# Victimization and Perpetration of Intimate Partner Violence among Female and Male Youth and Adults in South Africa

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Received: June 1, 2017 Accepted: June 19, 2017 Online Published: August 4, 2017

#### **Abstract**

**Objective:** Intimate partner violence (IPV) is a huge public health problem. The aim of the study was to estimate the prevalence and influence of sociodemographic and health characteristics on IPV victimization and perpetration among women and men 15 years and older in South Africa.

**Materials and Methods:** Data based on the South African national population-based survey in 2012 for 15916 (8532 women and 7384 men) aged 15 years and older who were in an intimate partner relationship were analysed. Bivariate and multivariable logistic regression was conducted to assess the association between sociodemographic factors, health variables and IPV victimization and perpetration.

Results: Among women, 8.5% had experienced any form of IPV in the past 12 months, and 3.5% of the women had engaged in IPV perpetration in the past 12 months. Among men, 5.0% had experienced any form of IPV in past 12 months, and 4.4% of the men had engaged in IPV perpetration in the past 12 months. In multivariable logistic regression analysis among women, younger age, being African Black, having psychological distress, having been a victim of violent crime and having had multiple sexual partners were associated with IPV victimization in the past 12 months, while younger age, psychological distress, hazardous or harmful alcohol use, and having had multiple sexual partners was associated with IPV perpetration in the past 12 months. In multivariable logistic regression analysis among men, younger age, psychological distress, hazardous or harmful alcohol use, and having been a victim of violence crime was associated with IPV victimization in the past 12 months, while younger age, poor health status, psychological distress, hazardous or harmful alcohol use, and illicit drug use was associated with IPV perpetration in the past 12 months.

**Conclusion:** Past 12-month prevalence of IPV victimization and perpetration among women and men was significant. IPV gender commonalities and differences in risk factors, such as psychological distress, substance use, crime victimization and sexual risk behaviour, may inform strategies of violence prevention programmes.

**Keywords:** Intimate partner violence, victimization, perpetration, women, men, risk factor, South Africa, national survey

## 1. Introduction

Intimate partner violence (IPV) refers to "behaviour by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, and psychological abuse and controlling behaviours." (WHO, 2016, p.1); a person can be a victim or perpetrator of IPV (WHO, 2013). Globally, IPV is a huge public health problem, especially in lower resourced countries (WHO, 2013). The past 12-month prevalence of IPV victimization among women seem to range between less than 4% in many high-income countries and 40% in some lower income countries (Heise & Kotsadam, 2015). In the United States, the past 12-month prevalence of severe IPV victimization was 2.3% among women and 2.1% among men (Breiding et al.,

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2014). Regarding IPV perpetration, a study in eight developing countries found across countries that 31% of men reported IPV perpetration in their lifetime (Fleming et al., 2015). IPV has a range of negative health impacts, including injury, unintended pregnancy, sexually transmitted infections (STIs), poor mental health, and addiction (Campbell, 2002; Ellsberg et al., 2008).

"Population-level surveys based on reports from victims provide the most accurate estimates of the prevalence of intimate partner violence and sexual violence in non-conflict settings." (WHO, 2016, p.1). Based on a national population-based study in South Africa in 2002-2004, the prevalence of IPV victimization (in their "current or most recent marriage or cohabiting relationship") was 29.3% among women and 20.9% among men, and IPV perpetration was 25.2% among women and 26.5% among men (Gass, Stein, Williams, & Seedat, 2011). The prevalence of IPV perpetration among 15-19 year-old male youth in Johannesburg in South Africa was 40% (Peitzmeier et al., 2016). In the 2016 Demographic and Health Survey in South Africa, the 12 months prevalence of physical IPV and sexual IPY victimization was among women 8% and 2%, respectively (Statistics South Africa, 2017). In relation to violence and injuries in general in South Africa, they are the "second leading cause of death and loss of disability-adjusted life years" and "the rate of homicide of women by intimate partners is six times the global average" (Seedat et al., 2009, p.1011). According to Seedat et al. (2009, p.1011), "The social dynamics that support violence are widespread poverty, unemployment, and income inequality; patriarchal notions of masculinity that valourise toughness, risk-taking, and defence of honour; exposure to abuse in childhood and weak parenting; access to firearms; widespread alcohol misuse; and weaknesses in the mechanisms of law enforcement."

A number of studies found that there are multiple factors that contribute to IPV and sexual violence. The factors can be perpetrator-related, victim-related or both perpetrator and victim related (WHO, 2016, p.1; Gass et al., 2011; Heise & Kotsadam, 2015). Sexual IPV perpetration and experience factors include: "lower levels of education; exposure to child maltreatment; witnessing family violence; harmful use of alcohol and attitudes that are accepting of violence and gender inequality"; perpetration factors include "antisocial personality disorder, having multiple partners or suspected by their partners of infidelity." (WHO, 2016, p.1; Gass et al., 2011; Heise & Kotsadam, 2015).

Women are more likely to report IPV experiences than men are, and men are more likely to report IPV perpetration than women (Gass et al., 2011; Statistics South Africa, 2017). In addition to substance use disorders (Gass et al., 2011; Gonzalez, Connell, Businelle, Jennings, & Chartier, 2014; Peitzmeier et al. 2016), IPV experiences and/or perpetration among women and/or men is associated with common mental disorders and/or community violence victimization (Fleming et al. 2015; Gass et al., 2011, Ishida, Stupp, Melian, Serbanescu, & Goodwin, 2010; Peitzmeier et al. 2016).

There is a lack of more recent nationally representative population-based surveys on IPV victimization and IPV perpetration in South Africa. The aim of the study was to estimate the prevalence and influence of sociodemographic and health characteristics on IPV victimization and perpetration among women and men 15 years and older in South Africa. Research questions included, what is the prevalence of IPV victimization and perpetration among women and men 15 years and older? and what are factors associated with IPV victimization and perpetration among women and men 15 years and older?

#### 2. Methods

#### 2.1 Data and Sampling

Secondary data analysis was conducted utilizing cross-sectional data from the "South African national HIV prevalence, incidence, and behaviour survey" from 2012 (Shisana et al., 2014). The sampling strategy was stratified by province, type of geolocality, and predominant population or racial groups. Using multistage sampling, a random sample of "enumeration areas" (EAs) was selected, and within EAs households were randomly selected. All individuals within a household were eligible to participate. Trained and supervised field workers interview-administered a questionnaire. Written informed consent was attained prior to the interview. The detailed survey methods are described elsewhere (Shisana et al., 2014).

This analysis is based only on data on 15 years and older individuals who indicated that they are in an intimate relationship who participated in the survey. The study survey proposal was approved by the "HSRC Research Ethics Committee (REC: 5/17/11/10)" and by the "Centers for Disease Control and Prevention" (CDC).

# 2.2 Measures

The questionnaire used included sections on intimate partner violence, sociodemograohic characteristis, health status variables, and health risk behaviour.

#### 2.3 Intimate Partner Violence

Participants who conceded that they were in an intimate relationship responded to seven IPV questions: "1) In the past 12 months, a partner has hit me (with a fist or slap or something else that could hurt me). 2) In the past 12 months, I have hit a partner (with a fist or slap or something else that could hurt them). 3) In the past 12 months, a partner has forced me to have sex against my wishes by using violence or threatening violence. 4) In the past 12 months, I have forced a partner to have sex with me when he/she didn't want it. 5) In the past 12 months, a partner has been violent towards me when he/she was drunk. 6) In the past 12 months, a partner has refused to use a condom during sex, even when I said I wanted to use one. 7) In the past year, have you been to a doctor, hospital or clinic for treatment because you have been injured by a partner?" (Response options were "yes"and "no") (Shisana et al., 2014).

Demographic measures included age, educational level, race (Black Africans or other races), and employment status.

#### 2.4 Self-Rated Health Status

"In general, would you say that your health is excellent, good, fair or poor?" (Shisana et al., 2014). The response was dichotomized into 1=fair or poor and 0=excellent or good.

Psychological distress was measured with the "Kessler Psychological Distress Scale (K-10)" (Kessler et al., 2003). The 10-item scale assesses global psychological distress experienced in the past 30 days, e.g., "In the past 30 days, how often did you feel so restless that you could not sit still?" Response options ranged from 1= "none of the time" to 5= "all the time". These scores were added-up, with higher total scores indicating higher psychological distress (Kessler et al., 2003). A cut-off of 16 scores and more for detecting depression and anxiety disorders was used, as suggested in a previous validation study of the K-10 in the general population in South Africa (Andersen, Grimsrud, Myer, Williams, Stein, & Seedat, 2011). Cronbach alpha for the K-10 in this sample was 0.89.

Hazardous or harmful alcohol use was assessed with the 10-item "Alcohol Disorder Identification Test (AUDIT)", e.g., "How often did you have a drink containing alcohol in the past 12 months?" (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Response options range from 0 to 4, with a total range from 0 to 40 scores; a score of 8 or more indicated hazardous or harmful or probable dependent drinking (Babor et al., 2001). Cronbach alpha for the AUDIT in this sample was 0.84.

Illicit drug use in the past three months was assessed with nine items of the "Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)", e.g., "In the past three months, how often have you used cannabis (dagga, marijuana, pot, grass, hash, etc.?" (Humeniuk, Henry-Edwards, Ali, Poznyak, & Monteiro, 2010). Response options ranged from 1=never to 5=almost daily. Any illicit drug use in the past three months was coded as 1 and never as 0. All items were added together to indicate the prevalence of any illicit drug use in the past three months. Cronbach alpha for this section of the ASSIST in this sample was 0.61.

Violent crime victimization was assessed with the question, "In the past 12 months, have you been a victim of a violent crime where a gun or knife was used to threaten or harm you?" (Response option was "yes" or "no") (Shisana et al., 2014).

Sexual risk behaviour was assessed with two questions,"Overall, how many sexual partners did you have during the past 12 months?" (Coded two or more=1 and 0 to 1 sexual partner=0) and "In the past six months, how many sex partners have you had whose HIV status you did not know at the time that you had sex?" (Coded 1 or more=1 and none=0) (Shisana et al., 2014).

### 2.5 Data Analysis

Descriptive statistics were used to summarize IPV prevalence, sociodemographic factors, and health characteristics. Pearson chi-square tests were used for differences in proportions. Associations between the outcome variables of IPV victimization and perpetration and sociodemographic and health independent variables were examined by calculating odds ratios (OR). Unconditional multivariable logistic regression was utilized to assess the impact of explanatory variables for the outcomes of IPV victimization and perpetration prevalence, for women and men separately. Variables that were found statistically significant at the P < .05 levels in bivariate analyses were subsequently included in the multivariable models. In the analysis, weighted percentages have been reported. The "svy" command was utilized to take into account the multi-stage cluster design of the survey. All statistical analyses were performed using Stata software version 12 (Stata Corp., College Station, TX, USA).

# 3. Results

# 3.1 Descriptive Analysis

#### Sample characteristics

Response rates for the interview was 89.5% (Shisana et al., 2014). The total sample included 15916 persons 15 years and older (8532 women and 7384 men) who indicated that they are currently in an intimate relationship. Almost half (45.8%) had Grade 12 or more education, 76.1% were from the African Black population group and 48.5% were employed. Almost one in five (17.7%) indicated that their health status was fair or poor, 36.2% had psychological distress, 12.6% engaged in hazardous or harmful drinking, 6.2% in illicit drug use in the past three months, and 8.9% were a victim of a violent crime in the past 12 months. Regarding HIV risk behaviour, 11.4% had multiple sexual partners in the past 12 months, and 27.1% had sex with someone with unknown HIV status in the past 6 months. Some of the indicators assessed differed by gender, men were older and more often employed than women. While women had a higher prevalence of psychological distress han men, men engaged more often then women in hazardous or harmful alcohol use, illicit drug use, were victims of a violent crime, and had multiple sexual partners) (see Table 1).

Table 1. Sample Characteristics

Variable	All	Women	Men	Test statistic
variable	(n=15916)	(n=8532)	(n=7384)	Test statistic
	N (%)	n (%)	n (%)	P-value
Age				
15-29	5188 (35.4)	2904 (38.1)	2284 (32.9)	
30-44	5249 (37.7)	2915 (37.5)	2334 (38.0)	< 0.001
45 or more	5475 (26.9)	2711 (24.5)	2764 (29.2)	
Education				
Grade 0-7	2301 (15.9)	1199 (15.1)	1102 (16.7)	
Grade 8-11	5180 (38.3)	2822 (39.2)	2358 (37.4)	0.249
Grade 12 or more	6361 (45.8)	3411 (45.8)	2950 (45.9)	
Population group				
African Black	8847 (75.9)	4832 (76.1)	4015 (75.7)	
White	2003 (11.9)	1049 (11.9)	954 (11.9)	0.020
Coloured	2952 (9.2)	1611 (9.1)	1341 (9.3)	0.920
Indian or Asian	2070 (3.0)	1024 (2.9)	1046 (3.2)	
Employment status				
Not employed	7221 (51.5)	4905 (63.2)	2316 (40.2)	-0.001
Employed	7520 (48.5)	3109 (36.8)	4411 (59.8)	< 0.001
Health status (fair or poor)				
No	12998 (82.3)	6896 (81.6)	6102 (82.9)	0.010
Yes	2803 (17.7)	1567 (18.4)	1236 (17.1)	0.010
Psychological distress (≥16)				
No	10212 (63.8)	5139 (58.8)	5073 (68.6)	.0.001
Yes	5268 (36.2)	3155 (41.2)	2113 (31.4)	< 0.001
Hazardous or harmful alcohol use				
No	13964 (87.4)	8046 (95.7)	5918 (79.5)	0.004
Yes	1810 (12.6)	406 (4.3)	1404 (20.5)	< 0.001

Illicit drug use				
No	13876 (93.8)	7700 (97.2)	6176 (90.5)	< 0.001
Yes	933 (6.2)	267 (2.8)	666 (9.5)	<b>\0.001</b>
Victim of violence crime				
No	14590 (91.1)	7949 (93.3)	6641 (88.9)	< 0.001
Yes	1254 (8.9)	547 (6.7)	707 (11.1)	<0.001
Two or more sexual partners				
No	13103 (88.6)	7346 (95.9)	5757 (81.6)	< 0.001
Yes	1184 (11.4)	261 (4.1)	923 (18.4)	<0.001
Sex with someone with unknown HIV status (6 ms)				
No	7975 (72.9)	4502 (71.7)	3473 (74.2)	0.194
Yes	2427 (27.1)	1477 (28.3)	950 (25.8)	U.17 <del>4</del>

# 3.2 Types of Intimate Partner Violence by Age and Gender

Among women, 5.1% had experienced physical violence (was hit) and 1.7% sexual violence in the past 12 months. Almost one in ten (8.5%) had experienced any form of IPV (was hit, forced sex, partner was violent against here when drunk, partner refused condom use and/or had sustained an injury) in the past 12 months. The prevalence of any IPV victimization among women was more than 10 percent in the age group 15 to 34 years and less than 4 percent in women 55 years and older. In all, 3.5% of the women had engaged in IPV perpetration (3.0% in physical and 0.7% in sexual violence) in the past 12 months. Considering both the experience and perpetration of IPV in the past 12 months, 2.3% of the women reported probably bidirectional IPV. The proportion of women with probable bidirectional IPV was 29.5% of those with IPV victimization and 67.5% of those with IPV perpetration.

Among men, 3.7% had experienced physical violence (was hit) and 0.9% sexual violence in the past 12 months. One in twenty (5.0%) had experienced any form of IPV (was hit, forced sex, partner was violent against here when drunk, partner refused condom use and/or had sustained an injury). The prevalence of any IPV victimization among men was more than 5 percent in the age group 15 to 34 years and less than 1 percent in men 55 years and older. In all, 4.4% of the men had engaged in IPV perpetration (3.9% physical and 0.9% in sexual violence) in the past 12 months. Considering both the experience and perpetration of IPV in the past 12 months, 2.7% of the men reported probably bidirectional IPV. The proportion of men with probable bidirectional IPV was 51.0% of those with IPV victimization and 58.8% of those with IPV perpetration (see Table 2).

Table 2. Types of Intimate Partner Violence by Age and Gender

	Age is years					All
Variable	15-24	25-34	35-44	45-54	55+	
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Women						
Was hit	131 (7.5)	131 (6.2)	56 (3.7)	45 (4.3)	11 (1.0)	374 (5.1)
Forced sex	27 (1.4)	35 (1.9)	26 (1.7)	24 (2.6)	9 (0.8)	121 (1.7)
Partner violent when drunk	56 (3.0)	74 (3.5)	51 (4.2)	40 (2.7)	14 (2.4)	235 (3.3)
Partner refused condom	56 (3.7)	75 (4.5)	48 (4.2)	24 (1.0)	7 (0.7)	210 (3.4)
Injury from partner	11 (0.6)	12 (0.5)	8 (1.0)	5 (0.7)	3 (0.3)	39 (0.7)
IPV victimization (any of 5)	176 (10.1)	197 (10.2)	110 (7.8)	80 (6.6)	27 (3.7)	590 (8.5)
I have hit a partner	83 (5.1)	75 (3.3)	31 (1.9)	27 (2.1)	9 (0.8)	225 (3.0)
Forced partner to have sex	13 (0.7)	13 (0.5)	11 (1.0)	10 (0.8)	2 (0.1)	49 (0.7)
IPV perpretration (any of 2)	90 (5.4)	84 (3.8)	41 (2.8)	34 (2.8)	9 (0.8)	258 (3.5)
IPV victim and perpetrator	60 (3.4)	56 (2.3)	32 (2.1)	20 (2.3)	6 (0.7)	174 (2.3)

Men						
Was hit	81 (6.8)	73 (5.9)	36 (1.8)	17 (1.5)	7 (0.7)	214 (3.7)
Forced sex	16 (1.1)	20 (1.8)	11 (0.5)	2 (0.1)	4 (0.4)	53 (0.9)
Partner violent when drunk	38 (2.6)	38 (3.0)	18 (0.8)	11 (0.5)	2 (0.0)	107 (1.6)
Partner refused condom	35 (2.5)	35 (2.9)	9 (0.5)	8 (0.8)	5 (0.3)	92 (1.6)
Injury from partner	5 (0.6)	4 (0.5)	5 (0.6)	1 (0.1)	1 (0.0)	16 (0.4)
IPV victimization (any of 5)	120 (9.0)	115 (7.2)	58 (3.1)	30 (2.8)	12 (1.0)	335 (5.0)
I have hit my partner	102 (7.3)	82 (5.3)	46 (3.3)	20 (1.3)	9 (0.3)	259 (3.9)
Forced partner to have sex	22 (1.2)	30 (1.7)	10 (0.2)	8 (1.1)	1 (0.0)	71 (0.9)
IPV perpretration (any of 2)	110 (7.8)	97 (6.2)	49 (3.4)	26 (2.3)	9 (0.3)	291 (4.4)
IPV victim and perpetrator	60 (4.7)	62 (4.1)	29 (1.7)	18 (1.6)	2 (0.1)	171 (2.7)

# 3.3 Association between Independent Variables and IPV Victimization and IPV Perpetration

In multivariable logistic regression analysis among women, younger age, being African Black, having psychological distress, having been a victim of violence crime in the past 12 months and having had multiple sexual partners in the past 12 months were associated with IPV victimization in the past 12 months.

Further, younger age, having psychological distress, hazardous or harmful alcohol use, and having had multiple sexual partners in the past 12 months was associated with IPV perpetration in the past 12 months (see Table 3).

Table 3. Association between Sociodemographics, Health Variables and Intimate Partner Violence (IPV) victimization and perpetration among women

Variable	IPV victimization-wor	men	IPV perpetration-women		
	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	
Age					
15-29	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)	
30-44	0.69 (0.53, 0.89)**	0.72 (0.51, 1.01)	0.50 (0.31, 0.79)**	0.51 (0.30, 0.86)*	
45 or more	0.46 (0.32, 0.66)***	0.52 (0.32, 0.86)**	0.36 (0.20, 0.64)***	0.44 (0.25, 0.96)*	
Education					
Grade 0-7	1 (Reference)	1 (Reference)	1 (Reference)		
Grade 8-11	1.00 (0.73, 1.38)	0.91 (0.61, 1.35)	1.08 (0.60, 1.95)		
Grade 12 or more	0.60 (0.41, 0.86)**	0.65 (0.40, 1.06)	0.75 (0.40, 1.42)		
Population group					
African Black	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)	
White	0.16 (0.08, 0.33)***	0.08 (0.02, 0.37)***	0.24 (0.09, 0.64)**	0.36 (0.11, 1.12)	
Coloured	0.62 (0.37, 1.04)	0.57 (0.35, 0.94)*	1.04 (0.69, 1.57)	1.02 (0.60, 1.72)	
Indian or Asian	0.07 (0.04, 0.13)***	0.10 (0.04, 0.24)***	0.13 (0.06, 0.28)***	0.16 (0.07, 0.39)***	
Employment status					
Not employed	1 (Reference)	1 (Reference)	1 (Reference)		
Employed	0.75 (0.58, 0.98)*	1.03 (0.62, 1.68)	0.92 (0.59, 1.43)		
Health status (fair or poor)					
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)	
Yes	1.46 (1.09, 1.97)*	1.26 (0.85, 1.88)	1.72 (1.09, 2.71)*	1.46 (0.83, 2.56)	

Psychological distress (≥16)				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	2.20 (1.68, 2.88)***	1.64 (1.13, 2.37)**	3.82 (2.51, 5.81)***	3.17 (1.99, 5.07)***
Hazardous or harmful alcohol use				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	3.22 (2.17, 4.47)***	1.46 (0.87, 2.44)	4.54 (2.57, 7.71)***	2.42 (1.06, 5.52)*
Illicit drug use				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	2.01 (1.11, 3.64)*	1.78 (0.78, 4.07)	2.71 (1.21, 6.07)*	1.92 (0.81, 4.54)
Victim of violence crime				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	2.67 (1.83, 3.88)***	3.04 (1.73, 5.33)***	2.27 (1.17, 4.39)*	2.11 (0.87, 5.11)
Two or more sexual partners				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	3.55 (2.09, 6.03)***	2.69 (1.49, 4.86)***	2.63 (1.43, 4.81)**	1.91 (1.01, 3.61)*
Sex with someone with unknown HIV status (6 ms)				
No	1 (Reference)	1 (Reference)	1 (Reference)	
Yes	1.82 (1.32, 2.51)***	1.16 (0.80, 1.69)	1.25 (0.73, 2.11)	_

<sup>\*\*\*</sup>P<0.001; \*\*P<0.01; \*P<0.05; CI=Confidence Interval

In multivariable logistic regression analysis among men, younger age, having psychological distress, hazardous or harmful alcohol use, and having been a victim of violence crime in the past 12 months were associated with IPV victimization in the past 12 months.

Further, younger age, poor health status, having psychological distress, hazardous or harmful alcohol use, and illicit drug use was associated with IPV perpetration in the past 12 months (see Table 4).

Table 4. Association between Sociodemographics, Health Variables and Intimate Partner Violence (IPV) victimization and perpetration among men

	IPV victimization-men		IPV perpetration-men	
Variable	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	Unadjusted Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
Age				
15-29	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
30-44	0.49 (0.33, 0.72)***	0.50 (0.27, 0.91)*	0.57 (0.36, 0.80)**	0.62 (0.39, 0.98)*
45 or more	0.21 (0.12, 0.36)***	0.47 (0.19, 1.19)	0.18 (0.10, 0.32)***	0.30 (0.15, 0.61)***
Education				
Grade 0-7	1 (Reference)	1 (Reference)	1 (Reference)	
Grade 8-11	2.00 (1.06, 3.80)*	1.36 (0.59, 3.13)	1.16 (0.63, 2.16)	
Grade 12 or more	1.31 (0.69, 2.48)	1.17 (0.52, 2.67)	0.66 (0.35, 1.26)	
Population group				
African Black	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)

White	0.18 (0.08, 0.40)***	0.29 (0.07, 1.14)	0.14 (0.04, 0.56)**	0.07 (0.02, 0.25)***
Coloured	0.82 (0.54, 1.24)	0.96 (0.54, 1.69)	0.70 (0.46, 1.06)	0.69 (0.43, 1.10)
Indian or Asian	0.21 (0.10, 0.44)***	0.16 (0.06, 0.43)***	0.23 (0.10, 0.52)***	0.40 (0.16, 1.00)
Employment status				
Not employed	1 (Reference)		1 (Reference)	
Employed	0.88 (0.62, 1.25)		0.87 (0.59, 1.28)	
Health status (fair or poor)				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	1.93 (1.26, 2.96)**	1.67 (0.84, 3.32)	1.80 (1.15, 2.83)**	1.99 (1.15, 3.44)*
Psychological distress (≥16)				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	3.09 (2.04, 4.68)***	2.17 (1.30, 3.60)**	2.96 (1.99, 4.40)***	2.21 (1.43, 3.42)***
Hazardous or harmful alcohol use				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	5.70 (4.17, 7.79)***	2.42 (1.40, 4.18)**	4.01 (2.75, 5.85)***	2.22 (1.46, 3.37)***
Illicit drug use				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	3.82 (2.56, 5.69)***	1.36 (0.72, 2.59)	3.86 (2.50, 5.96)***	2.33 (1.50, 3.62)***
Victim of violence crime				
No	1 (Reference)	1 (Reference)	1 (Reference)	
Yes	2.61 (1.66, 4.10)***	2.20 (1.03, 4.70)*	1.45 (0.83, 2.51)	<del></del>
Two or more sexual partners				
No	1 (Reference)	1 (Reference)	1 (Reference)	1 (Reference)
Yes	3.15 (2.18, 4.56)***	1.36 (0.80, 2.32)	2.92 (1.98, 4.31)***	1.35 (0.82, 2.22)
Sex with someone with unknown HIV status (6 ms)				
No	1 (Reference)	1 (Reference)	1 (Reference)	
Yes	1.65 (1.09, 2.50)*	1.05 (0.53, 2.08)	1.60 (1.00, 2.56)*	
HIV status				
Negative	1 (Reference)		1 (Reference)	
Positive	0.98 (0.54, 1.78)		1.39 (0.79, 2.45)	

<sup>\*\*\*</sup>P<0.001; \*\*P<0.01; \*P<0.05; CI=Confidence Interval

## 4. Discussion

In this 2012, nationally representative sample of individuals 15 years and older in South Africa, 8.5% of women and 5.0% of men had experienced IPV victimization in the past 12 months. The figure for women IPV victimization was pretty similar to the 2016 Demographic and Health Survey in South Africa (Statistics South Africa, 2017) and other previous studies in South Africa (e.g., Jewkes, Penn-Kekana, Levin, Ratsaka, & Schrieber, 2001), but the figures for both women and men seem to be lower than in a national population-based survey for the "current or most recent marriage or cohabiting relationship" in South Africa in 2002-2004 (29.3% among women

and 20.9% among men) (Gass et al., 2011). The latter higher figures may explained by the potentially lifetime IPV rather than 12-month prevalence.

Further, the study found a 12-month IPV perpetration prevalence of 3.5% among women and 4.4% among men. Previous studies in South Africa and elsewhere (Fleming et al., 2015; Gass et al., 2011; Peitzmeier et al., 2016) seem to have found higher rates of IPV perpetration, although lifetime rates were reported that are difficult to comapre with 12-month rates. The study also found high rates of co-occurrence of IPV victimization and perpetration, especially among IPV perpetrators, among both women and men. Similar results were found in a previous study in Tanzania (Mulawa et al., 2016). Although this study could not establish if IPV perpetration and victimization had happened within the same intimate relationship, a high probability of such overlap can be assumed given the 12 months reference period suggesting bidirectional IPV (Mulawa et al., 2016).

In agreement with some previous studies (Gass et al., 2011; Statistics South Africa, 2017), this study found that women at a younger age were more likely to report IPV victimization than men, and men were more likely to report IPV perpetration than women. Only in bivariate analysis among women lower education level and unemployment, as found previously (Heise & Kotsadam, 2015; WHO, 2016), was associated with IPV victimization in this study.

In agreement with previous studies (Gass et al., 2011; Gonzalez et al., 2014; Peitzmeier et al. 2016; WHO, 2016) harmful use of alcohol was associated with IPV perpetration and experience among men and IPV perpetration among women, and illicit drug use was in multivariable analysis associated with PIV perpetration among men and in bivariate analysis associated with IPV experiences and perpetration among women and IPV victimization in men. In a recent review, Rivera et al. (2015) found that in most studies a bidirectional relationship existed between IPV and substance use disorders.

This study found, in agreement with previous studies (Fleming et al. 2015; Gass et al., 2011, Ishida et al., 2010; Peitzmeier et al. 2016), an association common mental disorders and/or community violence victimization with IPV victimization and/or perpetration among women and/or men. However, contrary to these study findings common mental disorders have commonly been seen as a sequela of IPV, and not as a risk factor (Gass et al., 2011). Considering the importance of common mental disorders and its links to all type of IPV experiences and perpetration both among women and men in this study, further research is suggested to gain better insight into gender differentials of poor mental health as risk factor of IPV and sequela of IPV (Gass et al., 2011). Some studies (e.g., Tsai, Tomlinson, Comulada, & Rotheram-Borus, 2016), also found a bidirectional relationship between IPV and depression among women in South Africa.

Previous studies (WHO, 2016) found that having multiple partners was correlated with IPV perpetration among men, but this study found that having multiple sexual partners was associated with IPV experience and perpetration among women, and only in bivariate analysis among men. In bivariate analysis having sex with someone with unknown HIV, status was associated with IPV experience among women and men, and IPV perpetration among men.

## 4.1 Study limitation

This study had several limitations. Since this was a cross-sectional survey, we cannot establish causality between certain variables and IPV. Responses on IPV experiences and perpetration were based on self-report and social desirability biases may have led to underreporting of IPV. A further limitation of this study was that certain relevant concepts linked with IPV, such as "exposure to child maltreatment; witnessing family violence; antisocial personality disorder; and attitudes that are accepting of violence and gender inequality (perpetration and experience)" (Gass et al., 2011; WHO, 2016), were not assessed and should be included in future studies.

#### 5. Conclusion

Past 12-month prevalence of IPV victimization and perpetration among both women and men was significant. IPV gender commonalities and differences in risk factors, such as psychological distress, substance use, crime victimization and sexual risk behaviour, may inform strategies of violence prevention programmes. Interventions targeting women may include management of psychological distress, reduction of alcohol use, crime prevention and safer sexual practices, and interventions targeting men may include management of psychological distress, alcohol abuse, illicit drug use, crime prevention and improvement of health status. Future research should focus on understanding the complex processes involved in the development of IPV victimization and perpetration, such as childhood exposure to various forms of violence, including witnessing and structural violence.

# Acknowledgements

The work used data from the "Human Sciences Research Council. South African National HIV Prevalence, HIV Incidence, Behaviour and Communication Survey (SABSSM) 2012: Combined - All provinces. [Data set]. SABSSM 2012 Combined. Version 1.0. Pretoria South Africa: Human Sciences Research Council [producer] 2013, Human Sciences Research Council [distributor] 2016. http://dx.doi.org/doi:10.14749/1485430466." The original study was supported by the "USA's Centers for Disease control and Prevention and the Human Sciences Research Council, the Bill & Melinda Gates Foundation, the United Nations Children's Fund, and the South African National AIDS Council."

#### **Conflict of Interest**

The authors declare that they have no conflict of interest in regards to the publication of this paper.

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