

# The Prevalence of Violence and its Link to Depression and Illicit Drug Use: Women in a Prison Setting in Recife, Brazil

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## Background

High proportions of women in prison report having a history of violence victimization (40-94%)

Women in prison are likely at greater risk for mental health and substance use problems.

Previous studies among women in the general population indicate that experiencing violence leads to increased reports of depression and illicit drug use







## Purpose

The first study was conducted to:

- 1) Identify the prevalence, perpetrators, and types of violence experienced by a sample of incarcerated women in Recife, Brazil
- 2) Examine the associations between this violence and women's illicit drug use and depression

## Methods: Procedure & Sample

Cross-sectional study; women were interviewed by prison nurses

The sample (n= 377) consists of all women in the prison who agreed or who were able to participate in the study over a 5 month period of data collection.

A minority of women (27%) who were incarcerated during this time did not participate in the survey (Most were released prior to participation)

## Methods: Data Measures

### ***Lifetime Violence prior to Incarceration:***

Perpetrators: family members, intimate partners, police, acquaintances, and strangers

Types of violence: physical violence (including injuries), sexual violence, & life threats

### ***Depression:*** CESD-10

***Illicit Drug Use:*** current use of any of the following drugs: marijuana, crack, cocaine, heroin, shoe polish, prescription drugs, and injection drugs

## Methods: Data Analyses

- Crude and adjusted logistic regression analyses were conducted to assess for associations between each type of violence (physical, sexual, life threats) and depression and illicit drug use.
- Estimates were provided in terms of odds ratios and 95% confidence intervals.
- Covariates were identified *a priori* and included: age, relationship status, education, sentencing status, drug related offenses, & prior incarceration history



# Results

<b>Demographic Variables</b>	<b>Total sample (n=377)</b>
	<b>% (n)</b>
Age	
24 or younger	30.2 (114)
25-34	38.7 (146)
35 and older	31.0 (117)
Education	
None	7.4 (28)
Less than Secondary	79.3 (299)
Secondary Complete	9.0 (34)
Beyond Secondary	4.2 (16)
Relationship Status	
Fixed partner (spouse, other partner)	60.6 (228)
No relationship	38.0 (143)
Serial partners	1.3 (5)
City/Place of Residence Prior to Incarceration	
City where prison is located	50.9 (192)
Other city in Brazil	47.5 (179)
Other country	1.6 (6)
Urban residence	93.8 (350)
Rural residence	7.2 (27)

# Results

Incarceration Characteristics	Total sample (n=377) % (n)
Sentencing Status	
Sentenced	45.2 (170)
Awaiting Trial	54.8 (206)
Prison History	
Been incarcerated previously	33.2 (125)
**Reason For Imprisonment	
⊥Drug-Related Crime	50.9 (192)
Homicide	17.5 (66)
Fraud	16.7 (63)
Armed Robbery	14.1 (53)
Assault causing physical injury	1.6 (6)
Kidnapping	1.6 (6)
Report others involved in criminal activity that led to imprisonment	
YES/ANY	72.3 (272)
Acquaintance	45.9 (173)
Stranger	13.8 (52)
Friend	10.9 (41)
Partner	7.7 (29)
Parents	1.1 (4)

\*\*participants could select more than one response

⊥ Drug-Related Crimes included trafficking and selling drugs (n=189) drug use (n=3), and drug possession (n=2).

# Results

	<b>Any type of Violence</b>	<b>Physical Violence</b>	<b>Sexual Violence (rape or sexual assault)</b>	<b>Life Threats</b>
<b>Perpetrator</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>Any Perpetrator</b>	86.7 (327)	83.3 (314)	35.5 (134)	29.4 (111)
<b>Family</b>	66.8 (252)	65.0 (245)	10.6 (40)	1.3 (5)
<b>Police</b>	44.8 (169)	44.6 (168)	2.1 (8)	12.2 (46)
<b>Acquaintance</b>	32.6 (123)	15.9 (60)	23.6 (89)	2.9 (11)
<b>Partner</b>	31.8 (120)	29.4 (111)	8.8 (33)	14.6 (55)
<b>Stranger</b>	6.6 (25)	2.2 (8)	4.8 (8)	2.2 (8)

# Results

## Overlapping Experiences of Violence

	<b>Physical Abuse</b> (n=314)	<b>Sexual Violence</b> (rape or sexual assault) (n= 134)	<b>Life Threats</b> (n=111)
	<b>% (n)</b>	<b>% (n)</b>	<b>% (n)</b>
<b>Physical Violence</b>	---	90.2 (121) <sup>†</sup>	98.2 (109) <sup>‡</sup>
<b>Sexual Violence</b>	38.5 (121) <sup>†</sup>	---	54.1 (60) <sup>‡</sup>
<b>Life Threats</b>	34.7 (109) <sup>‡</sup>	44.8 (60) <sup>‡</sup>	---

For example, among those who report physical abuse, 38.5% also report sexual abuse.

<sup>‡</sup> p <0.0001, chi square

<sup>†</sup> p <0.05, chi square

# Results

## The Relation between Women's Experiences of Violence & Women's Current Depression and Illicit Drug Use

	Crude OR (95% CI)	Adjusted OR* (95% CI)
<b>Depression (80%; n=302)</b>		
Sexual Violence		
Yes	2.9 (1.5-5.4) <sup>†</sup>	2.8 (1.4-5.3) <sup>†</sup>
No	1.0 (Referent)	1.0
Physical Violence		
Yes	1.8 (1.0-3.3)	1.6 (0.8-3.0)
No	1.0	1.0
Life Threat		
Yes	1.4 (0.8-2.5)	1.4 (0.8-2.5)
No	1.0	1.0
<b>Illicit Drug Use (38%; n=146)</b>		
Sexual Violence		
Yes	2.8 (1.8-4.3) <sup>‡</sup>	2.7 (1.6-4.4) <sup>‡</sup>
No	1.0	1.0
Physical Violence		
Yes	2.3 (1.2-4.3) <sup>†</sup>	2.4 (1.2-4.9) <sup>†</sup>
No	1.0	1.0
Life Threat		
Yes	2.5 (1.6-3.9) <sup>‡</sup>	2.2 (1.3-3.7) <sup>†</sup>
No	1.0	1.0

\*Adjusted for age, education, partner status, prison history, drug related offense, and sentencing status.

‡ p ≤ 0.0001

† p < 0.05

## General Limitations

1. Measurement issues  
e.g. Self-report
2. While residual confounding is always a possibility, numerous relevant factors were considered in analyses.
3. Cross-sectional study design; not able to establish causality
4. Generalizability

## Limitations

- Measurement issues (e.g. self report)
- Not able to consider whether there were different effects by
  - Age at victimization
  - Perpetrator type
  - Repeated incidents of violence
- Non-significant findings related to the relationship between physical violence and depression may be the result of low variability (most women report physical violence)
- Were not able to directly investigate the effects of the prison context
- Cross-sectional study limitations
- Generalizability issues

## Implications

Efforts are needed to address issues of mental health and illicit drug use among incarcerated women which incorporate the relevance of women's experiences of violence throughout their lives

As a result of severe poverty and disenfranchisement, women in the sample may have been especially vulnerable to involvement in criminal activities and ultimately, imprisonment.



## Future Directions

Future studies will be needed

- To identify the relevance of the prison context to study findings
- To assess other mechanisms to explain the particular impact of sexual violence
- To examine the link between experiences of violence, drug use/trafficking/sales, and incarceration
- To assess a link between sexual and physical violence victimization and risk for incarceration.

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## The Relation between Women's Experiences of Violence & Women's Current Illicit Drug use and Depression

Outcome and Exposure Variables	Crude OR (95% CI)	Adjusted OR* (95% CI)	Adjusted OR** (95% CI)
<b>Drug use Outcomes</b>			
Sexual Violence	2.8 (1.8-4.3) ‡	2.6 (1.6-4.2) †	2.2 (1.4-3.7) †
Physical Violence	2.3 (1.2-4.3) †	2.4 (1.2-4.7) †	1.8 (0.9-3.7)
Life Threat	3.5 (1.6-3.9) ‡	2.2 (1.3-3.7) †	1.7 (1.0-2.9) †
<b>Depression Outcomes</b>			
Sexual Violence	2.9 (1.5-5.4) †	2.8 (1.5-5.4) †	2.7 (1.4-5.3) †
Physical Violence	1.8 (1.0-3.3)	1.7 (0.9-3.2)	1.6 (0.8-3.0)
Life Threat	1.4 (0.8-2.5)	1.3 (0.7-2.4)	1.0 (0.5-1.9)

\*Depression outcomes were adjusted for prison history; Drug use outcomes were adjusted for age, prison history, and sentencing status.

\*\*Adjusted for above covariates and other types of violence (ie. all 3 type of violence are included in the model)

‡ p <0.0001

† p <0.05