

## **Firearm Home Access and Intimate Partner Violence among College Students in Florida**

### Authors:

Student Name

The University of Georgia

Matthew L. Smith, PhD, MPH, CHES

The University of Georgia

Texas A&M Health Science Center

Mindy A. Menn, PhD, CHES

Texas Women's University

Kelly L. Wilson, PhD, MCHES

Texas A&M University

Don Chaney, PhD

University of Florida

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## ABSTRACT

**Background:** Intimate partner violence is a major public health concern. The CDC recognizes four types of intimate partner violence (IPV): physical, sexual, threats of physical or sexual, and psychological. The most extreme form of IPV is intimate partner homicide (IPH). The presence of a firearm during an IPV incident makes death 12 times more likely.

**Purpose:** This study is intended to (1) identify the characteristics of college-aged students who reported in-home access to firearms, sexual abuse, and physical; and (2) identify the relationship between firearm access and reported sexual and physical abuse.

**Methods:** In this study analyses were conducted for 670 participants who completed a questionnaire asking about in-home firearm access, sexual abuse, and physical abuse. These associations were calculated using one-way ANOVA for continuous variables and Pearson's chi-squared tests for categorical variables.

**Results:** Nineteen percent of participants reported access to a firearm in or around their home, and 2% indicated they didn't know. Regarding sexual abuse, 18% of participants reported attempted sexual abuse, 3% forced sex, and 5% both attempted and forced sex. Two percent of participants reported attempted physical abuse, 6% reported actual physical abuse, and 6% both attempted and actual physical abuse. Ten percent of participants had been threatened with physical abuse.

**Discussion:** Our study found that in-home firearm access had a significant overlap with experiencing physical abuse, and that physical abuse and sexual abuse also co-occurred at a significant level. These findings are valuable as they build upon the existing literature and emphasize the need for research to better understand these relationships and prevent future tragedies.

## INTRODUCTION

In recent years there has been a growing interest in the U.S. around violence, specifically firearm related tragedies; however, there is still a deficit in the research and literature on these topics. To develop effective policies, prevention efforts, and intervention strategies, it is important that research be conducted to understand violence and the role firearms can take in these occurrences. As such, in 2013, President Obama issued 23 executive orders for federal agencies to more closely examine firearm-related violence ([Institute of Medicine and National Research Council, 2013](#)).

Intimate partner violence (IPV) is a subset of violence that is a priority for public health research and intervention ([Perry, 2009](#)). According to the Centers for Disease Control and Prevention (CDC), IPV is defined as a current or former partner committing an act of physical violence, sexual violence, stalking, or psychological aggression that causes harm ([Smith, Fowler, & Niolon, 2014](#)). The CDC further categorizes IPV into four types: physical violence, sexual violence, threats of physical or sexual violence, and psychological abuse ([Spivak et al., 2014](#)).

An estimated 74 million people in the United States experienced IPV in 2010 ([Smith et al., 2014](#)). The National Intimate Partner and Sexual Violence Survey (NISVS) found that 35.6% of women and 28.5% men in the U.S. have experienced some form of IPV in their lifetime ([Sugg, 2015](#)). Individuals who experience IPV are more likely to experience adverse mental health including depression, anxiety, symptoms of post traumatic stress disorder (PTSD), and suicidal behavior([Spivak et al., 2014](#)). There is also research showing an increased association between IPV and chronic physical disease including asthma and strokes, and for women who've experienced IPV there is also an increased likelihood of developing high blood pressure, high cholesterol, heart attack, and heart disease ([Sugg, 2015](#)).

In addition to the impact of IPV on society in terms of physical and psychological harm, it also has economic consequences. The CDC estimates that close to \$6 billion is spent each year as result of IPV ([Smith et al., 2014](#)). Healthcare expenses account for \$4.1 billion of this estimate. When broken down into individual occurrences, it has been estimated that it costs \$838 per rape, \$816 per physical assault, and \$294 per stalking in services and lost productivity ([National Center for Injury Prevention and Control, 2003](#); [Smith et al., 2014](#)). While these figures are substantial, they still fail to capture the full impact of IPV because IPV is underreported and the long-term health consequences that are difficult to measure ([Perry, 2009](#)).

In IPV situations where a firearm is present, the outcome can be devastating. Investigation into the role that firearms play in IPV has brought to light the number of intimate partner homicides (IPH) occurring in the U.S. each year. The victims of these crimes are disproportionately women ([Sorenson, 2006](#)). [Smith et al. \(2014\)](#) looked at IPH and other deaths that resulted from IPV in 16 states and found that greater than half of the victims were killed with a firearm. They also found that the perpetrators of these crimes were predominantly male and that most of the events occurred in the home. [Smith et al. \(2014\)](#) noted that previous research has found that the risk of death increases 12-fold when a firearm is involved in an IPV incident. While it appears that policies limiting perpetrators access to firearms are successful at reducing IPH, often times they are not evidence-based or strictly enforced, thus denying the victim a sense of safety ([Vigdor & Mercy, 2006](#); [Webster et al., 2010](#)).

Another important population to consider relative to IPV is adolescents and young adults because it is common for the first onset of IPV to occur during this time period ([Bonomi et al., 2012](#)). When IPV occurs early in life, it often results in an ongoing pattern of violence that continues over a lifetime ([Spivak et al., 2014](#)). The years spent in college or attending a

university are often transition years where young people may have less protective factors than they did during adolescence. Firearm ownership and firearm related violence are also major concerns among this population. One study found that 11% of male students and 4% of female students had carried a firearm on campus. It has also been estimated by the American College Health Association that firearms are used in 9% of all violent crimes 8% of assaults, and 31% of robberies experienced by this population. Due to these factors the Director of the Federal Bureau of Investigations (FBI) identified colleges and universities as an easy target for terror ([Thompson, Price, Mrdjenovich, & Khubchandani, 2009](#)). All these factors combined highlight the importance of better understanding IPV among college students and universities as well as the intersection of IPV and firearm access within this population and setting. Therefore, the purposes of this study were to: (1) identify the characteristics of college-aged students who reported in-home access to firearms, sexual abuse (attempted and/or forced), and physical abuse (attempted and/or actual); and (2) identify the relationship between firearm access and reported sexual and physical abuse.

## **METHODS**

### **Population and Procedures**

Participants in this study were undergraduate students enrolled in an introductory health education course at a Florida university. Data for this study was collected over 3 academic semesters. Data were collected from a total of 870 participating students; however, because of missing data for key variables of interest, analyses were conducted for 670 participants with complete data. The study utilized a cross-sectional design to collect data through an internet-delivered questionnaire. Participation in this study was voluntary, and participants could

withdraw from the study at any time. The University of Florida Institutional Review Board approved all components of the study.

## **Instrument**

An instrument consisting of approximately 30 close-ended items was administered. Questions involved demographic information and self-report measures relating to firearm(s) in the home, sexual violence, and physical violence, and relationship status. Instruments took participants about 15 minutes to complete.

## **Measures**

### Dependent Variables

*In-Home Firearm Access.* Participants were asked if a firearm was in or near their home. Response choices for this question included no, yes, and don't know.

*Sexual Abuse.* Another dependent variable in this study was whether the participant had experienced sexual abuse or attempted sexual abuse in their lifetime. Participants were asked two questions: "Has anyone EVER ATTEMPTED to have sex with you after you said or showed that you didn't want to or without your consent, BUT SEX DID NOT OCCUR?" and "Has anyone EVER had sex with you after you said or showed that you didn't want them to or without your consent?" Response choices for this question included no, yes, and don't know. Because of the low endorsement of "don't know" for both items, these response choices were omitted. These two variables were then combined to form a 4-category variable with response choices including: neither attempted forced sex nor forced sex; attempted forced sex; forced sex; and both attempted forced sex and forced sex.

*Physical Abuse.* Another dependent variable in this study was whether the participant had experienced sexual abuse or attempted sexual abuse in their lifetime. Participants were asked

two questions: “Has an intimate partner EVER ATTEMPTED physical violence against you? This includes times when they tried to hit, slap, push, kick, or otherwise hurt you, BUT THEY WERE NOT ABLE TO.” and “Has an intimate partner EVER hit, slapped, pushed, kicked, or hurt you in any way?” Response choices for this question included no, yes, and don’t know. Because of the low endorsement of “don’t know” for both items, these response choices were omitted. These two variables were then combined to form a 4-category variable with response choices including: neither attempted physical abuse nor physical abuse; attempted physical abuse; physical abuse; and both attempted physical abuse and physical abuse.

### Independent Variables

*Threatened Physical Violence.* Participants were asked, “Has an intimate partner EVER THREATENED you with physical violence? This includes threatening to hit, slap, push, kick, or hurt you in any way.” Response choices for this question included no, yes, and don’t know.

*Affiliations.* Participants were asked about their group affiliations. More specifically, participants were asked if they were a member of a fraternity or sorority. Participants were also asked if they ever served on active duty in the U.S. Armed Forces, military Reserves, or National Guard.

*Health Indicators.* Certain health indicators were also included in the instrument questions. Participants were asked to report their general health status ([Centers for Disease Control and Prevention, 2000](#)). Participants were also asked to report their alcohol consumption

during the previous two weeks, with gender-associated standards incorporated (i.e., 5 or more drinks for a male, 4 or more drinks for a female).

*Personal Characteristics.* Study variables used to describe the demographics of the participants included: age; sex; ethnicity; race; sexual orientation; relationship status; insurance source; current place of residence; and approximate grade point average (GPA).

## **Statistical Analyses**

All statistical analyses for this descriptive study were performed using SPSS (v. 22). Analyses were performed to identify associations between firearm access and forms of IPV. These associations were calculated using one-way ANOVA for continuous variables and Pearson's chi-squared tests for categorical variables.

## **RESULTS**

### **Sample Characteristics**

The characteristics of the participants in this study are represented in Table 1. The average age of participants was 20.6 ( $\pm 3.0$ ) years old. Of these participants 72% were female. The majority of participants self identified their sexual orientation as heterosexual (96%). When asked what race participants most identified with, 71% self-identified as white, 13% as African American, and 10% as Asian. Twenty two percent of these participants self-identified as Hispanic. Regarding relationship status, 50% of participants reported that they were not currently dating, 32% reported being in a relationship, and 14% reported that they were dating. The source of insurance for 75% of participants was their parents' policy, while 14% of participants were uninsured. Fifty seven percent of participants reported that their residence was an apartment, 20% reported they lived in a house; and 18% reported living in an on-campus dorm. A small



portion of participants reported being affiliated with a fraternity/sorority with only 27% currently affiliated, and 1% of participants reporting that they were pledging to a fraternity/sorority. The majority of participants reported that they were never in military (97%). On average, participants had a 3.4 ( $\pm 0.4$ ) grade point average. In the previous 2 weeks, participants reported binge drinking 2.2 ( $\pm 1.9$ ) times on average.

**Table 1. Participant characteristics by firearm access and sexual and physical abuse experiences**

	Total (n = 670)	Firearm in Home			$\chi^2$ or f	P	Forced Sex and Attempted Forced Sex				$\chi^2$ or f	P	Physical Abuse and Attempted Physical Abuse				$\chi^2$ or f	P
		No (n = 526)	Yes (n = 129)	Don't Know (n = 15)			Neither (n = 483)	Attempted (n = 124)	Forced (n = 20)	Both (n = 33)			Neither (n = 577)	Attempted (n = 13)	Abused (n = 39)	Both (n = 33)		
<b>Age</b>	20.60 ( $\pm 3.04$ )	20.35 ( $\pm 3.49$ )	21.60 ( $\pm 4.58$ )	20.87 ( $\pm 2.53$ )	9.16	<0.001	20.57 ( $\pm 3.13$ )	20.25 ( $\pm 2.05$ )	20.75 ( $\pm 2.59$ )	22.21 ( $\pm 4.41$ )	3.71	0.011	20.46 ( $\pm 2.98$ )	20.00 ( $\pm 1.08$ )	20.92 ( $\pm 2.61$ )	22.41 ( $\pm 3.99$ )	5.70	0.001
<b>Sex</b>					1.10	0.577					15.29	0.002					3.65	0.301
Male	28.1%	27.6%	31.0%	20.0%			32.0%	18.5%	15.0%	12.1%			28.9%	7.7%	28.2%	22.0%		
Female	71.9%	72.4%	69.0%	80.0%			68.0%	81.5%	85.0%	87.9%			71.1%	92.3%	71.8%	78.0%		
<b>Hispanic</b>					0.31	0.857					1.49	0.684					1.28	0.735
No	77.8%	77.6%	79.1%	73.3%			78.9%	75.0%	75.0%	72.7%			77.5%	84.6%	74.4%	82.9%		
Yes	22.2%	22.4%	20.9%	26.7%			21.1%	25.0%	25.0%	27.3%			22.5%	15.4%	25.6%	17.1%		
<b>Race</b>					70.62	<0.001					32.48	0.006					18.23	0.251
White	70.6%	66.7%	89.1%	46.7%			68.8%	77.4%	75.0%	69.7%			70.5%	46.2%	76.9%	73.2%		
African American	13.1%	14.8%	4.7%	26.7%			13.0%	14.5%	0.0%	18.2%			12.3%	38.5%	10.3%	19.5%		
Asian	9.6%	11.2%	3.1%	6.7%			11.6%	4.0%	0.0%	6.1%			10.6%	7.7%	5.1%	0.0%		
Native American	0.1%	0.2%	0.0%	0.0%			0.0%	0.8%	0.0%	0.0%			0.2%	0.0%	0.0%	0.0%		
Pacific Islander	0.6%	0.4%	0.0%	13.3%			0.8%	0.0%	0.0%	0.0%			0.5%	0.0%	2.6%	0.0%		
Other	6.0%	6.7%	3.1%	6.7%			5.9%	3.2%	25.0%	6.1%			5.9%	7.7%	5.1%	7.3%		
<b>Sexual Orientation</b>					8.01	0.237					14.84	0.095					10.71	0.296
Heterosexual	95.8%	95.8%	96.1%	93.3%			96.6%	93.5%	90.0%	97.0%			96.2%	92.3%	92.3%	95.1%		
Homosexual	1.8%	1.9%	1.6%	0.0%			1.4%	3.2%	0.0%	3.0%			1.4%	0.0%	5.1%	4.9%		
Bisexual	1.5%	1.3%	0.1%	0.0%			1.0%	2.4%	10.0%	0.0%			1.4%	7.7%	2.6%	0.0%		
Asexual	0.9%	0.6%	1.6%	6.7%			1.0%	0.8%	0.0%	0.0%			1.0%	0.0%	0.0%	0.0%		
<b>Relationship Status</b>					19.17	0.014					32.81	0.001					34.10	0.001
Single/Not Dating	50.1%	53.0%	37.2%	60.0%			52.7%	49.2%	40.0%	21.2%			53.2%	53.8%	30.8%	24.4%		
Single/Dating	14.3%	14.6%	13.2%	13.3%			14.4%	16.9%	10.0%	6.1%			13.9%	15.4%	15.4%	19.5%		
Committed/Steady Relationship	31.8%	29.7%	41.9%	20.0%			29.4%	30.6%	50.0%	60.6%			29.8%	30.8%	51.3%	41.5%		
Married	3.0%	2.1%	6.2%	6.7%			2.4%	3.2%	0.0%	12.1%			2.6%	0.0%	2.6%	9.8%		
Other	0.7%	0.6%	1.6%	0.0%			1.0%	0.0%	0.0%	0.0%			0.5%	0.0%	0.0%	4.9%		
<b>Insurance Source</b>					12.23	0.057					8.09	0.525					18.34	0.031
Parent	74.9%	74.9%	76.0%	66.7%			75.5%	75.0%	85.0%	60.6%			76.4%	61.5%	74.4%	58.5%		
Other Source	7.2%	6.3%	11.6%	0.0%			7.1%	6.5%	0.0%	15.2%			6.9%	15.4%	2.6%	12.2%		
None	14.0%	14.6%	10.9%	20.0%			13.6%	13.7%	15.0%	21.2%			12.3%	23.1%	20.5%	29.3%		
Don't Know	3.9%	4.2%	1.6%	13.3%			3.9%	4.8%	0.0%	3.0%			4.3%	0.0%	2.6%	0.0%		
<b>Current Residence Location</b>					45.85	<0.001					16.91	0.153					12.38	0.415
On Campus Dormitory	17.9%	18.4%	15.5%	20.0%			19.1%	16.1%	10.0%	12.1%			18.5%	15.4%	12.8%	14.6%		
Off-Campus Dormitory	2.4%	1.9%	3.1%	13.3%			2.2%	2.4%	5.0%	3.0%			2.4%	7.7%	0.0%	2.4%		
Apartment	57.2%	61.8%	39.5%	46.7%			57.0%	59.7%	50.0%	54.5%			57.9%	61.5%	51.3%	51.2%		
House	19.9%	15.8%	37.2%	13.3%			20.3%	15.3%	30.0%	24.2%			18.4%	15.4%	30.8%	31.7%		
Other	2.7%	2.1%	4.7%	6.7%			1.4%	6.5%	5.0%	6.1%			2.8%	0.0%	5.1%	0.0%		
<b>Member of Fraternity or Sorority</b>					5.80	0.215					21.06	0.002					22.99	0.001
No	72.0%	72.0%	69.6%	93.3%			73.6%	66.4%	70.6%	70.0%			71.5%	61.5%	71.4%	84.2%		
Yes	27.3%	27.6%	28.8%	6.7%			26.0%	33.6%	29.4%	23.3%			28.3%	38.5%	25.7%	10.5%		
Process of Pledging	0.6%	0.3%	0.3%	0.0%			0.4%	0.0%	0.0%	6.7%			0.2%	0.0%	2.9%	5.3%		
<b>Ever Served in Active Duty in the US Military</b>					10.42	0.237					3.82	0.986					19.25	0.083
Yes, Now on Active Duty	0.6%	0.4%	1.6%	0.0%			0.6%	0.9%	0.0%	0.0%			0.6%	0.0%	0.0%	2.6%		
Yes, In Past 12 Months (not now)	0.2%	0.0%	0.8%	0.0%			0.2%	0.0%	0.0%	0.0%			0.2%	0.0%	0.0%	0.0%		
Yes, Not in Past 12 Months	1.0%	0.6%	2.4%	0.0%			1.3%	0.9%	0.0%	0.0%			0.9%	0.0%	2.9%	5.3%		
No, In Training	1.1%	1.0%	1.6%	0.0%			1.1%	1.8%	0.0%	0.0%			0.9%	7.7%	0.0%	2.6%		
No, Never Served	97.1%	97.9%	93.6%	100.0%			96.8%	97.3%	100.0%	100.0%			97.8%	92.3%	97.1%	89.5%		
<b>Approximate Grade Point Average</b>	3.41 ( $\pm 0.42$ )	3.41 ( $\pm 0.40$ )	3.40 ( $\pm 0.50$ )	3.35 ( $\pm 0.37$ )	0.19	0.831	3.40 ( $\pm 0.44$ )	3.40 ( $\pm 0.38$ )	3.51 ( $\pm 0.34$ )	3.42 ( $\pm 0.35$ )	0.40	0.752	3.42 ( $\pm 0.42$ )	3.29 ( $\pm 0.28$ )	3.32 ( $\pm 0.41$ )	3.3 ( $\pm 0.50$ )	2.05	0.106
<b>Number of Times Binge Drank in Past 2 Weeks</b>	2.22 ( $\pm 1.89$ )	2.20 ( $\pm 1.79$ )	2.29 ( $\pm 2.12$ )	2.33 ( $\pm 2.99$ )	0.15	0.864	2.16 ( $\pm 1.86$ )	2.52 ( $\pm 2.02$ )	2.75 ( $\pm 2.27$ )	1.73 ( $\pm 1.15$ )	2.54	0.056	2.25 ( $\pm 1.91$ )	2.15 ( $\pm 2.27$ )	1.85 ( $\pm 1.58$ )	2.22 ( $\pm 1.73$ )	0.57	0.637
<b>General Health Status</b>					14.28	0.075					12.75	0.388					7.57	0.818
Poor	0.1%	0.0%	0.8%	0.0%			0.2%	0.0%	0.0%	0.0%			0.2%	0.0%	0.0%	0.0%		
Fair	2.8%	2.9%	1.6%	13.3%			2.6%	3.2%	10.0%	0.0%			2.4%	7.7%	7.7%	2.4%		
Good	26.4%	27.4%	22.5%	26.7%			24.7%	29.8%	30.0%	36.4%			26.0%	15.4%	28.2%	34.1%		
Very Good	52.1%	39.7%	11.2%	1.2%			52.1%	54.8%	50.0%	42.4%			52.3%	61.5%	48.7%	48.8%		
Excellent	18.5%	19.2%	17.1%	6.7%			20.3%	12.1%	10.0%	21.2%			19.1%	15.4%	15.4%	14.6%		

## Intersection of Firearm Access and Abuse

When participants were asked whether they had access to a firearm in or around their home, 19% reported yes, and 2% indicated they didn't know. When questioned about sexual

abuse, 18% of participants reported attempted sexual abuse, 3% forced sex, and 5% both attempted forced sex and forced sex. Two percent of participants reported attempted physical abuse, 6% reported physical abuse, and 6% both attempted physical abuse and physical abuse. Ten percent of participants had been threatened with physical abuse.

When comparing the study variables of firearm access and physical abuse, a larger proportion of participants who reported attempted physical abuse, physical abuse, or both (attempted and actual) also reported in-home firearm access. Similarly, a larger proportions of participants with in-home firearm access reported attempted sexual abuse, forced sex, or both (attempted and actual). Additionally, there is a strong relationship between forced sex and physical abuse (and ‘both’ for each category) among participants. In this study, not knowing if there was a firearm in the home was associated with ‘both’ for sexual and physical abuse. However, there was no significant relationship between in-home firearm access and sexual abuse alone.

**Table 2. Intersection of firearm access and sexual and physical abuse experiences**

	Total (n = 670)	Firearm in Home			$\chi^2$ or f	P	Forced Sex and Attempted Forced Sex				$\chi^2$ or f	P	Physical Abuse and Attempted Physical Abuse				$\chi^2$ or f	P		
		No (n = 526)	Yes (n = 129)	Don't Know (n = 15)			Neither (n = 493)	Attempted (n = 124)	Forced (n = 20)	Both (n = 33)			Neither (n = 577)	Attempted (n = 13)	Abused (n = 39)	Both (n = 33)				
<b>Firearm in Home</b>																				
No	78.5%	--	--	--	--	--	78.5%	80.6%	75.0%	72.7%	1.92	0.927	81.3%	69.2%	59.0%	61.0%	24.20	<0.001		
Yes	19.3%	--	--	--	--	--	19.5%	16.9%	20.0%	24.2%	--	--	16.5%	30.8%	41.0%	34.1%	--	--		
Don't Know	2.2%	--	--	--	--	--	2.0%	2.4%	5.0%	3.0%	--	--	2.3%	0.0%	0.0%	4.9%	--	--		
<b>Forced Sex and Attempted Forced Sex</b>					1.92	0.927													59.64	<0.001
Neither	73.6%	73.6%	74.4%	66.7%	--	--	--	--	--	--	--	--	76.6%	30.8%	64.1%	53.7%	--	--		
Attempted Forced Sex	18.5%	19.0%	16.3%	20.0%	--	--	--	--	--	--	--	--	17.7%	53.8%	17.9%	19.5%	--	--		
Forced Sex	3.0%	2.9%	3.1%	6.7%	--	--	--	--	--	--	--	--	2.4%	7.7%	10.3%	2.4%	--	--		
Both	4.9%	4.6%	6.2%	6.7%	--	--	--	--	--	--	--	--	3.3%	7.7%	7.7%	24.4%	--	--		
<b>Physical Abuse and Attempted Physical Abuse</b>					24.20	<0.001					59.64	<0.001							--	--
Neither	86.1%	89.2%	73.6%	86.7%	89.7%	82.3%	70.0%	57.6%	--	--	--	--	--	--	--	--	--	--	--	
Attempted Physical Abuse	1.9%	1.7%	3.1%	0.0%	0.8%	5.6%	5.0%	3.0%	--	--	--	--	--	--	--	--	--	--	--	
Physical Abuse	5.8%	4.4%	12.4%	0.0%	5.1%	5.6%	20.0%	9.1%	--	--	--	--	--	--	--	--	--	--	--	
Both	6.1%	4.8%	10.9%	13.3%	4.5%	6.5%	5.0%	30.3%	--	--	--	--	--	--	--	--	--	--	--	
<b>Threatened with Physical Abuse</b>					3.64	0.162					29.08	<0.001							345.13	<0.001
No	90.4%	91.4%	86.0%	93.3%	93.1%	87.9%	80.0%	66.7%	97.9%	38.5%	74.4%	17.1%	2.1%	61.5%	25.6%	82.9%	--	--		
Yes	9.6%	8.6%	14.0%	6.7%	6.9%	12.1%	20.0%	33.3%	2.1%	61.5%	25.6%	82.9%	--	--	--	--	--	--		

### Sample by Firearm Access

As seen in Table 1, when considering participants who reported having access to a firearm relative to participants who did not report access, a larger proportion of those with access were older, white or African Americans, and married or in a committed/steady relationship.

These participants also were more likely to report physical abuse including attempted physical abuse, actual physical abuse, or both. Pacific Islanders were more likely to answer, “don’t know” to the question regarding firearm access. Additionally the participants who answered “don’t know” (2%) to this measure often reported living in an on-campus dormitory.

### **Sample by Sexual Abuse**

As seen in Table 1, a closer look at the participants who reported sexual abuse revealed that a larger proportion of those who reported attempted sexual abuse were female, white or Native American, single/dating, and affiliated with the Greek system. Additionally larger proportions of participants who reported forced sex were female, white or ‘other, in a Committed/steady relationship or married, and affiliated with the Greek system. Lastly a larger proportions of participants who reported both were older, female, white and African American, in a committed/steady relationship or married, and affiliated with the Greek system or pledging.

### **Sample by Physical Abuse**

As seen in Table 1, when one considers the sample based on participants who reported physical abuse versus, a larger proportion of participants who reported attempted physical abuse also reported having no insurance and affiliation with the Greek system. Participants who reported actual physical abuse more frequently reported being in a committed/steady relationship or married, having no insurance, and being in the process of pledging into the Greek system. Lastly, a larger proportion of participants who reported both attempted and actual physical abuse reported being older, having a relationship status of single/dating, in committed/steady relationship, married, or ‘other’, having no insurance, and were pledging into the Greek system.

## **DISCUSSION**

There is a growing concern regarding firearm related violence in the U.S. By increasing our knowledge about the co-occurrence of in-home firearm access and exposure to IPV, we hope to increase our understanding of what contributes to violent events and how to better prevent them from occurring. Our findings provide insight into the characteristics of university students with in-home access to firearms, who've experienced attempted or forced sexual abuse, or who've experienced attempted or actual physical abuse. More importantly, analyses with these data provide further insight into the co-occurrence of in-home firearm access and experiencing one or more forms of IPV.

Our study confirmed the previously known relationship between in-home firearm access and physical abuse ([Roberts, 2009](#); [Smith et al., 2014](#); [Sorenson, 2006](#); [Webster et al., 2010](#); [Zeoli & Bonomi, 2015](#)). There is a very real danger when a perpetrator of IPV has firearm access, as these are risk factors for intimate partner homicide ([Smith et al., 2014](#)). In the U.S., 16 out of every 1,000 women have experienced the use of a gun to threaten them and 7 out of every 1,000 women have experienced an intimate partner using a gun against them ([Sorenson, 2006](#)). It is 12 times more likely that a death will occur when a firearm is present during an IPV incident compared to incidents with out a firearm present ([Smith et al., 2014](#)). When women are the victim's of IPH, the event typically occurs in the home ([Sorenson, 2006](#)).

Our findings also supported existing literature that found a relationship between physical abuse and sexual abuse ([Krebs, Breiding, Browne, & Warner, 2011](#); [Messing, Thaller, & Bagwell, 2014](#); [Miller, 2006](#)). Its been supported that some victims experience multiple forms of IPV and multiple events in a single relationship, while other victims have multiple perpetrators over the course of their life ([Krebs et al., 2011](#)). [Miller \(2006\)](#) found that 31% of the women who experienced physical abuse from a partner during their adult life also reported being raped by a

current or former partner. These findings are significant, as research has also shown that the presence of more than one type of violence frequently translates to poorer outcomes for the victim ([Basile, Arias, Desai, & Thompson, 2004](#); [Krebs et al., 2011](#)).

We did not, however, find an association between in-home firearm access and sexual abuse in this study. There are numerous possible explanations for why this occurred. One reason is that there may be variations in aggression origin and manifestation. Another possible explanation is that the participants may not consider aggressive or forceful sexual encounters to be abusive in the confines of an intimate relationship. This could also be due to the way our instrument asked about sexual abuse. In contrast to the questions pertaining to physical abuse we did not limit the participants to sexual abuse by an intimate partner. As a result participants may not live with or near their perpetrator. Additionally for sexual abuse we specifically asked about the previous 12 months while with physical abuse there were no time constraints. Additional research would need to be done to determine whether or not this relationship exists.

### **Limitations**

It is important to recognize the limitations of this study. The sample had a low number of male participants (~20%), which may not be representative of the student population at the university, and may have limited our findings since firearm ownership is more predominant among males ([Smith et al., 2014](#)). Of the students who did participate, only a small number indicated that they had in-home access to firearms, creating a small sample size. It is also important to note that the instrument did not ask whom the firearm belonged to and it did not ask about access or proximity to firearms outside of the home.

This study also utilized self-report which may not represent the actual rates of abuse, which are commonly under reported. Additionally, due to the way participants were asked about

their experience with abuse, we could not be certain if the abuse occurred in current or past relationship. Additionally, this survey instrument asked about victimization, but did not ask about perpetration, which would have given us a bigger picture of the study populations exposure and contributions to intimate partner violence. It also did not ask about stalking, which was identified in literature as another major risk factor involved with IPV and increased severity in violence ([Krebs et al., 2011](#); [McFarlane, Campbell, & Watson, 2002](#)).

## CONCLUSION

Our study conducted with Florida university students found that in-home firearm access had a significant overlap with experiencing physical abuse, and that physical abuse and sexual abuse also co-occurred at a significant level. We did not find, however, that in-home firearm access had any relationship with sexual abuse. These findings are valuable as they build upon the existing literature on IPV, IPH, and firearm violence. These findings suggest that several opportunities for education and intervention with this population. Subgroups of this population that would most benefit from prevention and early intervention efforts are female students, members of the Greek system, and individuals with lower socioeconomic status. Because the onset of IPV is typically during adolescents, prevention efforts prior to attending a university could also help to decrease the impact of IPV on this population. Even though this study had significant results there is still much we do not know. This study also had a number of limitations that should help to inform future research on these topics and with this population.

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