Sport Social Work Journal

Sexual Violence Prevention Among Intercollegiate Athletes, Recreational Athletes, and Non-Athletes: Environmental Considerations for Program Interventions

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Previous research has suggested that individual, social, and environmental factors all play a role in developing individual attitudes regarding sexual violence. On college campuses, both intercollegiate and recreational athletics provide opportunities for students to engage in group settings that can impact these attitudes. The primary purpose of this study was to examine how attitudes towards sexual violence compared across intercollegiate athlete, recreational athlete, and non-athlete populations, while accounting for other individual and school factors. Analysis of a large national dataset found very small but statistically significant differences among these groups in their personal social norms, campus social norms, and bystander efficacy regarding sexual violence. Intercollegiate athletes were slightly lower than non-athletes in their personal social norms and bystander efficacy and slightly higher in their perceived campus social norms, while recreational athletes were higher in bystander efficacy, but lower in personal and campus social norms. Other personal demographic factors, including gender identity and sexual

orientation, were also significant, while most campus factors were non-significant. These findings suggest the identification of college sport as an at-risk community for sexual violence may be an oversimplification, with implications for program intervention design.

Keywords: sexual violence prevention education, socio-ecological model, personal social norms, campus social norms, bystander efficacy

According to the Centers for Disease Control and Prevention (CDC), "sexual violence is defined as any sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse" (Basile et al. 2014, p. 11). The Campus Sexual Assault Study (Krebs et al., 2007; 2009) indicated campus sexual violence (SV) affects one in five female undergraduate students, as well as 6% of undergraduate men. Recent research by the American Association of Universities found that rates of SV rose between 2015 and 2019 among 21 universities surveyed (Cantor et al., 2020). The prevalence of SV on college campuses is alarming, particularly given the devastating effects on victims (e.g., anxiety and depression, post-traumatic stress disorder, and increased substance use/abuse; Basile & Smith, 2011; Carey et al., 2018; Eisenberg et al., 2016; Ullman et al., 2013). In 2011, the Office for Civil Rights issued a "Dear Colleague Letter" and instructed colleges and universities to take steps to reduce SV on campus (Ali, 2011). These steps include investigations of known incidences of SV, as well as education with the intention of preventing SV from occurring among and between students.

The CDC has recommended "promoting social norms that protect against violence," specifically pointing to bystander approaches in education (Basile et al., 2016, p.7) which can increase the likelihood of intervention (Ahrens et al., 2011; Santacrose et al., 2020) and decrease social norms supporting SV (Coker et al., 2011; Fenton & Mott, 2018). In their systematic review, Teten Tharp et al. (2013) found a common risk factor for perpetration was peer support for SV, including association with all-male groups, such as fraternities or athletic teams. Additional risk factors for perpetration were hypermasculinity, hostile attitudes toward women, and adherence to traditional gender norms, as well as an acceptance of violence and competitiveness. Lastly, rape myth acceptance (RMA) and victim blaming were found to be attitudes predictive of intentions and behaviors resulting in SV perpetration (Teten Tharp et al., 2013). Thus, programs that change social norms regarding peer support, masculinity and traditional gender norms, and awareness about SV (i.e., breaking down rape myths) are anticipated to be the most effective SV prevention education.

Research on SV has proliferated in the last three decades, but efforts to evaluate the efficacy of prevention education have not kept pace (DeGue et al., 2014). However, several reviews shed light on SV prevention education programming best practices. An older meta-analytic review by Anderson and Whiston (2005) found most programs demonstrated a change in knowledge about sexual assault, but it was difficult to determine efficacy as a whole because "programming on college campuses appears to differ depending on which types of outcomes are considered" (p. 381). DeGue et al. (2014) completed a systematic review of 140 evaluations of SV prevention programs and found that most programs were "fairly one-dimensional" (p. 356) and did not cover the complex array of SV-related topics necessary to change participant attitudes regarding SV. These programs were also found to have an insufficient dosage (i.e., one session of one hour or less) and did not include varied instructional methods (e.g., mainly

lectures or videos). More recently, a meta-analysis of bystander intervention programs found that longer programs had greater effects than shorter programs on participants' attitudes and beliefs of SV (Jouriles et al., 2018).

The intended outcomes of SV prevention education are to lower risk factors (e.g., RMA, peer support of SV) and increase protective factors. Protective factors include emotional health and connectedness (Borowsky et al., 1997), social support and school belonging (Basile et al., 2018), conflict resolution skills (Forbes & Adams-Curtis, 2001), and greater empathy (Basile et al., 2018). However, "current knowledge of protective factors within the SV literature is extremely limited" (Teten Tharp et al., 2013, p. 141), suggesting SV prevention educators rely on reducing risk factors rather than increasing protective factors. Thus, protective factors should be examined more closely as changing social norms (e.g., gender norms, attitudes toward women, RMA) and increasing bystander efficacy are also critical to reducing and preventing SV.

At-Risk Communities

College communities are particularly at high risk for incidents of SV, with one in five college women experiencing SV (Krebs et al., 2007, 2009; Krebs et al., 2016). According to the U.S. Department of Justice, college women are at greater risk of victimization of SV (Sinozich & Langton, 2014), particularly during the first few months of their first semester, sometimes deemed the "red zone" for victimization (Cranney, 2015; Kimble et al., 2008). In efforts to learn more about SV in college communities, researchers have consistently found alcohol use and participation in fraternities linked with increased rates of SV perpetration (e.g., Klein et al., 2018; Martin, 2016). Additional research has found that participating in intercollegiate athletics is also linked with SV as the emphasis on competition, conquest, and aggression can lead to a "rape-prone environment" (Martin, 2016). These findings are mixed and not always consistent due, in part, to the heterogeneous nature of college sports participation (Burkhard et al., 2019), leading to calls for more research studying the differences between athletes and athletic teams (see McCray, 2019).

SV prevention research has focused on the differences between athlete and non-athlete populations (Morean et al., 2018; Navarro & Tewksbury, 2019; Young et al., 2017). However, the "athlete" designation is often exclusively for individuals playing on intercollegiate teams regulated by the National Collegiate Athletic Association (NCAA), while recreational athletes (i.e., players on club or intramural sport teams) are not distinguished. Although recreational athletes do not have the visibility of a NCAA athlete, they still maintain their association with competitive sports which can influence motivation, behavior, and self-concept (Lamont-Mills & Christensen, 2006). Recreational athletes also develop strong group bonds and experiences, positioning them to have a social lifestyle more similar to intercollegiate athletes and fraternity members than non-athletes (Allan & Madden, 2012). For example, Allan and Madden (2012) found 64% of club athletes and 49% of intramural athletes reported experiencing hazing (i.e., alcohol consumption, humiliation, isolation, sleep-deprivation, sex acts), compared to 74% of intercollegiate athletes and 73% of fraternity members. McGinley and colleagues (2016) found intramural sports participation significantly associated with risky alcohol use (for men and women) and generalized sexual harassment (for women).

Despite maintaining a social structure reflective of populations with higher rape-supportive attitudes and beliefs, recreational athletes are rarely distinguished from non-athletes in SV literature. As membership with athletic teams has been associated with attitudes and

environments related to sexual aggression (Humphrey & Kahn, 2000; McCray, 2015; Murnen & Kohlman, 2007; Stotzer & MacCartney, 2016; Wiersma-Mosley et al., 2017), it is important to determine whether recreational athletics promotes a similar environment. Young et al. (2017) extended the scope of studying SV among intercollegiate athletics to incorporate recreational athletes, finding non-athletes had lower rates of sexual coercion and RMA comparatively to athletes. There were no significant differences in RMA and attitudes toward women between intercollegiate and recreational athletes (Young et al., 2017), positioning recreational athletes closer to intercollegiate athletes than non-athletes. This remains one of the few studies that has captured differences in these athletic populations, therefore, a more comprehensive understanding of social norms, bystander efficacy, and SV education in the college environment can be achieved by studying recreational athletes as a unique subgroup.

Theoretical Framework

Prevention programming is most effective when clearly informed by theory (Nation et al., 2003). The lack of consistent theory framing research has been a criticism in the literature on evaluating the efficacy of SV prevention efforts (DeGue et al., 2014; Teten Tharp et al., 2013). Many SV prevention program evaluations have not used theory, but rather targeted specific outcomes (e.g., lowering RMA). Furthermore, when theories are used to guide SV prevention research, they range from feminist theory (as used by Cheever & Eisenberg, 2020) to grounded theory (as used by DeMaria et al., 2018) to the Theory of Planned Behavior (as used by Young et al., 2017). Often, these theories are focused on individual-level factors to understand SV perpetration and behavioral, cognitive, or emotional risk factors. While this is necessary, a broader view encompassing peer, community, and society-level factors is necessary to fully examine the complex issue of SV prevention (Casey & Lindhorst, 2009).

Bronfenbrenner (1979, 1994) established the ecological systems approach that provided a paradigm to study human development. The socio-ecological model focuses on the interactions and influences of the ecological environment on an individual. The innermost level contains elements of a person's social experiences and interpersonal relationships (e.g., family, peers, work environments). At levels further away from the individual, interactions between two or more inner systems are occurring that indirectly influence the individual (e.g., cultures, customs, belief systems). Ecological systems have been applied to SV research, such as Banyard's (2011) ecological model of bystander intervention, which provided perspective on influences motivating bystander behaviors. Similarly, the CDC established a violence prevention adaptation of the socio-ecological model with four levels – individual, relationship, community, and societal – identified to understand factors that perpetuate or protect against violence (CDC, 2020). This framework also accounts for relationships within and between levels of an individual's ecological environment. The flexibility and breadth of the CDC's violence prevention model affords intentional examination of communities at high risk for SV to guide change at the community level that can influence individual SV and bystander behaviors. As such, it guided two important aspects of this study.

First, the current study assesses protective factors at various levels of the violence prevention model, specifically personal social norms (i.e., individual level), campus social norms (i.e., relationship level), and SV education (i.e., community level). Second, we explored individual- and school-level variables that predict these protective factors among college students to establish a more holistic understanding of campus SV. Individual-level variables are

commonly studied to identify risk factors for sexual assault (Ullman & Najdowksi, 2011), perpetrator characteristics (Loh et al., 2005), and bystander behaviors (McMahon et al., 2015). Thus, personal characteristics at the innermost level of the violence prevention model were included in the analysis. Additionally, research has highlighted the importance of considering campus-level variation and characteristics on the risk of experiencing SV (Daigle et al., 2020; Moylan et al., 2019). For example, student demographics (e.g., minority serving institutions) are proposed to be an important campus variable, but there is conflicting information regarding whether an increased risk of SV for minority populations at the individual level translates to the campus level (Moylan & Javorka, 2020). Moylan and Javorka (2020) also noted that campus size, geographic region, and type of institution generally require more attention. As such, several school-level variables were examined to account for important influences beyond the individual level of the violence prevention model.

Purpose of the Study

Distinctions between intercollegiate athletes, recreational athletes, and non-athletes, as well as institutional characteristics, can provide important insight for designing SV prevention education. Therefore, the purpose of this study is threefold: (1) examine differences in campus social norms regarding SV, personal social norms regarding SV, and bystander efficacy (i.e., SV protective factors) across intercollegiate athlete, recreational athlete, and non-athlete student populations; (2) examine how student-level variables (i.e., athlete status, personal demographics, and SV education) predict these SV protective factors; and (3) examine how school-level variables (i.e., institutional affiliation, minority-serving status, enrollment size, and athletic affiliation) predict these SV protective factors.

Methods

Participants and Procedures

Data were taken from a larger data set collected by EVERFI, Inc., an education technology company. EVERFI offers a digital SV prevention education course (*Sexual Assault Prevention for Undergraduates*™) for college students, which is currently employed by more than 600 post-secondary institutions (Zapp et al., 2018). The online course includes six modules, each with associated learning objectives related to SV prevention. Students who participate in the course complete a pre-course online survey to assess their current beliefs, attitudes, and experiences pertaining to SV. The current study used anonymized data from this larger dataset, collected during the 2018-2019 academic year. Pre-course survey responses were requested from EVERFI to ascertain baseline characteristics of undergraduate students and control for the intervening effect of the course. The principal investigator's Institutional Review Board approved the study as exempt research.

Because this study was interested in how social and institutional structures on campus influenced attitudes regarding SV, first-year students and graduate students (whose amount of time spent on campus could not be determined) were removed from the sample. Additionally, the study included only students from schools whose athletics affiliation was noted at the time of the survey. Thus, the final sample for this study consisted of 62,996 students from 199 institutions in 41 U.S. states and the District of Columbia. Of these, approximately 55.8% identified as women,

41.5% identified as men, and 2.4% identified as another gender identity. Additionally, 19.8% identified as lesbian, gay, bisexual, queer, questioning, or asexual, and 79.1% identified as heterosexual or straight. Approximately 61.5% of the sample were White, while 14.0% were Asian, 12.5% were Black or African American, 15.8% were Hispanic or Latino/a, and 8.0% reported belonging to more than one race or ethnicity. Finally, roughly 7.5% of respondents said they were members of a varsity athletic team, with 6.5% playing intramural or club sports and 86.5% not reporting playing organized athletics at their institutions.

Primary and Secondary Data

Student-level variables were collected as primary data through the pre-course survey. The survey consisted of over 100 items assessing current beliefs, attitudes, and experiences pertaining to SV. Demographic information requested included gender identity, sexual orientation, academic status, age, race/ethnicity, school-based group memberships, and completed training related to SV prevention. Notably, the study assessed athlete registration status, rather than athletic identity itself. Students were asked to select options from a list of potential school-based membership groups to which they belonged; among these were "college athlete" and "intramural/club athlete". This possible limitation and how it can impact future research in the field will be discussed further.

The current study included 23 ordinal items assessing awareness and attitudes towards bystander intervention and social norms related to SV. Specifically, the measures included 5 items adapted from Banyard et al.'s (2005) bystander attitudes scale, 10 items adapted from Berkowitz' (2013) Social Norms Toolkit, and 8 items developed to align with the behavioral and learning objectives of the online course. Participants rated their level of agreement (1 = strongly disagree … 7 = strongly agree) with various statements. These items were adapted and developed by a team of subject-matter experts and research methodologists using academic literature and gold standard tools for assessing SV (Zapp et al., 2018). Additionally, 10 binary (i.e., yes/no) items from Banyard et al.'s (2005) bystander efficacy scale were included. Participants selected all that apply from a list of 10 bystander behaviors they would be confident engaging in if observing a situation that is or could lead to SV.

School-level variables were collected as secondary data based upon the student's institution. Institutional affiliation (public, private religious, or private nonreligious), minority-serving status (Hispanic-serving institution [HIS], Historically Black college or university [HBCU], or predominantly White institution [PWI]), enrollment size, and athletic affiliation (National Association of Intercollegiate Athletics [NAIA], National Junior College Athletic Association [NJCAA], NCAA Division I, NCAA Division II, or NCAA Division III) of the student's institution were included in the dataset for analysis.

Data Analysis

Scale Development

For the 23 ordinal items drawn from Banyard et al. (2005) and Berkowitz (2013), a combination of parallel analysis, principal component analysis (PCA), confirmatory factor analysis (CFA), and Rasch analysis were used to explore and validate the measures ultimately used. The data were randomly divided in half, with the first half used in the exploratory phase

and the second half used in the confirmatory phase, per DeVellis (2017). Latent parallel analysis was employed to determine the proper number of components to extract from the data. Next, PCA with oblimin rotation was conducted to examine the underlying component structure. The reference structure was examined for items with loadings greater than 0.5 and with no cross-loadings within 0.2 (Osborne, 2014). Items that did not meet these parameters were dropped, and the parallel analysis-PCA process was reiterated until an acceptable structure was found.

Next, CFA was conducted to confirm the proposed PCA model was a statistically and theoretically good fit. Multiple fit indices were used to assess global model fit, including a non-significant χ^2 test, confirmatory fit index (CFI) > 0.95, Tucker-Lewis index (TLI) > 0.95, root mean squared error or approximation (RMSEA) between 0.00 and 0.06, and standardized root mean residual (SRMR) between 0.00 and 0.08 (Hu & Bentler, 1999; Kline, 2015). Standardized factor loadings > 0.70 and average variance extracted (AVE) > 0.50 also indicate good model structure (Brown, 2015).

Rasch analysis was utilized to further validate the scale. Person separation ≥ 2.0 and item separation ≥ 0.8 indicate the instrument distinguishes well between those of high and low ability, while item separation ≥ 3.0 and item reliability > 0.9 suggest adequate sample size to model the difficulty of the items; additionally, item outfit mean-square residual statistics (MNSQ) between 0.5 and 1.5 also indicate the data are a good fit to the Rasch model (Bond & Fox, 2015; Boone et al., 2014; Linacre, 2017). Items not falling within these ranges were dropped from the scale, and the process was repeated. Rasch scores were then produced to create continuous measures of item difficulty and person ability for use in subsequent analyses. By default, Rasch scores are calculated in logits; however, to ease interpretability, the scores were rescaled to fall approximately between 1 and 7, as in the original scale.

For the 10 binary (i.e., yes/no) bystander efficacy items, we were not able to conduct the full parallel analysis-PCA-CFA process, so the dichotomous Rasch model was used for psychometric analysis. Fit parameters were the same as those described above, with poor-fitting items dropped and the data re-analyzed until adequate fit was achieved. Rasch scores were calculated and rescaled to fall between 1 and 7.

Analysis of Variance

Because the data violated assumptions of normality and homogeneity of variance, the Kruskal-Wallis test, a non-parametric form of ANOVA, was employed to determine the amount of variance in Rasch person scores that could be explained by athlete status. Effect sizes were calculated using the η^2 statistic, and interpreted according to the following standards: < 0.06 is a small effect, 0.06 to 0.14 is medium, and > 0.14 is large (Meyer & Seaman, 2013). Dunn's test was used to analyze pairwise group differences, with statistically significant mean differences measured by Dunn's *z*-statistic > 1.96 and $p < .05$ (Dinno, 2015).

Multilevel Regression Analysis

Because of the clustered data structure (i.e., students within institutions), a multilevel regression analysis was conducted to determine how individual- and group-level variables were related to the three scale outcomes. Due to minor deviations from homogeneity of variance, robust maximum likelihood estimation was used. Two different models were estimated for each of the outcome variables. The student-level variables in the first set of models were athlete

status, age, year in school, on-campus residency, race/ethnicity, gender identity, and sexual orientation. School-level variables were institutional affiliation, minority-serving status, enrollment size, and athletic affiliation. In the second set of models, a number of variables concerning the amount of SV education students had received, the perceived usefulness of the education, and 12 different types of individual trainings. All individual categories were dummy-coded, with the predominant group used as the reference indicator and excluded from the models to avoid multicollinearity issues.

Results

Scale Development

Initial parallel analysis of the ordinal items suggested a three-component model. However, when this structure was tested with PCA, two items did not have loadings greater than 0.5 on any factor or had cross-loadings within 0.2. Thus, these items were dropped and the process repeated. After four total parallel analysis-PCA iterations, an acceptable reference structure was identified. Based on the content of items that loaded together, the first component was defined *personal social norms*, and the second *campus social norms*.

CFA was used to confirm this structure. Although the χ^2 test was significant ($\chi^2[89] = 46061$, $p < .001$) and CFI (0.861) and TLI (0.836) below recommended cutoffs, the RMSEA (0.041, 95% CI = 0.041, 0.041) and SRMR (0.031) indicated good fit. Additionally, the AVE for *personal social norms* was 0.673, and 0.643 for *campus social norms*. Thus, we determined the model was a sufficient fit for the data. After Rasch analysis on the *personal social norms* scale, two items were dropped as not having item outfit MNSQ in the acceptable range. On the *campus social norms* scale, Rasch analysis suggested it was not necessary to drop any further items.

Next, Rasch modeling was conducted on the dichotomous *bystander efficacy* items. Based on item outfit MNSQ, one item was dropped after the initial iteration. Item separation (215.4) and item reliability (1.00) were adequate, but person separation (1.21) and person reliability (0.59) were not. Still, the item-difficulty scores had a wide enough range to indicate the *bystander efficacy* scale accurately measures a broad range of person abilities. The final item structure of all three constructs, including Rasch item scores, is found in Table 1 below.

Table 1
Final Measures of Dependent Variables

Construct	Item	Rasch Score
Personal Social Norms	I would take action in a situation in which someone was trying to take advantage of another person sexually.	4.09
	I would never place blame on a person who told me that someone had sexually assaulted them.	4.04
	I would express concern if I saw a person exhibiting abusive behavior toward their partner.	4.02
	I would respect someone who made sure they asked for and received consent in a sexual situation.	3.67
	I would reach out to offer support to a friend who I suspect is in an abusive relationship.	3.63

	In a sexual situation, I would make sure to communicate with the other person about what they want.	3.57
	Clear, verbal, and sober permission is the best way to make sure a person is okay with sexual activity.	3.30
	I would respect a person who took action to prevention a sexual assault.	3.25
Campus Social Norms	Most students at my school would not engage in sexual activity with someone if the other person.	4.28
	Most students at my school would take action in a situation in which someone was trying to take advantage of another person sexually.	3.81
	Most students at my school would never place blame on a person who told them someone else had sexually assaulted them.	3.79
	In a sexual situation, most students at my school would make sure to communicate with the other person about what they want.	3.67
Construct	Item	Rasch Score
	Most students at my school would express concern if they saw a person exhibiting abusive behavior toward their partner.	3.40
Bystander Efficacy	Confronting the person who appears to be causing the situation.	4.74
	Talking to others about your concern.	4.11
	Creating a distraction to cause people to disengage from the situation.	4.00
	Stepping in and separating the people involved in the situation	3.83
	Asking others to step in as a group to diffuse the situation.	3.47
	Finding the friends of those involved and asking them for help.	3.34
	Telling someone in a position of authority about the situation.	3.32
	Following up later to check in with the person.	2.93
	Asking the person who you're concerned about if they need help.	1.98

Analysis of Variance

Based on the Kruskal-Wallis tests, athlete status explained a significant amount of variance in personal social norms ($F = 75.5$, $p < .001$, $\eta^2 < 0.001$), campus social norms ($F = 66.0$, $p < .001$, $\eta^2 < 0.001$), and bystander efficacy ($F = 87.0$ $p < .001$, $\eta^2 < 0.001$). While this estimate was statistically significant in all three analyses, the magnitudes of the effect sizes were very small. Thus, athlete status explained very little of the variance in *personal social norms*,

campus social norms, or *bystander efficacy*. Further, as seen in Table 2, almost all mean differences among the groups were statistically significant, using an adjusted *p*-value based on the multiple comparisons. However, the magnitudes of these differences, as well as which groups rated higher, changed with the outcomes.

Table 2
Pairwise Group Comparisons

Variable and Comparison	Δ*m*	*z*	*p*
Bystander Efficacy			
College-IM/Club	-0.29	7.77	<.001
College-Non-Ath	-0.05	2.00	0.136
IM/Club-Non-Ath	0.26	-8.29	<.001
Personal Social Norms			
College-IM/Club	0.00	-1.64	0.102
College-Non-Ath	-0.10	5.07	<.001
Personal Social Norms			
IM/Club-Non-Ath	-0.10	6.70	<.001
Campus Social Norms			
College-IM/Club	0.20	-7.47	<.001
College-Non-Ath	0.15	-9.08	<.001
IM/Club-Non-Ath	-0.05	1.49	0.406

Multilevel Regression Analysis

Results of the first set of regression models without the SV education variables are found in Table 3.

Table 3
Multilevel Regression Results(Without SV Education Variables)

	BE	PSN	CSN
Intercept	4.01***	5.21***	4.52***
Level-One (Student) Independent Variables			
College Athlete	-0.05	-0.06**	0.12***
Intramural/Club Athlete	0.20***	-0.04	-0.03*
Age	0.02*	0.03***	0.03***
Junior	-0.01	-0.01	-0.06***
Senior	-0.06*	-0.06**	-0.16***
On-Campus Resident	0.01	-0.04	-0.04*
American Indian or Alaska Native	-0.36***	-0.09*	0.07
Asian	-0.64***	-0.49***	-0.01
Black or African-American	-0.48***	-0.08***	-0.09***
Hispanic or Latino/a	-0.34***	-0.05*	0.01

Pacific Islander or Hawaii Native	-0.11	-0.03	0.07
Other Race or Ethnicity	-0.58***	-0.20***	-0.08
More than One Race or Ethnicity	0.51***	0.19***	-0.06*
Female	0.01***	0.17***	-0.22***
Transgender Female	-0.68**	-0.58***	-0.48***
	BE	PSN	CSN
Transgender Male	-0.35*	-0.14	-0.56***
Genderqueer	-0.24	-0.06	-0.29**
Gender Nonconforming	-0.23*	-0.02	-0.34***
Other Gender Identity	-0.22	-0.19*	< 0.01
Asexual	-0.41***	-0.19***	0.09***
Bisexual	0.31***	0.17***	-0.13***
Gay	0.24***	0.21***	-0.11***
Lesbian	0.13	0.13**	-0.12**
Queer	0.46***	0.33***	-0.42***
Questioning	0.18***	0.01	-0.24***
Other Sexual Orientation	0.03	0.02	-0.19***
Level-Two (School) Independent Variables			
Private Nonreligious Institution	0.11*	0.09**	0.06
Private Religious Institution	0.05	0.08*	0.01
Hispanic Serving Institution	-0.08	0.03	0.17***
Historically Black College or University	-0.30***	-0.07	-0.19**
Enrollment between 1,000 and 4,999	0.21**	0.01	-0.13
Enrollment between 5,000 and 9,999	0.12	0.08	-0.13
Enrollment between 10,000 and 19,999	0.24*	0.060	-0.16
Enrollment greater than 20,000	0.20	0.09	-0.19
NAIA Athletics	-0.02	0.04	0.13
NJCAA Athletics	-0.07	-0.03	-0.01
NCAA Division II Athletics	-0.06	0.04	0.05
NCAA Division III Athletics	-0.06	0.01	0.01

* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

College athlete status was negatively related to *personal social norms* ($\beta = -0.06$, $p < 0.001$) but positively related to *campus social norms* ($\beta = 0.12$, $p < 0.001$); the relationship to bystander efficacy was not statistically significant. Intramural/club athlete status was not significantly related to *personal social norms*, but was negatively related to *campus social norms* ($\beta = -0.03$, $p = 0.035$) and positively related to *bystander efficacy* ($\beta = 0.20$, $p < 0.001$). The magnitudes of these effects were relatively small.

Age was positively associated with all three outcomes, although junior and senior class status were negatively related, when statistically significant. For *bystander efficacy* and *personal social norms,* all race/ethnicity variables were statistically significant except for Hawaiian/Pacific Islander, which had the smallest sample size. In the *campus social norms* model, only Black/African American ($\beta = -0.09$, $p < 0.001$) and identification with more than one race or ethnicity ($\beta = -0.06$, $p = 0.011$) were statistically significant. Being female was positively associated with *bystander efficacy* and *personal social norms,* but negatively related to *campus social norms*; all of the other gender identity variables tended to be negatively associated with the three outcomes, with varying levels of significance. Non-heterosexual sexual orientations also tended to be positively associated with *bystander efficacy* and *personal social norms,* but negatively related to *campus social norms*. The sizes of the effects varied across outcomes.

Of the level-two predictors, private nonreligious institution status was positively related to *personal social norms* ($\beta = 0.09$, $p = 0.001$) and bystander efficacy ($\beta = 0.11$, $p = 0.017$). HSI status was positively related to *campus social norms* ($\beta = 0.17$, $p < 0.001$), and HBCU status was negatively related to *bystander efficacy* ($\beta = -0.30$, $p < .001$) and *campus social norms* ($\beta = -0.19$, $p = 0.007$). None of the other athletic affiliation variables were significant in any of the models.

Results of the second set of models including the SV education variables are found in Table 4.

Table 4
Multilevel Regression Results (With SV Education Variables)

	BE	PSN	CSN
Intercept	3.48***	4.96***	4.46***
Level-One (Student) Demographic Variables			
College Athlete	-0.01***	-0.09***	0.11***
	BE	PSN	CSN
Intramural/Club Athlete	0.13***	-0.07**	-0.04*
Age	0.02**	0.03***	0.03***
Junior	0.02	0.01	-0.05**
Senior	-0.04	-0.03*	-0.15***
On-Campus Resident	0.01	-0.05**	-0.04*
American Indian or Alaska Native	-0.33***	-0.09*	0.070
Asian	-0.49***	-0.43***	-0.01
Black or African-American	-0.44***	-0.07**	-0.01***
Hispanic or Latino/a	-0.27***	-0.03	0.01
Pacific Islander or Hawaii Native	-0.11	-0.04	0.05
Other Race or Ethnicity	-0.49***	-0.16**	-0.07
More than One Race or Ethnicity	0.40***	0.15***	-0.06**
Female	0.11***	0.16***	-0.23***
Transgender Female	-0.66**	-0.12	-0.48***
Transgender Male	-0.28*	-0.14	-0.54***
Genderqueer	-0.230	-0.07	-0.29***

Gender Nonconforming	-0.20*	-0.014	-0.34***
Other Gender Identity	-0.22*	-0.18*	< 0.01
Asexual	-0.35***	-0.17***	0.09***
Bisexual	0.26***	0.15***	-0.14***
Gay	0.19***	0.18***	-0.12***
Lesbian	0.12	0.12**	-0.13**
Queer	0.39***	0.29***	-0.42***
Questioning	0.17***	< 0.01	-0.24***
Other Sexual Orientation	0.01	0.02	-0.20***
Level-One (Student) Training Variables			
Hours of Training Received	-0.01	-0.02***	-0.03***
Perceived Usefulness of Training	0.04***	0.06***	0.05***
Alcohol and Drug Training	-0.04	-0.12***	-0.13***
Bystander Intervention Training	0.24***	0.05**	-0.04*
Consent Training	0.09***	0.06***	-0.06**
Dating Violence Training	-0.01	0.01	-0.03
Healthy Relationships Training	0.06***	-0.020	0.04
Support Training	0.15***	0.13***	0.11***
Reporting Training	0.19***	0.12***	0.09***
Personal Safety Training	0.12***	0.01	-0.01
Sexual Assault Training	-0.08*	-0.040	0.04**
Sexual Harassment Training	0.04	0.040	-0.02
Sexual Health Training	0.10***	0.06***	-0.03
Stalking Training	0.02	0.020	0.15***
	BE	PSN	CSN
Level-Two (School) Independent Variables			
Private Nonreligious Institution	0.06	0.06*	0.06
Private Religious Institution	-0.01	0.05	0.01
Hispanic Serving Institution	-0.05	0.04	0.17***
Historically Black College or University	-0.32***	-0.08*	-0.21**
Enrollment between 1,000 and 4,999	0.11	-0.03	-0.14
Enrollment between 5,000 and 9,999	0.05	0.05	-0.14
Enrollment between 10,000 and 19,999	0.14	0.020	-0.172
Enrollment greater than 20,000	0.10	0.05	-0.20
NAIA Athletics	0.02	0.06	0.13
NJCAA Athletics	0.02	0.01	< 0.01
NCAA Division II Athletics	-0.04	0.04	0.05
NCAA Division III Athletics	-0.06	0.01	0.01

** $p < 0.05$*
*** $p < 0.01$*
**** $p < 0.001$*

Controlling for the SV education variables did not meaningfully affect the significance of magnitude of most variables in the model. Notably, however, upon the addition of these variables, college athlete status became significantly and positively related to *bystander efficacy* ($\beta = -0.01$, $p = < 0.001$), and intramural/club status became significantly and negatively related to *personal social norms* ($\beta = -0.07$, $p = 0.004$).

Among the SV education variables, hours of training were negatively and significantly related to *personal social norms* ($\beta = -0.02$, $p < 0.001$) and *campus social norms* ($\beta = -0.03$, $p < 0.001$), but not significantly related to *bystander efficacy*. Usefulness of training was positively and significantly related to all outcomes. The individual training variables also yielded some notable results. Not surprisingly, bystander intervention training was significantly and positively related to *bystander efficacy* ($\beta = 0.24$, $p < 0.001$), with the largest effect of any individual training on any of the outcomes. Trainings that had positive and significant effects across all outcomes included programs on helping victims and reporting. Some trainings had differing effects on the different outcomes. For instance, consent training was significantly and positively related to *personal social norms* ($\beta = 0.08$, $p < 0.001$) and *bystander efficacy* ($\beta = 0.09$, $p < 0.001$), but negatively related to perceptions of *campus social norms* ($\beta = -0.04$, $p < 0.001$). It is possible such trainings make some students more confident in their personal norms and efficacy, but can also cause them to have fewer positive views of the behaviors they observe from peers on campus.

Discussion

The current study examined differences in campus social norms, personal social norms, and bystander efficacy across athlete and non-athlete populations and tested student-level and school-level variables as predictors of these SV protective factors.

Differences Across Athlete and Non-Athlete Populations

The findings demonstrated significant differences in personal social norms, campus social norms, and bystander efficacy across athlete (intercollegiate; recreational) and non-athlete student populations. Overall, this aligns with previous studies that have demonstrated differences between athlete and non-athlete populations (e.g., McGinley et al., 2016; Murnen & Kohlman, 2007; Young et al., 2017) and athletic contexts (e.g., Forbes et al., 2006; Gage, 2008) in relation to SV attitudes and behaviors. However, whereas the variance explained by athlete grouping was statistically significant, the effect size for all outcomes was very small, suggesting athletic context may not be as much of a risk factor as previously proposed (Martin, 2016) or differences in sport participation may merit investigation (e.g., team vs. individual sports).

From a socio-ecological perspective (CDC, 2020), engagement in an athletic group should influence a student's SV protective factors. Intercollegiate athletes may have reported higher campus social norms due to departmental initiatives fostering community engagement (e.g., athletes organizing charity events) that promote a positive view of one's campus community (Huml et al., 2017). Comparatively, intercollegiate and recreational athletes reported lower personal social norms, which may be explained by the construct of athletic identity. Brewer et al. (1993) defined athletic identity as the extent to which an individual sees themself as an athlete and associates with the athlete role. For recreational athletes, their continued participation in competitive sports allows them to retain some degree of their athletic identity (Lamont-Mills & Christensen, 2006). Like student-athletes, this may be a dominant identity that

insulates other social identities, such as the role of SV bystander (Beamon, 2010). Athletes are also at risk for "pluralistic ignorance," which is "a psychological phenomenon in which the majority of group members hold private attitudes that differ from perceived group norms" (Levene et al., 2014, p. 527). Pluralistic ignorance may be reflected in the findings as athletes' personal social norms (private attitudes) were considerably higher than their perceived campus (group) norms.

When comparing athlete populations, recreational athletes reported the highest bystander efficacy. Collegiate recreation presents a unique environment, as students often straddle athlete and non-athlete roles in their recreational sport involvement (Helms, 2010). Though their athlete identity likely remains salient to an extent, transitioning out of varsity athletics (e.g., high school) may decrease their exposure to toxic cultures prevalent within hegemonic, hypermasculine environments (Martin, 2016; Murnen & Kohlman, 2007). Furthermore, engagement in collegiate recreation facilitates opportunities for leadership development (e.g., sport club officer; Dugan et al., 2015). Literature has identified student leaders as informal helpers on college campuses, possessing important skills in working with peers that can aid in SV prevention efforts (Banyard et al., 2009).

Student-Level Predictors of Sexual Violence Protective Factors

Athlete status was a significant but small predictor of each SV outcome. Intercollegiate athletic membership predicted lower personal social norms and bystander efficacy but higher campus social norms. Thus, while intercollegiate athletes may have a positive view of other students on campus, they are less likely to report protective factors enhancing SV prevention. This is an important contribution as previous scholarship has almost exclusively focused on SV risk factors (Teten Tharp et al., 2013). Overall, this finding supports scholars' efforts to develop SV interventions targeting intercollegiate athletes (McCray et al., 2018a).

Comparatively, recreational sport membership was associated with decreased personal and campus social norms, and higher bystander efficacy. This finding suggests recreational sport athletes are similar to intercollegiate athletes in terms of SV attitudes, which aligns with Young et al. (2017). However, recreational sport athletes demonstrate greater confidence to intervene when observing SV, which may reflect the priorities of their campus unit. Collegiate recreation departments are housed within the division of student affairs, where student development and diversity and inclusion are of primary concern (Lower-Hoppe et al., 2019). Within this environment, students may experience greater confidence to intervene on behalf of a peer.

Athlete status had little impact on a student's perceived social norms and bystander efficacy. While many scholars point to the rape prone culture, hegemonic views, and sexual aggression/coercion within athletics (Cheever & Eisenberg, 2020; Martin, 2016; McCray, 2019; Young et al., 2017), a few previous studies have found athletes and non-athletes are more similar than dissimilar in relation to SV attitudes, behaviors, and victimization (Navarro & Tewksbury, 2019; Smith & Stewart, 2003). Humphrey and Kahn (2000) argued mere athletic membership is not as important as the specific norms of existing team members that influence team culture and behaviors. It is possible some athletic teams foster prosocial norms and bystander efficacy while other athletic teams do not (Gidycz et al., 2007). SV interventions may be more effective by targeting the team-level of the athletic community. Overall, the notion that college sport is an at-risk community appears to be an oversimplification (Smith & Stewart, 2003).

Personal demographics were significant predictors of campus social norms, personal social norms, and bystander efficacy. Previous research indicates demographics play a large role in bystander intervention and perceived social norms (Diamond-Welch et al., 2016; Hoxmeier et al., 2020). Social identity theory proposes individuals categorize themselves as belonging to various social groups, which can lead to the adoption of attitudes and behaviors of that in-group (Tajfel, 1979). Berkowitz (2013) claimed an individual's likeliness to engage in SV prevention is influenced by the degree individuals feel their beliefs and attitudes are supported. Accordingly, one's social group can impact their individual SV attitudes and behaviors.

Gender and sexual orientation demographic variables had the greatest effect on all outcomes and are considered salient identities in the context of SV prevention education (de Heer & Jones, 2017; Rogers & Rogers, 2020). Prior studies on gender and sexual minorities demonstrated certain populations of queer students, gay men, bisexual women, and especially transgender people are at an increased risk of SV on college campuses (Cantor et al., 2020; Johnson et al., 2016) and, therefore, may be more sensitive to social norms regarding SV. Racial/ethnic identity had moderate effects on SV protective factors. Prior studies have found Black students and those with intersecting or multiple identities experience higher rates of SV (Coulter et al., 2017).

A student's year in school has been linked to a prevalence of SV (Rogers & Rogers, 2020) such that first-year students are at a higher rate for victimization (Adams-Curtis & Forbes, 2004). While academic year was found to be a significant predictor of campus social norms, it was not significant of bystander efficacy. Thus, while greater time in school may influence one's views of the campus community, it may not directly contribute to one's confidence to intervene if observing SV.

SV education was a significant predictor for campus social norms, personal social norms, and bystander efficacy. More specifically, the breadth of training completed (i.e., different content areas) positively predicted all outcomes. When analyzing the specific training variables, bystander intervention training had the highest effect on bystander efficacy, which is a common finding in the literature (Banyard et al., 2005; Moynihan et al., 2011). Additionally, training on how to support someone who has experienced SV and how to report SV had a significantly positive relationship with all outcomes. On the contrary, alcohol/drug training had a negative relationship with all outcomes, which could indicate a lack of connection between SV and the presented topics (Leone et al., 2018). This demonstrates the importance of including relevant topics within SV prevention programs.

Perceived usefulness of training also positively predicted SV protective factors. Education theorists suggest more meaningful learning experiences are less likely to be rejected (Weinberg & Reidford, 1972). Learning experiences that are personally meaningful, relevant to the learner's self-concept, and situated in the learner's environment (e.g., social, cultural) can result in greater learning and overall development (Chen & Schmidtke, 2017). While level of training and usefulness of training positively predicted the SV protective factors, hours of training was a negative predictor. This conflicts with a majority of scholarship finding longer programs more effective (DeGue et al., 2014; Nation et al., 2003). However, Jouriles et al. (2018) conducted a meta-analysis of bystander programs and found that while the longest programs (i.e., 6 hours) produced the largest effects on participant attitudes and behaviors, 20-minute bystander programs had positive effects comparable in magnitude to 90-minute programs. Collectively, these findings support quality over quantity in relation to SV education programs that may have limited resources or access to target populations.

School-Level Predictors of Sexual Violence Protective Factors

Based upon the socio-ecological model (CDC, 2020), a student's school environment should influence their awareness and attitudes towards bystander intervention and social norms related to SV. When considering the classification of institution, institutional affiliation (i.e., public, private religious, or private nonreligious) was largely non-significant. The literature presents mixed findings as some studies have suggested the "moral community" of religious institutions help prevent SV (e.g., Vanderwoerd & Cheng, 2017), while other studies have implied the lack of sexual education at religious institutions increases the risk for SV (e.g., Davidson et al., 2017). In light of the non-significant findings, perhaps the provision of SV education is a greater predictor of SV protective factors than the public versus private nonreligious environment.

The present study found a statistically significant negative relationship between HBCU classification and predicting bystander efficacy, personal social norms, and campus social norms. Thus, individuals at these institutions have lower perceptions of their own personal social norms and bystander efficacy, as well as the campus social norms they observe. While, previous studies have found lower rates of SV at HBCUs compared to non-HBCUs (e.g., Krebs et al., 2010), scholarship has also pointed to HBCUs having less bystander intervention education within their prevention programs (Kafonek & Richards, 2017). The literature also highlights conflicting messages students at HBCUs are exposed to, with the media portraying Black students as hypersexual while the religious affiliation of many HBCUs makes the topic of sexual behavior taboo (Johnson, 2017). These conflicting messages may undermine students' social norms related to SV and confidence intervening when observing SV.

The literature proposes larger university settings are more susceptible to SV due to the greater presence of *available* victims (Stotzer & MacCartney, 2016), elevated status of athletes, and likelihood students are more removed from controlling institutional forces (Murnen & Kohlman, 2007). However, the current study found no significant relationships between enrollment size and SV protective factors. Murnen and Kohlman (2007) unexpectedly found fraternity men at smaller colleges at greater risk for RMA than at larger colleges, pointing to the power of peers in defining the parameters of acceptable SV attitudes and behaviors and exerting pressure on group members. Therefore, school-based group membership (intercollegiate athletics; intramural or club sport) may have a greater influence on SV protective factors than broader institutional factors such as enrollment size (Gidycz et al., 2007).

When examining athletics beyond individual membership, institutional athletic affiliations were found not significant in the model. However, previous studies have found reports of SV to be higher on campuses with Division I athletic programs versus Division II, III, and institutions with no athletics (Wiersma-Mosley & Jozkowski, 2019). The non-significant findings within this study may be attributed to the differing levels of social power and prestige within intercollegiate and recreational programs but also across division levels. Overall, individual variables appear to have greater impact on SV protective factors than school variables.

Implications

SV continues to be a salient problem within college communities (Krebs et al., 2007), with legislation (e.g., Clery Act) and the Office for Civil Rights calling upon universities to implement SV prevention education (Ali, 2011; Coker et al., 2011). In response to research

suggesting college athletes are at greater risk for perpetration and victimization of SV, bystander intervention programs have begun targeting this at-risk population (e.g., McCray et al., 2018a; Moynihan & Banyard, 2008; Moynihan et al., 2010). Contrary to popular media and some scholarship, the current study suggests athletes may not be at greater risk for SV perpetration than non-athletes. These results do not diminish the value of interventions targeting college athletes, but rather illuminate program design considerations that may enhance program efficacy.

For example, EVERFI's digital SV prevention education course (*Sexual Assault Prevention for Undergraduates*™) that served as a platform to access participants for this study is only one of several different courses in their Sexual Assault Prevention suite. EVEFRI also offer courses designed specifically for college athletic staff and intercollegiate athletes. The results from this study that shine light on the differences and similarities of students based on athlete status can help EVERFI further develop and refine the sexual assault prevention courses targeting specific groups (B. Burkhard, personal communication, December 8, 2021). As intercollegiate athletes reported lowest personal social norms and bystander efficacy, EVERFI could evaluate their curriculum to ensure athletic staff and student participants learn what consent and SV is, receive opportunities to critically reflect upon their attitudes and behaviors related to consent and SV, learn strategies to intervene if observing a situation that is or could lead to SV, and receive opportunities to translate their learning into practice to increase their bystander efficacy.

Scholarship suggests the potential rape-prone culture of college athletics may be more prevalent at the team-level than program- or division-level (Gidycz et al., 2007; Humphrey & Kahn, 2000). As such, SV intervention programs should target the most at-risk athletic teams (e.g., teams with incidents of SV, aggressive sports; Forbes et al., 2006) and/or be implemented across the department. The authors of the current study recommend SV intervention programming be required department-wide, yet delivered at the team-level. Within college athletics, NCAA policy now requires all intercollegiate athletes complete SV prevention education (NCAA, 2020). Athletic administrators may consider evidence-based SV education programs (e.g., EVERFI's SV prevention education course), as well as the NCAA's toolkit for SV prevention (NCAA Sport Science Institute, 2019), as available resources. In addition, educators and administrators may rely upon the Resource Guide offered by Raliance, a nonprofit organization dedicated to ending sexual violence in one generation, particularly through the use of sport as a protective factor. Lastly, as EVERFI intends to disseminate the findings of this study (and other research on their SV prevention education courses) to campus practitioners through webinars, podcasts, monthly publications, and their annual research conference (H. Rider-Milkovich, personal communication, December 8, 2021), athletic administrators can look to this organization as a source of information.

According to the CDC, effective SV prevention programs must address individual, relationship, community, and societal factors influencing SV knowledge, attitudes, and behaviors (Basile et al., 2016). As intercollegiate athletes function in tightly knit, social communities (McMahon, 2004), bystander intervention programs should be delivered at the team-level to effectively address SV culture and behaviors within athletic teams (McCray et al., 2018a). Moreover, scholars have called for a more nuanced education on SV, "as one size does not fit all" (McCray et al., 2018b, p. 45). Particular attention should be paid to individual demographics of program participants, which were found more influential in predicting SV protective factors than athletic status or school-level variables.

The present study found gender and sexual orientation to be the strongest predictors of SV protective factors amongst other demographics, and should be considered throughout program design. Women and queer students are more likely to be assaulted; therefore, they have a greater inclination to be receptive to gender-segregated program design (de Heer & Jones, 2017; Rogers & Rogers, 2020). Prior research has indicated gender-segregated training appears more effective (Anderson & Whiston, 2005; Berkowitz, 2002; Jackson & Davis, 2000), as men can become more defensive on topics of SV in the presence of women (Brecklin & Forde, 2001; Rozee & Koss, 2001). Additionally, same-gender educators could ensure receptive audiences (McCray et al., 2018a). Placing individuals with others who share similar social identities could create more engagement with the educational programming as individuals would be surrounded by people with congruent attitudes and beliefs (Berkowitz, 2013). Furthermore, program design could portray both genders as bystanders - rather than men as perpetrators and women as (potential) victims - to minimize defensive responses and promote a greater sense of openness to program content (Moynihan & Banyard, 2008, 2011).

Given the low amount of training reported in the current study, there is a clear need for SV prevention education on college campuses, particularly in the fall semester deemed the "red zone" for victimization (Kimble et al., 2008). SV education should be presented in a manner personally meaningful to participants' social identity and self-concept (Chen & Schmidtke, 2017), and emphasize content areas that are relevant to SV prevention. A comprehensive approach to SV programming should include training across all levels of the socio-ecological model to address the complex array of individual, relationship, community, and societal factors contributing to students' SV knowledge, attitudes, and behaviors (Basile et al., 2016).

As institutional characteristics were found less predictive of SV protective factors than student-level factors, the study findings somewhat combat scholarship that has identified large, NCAA DI, public institutions as high-risk settings for SV (Stotzer & MacCartney, 2016; Vanderwoerd & Cheng, 2017; Wiersma-Mosley & Jozkowski, 2019). Moreover, the authors assert the importance of SV prevention education for all types and sizes of institutions. Such education should account for participants' school-based group membership, personal demographics, and educational topics that are personally meaningful.

Limitations and Future Research

While the current study extends SV prevention literature, the findings should be interpreted with the limitations in mind. In light of the social cohesion of athletic teams, participants reporting athletic membership may be influenced by their team's social norms more than campus norms. Future research should seek a broader cross-section of athlete and non-athlete populations across academic years and consider measuring social norms at the group-level rather than campus level. Additionally, as noted above, the study focused primarily on athlete registration status, a dichotomous indicator of whether a student was on a varsity or intramural/club team. Future research can expand in this area by including more robust and psychometrically tested measures of athlete identity such as the Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993). It is also highly possible that other factors at the individual, relationship, community, and societal levels are influencing these SV protective factors. Future research may consider the influence of media, peers and teammates, and one's family and background as contributing to SV knowledge, attitudes, and behaviors (McCray et al., 2018b). Evaluating different subgroups of athletes (e.g., contact vs. non-contact sports) may also identify

at-risk populations and increase understanding of ways SV prevention programming works for different types of athletes. Measuring athletic identity using the AIMS scale is an important variable to include in future studies that evaluate athlete subgroups. This study focused on membership to athletic groups or teams, but it did not capture the strength of athlete identity for individual team members. Athletic identity would add depth to such studies since expectations and competitiveness vary considerably across different intramural and sport club teams.

Another limitation is in construct measurement. While anonymous or confidential questionnaires can result in valid and reliable self-report population-level data (Zapp et al., 2018), future research may consider incorporating objective measures. Additionally, though PCA and CFA metrics indicated the measures were sound, Rasch analysis suggested limitations in measuring individuals at extreme abilities on the construct. Lastly, intersecting marginalized social identities can be lost in survey construction that compares different groups (Koss et al., 2011). Future research may consider a qualitative or mixed-methods research design to deepen our understanding of how demographics influence SV protective factors. Tests of measurement invariance can also provide evidence that measures function equally well across groups and time.

Conclusion

Participation on college athletic teams is often linked to higher rates of SV, making athletic teams the focus of much research on SV prevention. By exploring comparisons between athletes (i.e., intercollegiate and recreational) and non-athletes, this study found differences in SV protective factors among all three groups. Our findings demonstrated gender and sexual orientation are more predictive of personal social norms, campus social norms, and bystander efficacy when compared to athlete status. Despite small effect sizes, DeGue et al. (2014) noted that when interventions have the potential of reaching a large audience, it may be necessary to look beyond statistical significance and consider clinical significance because “even a small effect on perpetration behavior may have a large impact” (p. 359). As such, findings from this study can guide the design and delivery of SV prevention education on college campuses.

References

Adams-Curtis, L. E., & Forbes, G. B. (2004). College women’s experiences of sexual coercion: A review of cultural, perpetrator, victim, and situational variables. *Trauma, Violence, & Abuse*, *5*(2), 91-122.

Ahrens, C. E., Rich, M. D., & Ullman, J. B. (2011). Rehearsing for real life: The impact of the InterACT Sexual Assault Prevention program on self-reported likelihood of engaging in bystander interventions. *Violence Against Women, 17*(6), 760-776.

Ali, R. (2011, April 4). *Dear Colleague letter* [Memorandum]. U.S. Department of Education, Office of Civil Rights. https://obamawhitehouse.archives.gov/sites/default/files/dear_colleague_sexual_violence.pdf.

Allan, E. J., & Madden, M. (2012). The nature and extent of college student hazing. *International Journal of Adolescent Medicine & Health, 24*(1), 83-90.

Anderson, L. A., & Whiston, S. C. (2005). Sexual assault education programs: A meta-analytic examination of their effectiveness. *Psychology of Women Quarterly, 29*(4), 374-388.

Banyard, V. L., Moynihan, M. M., & Crossman, M. T. (2009). Reducing sexual violence on campus: The role of student leaders as empowered bystanders. *Journal of College Student Development, 50*(4), 446-457.

Banyard, V. L., Plante, E. G., & Moynihan, M. M. (2005). *Rape prevention through bystander education: Bringing a broader community perspective to sexual violence education* (NCJRS Document No. 208701). U.S. Department of Justice. www.ncjrs.org0pdffiles10nij0grants0208701.pdf.

Basile, K. C., DeGue, S., Jones, K., Freire, K., Dills, J., Smith, S. G., & Raiford, J. L. (2016). *Stop SV: A technical package to prevent sexual violence.* National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. https:// www.cdc.gov/violenceprevention/pdf/sv-prevention-technical-package.pdf.

Basile, K. C., Rostad, W. L., Leemis, R. W., Espelage, D. L., & Davis, J. P. (2018). Protective factors for sexual violence: Understanding how trajectories relate to perpetration in high school. *Prevention Science, 19*, 1123-1132.

Basile, K. C., Smith, S. G., Breiding, M. J., Black, M. C., Mahendra, R. R. (2014). *Sexual violence surveillance: Uniform definitions and recommended data elements* [Version 2.0]. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. https://www.cdc.gov/violenceprevention/pdf/sv_surveillance_definitionsl-2009-a.pdf.

Basile, K. C., & Smith, S. G. (2011). Sexual violence victimization of women: Prevalence, characteristics, and the role of public health and prevention. *American Journal of Lifestyle Medicine, 5*(5), 407-417.

Beamon, K. K. (2010). Are sports overemphasized in the socialization process of African American males? A qualitative analysis of former collegiate athlete's perception of sport socialization. *Journal of Black Studies, 41*(2), 281-300.

Berkowitz, A. D. (2002). Fostering men's responsibility for preventing sexual assault. In P. A. Schewe (Ed.). *Preventing violence in relationships: Interventions across the lifespan* (pp. 163– 196). American Psychological Association.

Berkowitz, A. D. (2013). *A grassroots guide to fostering healthy norms to reduce violence in our communities: A social norms toolkit*. New Jersey Coalition Against Sexual Assault. http://www.alanberkowitz.com/articles/Social_Norms_Violence_Prevention_Toolkit.pdf.

Bond, T. G., & Fox, C. M. (2015). *Applying the Rasch model: Fundamental measurement in the human sciences* (3rd ed.). Routledge.

Boone, W. J., Staver, J. R., & Yale, M. S. (2014). *Rasch analysis in the human sciences*. Springer.

Borowsky, I. W., Hogan, M., & Ireland, M. (1997). Adolescent sexual aggression: Risk and protective factors. *Pediatrics, 100*(6), 1-8.

Brecklin, L. R., & Forde, D. R. (2001). A meta-analysis of rape education programs. *Violence and Victims, 16*(3), 303-321.

Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles's heel? *International Journal of Sport Psychology, 24*(2), 237-254.

Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard University Press.

Bronfenbrenner, U. (1994). Ecological models of human development. *Readings on the Development of Children, 2*(1), 37-43.

Brown, T. A. (2015) *Confirmatory factor analysis for applied research* (2nd ed.). Guilford.

Burkhard, B., Zapp, D., & Rider-Milkovich, H. (2019). *Linking protective factors and high school sex education to victimization and perpetration rates of unwanted sexual contact among college students* [Conference presentation]. National Academies: 2019 Action Collaborative on Preventing Sexual Harassment in Higher Education, Seattle, WA, United States.

Cantor, D., Fisher, B., Chibnall, S., Harps, S., Townsend, R., Thomas, G., Lee, H., Kranz, V., Herbison, R., & Madden, K. (2020). *Report on the AAU campus climate survey on sexual assault and misconduct*. The Association of American Universities. https://www.aau.edu/sites/default/files/AAU-Files/Key-Issues/Campus-Safety/Revised%20Aggregate%20report%20%20and%20appendices%201-7_(01-16-2020_FINAL).pdf.

Carey, K. B., Norris, A. L., Durney, S. E., Shepardson, R. L., & Carey, M. P. (2018). Mental health consequences of sexual assault among first-year college women. *Journal of American College Health, 66*(6), 480-486.

Casey, E. A., & Lindhorst, T. P. (2009). Toward a multi-level, ecological approach to the primary prevention of sexual assault: Prevention in peer and community contexts. *Trauma, Violence, & Abuse, 10*(2), 91-114.

Center for Disease Control and Prevention [CDC]. (2020). *The socio-ecological model: A framework for prevention.* https://www.cdc.gov/violenceprevention/publichealthissue/social-ecologicalmodel.html.

Cheever, J., & Eisenberg, M. E. (2020). Team sports and sexual violence: Examining perpetration by and victimization of adolescent males and females. *Journal of Interpersonal Violence*. PubMed.

Chen, P., & Schmidtke, C. (2017). Humanistic elements in the educational practice at a United States sub-baccalaureate technical college. *International Journal for Research in Vocational Education and Training, 4*(2), 117-145.

Coker, A. L., Cook-Craig, P. G., Williams, C. M., Fisher, B. S., Clear, E. R., Garcia, L. S., & Hegge, L. M. (2011). Evaluation of Green Dot: An active bystander intervention to reduce sexual violence on college campuses. *Violence Against Women, 17*(6), 777-796.

Coulter, R. W., Mair, C., Miller, E., Blosnich, J. R., Matthews, D. D., & McCauley, H. L. (2017). Prevalence of past-year sexual assault victimization among undergraduate students: Exploring differences by and intersections of gender identity, sexual identity, and race/ethnicity. *Prevention Science, 18*(6), 726-736.

Cranney, S. (2015). The relationship between sexual victimization and year in school in US colleges: Investigating the parameters of the "Red Zone". *Journal of Interpersonal Violence, 30*(17), 3133-3145.

Daigle, L. E., Johnson, L. M., Azimi, A. M., & Hancock, K. P. (2020). Does college matter? Exploring college-level factors related to victimization risk for US and Canadian college students. *International Journal of Offender Therapy and Comparative Criminology*. PubMed.

Davidson, C. R., Turner-McGrievy, G. M., Hilfinger Messias, D. K., Friedman, D. B., & Robillard, A. G. (2017). Conversations about sexuality on a public university campus: Perspectives from campus ministry students and leaders. *Sex Education, 17*(1), 103-118.

de Heer, B., & Jones, L. (2017). Measuring sexual violence on campus: Climate surveys and vulnerable groups. *Journal of School Violence, 16*(2), 207-221.

DeGue, S., Valle, L. A., Holt, M. K., Massetti, G. M., Matjasko, J. L., Teten Tharp, A. (2014). A systematic review of primary prevention strategies for sexual violence perpetration. *Aggression and Violent Behavior, 19*, 346-362.

DeMaria, A. L., Sundstrom, B., Grzejdziak, M., Booth, K., Adams, H., Gabel, C., & Cabot, J. (2018). It's not my place: Formative evaluation research to design a bystander intervention campaign. *Journal of Interpersonal Violence, 33*(3), 468-490.

DeVellis, R. F. (2017). *Scale development: Theory and applications* (4th ed.). Sage.

Diamond-Welch, B. K., Hetzel-Riggin, M. D., & Hemingway, J. A. (2016). The willingness of college students to intervene in sexual assault situations: Attitude and behavior differences by gender, race, age, and community of origin. *Violence and Gender*, *3*(1), 49-54.

Dinno, A. (2015). Nonparametric pairwise multiple comparisons in independent groups using Dunn's test. *The Stata Journal*, *15*(1), 292-300.

Dugan, J. P., Turman, N. T., & Torrez, M. A. (2015). When recreation is more than just sport: Advancing the leadership development of students in intramural and club sports. *Recreational Sports Journal, 39*, 37-48.

Eisenberg, M. E., Lust, K. A., Hannan, P. J., & Porta, C. (2016). Campus sexual resources and emotional health of college women who have experienced sexual assault. *Violence and Victims, 31*(2), 274-284.

Fenton, R. A., & Mott, H. L. (2018). Evaluation of the intervention initiative: A bystander intervention program to prevent violence against women in universities. *Violence and Victims, 33*(4), 645-662.

Forbes, G. B., & Adams-Curtis, L. (2001). Experiences with sexual coercion in college males and females: role of family conflict, sexist attitudes, acceptance of rape myths, self-esteem, and the Big Five personality factors. *Journal of Interpersonal Violence*, *16*, 865-889.

Forbes, G. B., Adams-Curtis, L. E., Pakalka, A. H., & White, K. B. (2006). Dating aggression, sexual coercion, and aggression-supporting attitudes among college men as a function of participation in aggressive high school sports. *Violence Against Women, 12*(5), 441-455.

Gage, E. A. (2008). Gender attitudes and sexual behaviors: Comparing center and marginal athletes and nonathletes in a collegiate setting. *Violence Against Women, 14*(9), 1014-1032.

Gidycz, C. A., Warkentin, J. B., & Orchowski, L. M. (2007). Predictors of perpetration of verbal, physical, and sexual violence: A prospective analysis of college men. *Psychology of Men & Masculinity*, *8*(2), 79-94.

Helms, K. E. (2010). *Campus recreation program involvement, athletic identity, transitional loss and life satisfaction in former high school athletes* [Unpublished doctoral dissertation]. University of Arkansas.

Hoxmeier, J. C., Acock, A. C., & Flay, B. R. (2020). Students as prosocial bystanders to sexual assault: Demographic correlates of intervention norms, intentions, and missed opportunities. *Journal of Interpersonal Violence*, *35*(3-4), 731-754.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55.

Huml, M., Svensson, P., & Hancock, M. (2017). Community service in intercollegiate athletics: A student involvement approach to college athlete engagement. *Journal of Issues in Intercollegiate Athletics, 10*, 101-121.

Humphrey, S. E., & Kahn, A. S. (2000). Fraternities, athletic teams, and rape: Importance of identification with a risky group. *Journal of Interpersonal Violence, 15*(12), 1313-1322.

Jackson, T. L., & Davis, J. L. (2000). Prevention of sexual and physical assault toward women: A program for male athletes. *Journal of Community Psychology, 28*(6), 589-605.

Johnson, J. M. (2017). Social norms, gender ratio imbalance, perceptions of risk, and the sexual behaviors of African American women at historically black colleges and universities. *Journal of African American Studies, 21*, 203-215.

Johnson, L. M., Matthews, T. L., & Napper, S. L. (2016). Sexual orientation and sexual assault victimization among US college students. *The Social Science Journal, 53*, 174–183.

Jouriles, E. N., Krauss, A., Vu, N. L., Banyard, V. L., & McDonald, R. (2018). Bystander programs addressing sexual violence on college campuses: A systematic review and meta-analysis of program outcomes and delivery methods. *Journal of American College Health, 66*(6), 457-466.

Kafonek, K., & Richards, T. N. (2017). An examination of strategies for the prevention of gender-based violence at four-year institutions of higher education. *Journal of School Violence, 16*(3), 271-285.

Kimble, M., Neacsiu, A. D., Flack, W. F., & Horner, J. (2008). Risk of unwanted sex for college women: Evidence for a red zone. *Journal of American College Health, 57*(3), 331-338.

Klein, L. B., Rizzo, A. J., Cherry, L. H., & Woofter, R. C. (2018). *Addressing alcohol's role in campus sexual assault: A toolkit by and for prevention specialists.* Campus Advocacy and Prevention Professionals Association and Prevention Innovations Research Center https://www.unh.edu/research/sites/default/files/media/2019/09/saalctoolkit.pdf.

Kline, R. B. (2015). *Principles and practices of structural equation modeling* (4th ed.). Guilford.

Koss, M. P., White, J., & Kazdin, A. E. (2011). Violence against women and children: Perspectives and next steps. In M. Koss, J. White, & A. Kazdin (Eds.), *Violence against women and children* (Vol. 2, pp. 261–306). American Psychological Association.

Krebs, C. P., Lindquist, C. H., & Barrick, K. (2010). *The historically black college and university campus sexual assault (HBCU-CSA) study* (NCJRS Document No. 233614). U.S. Department of Justice. https://www.ojp.gov/pdffiles1/nij/grants/233614.pdf.

Krebs, C., Lindquist, C., Berzofsky, M., Shook-Sa, B., Peterson, K., Planty, M., Langton, L., & Stroop, J. (2016). *Campus Climate Survey Validation Study final technical report*. Bureau of Justice Statistics, U.S. Department of Justice. https://bjs.ojp.gov/content/pub/pdf/ccsvsftr.pdf.

Krebs, C. P., Lindquist, C. H., Warner, T. D., Fisher, B. S., & Martin, S. L. (2007). *The Campus Sexual Assault (CSA) Study*. (NCJRS Document No. 221153). U.S. Department of Justice. https://www.ncjrs.gov/ pdffiles1/nij/grants/ 221153.pdf.

Krebs, C. P., Lindquist, C. H., Warner, T. D., Fisher, B. S., & Martin, S. L. (2009). College women's experiences with physically forced, alcohol- or other drug-enabled, and drug-facilitated sexual assault before and since entering college. *Journal of American College Health*, 57(6), 639-647.

Lamont-Mills, A., & Christensen, S. A. (2006). Athletic identity and its relationship to sport participation levels. *Journal of Science and Medicine in Sport, 9*(6), 472-478.

Leone, R. M., Haikalis, M., Parrott, D. J., & DiLillo, D. (2018). Bystander intervention to prevent sexual violence: The overlooked role of bystander alcohol intoxication. *Psychology of Violence, 8*(5), 639-647.

Levene, J., Etchison, S., & Oppenheimer, D. M. (2014). Pluralistic ignorance among student-athlete populations: A factor in academic underperformance. *Higher Education, 68*(5), 525-540.

Linacre, J. M. (2017). A user's guide to Winsteps Ministep Rasch-model computer programs [versions 4.00.0]. Winsteps.

Loh, C., Gidycz, C. A., Lobo, T. R., & Luthra, R. (2005). A prospective analysis of sexual assault perpetration: Risk factors related to perpetrator characteristics. *Journal of Interpersonal Violence, 20*(10), 1325-1348.

Lower-Hoppe, L. M., Parietti, M. L., & Czekanski, W. A. (2019). Current priorities in campus recreation: A multi-institutional study of strategic plans. *Recreational Sports Journal, 43*(1), 43-54.

Martin, P. Y. (2016). The rape prone culture of academic contexts fraternities and athletics. *Gender & Society, 30,* 30–43.

McCray, K. L. (2015). Intercollegiate athletes and sexual violence: A review of literature and recommendations for future study. *Trauma, Violence, & Abuse*, *16*(4), 438-443.

McCray, K. L. (2019). Sexual Assault and Intercollegiate Athletes. In W. O'Donohue & P. Schewe (Eds.), *Handbook of Sexual Assault and Sexual Assault Prevention* (pp. 733-744). Springer.

McCray, K. L., McDougal, K., & McNeil, C. (2018a). *A Zero Tolerance approach: Assessing the effectiveness of sexual assault prevention education for intercollegiate athletes* [Conference presentation]. 2018 North American Society for Sport Management Convention, Halifax, NS, Canada.

McCray, K. L., Sutherland, S. L., & Pastore, D. L. (2018b). Creating change in intercollegiate athletics: The Sexual Assault Prevention Paradigm for athletic departments. *Journal of Higher Education, Athletics, & Innovation, 1*(4), 25-53.

McGinley, M., Rospenda, K. M., Liu, L., & Richman, J. A. (2016). It isn't all just fun and games: Collegiate participation in extracurricular activities and risk for generalized and sexual harassment, psychological distress, and alcohol use. *Journal of Adolescence, 53*, 152-163.

McMahon, S. (2004). *Student-athletes, rape-supportive culture, and social change*: *Executive summary*. Rutgers University, Department of Sexual Assault Services and Crime Victim Assistance. https://www.sexualassault.rutgers.edu

McMahon, S., Peterson, N. A., Winter, S. C., Palmer, J. E., Postmus, J. L., & Koenick, R. A. (2015). Predicting bystander behavior to prevent sexual assault on college campuses: The role of self-efficacy and intent. *American Journal of Community Psychology*, *56*(1), 46-56.

Meyer, J. P., & Seaman, M. A. (2013). A comparison of the exact Kruskal-Wallis distribution to asymptomatic approximations for all sample sizes up to 105. *The Journal of Experimental Education*, *81*(2), 139-156.

Morean, M. E., Darling, N., Smit, J., DeFeis, J., Wergeles, M., Kurzer-Yashin, D., & Custer, K. (2018). Preventing and responding to sexual misconduct: Preliminary efficacy of a peer-led bystander training program for preventing sexual misconduct and reducing heavy drinking among collegiate athletes. *Journal of Interpersonal Violence*. PubMed.

Moylan, C. A., & Javorka, M. (2020). Widening the lens: An ecological review of campus sexual assault. *Trauma, Violence, & Abuse*, *21*(1), 179-192.

Moylan, C. A., Javorka, M., Bybee, D., Stotzer, R. L., & Carlson, M. (2019). Campus-level variation in the prevalence of student experiences of sexual assault and intimate partner violence. *Journal of the Society for Social Work and Research*, *10*(3), 397-421.

Moynihan, M. M., & Banyard, V. L. (2008). Community responsibility for preventing sexual violence: A pilot study with campus Greeks and intercollegiate athletes. *Journal of Prevention & Intervention in the Community, 36*(1-2), 23-38.

Moynihan, M. M., & Banyard, V. L. (2011). Educating bystanders helps prevent sexual violence and reduce backlash. *Family & Intimate Partner Violence Quarterly*, *3*(4), 293-303.

Moynihan, M. M., Banyard, V. L., Arnold, J. S., Eckstein, R. P., & Stapleton, J. G. (2010). Engaging intercollegiate athletes in preventing and intervening in sexual and intimate partner violence. *Journal of American College Health*, *59*(3), 197-204.

Moynihan, M. M., Banyard, V. L., Eckstein, R. P., Arnold, J., & Stapleton, J. G. (2011). Decreasing sexual violence through bystander intervention: A study of intercollegiate athletes. *Journal of American College Health*, *59*, 197-204.

Murnen, S. K., & Kohlman, M. H. (2007). Athletic participation, fraternity membership, and sexual aggression among college men: A meta-analytic review. *Sex Roles*, *57*, 145-157.

Nation, M., Crusto, C., Wandersman, A., Kumpfer, K. L., Seybolt, D., Morrissey-Kane, E., & Davino, K. (2003). What works in prevention: Principles of effective prevention programs. *American Psychologist, 58*(6-7), 449-456.

National Collegiate Athletic Association [NCAA]. (2020). *NCAA Board of Governors policy on campus sexual violence*. https://ncaaorg.s3.amazonaws.com/ssi/violence/NCAA_CampusSexualViolencePolicy.pdf.

NCAA Sport Science Institute. (2019). *Sexual violence prevention: An athletics toolkit for a healthy and safe culture* (2nd ed.). NCAA. https://ncaaorg.s3.amazonaws.com/ssi/violence/SSI_SexualViolencePreventionToolkit.pdf.

Navarro, J. C., & Tewksbury, R. (2019). National comparisons of rape myth acceptance predictors between nonathletes and athletes from multi-institutional settings. *Sexual Abuse*, *31*(5), 543-559.

Osborne, J. W. (2014). *Best practices in exploratory factor analysis*. Sage.

Rogers, S. A., & Rogers, B. A. (2020). Expanding our view: Demographic, behavioral, and contextual factors in college sexual victimization. *Journal of Interpersonal Violence*. PubMed.

Rozee, P. D., & Koss, M. P. (2001). Rape: A century of resistance. *Psychology of Women Quarterly*, *25*(4), 295-311.

Santacrose, L. B., Laurita, A. C., & Marchell T. C. (2020). Intervene: Modeling pro-social bystander behavior in college students through online video. *Health Communication, 35*(4), 397-409.

Sinozich, S., & Langton, L. (2014). *Rape and Sexual Assault Victimization Among College-Age Females, 1995-2013*. (NCJRS Document No. 248471). https://www.bjs.gov/content/pub/pdf/rsavcaf9513.pdf.

Smith, D., & Stewart, S. (2003). Sexual aggression and sports participation. *Journal of Sport Behavior, 26*(4), 384-395.

Stotzer, R. L., & MacCartney, D. (2016). The role of institutional factors on on-campus reported rape violence. *Journal of Interpersonal Violence*, *31*(16), 2687-2707.

Tajfel, H. (1979). Individuals and groups in social psychology. *British Journal of Social and Clinical Psychology*, *18*(2), 183-190.

Teten Tharp, A., DeGue, S., Valle, L. A., Brookmeyer, K. A., Massetti, G. M., & Matjasko, J. L. (2013). A systematic qualitative review of risk and protective factors for sexual violence perpetration. *Trauma, Violence, & Abuse, 14*(2), 133-167.

Ullman, S. E., Reylea, M., Peter-Hagene, L., & Vasquez, A. L. (2013). Trauma histories, substance use coping, PTSD, and problem substance use among sexual assault victims. *Addictive Behaviors, 38*, 2219-2223.

Ullman, S. E., & Najdowski, C. J. (2011). Vulnerability and protective factors for sexual violence. In J. W. White, M. P. Koss, & A. E. Kazdin (Eds.), *Violence against women and children: Mapping the terrain* (pp. 151-172). American Psychological Association.

Vanderwoerd, J. R., & Cheng, A. (2017). Sexual violence on religious campuses. *Canadian Journal of Higher Education, 47*(2), 1-21.

Weinberg, C., & Reidford, P. (1972). Humanistic educational psychology. In Weinberg (Ed.) *Humanistic foundations of education* (pp. 101-132). Prentice-Hall.

Wiersma-Mosley, J. D., & Jozkowski, K. N. (2019). A brief report of sexual violence among universities with NCAA division I athletic programs. *Behavioral sciences, 9*(2), 17.

Wiersma-Mosley, J. D., Jozkowski, K. N., & Martinez, T. (2017). An empirical investigation of campus demographics and reported rapes. *Journal of American College Health*, *65*(7), 482-491.

Young, B. R., Desmarais, S. L., Baldwin, J. A., & Chandler, R. (2017). Sexual coercion practices among undergraduate male recreational athletes, intercollegiate athletes, and non-athletes. *Violence Against Women, 23*(7), 795-812.

Zapp, D., Buelow, R., Soutiea, L., Berkowitz, A., & DeJong, W. (2018). Exploring the potential campus-level impact of online universal sexual assault prevention education. *Journal of Interpersonal Violence*. PubMed.