

# Associations of childhood violence experience and intimate partner violence during adulthood among women in Limpopo, South Africa

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## Research Article

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# Abstract

**Background and Purpose:** Adverse childhood experiences (ACEs) are associated with lifelong health risks, including intimate partner violence (IPV). The Republic of South Africa (RSA) has the world's highest rate of IPV. We sought to understand how childhood exposure to violence related to women's experiences of IPV in rural Limpopo, RSA, to inform intervention development.

**Participants and Setting:** Participants were 50 adult women from villages near Thohoyandou and 57 adult female students at the University of Venda.

**Methods:** Participants completed a questionnaire including demographic characteristics. IPV victimization and perpetration in adulthood were measured using the *Revised Conflict Tactics Scale*. We compared female village residents and university students using descriptive statistics. Multivariable logistic regressions examined relationships between childhood violence exposure and adulthood victimization and perpetration of psychological, physical, and sexual violence.

**Results:** Childhood violence exposure significantly predicted adulthood victimization by minor ( $\chi^2(1) = 4.540$ ,  $p=.033$ ) and severe psychological aggression ( $\chi^2(1) = 6.965$ ,  $p=.008$ ), and severe physical assault ( $\chi^2(1) = 6.130$ ,  $p=.013$ ). Witnessing IPV during childhood predicted women's perpetration of minor sexual coercion ( $\chi^2(1) = 5.971$ ,  $p=.015$ ). Community-women were more likely to perpetrate severe physical assault than university women (16.1%) ( $\chi^2(1) = 4.10$ ,  $p = .043$ ).

**Conclusions:** Childhood exposure to violence was significantly related to women's IPV victimization and perpetration experiences in adulthood. Interventions to promote conflict resolution skills in adult partner relationships and reduce IPV are needed for men and women. Action is needed to minimize ACEs among girls, such as witnessing violence between adult intimate partners.

## Introduction

### Adverse Childhood Experiences (ACEs)

Experiencing or witnessing violence are adverse childhood experiences (ACEs) that are directly associated with lifelong health risks, including mental illness, chronic health problems, substance misuse, and violence perpetration and victimization in adulthood, including intimate partner violence (IPV) (Center for Disease Control and Prevention, 2021b; V. J. Felitti et al., 1998; Vincent J. Felitti, 2009; Harris, n.d.; Mair, Cunradi, & Todd, 2012). ACEs are defined as traumatic experiences that occur from 0–17 years of age, such as family member death, witnessing violence at home or within the community, or experiencing neglect, abuse, or violence oneself (Center for Disease Control and Prevention, 2021b; V. J. Felitti et al., 1998). Individual, family, and community risk factors can contribute to ACEs' overall impact on adult health (Center for Disease Control and Prevention, 2021b; Harris, n.d.). These risk factors include neglect of children by caregivers, low incomes, single parents, high family conflict and negative communication styles, and high levels of community violence and unemployment (Bramlett & Radel, 2014; Center for Disease Control and Prevention, 2021a).

### ACEs in the Republic of South Africa

According to the World Health Organization, there is a direct correlation between countries' incidence of ACEs and lower per-capita incomes (Bellis et al., 2014). While the RSA is considered to be a lower-middle-income (per-capita) country (The World Bank, n.d.), nearly half (49.2%) of the population in 2019 fell below the poverty line, especially in rural areas (Department of Statistics South Africa, 2019). Moreover, women in the RSA, especially those who are heads of their households, experience higher rates and more severe poverty levels than men (Department of Statistics South Africa, 2019). Globally, women and racial/ethnic minority groups have a greater risk of experiencing four or more ACEs in childhood, which increases the lifelong risk to health and opportunities (Center for Disease Control and Prevention, 2021b). Finally, those who experience four or more ACEs are at greater risk for chronic physical, behavioral, and mental health outcomes throughout their lifetime (V. J. Felitti et al., 1998).

## **Prevalence and Impact of ACEs**

Unfortunately, ACEs are common. Approximately 17% of adults have experienced four or more ACEs in childhood (Center for Disease Control and Prevention, 2020). ACEs are associated with at least 50% of the leading causes of death during adulthood, showing tremendous impact (Center for Disease Control and Prevention, 2020). Previous studies have shown that children who experienced sexual abuse were particularly at risk for sexual victimization in adulthood, and adulthood sexual coercion is significantly correlated with ACEs (Ecott, Aiolfi, & Ciardha, 2020; Ports, Ford, & Merrick, 2016).

Witnessing IPV during childhood can lead to severe physical and mental health outcomes later in life, including a greater risk of being involved in a violent marital relationship (Gil-González, Vives-Cases, Ruiz, Carrasco-Portiño, & Álvarez-Dardet, 2008; Howell, Barnes, Miller, & Graham-Bermann, 2016; Kieselbach, Kress, MacMillan, & Perneger, 2021; Whitfield, Anda, Dube, & Felitti, 2003). Witnessing IPV is correlated with experiencing violence. While 30% of children in the United States who witnessed violence were victims of violence themselves, only 5% of children who did not witness IPV were victims of physical abuse (Kieselbach et al., 2021).

## **Intimate Partner Violence (IPV) in South Africa**

IPV accounts for 62% of the violence burden against women in South Africa (Joyner & Mash, 2011). Approximately one-quarter of women in South Africa experience some form of IPV, most commonly psychological abuse (World Health Organization, 2017b). Psychological aggression is defined as behavioral or verbal acts to threaten one's partner and is the most common form of aggression in relationships (Breiding, Basile, Smith, Black, & Mahendra, n.d.; Shorey et al., 2012). This includes actions that humiliate, blame, isolate, or intimidate to attack a partner's self-esteem and emotional well-being (Follingstad, Coyne, & Gambone, 2005; Murphy & Hoover, 1999; Shorey et al., 2012). Of the women worldwide who experience IPV, 30% also experience physical assault (World Health Organization, 2017a).

Experiencing IPV during adulthood is related to exposure to violence and witnessing IPV during childhood. Adults who committed offenses with weapons most often saw parents use weapons while growing up, and those who reported hitting or throwing things at their partner reported seeing their parents do the same (Kieselbach et al., 2021; Murrell, Merwin, Christoff, & Henning, 2005; White & Widom, 2003).

# Increased Incidence of Violence Against Women in Limpopo, South Africa

In the years prior to this study (2013–2017), there was increased violence against women (VAW), especially in the Limpopo province (“South Africa: Limpopo Shocked By Brutal Killings - AllAfrica.Com,” n.d.). Several news articles were written to alert South Africans of a manhunt for the alleged girlfriend murderer (“Manhunt on for Alleged Girlfriend, Baby Killer | ENCA,” n.d.), the murder of a child and three women (“Limpopo Police Commissioner Express Outrage at Murder of Three Women and Child | South African Government,” n.d.), police officers and doctors murdering their girlfriends (“Limpopo Cop Kills Girlfriend, Self | News24,” n.d.; “Limpopo Doctor in Court for Student Girlfriend’s Murder,” n.d.). Similar events also occurred at the University of Venda (“Univen Student Believed to Be Thohoyandou Serial Killer,” 2014; “Univen Student Stabbed to Death,” 2013; “Univen Student Stabbed to Death in Taxi,” 2021). The ongoing experience of VAW in Limpopo and at the University of Venda led this team to study its precipitants.

## The Gap in Literature and Current Study

Even in a country with data available on IPV, not all regions are equally represented in national reports. There is a gap in knowledge about ACEs and IPV experienced during adulthood in the rural Vhembe district of northern Limpopo, South Africa. Further, South African investigators were aware of the VAW in the Limpopo region of South Africa and on the UNIVEN campus. We sought to estimate the prevalence of IPV and VAW and understand the associations between childhood exposure to violence and witnessing IPV and adult victimization and perpetration experiences of female university students and community residents. We hypothesized that childhood exposure to violence would be positively related to adult IPV perpetration and victimization and that witnessing IPV in childhood would positively relate to adult IPV perpetration and victimization.

## Methods

This quantitative study was part of a larger mixed-methods research project that collected data on alcohol use, sexual risk behaviors, and gender-based violence co-directed by South African and U.S. investigators (A.M. and K.I.). In this sub-study, women residents from rural areas in the Vhembe District and university students responded to an epidemiological questionnaire about alcohol-related sexual risks, childhood exposure to violence, childhood experiences witnessing IPV, and adult experiences of IPV perpetration and victimization.

## Ethical and Local Approvals

The University of Virginia and the University of Venda (UNIVEN) Institutional Review Boards approved this study. In addition to institutional approvals, A.M. met with community leaders and village Chiefs to discuss the project’s overall purposes and negotiate entry and introductions to residents. Community Chiefs provided approval to conduct the study in the Ha-Mangilasi (Makhado Municipality) and Maungani (Thulamela municipality) communities. Following university and local approvals, research team members met with community groups to present the study and answered questions.

## Eligibility

Women were eligible if they were 18–44 years old. If women were students, they had to be enrolled at the University of Venda. If they were not students, they had to be residents in a participating community. Finally, all participants had to report that they had been in an intimate partner relationship with a man within the past 12 months.

## Recruitment

Convenience sampling was used to recruit adult female residents from the villages and adult female students at UNIVEN. Researchers posted paper flyers about the study throughout the university campus, shopping centers, restaurants in Thohoyandou, and participating communities to inform residents of the study. Recruitment materials were printed in English and Tshivenda languages. Correspondence occurred in English and Tshivenda. **Data Collection**

Data were collected in June and July 2018 as part of a multi-year collaborative project between the University of Virginia and UNIVEN that supported U.S. and South African university students undertaking research training in Limpopo. Research assistants (RAs) screened potential participants for eligibility. Eligible candidates signed informed consent for the study. R.A.s administered an epidemiological questionnaire to assess the prevalence of IPV victimization and perpetration. Data were collected using a highly secure version of the Qualtrics application on the R.A.'s secured mobile device. Small teams of 2–3 R.A.s went to communities and collected data from women in private areas of their residence.

Similarly, small teams of R.A.s collected data from female university students in private locations on the UNIVEN campus. Participants could complete the questionnaire independently on the R.A.'s device, or the interviewer could read the questions and record answers. The South African R.A.s and University student participants were fluent in both English and Tshivenda, while some community participants were fluent in Tshivenda, with lower fluency in English. The South African R.A.s translated as needed.

## Measures

Sociodemographic data were collected using a questionnaire in English with 16 items. The questionnaire was pilot tested for readability, comprehension, and response choice appropriateness among UNIVEN students in a 2017 pilot of the current study (Allen, 2017b, 2017a), followed by minor wording changes to use local terms and enhance comprehension of questions and answer choices for the current study. Questionnaire items queried participants' age, sex, university year (if applicable), education, intimate partner relationship, people/tribe, residence, and employment status. Example eligibility questions included, "Are you a student enrolled at UNIVEN? Are you currently in a relationship such as a dating, romantic, or marital relationship? Have you been in a dating, romantic, or marital relationship in the past 12 months?" Participants also answered two questions related to childhood exposure to violence and IPV. These included "Were you exposed to any form of violence during childhood?" and "Did you witness intimate partner violence during childhood?" (Participants were informed that "intimate partner violence includes controlling behaviors, physical abuse, psychological abuse, and sexual abuse by an intimate partner.") Response options were "definitely yes," "probably yes," "might or might not," "probably not," and "definitely not."

IPV victimization and perpetration in adulthood were measured using the *Revised Conflict Tactics Scale* (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). The CTS2 has 78 items assessing perpetration and

victimization experiences with “tactics” to address conflicts, including negotiation, psychological aggression, physical assault, sexual coercion, and injury. The scale includes five subscales: Negotiation (cognitive (3 items) and emotional (3 items)), Psychological aggression (minor (4 items) and major (4 items)), Physical Assault (minor (5 items), and severe (7 items)), injury (minor (2 items) and severe (4 items)), and Sexual Coercion (minor (3 items) and severe (4 items)). Psychological aggression included verbal and non-verbal minor acts such as “I shouted or yelled at my partner” and severe acts such as “I destroyed something belonging to my partner” (Strauss et al., 1996). Physical assault addressed minor physical violence such as “I grabbed my partner” and severe acts such as “I used a knife or gun on my partner.” The coercion level measured sexual coercion in forcing partners to engage in unwanted sexual activity (e.g., insistence, actual force, and threats of force) and the nature of the sexual acts (e.g., oral, anal, and vaginal). Thirty-nine items measured participants’ use of conflict tactics, and the other 39 reflected participants’ reports of their partners’ use of tactics. Response options were measured on a nine-point scale (0 = never, 1 = once, 2 = twice, 3 = 3 times, 4 = 4 times, 5 = 5 times, 6 = 6–10 times, 7 = 11–20 times, and 8 = More than 20 times) during the past 12 months. Items for each subscale were summed, and responses were dichotomized to reflect never vs. any experience of each type of violence, as recommended by the scale developer to determine prevalence (Strauss et al., 1996). Childhood experiences were retrospective reports of exposure to violence and witnessing IPV any time before the age of 18 that were dichotomized as never experienced or experienced. Responses that were “definitely yes,” “probably yes,” “might or might not,” were recoded as experienced, and “probably not” and “definitely not” were recoded as never experienced.

## Data Analysis

Descriptive statistics generated sample sociodemographic characteristics and prevalence and distribution of the variables. Cross-tabulations using chi-square tests determine 1) differences in variables by population (i.e., university versus community) and 2) bivariate relationships between childhood exposure to violence or IPV and IPV victimization and perpetration in adulthood.

A series of multivariable logistic regressions examined the relationship between childhood violence (i.e., childhood exposure to violence and witnessing IPV) and adult victimization and perpetration of 3 types of IPV. All regression models controlled for age and population. In Model 1, we examined whether childhood violence exposure was related to adult experiences with IPV. In Model 2, we examined whether childhood witnessing of IPV was related to adult experiences with IPV. Finally, in Model 3, childhood violence exposure and childhood witnessing of IPV were entered simultaneously to determine whether there were unique associations with adult experiences with IPV. Odds ratios and 95% confidence intervals are presented for regressions. All analyses used an alpha level of .05 and were conducted in SPSS version 27 (IBM Corporation, Armonk, NY).

## Results

### Sample sociodemographic characteristics

Sociodemographic information is in Table 1. Fifty-seven female university students and 50 female community residents participated. Six community residents who were students not attending UNIVEN were classified as community participants. The average age of the students was 21.05 years ( $SD= 2.93$ ; range 18–35 years), while the average age of the community participants was 30.38 years (range of 18–44 years;  $SD = 7.57$ ). Most of the participants (94.4%) were heterosexual women, and most women ( $n = 66, 61.7%$ ) were in a

relationship. Educational status of participants varied by recruitment location, with the majority of participants recruited at the university reporting some college or more education, whereas most participants from the community reported education less than some college/university.

Table 1  
Sociodemographic characteristics of the participants (N= 107)

<b>N = 107</b>			
<b>Characteristic (N (%) unless specified)</b>	<b>Full sample (N = 107)</b>	<b>University students (n = 57)</b>	<b>Community residents (n = 50)</b>
Age			
Mean ( <i>SD</i> )	25.41 (7.27)	21.05 (2.93)	30.38 (7.57)
Sexual Orientation			
Straight/Heterosexual	101 (94.4)	52 (91.2)	49 (98.0)
Bisexual	2 (1.90)	2 (3.50)	0 (0.00)
Lesbian	1 (0.90)	1 (1.80)	0 (0.00)
Queer	1 (0.90)	1 (1.80)	0 (0.00)
Other	1 (0.90)	1 (1.80)	0 (0.00)
No answer	1 (0.90)	0 (0.00)	1 (2.00)
Relationship Status			
Single, never married	19 (17.8)	11 (19.3)	8 (16.0)
In a relationship	66 (61.7)	38 (66.7)	28 (56.0)
Dating	7 (6.50)	5 (8.80)	2 (4.00)
Married	10 (9.30)	1 (1.80)	9 (18.0)
Divorced/Widowed/Separated	4 (3.70)	1 (1.80)	3 (6.00)
University Year			
1st year student		15 (14.0)	
2nd year student		23 (21.5)	
3rd year student		12 (11.2)	
4th year student/honors		4 (3.70)	
5th year/master's student		2 (1.90)	
Ph.D. student		1 (0.90)	
Education Level			
Less than high school	13 (12.1)	0 (0.00)	13 (26.0)
High school graduate	29 (27.1)	6 (10.5)	23 (46.0)
Some college	47 (43.9)	42 (73.7)	5 (10.0)

<b>N = 107</b>			
College degree	15 (14.0)	7 (12.3)	8 (16.0)
Professional or master's degree	2 (1.90)	2 (3.50)	0 (0.00)
<b>Employment</b>			
Unemployed	37 (34.6)	2 (3.5)	35 (70.0)
Employed	11 (10.3)	2 (3.5)	9 (18.0)
Student	59 (55.1)	53 (93.0)	6 (12.0)

## Experience of violence exposure during childhood and adulthood

Table 2 compares the prevalence of violence exposures between university and community participants. Less severe experiences were more common than more severe experiences of violence. For example, minor perpetration of psychological aggression was the most prevalent type of violence perpetrated by university (86%) and community participants (82%). In contrast, severe perpetration of sexual coercion was the least reported experience among university and community participants (7% and 18%, respectively). Minor psychological aggression was the most common victimization experience reported by university (78.6%) and community participants (66.7%). The least reported victimization experience was severe sexual coercion, reported by 20% of university and 24% of community participants. Rates of severe physical assault perpetration differed by population. Community-women (33.3%) reported a greater prevalence than university women (16.1%) ( $X^2(1) = 4.10, p = .043$ ). There were no other significant differences in the IPV measures between university and community women.

Table 2  
Prevalence of Childhood and Adult Violence Exposure and Victimization by  
population (university students and community residents)

Variables	Population n (%)	
	University Student	Community Resident
Childhood Violence Exposure	$X^2 (1) = .239, p = .625$	
Never Experienced	40 (74.1)	36 (78.3)
Ever Experienced	14 (25.9)	10 (21.7)
Childhood IPV	$X^2 (1) = 1.060, p = .303$	
Never Experienced	37 (64.9)	27 (55.1)
Ever Experienced	20 (35.1)	22 (44.9)
Psychological Aggression		
Perpetrator Minor	$X^2 (1) = .228, p = .633$	
Never Experienced	8 (14.3)	8 (17.8)
Ever Experienced	48 (85.7)	37 (82.2)
Perpetrator Severe	$X^2 (1) = .499, p = .480$	
Never Experienced	21 (37.5)	20 (44.4)
Ever Experienced	35 (62.5)	25 (55.6)
Victim Minor	$X^2 (1) = 1.805, p = .179$	
Never Experienced	12 (21.4)	15 (33.3)
Ever Experienced	44 (78.6)	30 (66.7)
Victim Severe	$X^2 (1) = .219, p = .640$	
Never Experienced	30 (53.6)	22 (48.9)
Ever Experienced	26 (46.4)	23 (51.1)
Physical Assault		
Perpetrator Minor	$X^2 (1) = .419, p = .517$	
Never Experienced	30 (53.6)	27 (60.0)
Ever Experienced	26 (46.4)	18 (40.0)
Perpetrator Severe	$X^2 (1) = 4.10, p = .043^*$	
Never Experienced	47 (83.9)	30 (66.7)
Ever Experienced	9 (16.1)	15 (33.3)

Variables	Population n (%)	
	University Student	Community Resident
Victim Minor	$X^2 (1) = 1.014, p = .314$	
Never Experienced	33 (58.9)	22 (48.9)
Ever Experienced	23 (41.1)	23 (51.1)
Victim Severe	$X^2 (1) = .396, p = .529$	
Never Experienced	37 (66.1)	27 (60.0)
Ever Experienced	19 (33.9)	18 (40.0)
Sexual Coercion		
Perpetrator Minor	$X^2 (1) = .001, p = .981$	
Never Experienced	26 (46.4)	21 (46.7)
Ever Experienced	30 (53.6)	24 (53.3)
Perpetrator Severe	$X^2 (1) = 2.586, p = .108$	
Never Experienced	51 (92.7)	37 (82.2)
Ever Experienced	4 (7.3)	8 (17.8)
Victim Minor	$X^2 (1) = 3.723, p = .054$	
Never Experienced	18 (32.1)	23 (51.1)
Ever Experienced	38 (67.9)	22 (48.9)
Victim Severe	$X^2 (1) = .285, p = .594$	
Never Experienced	44 (80.0)	34 (75.6)
Ever Experienced	11 (20.0)	11 (24.4)
Note: *indicates significance at 0.05 level		

## Relationships of childhood violence exposures and IPV victimization and perpetration

Due to few significant differences between community and university women, the groups were combined for analysis. Bivariate analyses showed that childhood exposure to violence was significantly related to minor and severe psychological aggression victimization. (See Table 3). Among women exposed to violence during childhood, 91% reported experiencing adulthood minor psychological aggression, while 74% reported severe psychological aggression. In contrast, among those not exposed to violence during childhood, 69% reported minor psychological aggression, and 42% reported severe psychological aggression during adulthood. Women exposed to violence during childhood also had higher rates of experiencing physical assault and perpetrating

minor sexual coercion. Fifty-seven percent of women who witnessed violence, versus 28% of those who did not witness violence in childhood, reported experiencing severe physical assault as an adult. Witnessing IPV during childhood was significantly related to minor sexual coercion perpetration. Nearly 70% of women who witnessed IPV during childhood reported that they perpetrated minor sexual coercion during adulthood. In contrast, among those who did not witness IPV in childhood, 44% reported perpetrating minor sexual coercion.

Table 3  
Childhood experience of violence and witnessing IPV

Variables N (%)	Childhood Violence Exposure		Childhood IPV	
	None	Any	None	Any
Psychological Aggression				
Perpetrator Minor	$X^2 (1) = 3.463, p = .063$		$X^2 (1) = .481, p = .488$	
Never Experienced	15 (21.1)	1 (4.3)	11 (18.0)	5 (12.8)
Ever Experienced	56 (78.9)	22 (95.7)	50 (82.0)	34 (87.2)
Perpetrator Severe	$X^2 (1) = .564, p = .453$		$X^2 (1) = .688, p = .407$	
Never Experienced	31 (43.7)	8 (34.8)	27 (44.3)	14 (35.9)
Ever Experienced	40 (56.3)	15 (65.2)	34 (55.7)	25 (64.1)
Victim Minor	$X^2 (1) = 4.540, p = .033^*$		$X^2 (1) = .284, p = .594$	
Never Experienced	22 (31.0)	2 (8.7)	17 (27.9)	9 (23.1)
Ever Experienced	49 (69.0)	21 (91.3)	44 (72.1)	30 (76.9)
Victim Severe	$X^2 (1) = 6.965, p = .008^*$		$X^2 (1) = .002, p = .964$	
Never Experienced	41 (57.7)	6 (26.1)	31 (50.8)	20 (51.3)
Ever Experienced	30 (42.3)	17 (73.9)	30 (49.2)	19 (48.7)
Physical Assault				
Perpetrator Minor	$X^2 (1) = .219, p = .640$		$X^2 (1) = .537, p = .464$	
Never Experienced	41 (57.7)	12 (52.2)	33 (54.1)	24 (61.5)
Ever Experienced	30 (42.3)	11 (47.8)	28 (45.9)	15 (38.5)
Perpetrator Severe	$X^2 (1) = 3.316, p = .069$		$X^2 (1) = .978, p = .323$	
Never Experienced	59 (83.1)	15 (65.2)	49 (80.3)	28 (71.8)
Ever Experienced	12 (16.9)	8 (34.8)	12 (19.7)	11 (28.2)
Victim Minor	$X^2 (1) = .907, p = .341$		$X^2 (1) = .357, p = .550$	
Never Experienced	42 (59.2)	11 (47.8)	35 (57.4)	20 (51.3)
Ever Experienced	29 (40.8)	12 (52.2)	26 (42.6)	19 (48.7)
Victim Severe	$X^2 (1) = 6.130, p = .013^*$		$X^2 (1) = .701, p = .402$	
Never Experienced	51 (71.8)	10 (43.5)	41 (67.2)	23 (59.0)

Variables N (%)	Childhood Violence Exposure		Childhood IPV	
Ever Experienced	20 (28.2)	13 (56.5)	20 (32.8)	16 (41.0)
Sexual Coercion				
Perpetrator Minor	$X^2 (1) = .226, p = .635$		$X^2 (1) = 5.971, p = .015^*$	
Never Experienced	33 (46.5)	12 (52.20)	34 (55.7)	12 (30.8)
Ever Experienced	38 (53.5)	11 (47.8)	27 (69.2)	27 (69.2)
Perpetrator Severe	$X^2 (1) = .135, p = .714$		$X^2 (1) = .030, p = .864$	
Never Experienced	62 (88.6)	21 (91.3)	53 (88.3)	34 (87.2)
Ever Experienced	8 (11.4)	2 (8.7)	7 (11.7)	5 (12.8)
Victim Minor	$X^2 (1) = .564, p = .453$		$X^2 (1) = .448, p = .503$	
Never Experienced	31 (43.7)	8 (34.8)	26 (42.6)	14 (35.9)
Ever Experienced	40 (56.3)	15 (65.2)	35 (57.4)	25 (64.1)
Victim Severe	$X^2 (1) = .215, p = .643$		$X^2 (1) = .027, p = .869$	
Never Experienced	55 (78.6)	17 (73.9)	47 (78.3)	30 (76.9)
Ever Experienced	15 (21.4)	6 (26.1)	13 (21.7)	9 (23.1)
Note: IPV = Intimate partner violence; *indicates significance at or below 0.05 level				

Multivariable regression models controlling for age and the sample population (students vs. community residents) were similar to bivariate analysis. Age and population were controlled in each of the three models. Model 1 tested how childhood violence exposure was related to adult experiences. Model 2 tested how witnessing IPV during childhood was related to adult experiences. Model 3 tested how exposure to violence and witnessing IPV during childhood were related to adult experiences. Analyses showed numerous relationships between childhood exposures and adult victimization and perpetration experiences. In Model 1, childhood violence exposure independently predicted minor (*OR* 4.69; 95% *CI*: 1.00, 21.97) and severe (*OR* 4.19; 95% *CI*: 1.45, 12.14) psychological aggression victimization, severe physical assault victimization (*OR* 3.51; 95% *CI*: 1.30, 9.45), and severe perpetration of physical assault (*OR* 3.03; 95% *CI*: 1.00, 9.20), during adulthood. Additionally, in Model 1, community women had 4.5 times the odds of perpetrating severe physical assault compared to university students (*OR* 4.53; 95% *CI*: 1.14, 17.95), even after accounting for age and childhood exposure to violence (See Table 4).

Table 4  
Regression Models

	Model 1	Model 2	Model 3
Psychological aggression minor perpetrator			
Age	0.92 (0.84, 1.02)	0.93 ( 0.84, 1.02)	0.92 (0.83, 1.02)
Population <sup>a</sup>	1.75 (0.35, 8.64)	1.63 (0.34, 7.84)	1.73 (0.35, 8.50)
Childhood violence exposure	5.91(0.73, 47.95) <sup>t</sup>		5.61 (0.67, 47.01)
Childhood IPV witness	1.61 (0.50, 5.18)		1.19 (0.34, 4.11)
Psychological aggression severe perpetrator			
Age	0.92(0.85, 1.00) <sup>t</sup>	0.90 (0.83, 0.98)*	0.92 (0.85, 1.00)*
Population <sup>a</sup>	1.57 (0.48, 5.18)	1.85 (0.58, 5.93)	1.58 (0.48, 5.20)
Childhood violence exposure	1.46 (0.54, 3.95)		1.38 (0.49, 3.90)
Childhood IPV witness	1.61 (0.68, 3.83)		1.20 (0.47, 3.01)
Psychological aggression minor victim			
Age	0.97 (0.89, 1.06)	0.96 (0.89, 1.04)	0.97 (0.89, 1.06)
Population <sup>a</sup>	0.77 (0.22, 2.77)	0.86 (0.26, 2.90)	0.77 (0.22, 2.77)
Childhood violence exposure	4.69 (1.00, 21.97)*		4.62(0.96, 22.31) <sup>t</sup>
Childhood IPV witness	1.40 (0.54, 3.62)		1.05 (0.37, 3.03)
Psychological aggression severe victim			
Age	0.92 (0.84, 1.00)*	0.92 (0.85, 1.00)*	0.92 (0.84, 1.01) <sup>t</sup>
Population <sup>a</sup>	3.32(0.96, 11.50) <sup>t</sup>	2.73(0.89, 8.42) <sup>t</sup>	3.33(0.96, 11.63) <sup>t</sup>
Childhood violence exposure	4.19 (1.45, 12.14)*		4.89 (1.57, 15.25)*
Childhood IPV witness	1.02 (0.45, 2.33)		0.65 (0.25, 1.72)
Physical assault minor perpetrator			
Age	0.91 (0.83, 0.99)*	0.91 (0.83, 0.99)*	0.91 (0.83, 0.99)*
Population <sup>a</sup>	1.84 (0.57, 5.97)	1.79 (0.59, 5.39)	1.81 (0.56, 5.89)
Childhood violence exposure	1.27 (0.48, 3.36)		1.43 (0.51, 3.98)
Childhood IPV witness	0.80 (0.34, 1.87)		0.69( 0.27, 1.76)
Physical assault severe perpetrator			
Note: *indicates significance at or below 0.05 level			

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Age	0.94 (0.86, 1.04)	0.92(0.84, 1.01) <sup>t</sup>	0.94 (0.86, 1.04)
Population <sup>a</sup>	4.53 (1.14, 17.95)*	4.82 (1.39, 16.67)*	4.49 (1.13, 17.88)*
Childhood violence exposure	3.03 (1.00, 9.20)*		3.10 (0.98, 9.88) <sup>t</sup>
Childhood IPV witness		1.70 (0.63, 4.55)	0.93 (0.30, 2.86)
Physical assault minor victim			
Age	0.94 (0.86, 1.02)	0.94(0.87, 1.01) <sup>t</sup>	0.94 (0.86, 1.02)
Population <sup>a</sup>	2.36 (0.74, 7.60)	2.62(0.87, 7.90) <sup>t</sup>	2.37 (0.74, 7.61)
Childhood violence exposure	1.64 (0.63, 4.27)		1.58 (0.58, 4.29)
Childhood IPV witness		1.32 (0.58, 3.01)	1.12 (0.45, 2.78)
Physical assault severe victim			
Age	0.93 (0.85, 1.02)	0.92(0.85, 1.00) <sup>t</sup>	0.94 (0.86, 1.02)
Population <sup>a</sup>	2.30 (0.68, 7.78)	2.539(0.83, 7.78) <sup>t</sup>	2.28 (0.67, 7.74)
Childhood violence exposure	3.51 (1.30, 9.45)*		3.62 (1.28, 10.28)*
Childhood IPV witness		1.53 (0.65, 3.62)	0.90 (0.34, 2.41)
Sexual coercion minor perpetrator			
Age	1.01 (0.94, 1.09)	1.01 (0.93, 1.09)	1.00 (0.92, 1.08)
Population <sup>a</sup>	0.82 (0.27, 2.50)	0.90 (0.31, 2.67)	0.85 (0.27, 2.69)
Childhood violence exposure	0.79 (0.31, 2.03)		0.50 (0.17, 1.45)
Childhood IPV witness		2.83 (1.21, 6.63)*	3.70 (1.40, 9.77)*
Sexual coercion severe perpetrator			
Age	0.98 (0.87, 1.10)	0.99 (0.89, 1.09)	0.98 (0.87, 1.10)
Population <sup>a</sup>	2.47 (0.45, 13.52)	3.12 (.90, 1.10)	2.50 (0.45, 13.81)
Childhood violence exposure	0.78 (0.15, 4.01)		0.74 (0.14, 4.01)
Childhood IPV witness		1.05 (0.30, 3.67)	1.19 (0.29, 4.92)
Sexual coercion minor victim			
Age	0.98 (0.90, 1.06)	0.98 (0.91, 1.05)	0.97 (0.90, 1.05)
Population <sup>a</sup>	0.52 (0.17, 1.61)	0.57 (0.19, 1.68)	0.52 (0.17, 1.62)
Note: *indicates significance at or below 0.05 level			

	Model 1	Model 2	Model 3
Childhood violence exposure	1.41 (0.52, 3.84)		1.26 (0.44, 3.58)
Childhood IPV witness		1.45 (0.62, 3.41)	1.45 (0.57, 3.70)
	Sexual coercion severe victim		
Age	0.99 (0.90, 1.08)	0.97 (0.89, 1.06)	0.99 (0.90, 1.08)
Population <sup>a</sup>	1.39 (0.37, 5.17)	1.71 (0.50, 5.87)	1.38 (0.37, 5.16)
Childhood violence exposure	1.32 (0.44, 3.94)		1.33 (0.43, 4.17)
Childhood IPV witness		1.09 (0.41, 2.89)	0.96 (0.33, 2.78)
Note: *indicates significance at or below 0.05 level			

Results of Model 2 showed that women who witnessed IPV in childhood had nearly three times the odds of perpetrating minor sexual coercion than women who did not witness IPV during childhood (*OR* 2.83; 95%*CI*: 1.21, 6.63) (Fonseka, Minnis, & Gomez, 2015). Witnessing IPV in childhood did not predict any other types of IPV in adulthood. In Model 2, being a community resident and witnessing IPV in childhood led to a nearly five-fold increase in the odds of perpetrating severe physical assault in adulthood (*OR* 4.82; 95%*CI*: 1.39, 16.67).

When childhood exposure to violence and IPV were considered simultaneously in Model 3, childhood violence exposure remained a significant independent predictor of severe psychological aggression victimization (*OR* 4.89; 95%*CI*: 1.57, 15.25) and severe physical assault victimization (*OR* 3.62; 95%*CI*: 1.28, 10.28). However, the significant associations between childhood violence exposure and minor psychological aggression victimization, and severe physical assault perpetration in Model 1 were reduced to a nonsignificant trend in Model 3. Witnessing IPV during childhood remained a significant predictor of minor sexual coercion perpetration in Model 3 (*OR* 3.70; 95%*CI*: 1.40, 9.77). Sub-population also remained significant, as participants from the community had 4.5 times the odds of perpetrating severe physical assault (*OR* 4.49; 95%*CI*: 1.13, 17.88) compared to students.

## Discussion

This study examined the associations between childhood ACEs (exposure to violence and witnessing IPV) and adult experiences of IPV and other violence among community and university women in rural Limpopo, RSA. This is the first study investigating the prevalence of and relationship between specific childhood ACEs and adulthood IPV victimization and perpetration among women from this area of South Africa. Results partially supported hypotheses that ACEs (exposure to violence and witnessing IPV in childhood) are related to adult IPV perpetration and victimization. The primary contributions of this study are that witnessing IPV during girlhood and exposure to violence as a girl can negatively affect adult women and their partners in intimate relationships and that women from the community who witnessed IPV during childhood were nearly five times more likely to perpetrate severe physical assault than university women.

Minor acts of psychological aggression were the most prevalent IPV perpetration and victimization reported by women from the university and community. Previous research indicated that psychological aggression is the

most common form of aggression in intimate partner relationships (Follingstad et al., 2005; Murphy & Hoover, 1999; Shorey et al., 2012). Prior studies indicated that men are typically more violent than women (United Nations Office on Drugs and Crime, 2014; Denson, O'Dean, Blake, & Beames, 2018) and are the main perpetrators of psychological aggression (Johnson, 2006; Stark, 2012). Our study shows that women also perpetrate psychological aggression towards their partners (Archer & Coyne, 2005; Spencer, Haffeejee, Candy, & Kaseke, 2016). While women display these behaviors more frequently than other forms of IPV, they tend to be minor and less direct (Archer & Coyne, 2005), but any form of IPV perpetration by anyone is unacceptable.

We found that women from the community who witnessed IPV during childhood were nearly five times more likely to perpetrate severe physical assault than university women. Women perpetrate violence against their partners for numerous reasons. For some women, witnessing IPV as a girl without exposure to positive ways of solving intimate partner conflicts could teach her that handling conflicts violently is appropriate or normal (Caldwell, Swan, Allen, Sullivan, & Snow, 2009). In intimate partner relationships, women perpetrate violence for reasons such as self-defense, poor management of negative emotions, yearning for control, jealousy, and to appear strong (Caldwell et al., 2009; Stewart, Gabora, Allegri, & Slavin-Stewart, 2014). Some women who perpetrated physical assault and other IPV behaviors report that they had been longtime victims of IPV and eventually used violence in retaliation (Dugan, Rosenfeld, & Nagin, 2003). Girls exposed to IPV are a priority population to receive interventions that provide role modeling and practice more appropriate ways to handle conflicts in their future relationships. Interventions that focus on communication and interpersonal skills can prevent women from behaving violently in relationships and help them avoid consequences such as incarceration (Caldwell et al., 2009; Stewart et al., 2014).

People who experience ACEs are at risk for mental health disorders that can be detrimental to their health (Center for Disease Control and Prevention, 2021b). Children exposed to violence and witnessed IPV between parents were at an increased risk for developing depression (Lövestad, Löve, Vaez, & Krantz, 2017). Women who are victims of psychological aggression could also develop depression (Nathanson, Shorey, Tirone, & Rhatigan, 2012; Ouellet & Morin, 2004). Disorders such as depression can hinder healthy relationships and impair socialization activities with others (Dillon, Hussain, Loxton, & Rahman, 2013). Younger women from the community and female university students who are victims of psychological aggression and other forms of IPV could benefit from positive social support resources, which can aid women in handling their depression (Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008; Landstedt, Gustafsson, Johansson, & Hammarström, 2016). With positive support, resources, and mental health treatment, young women may be better positioned to foster healthy relationships with partners and others, ending the vicious cycle of experiencing then re-enacting perpetration as adults.

In addition to depression, IPV victimization reduces students' ability to focus in school. Female students with depression or psychological aggression victimization can have difficulties concentrating, falling asleep, and tiredness daily (Lövestad et al., 2017). We found that women from the community who did not attend a university are at an increased risk for IPV victimization, consistent with previous findings that women with ACEs, substance use as adults, and low educational attainment are more likely to be victims of IPV (Spencer et al., 2016). Poverty also places community women at an increased risk for physical assault victimization. Unemployed women may be at risk for physical and psychological abuse due to depending on their partners for financial benefits (Banwell, 2010). Women with low educational attainment who live in poverty should be a

priority for interventions. These women could benefit from safe spaces to report abuse and receive assistance to reduce the risk of further abuse and IPV.

While IPV victimization can affect women from the community and university students differently, they also face similar risk factors. They were living in a low to a middle-income country such as South Africa, experiencing poverty, unemployment, and being of a younger age all place both groups of women at an increased risk for depression (Capaldi, Knoble, Shortt, & Kim, 2012; Iverson et al., 2013; Lövestad et al., 2017). Special attention should also be given to parents in abusive relationships with children in the home, as witnessing IPV places that child at risk for future IPV victimization or perpetuation (“Child Maltreatment and Polyvictimization as Predictors of Intimate Partner Violence in Women From the General Population of Quebec - Audrey Brassard, Marc Tourigny, Caroline Dugal, Yvan Lussier, Stéphane Sabourin, Natacha Godbout, 2020,” n.d.; Shields, Tonmyr, Hovdestad, Gonzalez, & MacMillan, 2020; Yan & Karatzias, 2020). IPV experiences can also affect future family generations as behaviors and practices are passed on from one generation to another (Islam, Tareque, Tiedt, & Hoque, 2014). Therefore, interventions must target parents, couples, children, and even young adults (Spencer et al., 2016). Additionally, we recommend that interventions for girls who witness IPV should consider screening for physical, sexual, and psychological well-being and promote education and awareness about violence and IPV. Those who screen positive for ACEs should receive family conflict resolution skills training.

Further, access to psychological services, health care providers, and resources should be expanded for families to promote optimal health outcomes and limit the harmful effects of exposure to IPV. Interventions should be provided to girls as soon as the screening indicates exposure to IPV. Screening should be implemented in outpatient and in-patient settings, schools, community centers, classrooms, and clinics across childhood and into high school and college years when intimate partner relationships are forming (Agency for Healthcare Research and Quality, n.d.).

## **Strengths and Limitations**

This was the first study to investigate the relationship between childhood exposure to violence and IPV and adulthood experience with IPV victimization and perpetration in Limpopo Province, Republic of South Africa. An important strength of this study was including both university and community women to understand who experienced ACEs and s who are experiencing adulthood violence and IPV.. An additional strength was that the study investigated women as victims and perpetrators, rather than assuming that women had roles only as victims.

A potential limitation of this study was its focus on one gender and one location, which limits generalizability. However, this study provides information that could inform future studies with a larger sample to understand how ACEs influence IPV during adulthood. Findings from this study replicate many other studies showing the negative impact of ACEs on adults but are more specifically focused on resulting adult victimization and perpetration. University and community leaders in Limpopo Province can use information from this study to develop and implement interventions to prevent children from being exposed to violence and provide support for behavior change for victims and perpetrators of IPV.

## Conclusions

This study found that girlhood exposure to violence, including IPV, increases women's risk of experiencing IPV as victims or perpetrators. Screening for physical, sexual, and psychological well-being and providing support to reduce the impact of exposure to violence and witnessing IPV are needed in this region to promote optimal health among children and women. There is also a need for novel interventions to reduce the impact of ACEs and adult experiences tailored to university students and women in rural communities. The findings point to the need to understand IPV and ACEs among men, and subsequent studies should include men. Educating children about violence, IPV, and conflict resolution might ameliorate short and long-term effects. Finally, implementing robust psychosocial services to survivors of IPV could improve their quality of life.

## Declarations

**Notes:** Dr. Christina Ross, R.N., is now Assistant Professor at University of Connecticut

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## Conflicts of Interest

None

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