

Previous research studies have suggested that adolescents who have experienced violence victimization and have been exposed to violence in the community are more likely to engage in sexual risk taking,^{24,25} other forms of violence,²⁶ and substance use behaviors.²⁴⁻²⁶ Substance use, specifically, is more likely to occur among adolescents who attempt to cope with violence exposure through escape.²⁴ Because of this, it is not surprising that these factors are significantly associated with PDV victimization among adolescents. The gender differences in the determinants of PDV victimization may be a result of male and female adolescents utilizing different strategies to cope with violence victimization.

Strengths/Limitations

There are a number of strengths associated with the current study. First, since this study utilized a nationally representative sample of both male and female adolescents, the results are

generalizable to high school adolescents throughout the United States. In addition, since the YRBSS is administered every two years, it is possible to track trends in the predictors of PDV victimization over time. Unlike some previous research studies, our study assessed a wide variety of possible predictors, while also broadly defining exposure variables, thus assessing lifetime involvement in such behaviors. This is important since prevention programs directed to youth often stress the importance of delayed initiation of high risk behaviors.

There are also important limitations associated with this study. In terms of the survey instrument, since the YRBSS does not contain items related to sexual dating violence and psychological dating violence, it was not possible to assess the full range of dating abuse that may affect adolescents in the U.S. It was also not possible to assess the frequency, duration, recentness and severity of PDV victimization utilizing YRBSS data. Further, because information about PDV perpetration was not assessed on the survey instrument, it is not possible to determine if students who report PDV victimization have also perpetrated violence in the dating relationship. If, for instance, a student perpetrated PDV and subsequently experienced PDV victimization, he or she may also report having engaged in a physical fight during the past 12 months. Thus, the association between physical fighting and PDV victimization in the current study may be overestimated. In addition, since students were not asked if they had a boyfriend or girlfriend within the previous 12 months, it is not possible to determine if students responded “no” to the primary outcome measure because they were not in a dating relationship during that time or if they had actually not experienced PDV victimization during that time period. Finally, the YRBSS only assesses individual, behavioral predictors; therefore it is not possible to explore the environmental and societal factors that may predict PDV victimization.

There is also the possibility of selection bias in this study. Because students who engage in high risk behaviors such as alcohol and illicit drug use may be more likely to be absent from school, the association between PDV and substance use behaviors may be underestimated since absent students did not participate in the study. The methods by which variables were defined in this study and may also contribute to underestimations of the association between various risk behaviors and PDV in the study population. First, since the illicit drug use variable definition in this study did not include information regarding inhalant use and misuse of steroids, drug use among the study population may be underestimated. Furthermore, while the YRBSS assesses the misuse of pharmaceutical steroids among youth, it does not assess the misuse of other pharmaceutical drugs, further underestimating drug use among adolescents.

Finally, because of the cross-sectional study design utilized in the current study, it is not possible to determine if having experienced PDV victimization predisposes adolescents to engage in high risk behaviors or if adolescents who engage in high risk behaviors are more likely to experience PDV victimization. Further research, specifically, studies utilizing case-control and/or cohort data, could provide important information on the causality of these associations.

Conclusions/Recommendations

This study contributes to the growing body of literature examining the gender differences in the determinants of PDV victimization among adolescents. Our findings suggest that there are gender differences in the predictors of PDV victimization. These findings provide medical and mental health care providers as well as school counselors with screening criteria, which may aid in the identification of students who have experienced PDV victimization and referral of such students to counseling services and secondary prevention programs as needed. In addition, the findings suggest that PDV victimization prevention program content should contain content that

addresses associated high risk behaviors and this content should be tailored with working in gender-specific settings. Finally, further research is needed to assess secular trends in the gender-specific predictors of PDV and to assess causality.

Table 1: Characteristics of the 2005 YRBSS Survey Participants (n=13,808)

Race	Total		PDV		No PDV	
	N	%	N	%	N	%
White	8472	62.3	696	56.1	7776	63.0
Black	1953	14.4	233	18.8	1720	13.9
Hispanic or Latino	1290	9.5	101	8.1	1189	9.6
Other	1878	13.8	211	17.0	1667	13.5
Age						
14 Years or younger	1456	10.6	109	8.7	1347	10.8
15 years	3636	26.4	246	19.6	3390	27.1
16 years	3578	26.0	368	29.3	3210	25.7
17 years	3223	23.4	316	25.1	2907	23.2
18 years or older	1870	13.6	219	17.4	1651	13.2
Gender						
Male	6951	50.5	627	49.8	6324	50.6
Female	6807	49.5	631	50.2	6176	49.4
Currently Sexually Active						
Yes	4314	33.9	715	64.0	3599	31.0
No	8410	66.1	403	36.0	8007	69.0
Tobacco Use						
Yes	7204	54.3	868	73.6	6336	52.5
No	6052	45.7	311	26.4	5741	47.5
Alcohol Use						
Yes	9025	74.4	1006	89.6	8019	72.8
No	3111	25.6	117	10.4	2994	27.2
Illicit Drug Use						
Yes	5439	43.0	779	67.3	4660	40.5
No	7216	57.0	379	32.7	6837	59.5

Table 1: Characteristics of the 2005 YRBSS Survey Participants (n=13,808)

	Total		PDV		No PDV	
	N	%	N	%	N	%
Physical Fighting						
Yes	4899	35.8	716	57.7	4183	33.7
No	8768	64.2	525	42.3	8243	66.3
Sexual Victimization						
Yes	1002	7.4	340	28.2	662	5.4
No	12458	92.6	867	71.8	11591	94.6
Suicidal Thoughts						
Yes	2319	16.8	421	33.4	1898	15.2
No	11456	83.2	838	66.6	10618	84.8
Poor Body Image						
Yes	883	6.5	126	10.2	757	6.1
No	12,776	93.5	1115	89.8	11,661	93.9

Table 2: Characteristics of the 2005 YRBSS Survey Participants Stratified by Gender (n=13,808)

	Males (n=6,951)						Females (n=6,807)					
	Total		PDV		No PDV		Total		PDV		No PDV	
Race	N	%	N	%	N	%	N	%	N	%	N	%
White	4288	62.6	341	55.4	3947	63.3	4176	62.1	355	56.7	3821	62.6
Black	957	14.0	113	18.4	844	13.5	994	14.8	120	19.2	874	14.3
Hispanic or Latino	634	9.3	50	8.1	584	9.4	653	9.7	52	8.3	601	9.9
Other	970	14.2	111	18.0	859	13.8	904	13.4	99	15.8	805	13.2
Age												
14 years or younger	658	9.5	42	6.7	616	9.7	795	11.7	65	10.3	730	11.8
15 years	1777	25.6	118	18.9	1659	26.2	1853	27.3	128	20.3	1725	28.0
16 years	1873	27.0	166	26.6	1707	27.0	1699	25.0	201	32.0	1498	24.3
17 years	1604	23.1	168	26.9	1436	22.7	1613	23.7	147	23.4	1466	23.8
18 years or older	1034	14.9	131	21.0	903	14.3	836	12.3	88	14.0	748	12.1
Currently Sexually Active												
Yes	2109	33.2	355	65.7	1754	30.2	2189	34.6	358	62.4	1831	31.8
No	4244	66.8	185	34.3	4059	69.8	4145	65.4	216	37.6	3929	68.2
Tobacco Use												
Yes	3719	56.0	422	72.8	3297	54.4	3459	52.7	443	74.7	3016	50.5
No	2921	44.0	158	27.2	2763	45.6	3108	47.3	150	25.3	2958	49.5
Alcohol Use												
Yes	4490	73.8	497	89.7	3993	72.2	4502	74.9	505	89.5	3997	73.4
No	1591	26.2	57	10.3	1534	27.8	1509	25.1	59	10.5	1450	26.6

Table 2: Characteristics of the 2005 YRBSS Survey Participants Stratified by Gender (n=13,808)

	Males (n=6,951)						Females (n=6,807)					
	Total		PDV		No PDV		Total		PDV		No PDV	
	N	%	N	%	N	%	N	%	N	%	N	%
Illicit Drug Use												
Yes	2910	45.6	405	70.6	2505	43.2	2509	40.2	370	64.0	2139	37.8
No	3466	54.4	169	29.4	3297	56.8	3725	59.8	208	36.0	3517	62.2
Physical Fighting												
Yes	2980	43.4	407	66.3	2573	41.2	1897	28.1	304	49.0	1593	26.0
No	3886	56.6	207	33.7	3679	58.8	4855	71.9	316	51.0	4539	74.0
Sexual Victimization												
Yes	283	4.2	134	22.5	149	2.4	717	10.8	204	33.6	513	8.5
No	6490	95.8	461	77.5	6029	97.6	5924	89.2	403	66.4	5521	91.5
Suicidal Thoughts												
Yes	831	12.0	159	25.5	672	10.7	1482	21.8	260	41.3	1222	19.8
No	6101	88.0	465	74.5	5636	89.3	5310	78.2	369	58.7	4941	80.2
Poor Body Image												
Yes	390	5.7	58	9.5	332	5.3	489	7.2	67	10.8	422	6.9
No	6467	94.3	554	90.5	5913	94.7	6265	92.8	556	89.2	5709	93.1

Table 3: Prevalence of PDV among the 2005 YRBSS Survey Participants (n=13,808)

	Total Population				
	Total (N)	PDV (N)	Prevalence	95% CI	
Race				Lower	Upper
White	8472	696	8.2%	8.2%	8.2%
Black	1953	233	11.9%	11.9%	12.0%
Hispanic or Latino	1290	101	7.8%	7.8%	7.9%
Other	1878	211	11.2%	11.2%	11.3%
Age					
14 Years or younger	1456	109	7.5%	7.5%	7.5%
15 years	3636	246	6.8%	6.8%	6.8%
16 years	3578	368	10.3%	10.3%	10.3%
17 years	3223	316	9.8%	9.8%	9.8%
18 years or older	1870	219	11.7%	11.7%	11.7%
Gender					
Male	6951	627	9.0%	9.0%	9.0%
Female	6807	631	9.3%	9.3%	9.3%
Currently Sexually Active					
Yes	4314	715	16.6%	16.6%	16.6%
No	8410	403	4.8%	4.8%	4.8%
Tobacco Use					
Yes	7204	868	12.0%	12.0%	12.1%
No	6052	311	5.1%	5.1%	5.1%
Alcohol Use					
Yes	9025	1006	11.1%	11.1%	11.2%
No	3111	117	3.8%	3.7%	3.8%

Table 3: Prevalence of PDV among the 2005 YRBSS Survey Participants (n=13,808)

	Total Population				
	Total (N)	PDV (N)	Prevalence	95% CI	
Illicit Drug Use				Lower	Upper
Yes	5439	779	14.3%	14.3%	14.3%
No	7216	379	5.3%	5.2%	5.3%
Physical Fighting					
Yes	4899	716	14.6%	14.6%	14.6%
No	8768	525	6.0%	6.0%	6.0%
Sexual Victimization					
Yes	1002	340	33.9%	33.8%	34.0%
No	12458	867	7.0%	7.0%	7.0%
Suicidal Thoughts					
Yes	2319	421	18.2%	18.1%	18.2%
No	11456	838	7.3%	7.3%	7.3%
Poor Body Image					
Yes	883	126	14.3%	14.2%	14.3%
No	12,776	1115	8.7%	8.7%	8.7%

Table 4: Prevalence of PDV among the 2005 YRBSS Survey Participants Stratified by Gender (n=13,808)

Race	Males					Females				
	Total PDV		Prev.	95% CI		Total PDV		Prev.	95% CI	
	(N)	(N)		LL	UL	(N)	(N)		LL	UL
White	4288	341	8.0%	7.9%	8.0%	4176	355	8.5%	8.5%	8.5%
Black	957	113	11.8%	11.7%	11.9%	994	120	12.1%	12.0%	12.1%
Hispanic or Latino	634	50	7.9%	7.8%	8.0%	653	52	8.0%	7.9%	8.0%
Other	970	111	11.4%	11.4%	11.5%	904	99	11.0%	10.9%	11.0%
Age										
14 Years or younger	658	42	6.4%	6.3%	6.5%	795	65	8.2%	8.1%	8.2%
15 years	1777	118	6.6%	6.6%	6.7%	1853	128	6.9%	6.9%	6.9%
16 years	1873	166	8.9%	8.8%	8.9%	1699	201	11.8%	11.8%	11.9%
17 years	1604	168	10.5%	10.4%	10.5%	1613	147	9.1%	9.1%	9.1%
18 years or older	1034	131	12.7%	12.6%	12.7%	836	88	10.5%	10.5%	10.6%
Currently Sexually Active										
Yes	2109	355	16.8%	16.8%	16.9%	2189	358	16.4%	16.3%	16.4%
No	4244	185	4.4%	4.3%	4.4%	4145	216	5.2%	5.2%	5.2%
Tobacco Use										
Yes	3719	422	11.3%	11.3%	11.4%	3459	443	12.8%	12.8%	12.8%
No	2921	158	5.4%	5.4%	5.4%	3108	150	4.8%	4.8%	4.8%
Alcohol Use										
Yes	4490	497	11.1%	11.1%	11.1%	4502	505	11.2%	11.2%	11.2%
No	1591	57	3.6%	3.6%	3.6%	1509	59	3.9%	3.9%	3.9%

Table 4: Prevalence of PDV among the 2005 YRBSS Survey Participants Stratified by Gender (n=13,808)

Illicit Drug Use	Males					Females				
	Total	PDV	Prev.	95% CI		Total	PDV	Prev.	95% CI	
	(N)	(N)		LL	UL	(N)	(N)		LL	UL
Yes	2910	405	13.9%	13.9%	13.9%	2509	370	14.7%	14.7%	14.8%
No	3466	169	4.9%	4.9%	4.9%	3725	208	5.6%	5.6%	5.6%
Physical Fighting										
Yes	2980	407	13.7%	13.6%	13.7%	1897	304	16.0%	16.0%	16.1%
No	3886	207	5.3%	5.3%	5.3%	4855	316	6.5%	6.5%	6.5%
Sexual Victimization										
Yes	283	134	47.3%	47.0%	47.7%	717	204	28.5%	28.3%	28.6%
No	6490	461	7.1%	7.1%	7.1%	5924	403	6.8%	6.8%	6.8%
Suicidal Thoughts										
Yes	831	159	19.1%	19.0%	19.2%	1482	260	17.5%	17.5%	17.6%
No	6101	465	7.6%	7.6%	7.6%	5310	369	6.9%	6.9%	7.0%
Poor Body Image										
Yes	390	58	14.9%	14.7%	15.1%	489	67	13.7%	13.6%	13.8%
No	6467	554	8.6%	8.6%	8.6%	6265	556	8.9%	8.9%	8.9%

Table 5: Crude Analysis of PDV Among the 2005 YRBSS Survey Participants (n=13,808)

Race	Total Population			Males			Females		
	POR	95% CI		POR	95% CI		POR	95% CI	
	Crude	LL	UL	Crude	LL	UL	Crude	LL	UL
White	Referent			Referent			Referent		
Black	1.51	1.29	1.77	1.55	1.24	1.94	1.47	1.18	1.84
Hispanic or Latino	0.95	0.77	1.18	0.98	0.72	1.34	0.93	0.68	1.26
Other	1.42	1.20	1.67	1.50	1.19	1.88	1.32	1.05	1.68
Age									
14 Years or younger	Referent			Referent			Referent		
15 years	0.90	0.71	1.13	1.04	0.72	1.49	0.83	0.61	1.13
16 years	1.42	1.13	1.77	1.42	1.00	2.02	1.50	1.12	2.01
17 years	1.35	1.07	1.69	1.71	1.20	2.43	1.12	0.83	1.52
18 years or older	1.64	1.29	2.09	2.12	1.48	3.04	1.31	0.94	1.83
Gender									
Female	1.03	0.92	1.16	-----	-----	-----	-----	-----	-----
Male	Referent			-----	-----	-----	-----	-----	-----
Currently Sexually Active									
Yes	3.95	3.47	4.49	4.67	3.77	5.78	3.56	2.98	4.25
No	Referent			Referent			Referent		
Tobacco Use									
Yes	2.53	2.21	2.89	2.24	1.85	2.71	2.90	2.39	3.51
No	Referent			Referent			Referent		
Alcohol Use									
Yes	3.21	2.64	3.91	3.35	2.53	4.43	3.11	2.36	4.09
No	Referent			Referent			Referent		

Table 5: Crude Analysis of PDV Among the 2005 YRBSS Survey Participants (n=13,808)

	Total Population			Males			Females		
	POR	95% CI		POR	95% CI		POR	95% CI	
Illicit Drug Use	Crude	LL	UL	Crude	LL	UL	Crude	LL	UL
Yes	3.02	2.65	3.43	3.15	2.62	3.80	2.93	2.45	3.50
No	Referent			Referent			Referent		
Physical Fighting									
Yes	2.69	2.39	3.03	2.81	2.36	3.35	2.74	2.32	3.24
No	Referent			Referent			Referent		
Sexual Victimization									
Yes	6.87	5.92	7.96	11.76	9.14	15.13	5.45	4.50	6.60
No	Referent			Referent			Referent		
Suicidal Thoughts									
Yes	2.81	2.48	3.19	2.87	2.36	3.49	2.85	2.40	3.38
No	Referent			Referent			Referent		
Poor Body Image									
Yes	1.74	1.43	2.12	1.87	1.39	2.50	1.63	1.24	2.14
No	Referent			Referent			Referent		

Table 6: Adjusted Analysis of PDV Among the 2005 YRBSS Survey Participants (n=10,168)

	<u>Total Population</u>			<u>Males</u>			<u>Females</u>		
	<u>POR</u>	<u>95% CL</u>		<u>POR</u>	<u>95% CI</u>		<u>POR</u>	<u>95% CI</u>	
<u>Gender</u>	<u>Adj.</u>	<u>LL</u>	<u>UL</u>	<u>Adj.</u>	<u>LL</u>	<u>UL</u>	<u>Adj.</u>	<u>LL</u>	<u>UL</u>
Female	1.02	0.87	1.20	-----	-----	-----	-----	-----	-----
Male	Referent			-----	-----	-----	-----	-----	-----
Currently Sexually Active									
Yes	2.49	2.13	2.91	2.70	2.16	3.39	2.46	1.81	3.35
No	Referent			Referent			Referent		
Alcohol Use									
Yes	1.50	1.15	1.95	1.69	1.17	2.45	1.53	1.09	2.15
No	Referent			Referent			Referent		
Illicit Drug Use									
Yes	1.50	1.25	1.81	1.45	1.14	1.85	-----	-----	-----
No	Referent			Referent			-----		
Physical Fighting									
Yes	1.88	1.62	2.18	1.89	1.51	2.35	1.20	0.85	1.67
No	Referent			Referent			Referent		
Sexual Victimization									
Yes	8.14	5.23	12.68	5.73	4.12	7.96	2.97	2.37	3.74
No	Referent			Referent			Referent		

Table 6: Adjusted Analysis of PDV Among the 2005 YRBSS Survey Participants (n=10,168)

	<u>Total Population</u>			<u>Males</u>			<u>Females</u>		
	POR	95% CI		POR	95% CI		POR	95% CI	
Suicidal Thoughts	Adj.	LL	UL	Adj.	LL	UL	Adj.	LL	UL
Yes	1.73	1.47	2.03	1.73	1.35	2.21	2.91	2.10	4.04
No	Referent			Referent			Referent		
Poor Body Image									
Yes	1.35	1.02	1.78	-----	-----	-----	1.39	0.98	1.98
No	Referent						Referent		
Sexual Violence* Gender									
	0.45	0.31	0.67	-----	-----	-----	-----	-----	-----
	Referent								
Sexual Violence* Drug Use									
	0.63	0.42	0.94	-----	-----	-----	-----	-----	-----
	Referent								
Sexual Activity* Physical Fight									
	-----	-----	-----	-----	-----	-----	1.97	1.29	2.99
							Referent		
Sexual Activity* Suicidal Thoughts									
	-----	-----	-----	-----	-----	-----	0.46	0.30	0.70
							Referent		

Appendix

recode Q1 (1,2,3=1) (4=2) (5=3) (6=4) (7=5) into AGE.
execute.

VALUE LABELS AGE 1 '14 years or younger' 2 '15 years old' 3 '16 years old' 4 '17 years old' 5 '18 years or older'.
Execute.

recode Q2 (1=1) (2=2) into GENDER.
VALUE LABELS GENDER 1 'Female' 2 'Male'.
EXECUTE.

recode Q4 (6=1) (3=2) (4=3) (1,2,5,7,8 = 4) into RACE.
execute.

VALUE LABELS RACE 1 'White' 2 'Black or African American' 3 'Hispanic or Latino' 4 'Other'.
Execute.

VALUE LABELS QN18, QN21, QN22, QN24, QN28, QN39, QN60 1'Yes' 2'No'.
Execute.

RECODE Q64 (1,5=1) (2,3,4=2) into POORBODYIMG.
Value Labels POORBODYIMG 1'Yes' 2 'No'.
eXECUTE.

IF (QN53=1 OR QN52=1 OR QN48=1 OR QN44=1 OR QN90=1 OR QN51=1) DrugUseTotal=1.
IF (QN53=2 AND QN52=2 AND QN48=2 AND QN44=2 AND QN90=2 AND QN51=2) DrugUseTotal=2.
Value Labels DrugUseTotal 1 'Yes' 2'No'.
Execute.

WEIGHT
BY weight .

CROSSTABS
/TABLES=QN18 QN22 QN24 QN28 QN39 QN60 AGE GENDER RACE POORBODYIMG
DrugUseTotal BY QN21
/FORMAT= AVALUE TABLES
/CELLS= COUNT COLUMN
/COUNT ROUND CELL .

USE ALL.
COMPUTE filter_\$=(GENDER = 2).
VARIABLE LABEL filter_\$ 'GENDER = 2 (FILTER)'.
VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_\$ (f1.0).
FILTER BY filter_\$.
EXECUTE .

CROSSTABS
/TABLES=QN18 QN22 QN24 QN28 QN39 QN60 AGE GENDER RACE POORBODYIMG
DrugUseTotal BY QN21
/FORMAT= AVALUE TABLES
/CELLS= COUNT COLUMN

/COUNT ROUND CELL .

USE ALL.

COMPUTE filter_\$=(GENDER = 1).

VARIABLE LABEL filter_\$ 'GENDER = 1 (FILTER)'.
VALUE LABELS filter_\$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_\$ (f1.0).
FILTER BY filter_\$.
EXECUTE .

CROSSTABS

/TABLES=QN18 QN22 QN24 QN28 QN39 QN60 AGE GENDER RACE POORBODYIMG

DrugUseTotal BY QN21

/FORMAT= AVALUE TABLES

/CELLS= COUNT COLUMN

/COUNT ROUND CELL .

FILTER OFF.

USE ALL.

EXECUTE .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN18

/CONTRAST (QN18)=Indicator(1)

/PRINT = CI(95)

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN22

/CONTRAST (QN22)=Indicator(1)

/PRINT = CI(95)

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN24

/CONTRAST (QN24)=Indicator(1)

/PRINT = CI(95)

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN28

/CONTRAST (QN28)=Indicator(1)

/PRINT = CI(95)

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN39

/CONTRAST (QN39)=Indicator(1)

/PRINT = CI(95)

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN60

/CONTRAST (QN60)=Indicator(1)

/PRINT = CI(95)

/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER POORBODYIMG

/CONTRAST (POORBODYIMG)=Indicator(1)

/PRINT = CI(95)

```
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .  
LOGISTIC REGRESSION QN21  
/METHOD = ENTER DrugUseTotal  
/CONTRAST (DrugUseTotal)=Indicator(1)  
/PRINT = CI(95)  
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
CROSSTABS  
/TABLES= GENDER BY QN21  
/FORMAT= AVALUE TABLES  
/STATISTIC=RISK  
/CELLS= COUNT COLUMN  
/COUNT ROUND CELL .
```

```
USE ALL.  
COMPUTE filter_$=(GENDER = 2).  
VARIABLE LABEL filter_$ 'GENDER = 2 (FILTER)'.  
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.  
FORMAT filter_$ (f1.0).  
FILTER BY filter_$.  
EXECUTE .
```

```
LOGISTIC REGRESSION QN21  
/METHOD = ENTER QN18  
/CONTRAST (QN18)=Indicator(1)  
/PRINT = CI(95)  
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21  
/METHOD = ENTER QN22  
/CONTRAST (QN22)=Indicator(1)  
/PRINT = CI(95)  
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21  
/METHOD = ENTER QN24  
/CONTRAST (QN24)=Indicator(1)  
/PRINT = CI(95)  
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21  
/METHOD = ENTER QN28  
/CONTRAST (QN28)=Indicator(1)  
/PRINT = CI(95)  
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21  
/METHOD = ENTER QN39  
/CONTRAST (QN39)=Indicator(1)  
/PRINT = CI(95)  
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21  
/METHOD = ENTER QN60  
/CONTRAST (QN60)=Indicator(1)  
/PRINT = CI(95)  
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21  
/METHOD = ENTER POORBODYIMG  
/CONTRAST (POORBODYIMG)=Indicator(1)
```

```
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION QN21
/METHOD = ENTER DrugUseTotal
/CONTRAST (DrugUseTotal)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
USE ALL.
COMPUTE filter_$=(GENDER = 1).
VARIABLE LABEL filter_$ 'GENDER = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .
```

```
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN18
/CONTRAST (QN18)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN22
/CONTRAST (QN22)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN24
/CONTRAST (QN24)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN28
/CONTRAST (QN28)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN39
/CONTRAST (QN39)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN60
/CONTRAST (QN60)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION QN21
/METHOD = ENTER POORBODYIMG
/CONTRAST (POORBODYIMG)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
LOGISTIC REGRESSION QN21
/METHOD = ENTER DrugUseTotal
```



```
/CONTRAST (DrugUseTotal)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

***RECODE FOR REGRESSION**

```
RECODE AGE (1=0) (2=1) (3=2) (4=3) (5=4).
VALUE LABELS AGE 0 '14 years or younger' 1 '15 years old' 2 '16 years old' 3 '17 years old' 4 '18 years
or older'.
EXECUTE.
```

```
recode GENDER (1=1) (2=0).
VALUE LABELS GENDER 1 'Female' 0 'Male'.
EXECUTE.
```

```
recode RACE (1=0) (2=1) (3=2) (4=3).
execute.
```

```
VALUE LABELS RACE 0 'White' 1 'Black or African American' 2 'Hispanic or Latino' 3 'Other'.
Execute.
```

```
RECODE QN18, QN21, QN22, QN24, QN28, QN39, QN60 (1=1) (2=0).
```

```
VALUE LABELS QN18, QN21, QN22, QN24, QN28, QN39, QN60 1'Yes' 0'No'.
Execute.
```

```
RECODE POORBODYIMG (1=1) (2=0).
Value Labels POORBODYIMG 1'Yes' 0 'No'.
eEXECUTE.
```

```
RECODE DrugUseTotal (1=1) (2=0).
Value Labels DrugUseTotal 1 'Yes' 0 'No'.
```

```
FILTER OFF.
USE ALL.
EXECUTE .
```

LOGISTIC REGRESSION QN21

```
/METHOD = FSTEP(LR) DrugUseTotal POORBODYIMG RACE GENDER AGE QN60 QN39 QN28
QN24 QN22 QN18 QN39*RACE POORBODYIMG*RACE AGE*GENDER AGE*QN28 AGE*QN18 AGE
*QN22 AGE*QN24 AGE*POORBODYIMG GENDER*QN22 DrugUseTotal*QN60 QN22*QN60 QN24
*QN60 DrugUseTotal*QN28 QN18*QN28 DrugUseTotal*QN39 QN22*QN39 QN24*QN39
POORBODYIMG*QN39 DrugUseTotal*QN22 DrugUseTotal*QN24 DrugUseTotal
*POORBODYIMG POORBODYIMG*QN22 QN22*QN24
/CONTRAST (DrugUseTotal)=Indicator(1) /CONTRAST (POORBODYIMG)=Indicator(1)
/CONTRAST (RACE)=Indicator(1) /CONTRAST (GENDER)=Indicator(1) /CONTRAST
(AGE)=Indicator(1) /CONTRAST (QN60)=Indicator(1) /CONTRAST
(QN39)=Indicator(1) /CONTRAST (QN28)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
```

(QN18)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN60 QN39 DrugUseTotal QN18 QN22 QN24 POORBODYIMG*RACE
RACE POORBODYIMG AGE*GENDER AGE GENDER AGE*QN28 QN28 GENDER*QN22
DrugUseTotal*QN22
/CONTRAST (QN60)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(DrugUseTotal)=Indicator(1) /CONTRAST (QN18)=Indicator(1) /CONTRAST
(QN22)=Indicator(1) /CONTRAST (QN24)=Indicator(1) /CONTRAST
(POORBODYIMG)=Indicator(1) /CONTRAST (RACE)=Indicator(1) /CONTRAST
(AGE)=Indicator(1) /CONTRAST (GENDER)=Indicator(1) /CONTRAST
(QN28)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN60 QN39 DrugUseTotal QN18 QN22 QN24 AGE*GENDER AGE
GENDER AGE*QN28 QN28 GENDER*QN22 DrugUseTotal*QN22
/CONTRAST (QN60)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(DrugUseTotal)=Indicator(1) /CONTRAST (QN18)=Indicator(1) /CONTRAST
(QN22)=Indicator(1) /CONTRAST (QN24)=Indicator(1) /CONTRAST
(AGE)=Indicator(1) /CONTRAST (GENDER)=Indicator(1) /CONTRAST
(QN28)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN60 QN39 DrugUseTotal QN18 QN22 QN24 AGE*GENDER AGE
GENDER GENDER*QN22 DrugUseTotal*QN22
/CONTRAST (QN60)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(DrugUseTotal)=Indicator(1) /CONTRAST (QN18)=Indicator(1) /CONTRAST
(QN22)=Indicator(1) /CONTRAST (QN24)=Indicator(1) /CONTRAST
(AGE)=Indicator(1) /CONTRAST (GENDER)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN60 QN39 DrugUseTotal QN18 QN22 QN24 GENDER GENDER*QN22
DrugUseTotal*QN22
/CONTRAST (QN60)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(DrugUseTotal)=Indicator(1) /CONTRAST (QN18)=Indicator(1) /CONTRAST
(QN22)=Indicator(1) /CONTRAST (QN24)=Indicator(1) /CONTRAST
(GENDER)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

LOGISTIC REGRESSION QN21

/METHOD = ENTER QN60 QN39 DrugUseTotal QN18 QN22 QN24 GENDER GENDER*QN22
DrugUseTotal*QN22 POORBODYIMG
/CONTRAST (QN60)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST

```
(DrugUseTotal)=Indicator(1) /CONTRAST (QN18)=Indicator(1) /CONTRAST
(QN22)=Indicator(1) /CONTRAST (QN24)=Indicator(1) /CONTRAST
(GENDER)=Indicator(1) /CONTRAST (POORBODYIMG)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
*FEMALES
USE ALL.
COMPUTE filter_$=(GENDER = 1).
VARIABLE LABEL filter_$ 'GENDER = 1 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .
```

```
LOGISTIC REGRESSION QN21
/METHOD = FSTEP(LR) QN18 QN22 QN24 QN28 QN39 QN60 AGE GENDER RACE
POORBODYIMG DrugUseTotal QN39*RACE POORBODYIMG*RACE AGE*QN60 AGE*QN28 AGE
*QN22 DrugUseTotal*QN60 QN18*QN60 QN22*QN60 QN24*QN60 QN24*QN28 QN24*QN39
QN22*QN39 POORBODYIMG*QN39 DrugUseTotal*QN22 DrugUseTotal*QN24 DrugUseTotal
*POORBODYIMG
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN28)=Indicator(1) /CONTRAST
(QN39)=Indicator(1) /CONTRAST (QN60)=Indicator(1) /CONTRAST
(AGE)=Indicator(1) /CONTRAST (GENDER)=Indicator(1) /CONTRAST
(RACE)=Indicator(1) /CONTRAST (POORBODYIMG)=Indicator(1) /CONTRAST
(DrugUseTotal)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN18 QN22 QN24 QN39 QN60 AGE RACE POORBODYIMG*RACE
POORBODYIMG AGE*QN28 QN28 AGE*QN22 QN18*QN60 QN24*QN60
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(QN60)=Indicator(1) /CONTRAST (AGE)=Indicator(1) /CONTRAST
(RACE)=Indicator(1) /CONTRAST (POORBODYIMG)=Indicator(1) /CONTRAST
(QN28)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21
/METHOD = ENTER QN18 QN22 QN24 QN39 QN60 AGE AGE*QN28 QN28 AGE*QN22
QN18*QN60 QN24*QN60
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(QN60)=Indicator(1) /CONTRAST (AGE)=Indicator(1) /CONTRAST
(RACE)=Indicator(1) /CONTRAST (QN28)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

```
LOGISTIC REGRESSION QN21
```

```

/METHOD = ENTER QN18 QN22 QN24 QN39 QN60 AGE AGE*QN22 QN18*QN60 QN24
*QN60
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(QN60)=Indicator(1) /CONTRAST (AGE)=Indicator(1) /CONTRAST
(RACE)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

```

LOGISTIC REGRESSION QN21

```

/METHOD = ENTER QN18 QN22 QN24 QN39 QN60 AGE QN18*QN60 QN24*QN60
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(QN60)=Indicator(1) /CONTRAST (AGE)=Indicator(1) /CONTRAST
(RACE)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

```

LOGISTIC REGRESSION QN21

```

/METHOD = ENTER QN18 QN22 QN24 QN39 QN60 QN18*QN60 QN24*QN60
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(QN60)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

```

LOGISTIC REGRESSION QN21

```

/METHOD = ENTER QN18 QN22 QN24 QN39 QN60 QN18*QN60 QN24*QN60 POORBODYIMG
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN39)=Indicator(1) /CONTRAST
(QN60)=Indicator(1) /CONTRAST (POORBODYIMG)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .

```

*MALES

```

USE ALL.
COMPUTE filter_$=(GENDER = 0).
VARIABLE LABEL filter_$ 'GENDER = 0'+
'(FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

```

LOGISTIC REGRESSION QN21

```

/METHOD = FSTEP(LR) QN18 QN22 QN24 QN28 QN39 QN60 AGE GENDER RACE
POORBODYIMG DrugUseTotal QN22*RACE POORBODYIMG*RACE AGE*QN60 AGE*QN28 AGE
*QN39 AGE*QN18 AGE*QN24 AGE*POORBODYIMG DrugUseTotal*QN39
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (QN28)=Indicator(1) /CONTRAST
(QN39)=Indicator(1) /CONTRAST (QN60)=Indicator(1) /CONTRAST
(AGE)=Indicator(1) /CONTRAST (GENDER)=Indicator(1) /CONTRAST
(RACE)=Indicator(1) /CONTRAST (POORBODYIMG)=Indicator(1) /CONTRAST

```

```
(DrugUseTotal)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

LOGISTIC REGRESSION QN21

```
/METHOD = ENTER AGE RACE QN18 QN22 QN24 DrugUseTotal QN60 QN22*RACE AGE
*QN60 QN39 AGE*QN39 AGE*QN24
/CONTRAST (AGE)=Indicator(1) /CONTRAST (RACE)=Indicator(1) /CONTRAST
(QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (DrugUseTotal)=Indicator(1) /CONTRAST
(QN60)=Indicator(1) /CONTRAST (QN39)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

LOGISTIC REGRESSION QN21

```
/METHOD = ENTER AGE RACE QN18 QN22 QN24 DrugUseTotal QN60 QN22*RACE AGE
*QN60 AGE*QN24
/CONTRAST (AGE)=Indicator(1) /CONTRAST (RACE)=Indicator(1) /CONTRAST
(QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (DrugUseTotal)=Indicator(1) /CONTRAST
(QN60)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

LOGISTIC REGRESSION QN21

```
/METHOD = ENTER AGE RACE QN18 QN22 QN24 DrugUseTotal QN60 QN22*RACE AGE
*QN24
/CONTRAST (AGE)=Indicator(1) /CONTRAST (RACE)=Indicator(1) /CONTRAST
(QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (DrugUseTotal)=Indicator(1) /CONTRAST
(QN60)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

LOGISTIC REGRESSION QN21

```
/METHOD = ENTER RACE QN18 QN22 QN24 DrugUseTotal QN60 QN22*RACE
/CONTRAST (RACE)=Indicator(1) /CONTRAST (QN18)=Indicator(1) /CONTRAST
(QN22)=Indicator(1) /CONTRAST (QN24)=Indicator(1) /CONTRAST
(DrugUseTotal)=Indicator(1) /CONTRAST (QN60)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

LOGISTIC REGRESSION QN21

```
/METHOD = ENTER QN18 QN22 QN24 DrugUseTotal QN60
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (DrugUseTotal)=Indicator(1) /CONTRAST
(QN60)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

LOGISTIC REGRESSION QN21

```
/METHOD = ENTER QN18 QN22 QN24 DrugUseTotal QN60 QN39
/CONTRAST (QN18)=Indicator(1) /CONTRAST (QN22)=Indicator(1) /CONTRAST
(QN24)=Indicator(1) /CONTRAST (DrugUseTotal)=Indicator(1) /CONTRAST
(QN60)=Indicator(1) /CONTRAST (QN39)=Indicator(1)
/PRINT = CI(95)
/CRITERIA = PIN(.05) POUT(.10) ITERATE(20) CUT(.5) .
```

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