

Depression and other psychiatric outcomes in people who inject drugs with a probable brain injury

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Introduction

- PWID** are people who inject drugs, typically within the past few months.
 - Injection drug use (IDU) increases the risk of addiction, overdose, and health issues. (Kar et al., 2023)
- IDU** is one of the riskiest drug use methods. (Novak & Kral, 2012)
 - Linked to infections, chronic disease, and mental health problems. (Bradley et al., 2022)
- Brain injury (BI)** is damage caused by trauma or internal events (e.g., overdose, stroke) and is highly co-morbid with substance use. (Giustini et al., 2015)
 - Can affect mood, memory, and decision-making. (Azouvi et al., 2017)
- Both IDU and BI are tied to depression** and other psychiatric issues. (Adams et al., 2020)
- However, few studies explore how brain injury may exacerbate psychiatric outcomes within PWID populations
- Current Study Goal:** Understand the effects of brain injury on psychological functioning and coping within PWID
 - Aim 1: Document prevalence of BI in PWID.
 - Aim 2: Examine whether a history of brain injury (BI) is linked to increased psychiatric burden and emotional coping among PWID
 - Aim 3: Explore how the presence, number, and severity of BI relates to psychiatric diagnoses in PWID

Methods

Original Study Sample

- Puerto Rican adults (18+)
- PWID with HIV, PWID without HIV & Non-injecting Controls
- Recruitment: Respondent Driven Sampling (RDS)

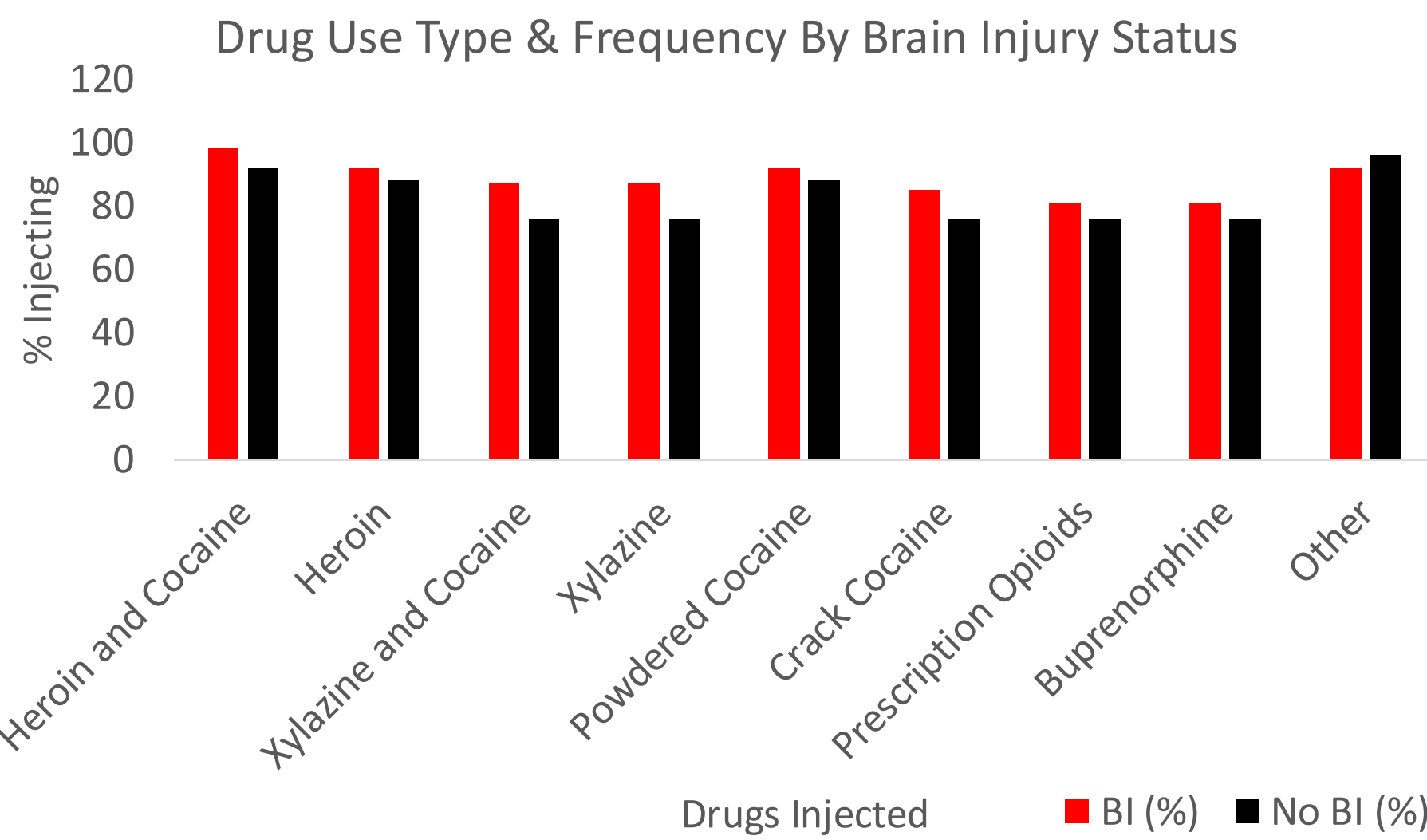
Current Study

- Only PWID
- Include HIV negative Individuals only

Structured Spanish Interviews

- Demographics
- Drug Use History
- Psychiatric Diagnoses
- Coping & Emotional Wellbeing

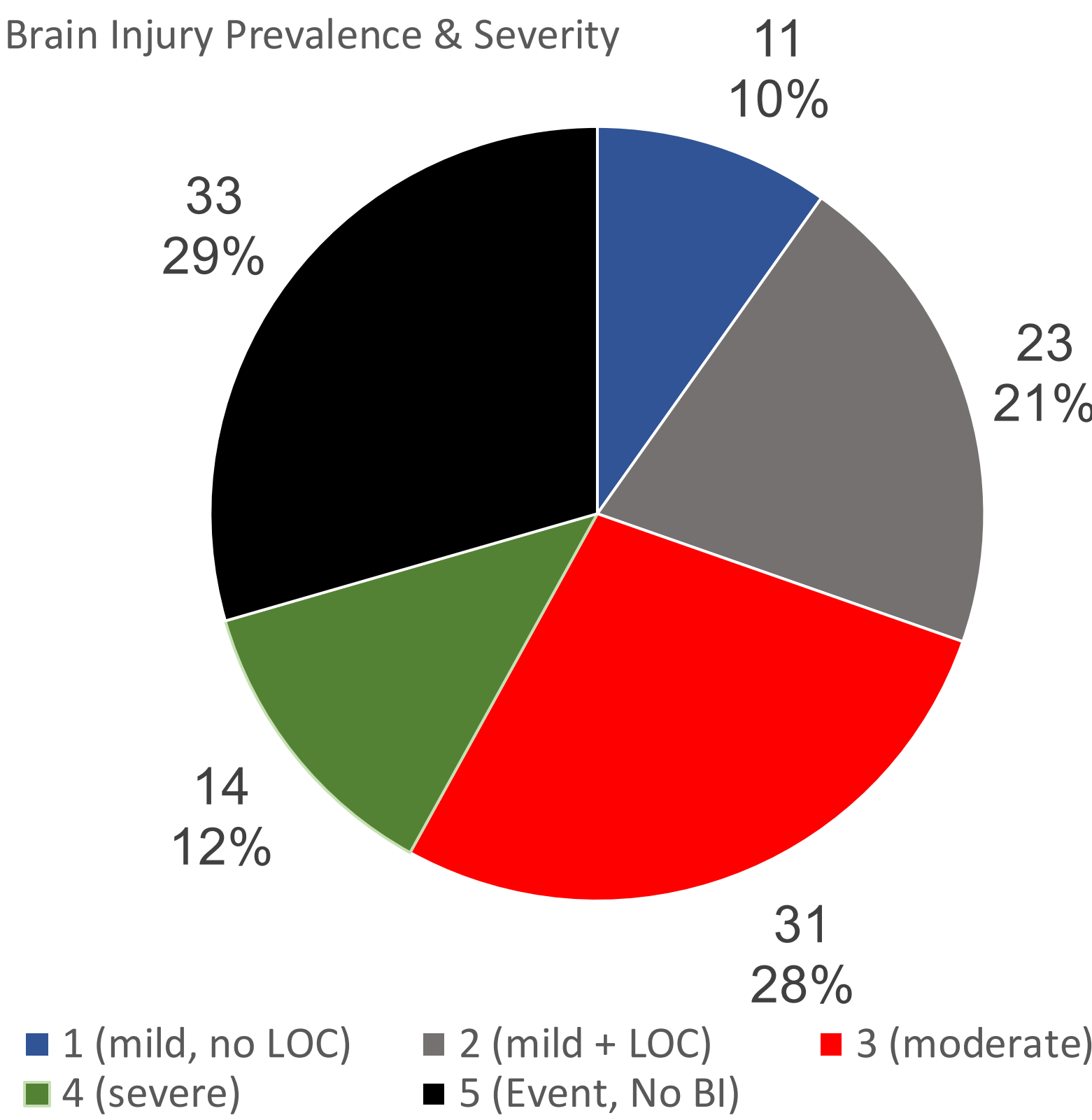
Participant Demographics			
Category	Brain Injury	No Brain Injury	Statistic
% Female	6 (12.8%)	3 (12%)	---
% Male	40 (85.1%)	22 (88%)	---
%Transgender	1 (2.1%)	---	---
% Spanish	45 (95.7%)	25 (100%)	---
% Puerto Rico	41 (87.2%)	24 (96%)	---
% United States	6 (12.8%)	1 (4%)	---
Age (M, SD)	42.79 (6.54)	46.40 (6.38)	$t_{(50)} = -2.27, p = .027$
Education (M, SD)	11.17 (2.91)	11.75 (1.65)	$t_{(68.1)} = -1.07, p = .029$



- Brain injury severity determined by duration of alteration/loss of consciousness:
 - Mild: <30 minutes
 - Moderate: 30 minutes–24 hours
 - Severe: >24 hours
- Psychiatric history determined by self-report to interview questions.
- Coping and emotional well being determined by Likert scale rating on 10 items falling into 3 themes: Coping Difficulty, Negative Emotionality, and Feeling of Being in Control

Results

BI Prevalence & Characteristics in PWID



BI Characteristic	Mean (SD)
Number of BI	1.68 (0.73)
Severity	2.91 (0.8)

Table 1. Mean number and severity of BIs reported. Severity refers to most severe injury reported.

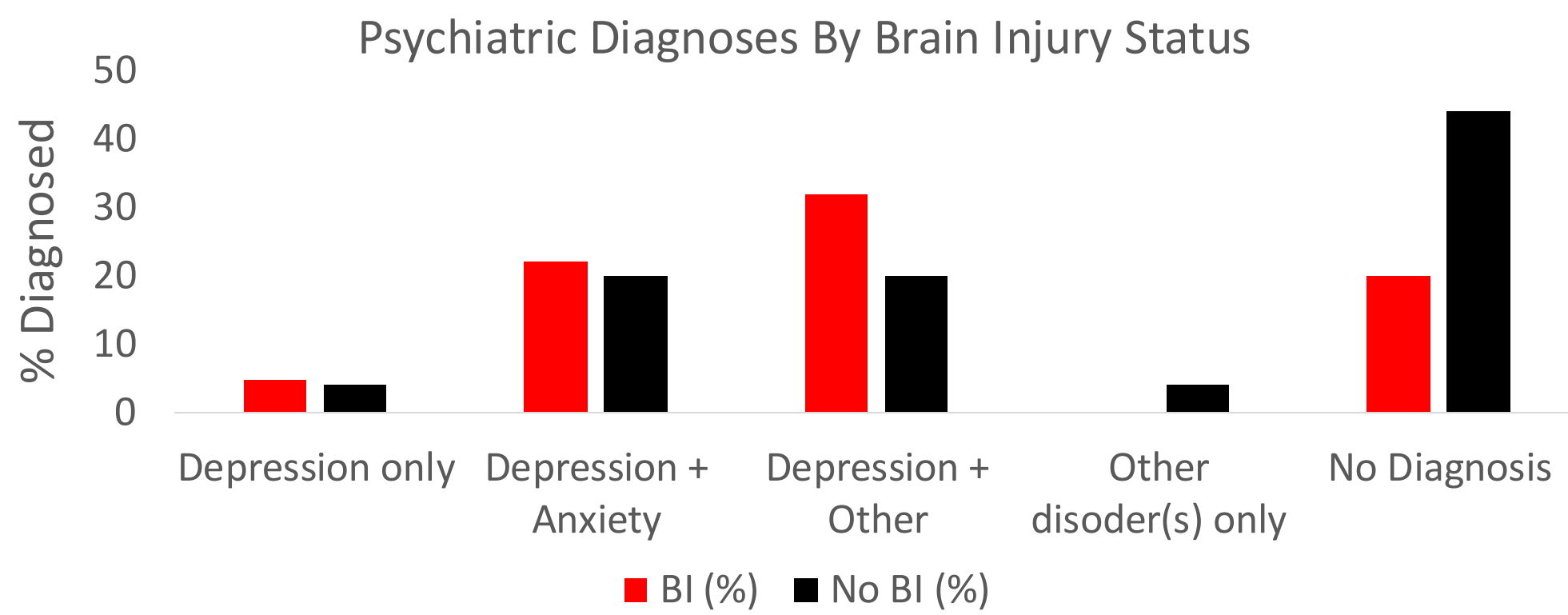
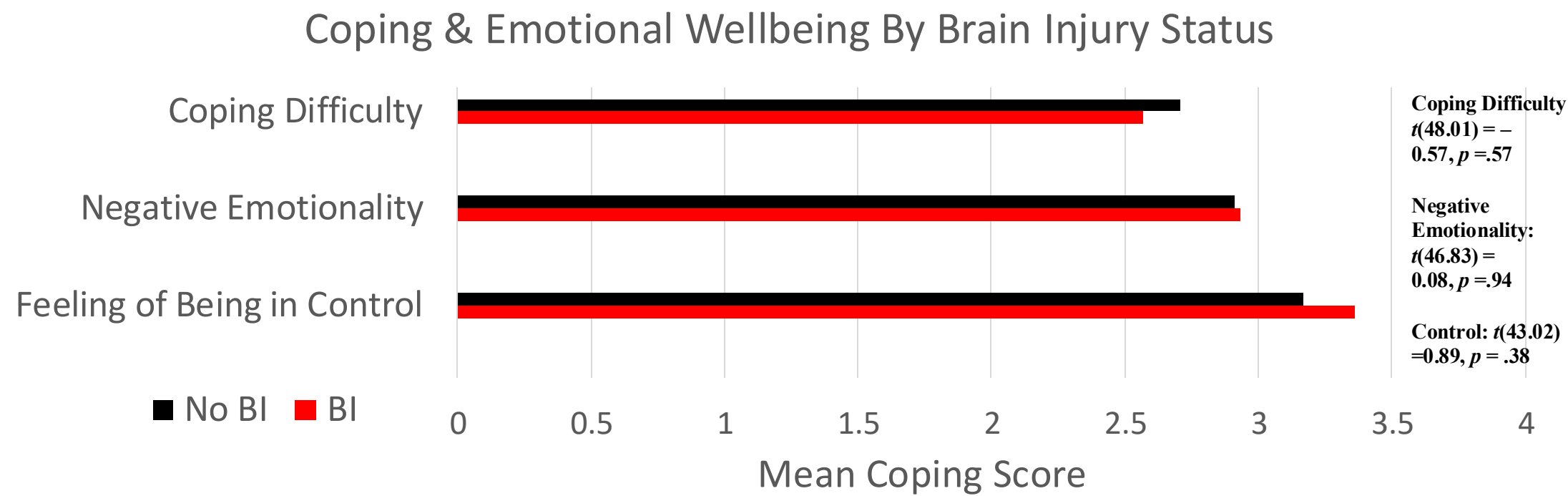
Mechanism	Total Number
Neck Injuries	21
Falls	18
Sports	2
Assaults	4
Explosion	1
Drowning	1
Overdose	28
Heart Attack	4
Repeated Blows	1

Table 2. Mechanisms of BI reported by the sample.

Psychiatric History & Coping in PWID With/Without Probable BI

Variable	BI (n = 47)		No BI (n = 25)		Statistics
	n	%	n	%	
Psychiatric Hx (Yes)	33	80%	14	56%	$\chi^2_{(1)} = 3.43, p = .06$
Psychiatric Hx (No)	8	20%	11	11%	----
					$t_{(66)} = 2.13, p = .04$
Number of Psychiatric Diagnoses		M	SD	M	SD
		1.83	1.43	1.12	1.24

Table 3. Rates of endorsed psychiatric history and mean number of diagnoses reported by BI status.



BI Characteristics in PWID With/Without Psychiatric History

Variable	Psychiatric Hx (n = 47)		No Psychiatric Hx (n = 25)		Statistics
	M	SD	M	SD	
Severity of BI	2.85	0.83	3.07	0.73	$t_{(27.90)} = -0.917, p = .37$
Number of BIs	1.26	1.05	0.684	0.89	$t_{(39.4)} = 2.24, p = .03$

Table 4. Mean severity and number of BIs reported by psychiatric history status.

Discussion

Key findings

- The majority (71%) of this sample of PWID also had a history of probable BI. This high rate is consistent with the previous literature on BI and substance use.
- PWID with probable BI tended to endorse having a psychiatric history more often and had significantly higher number of psychiatric diagnoses. These findings suggest that having a co-morbid BI in addition to IDU may increase risk of psychiatric burden.
- Groups did not differ in their psychological coping. PWID with probable brain injury endorsed feeling less in control; however, this finding was not statistically significant.
- PWID with a psychiatric history report a history of more probable BIs than PWID without any psychiatric history, suggesting that there may be a negative cumulative effect of BIs on psychological health among PWID.

Conclusions

- Brain injury is a prevalent co-morbidity in IDU that may have additive negative effects on mental health. Using neurologically-informed care when working with PWID may help improve outcomes.

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