

# Associations Between Pain Characteristics & Suicidality Across Chronic Pain Conditions

## A Population-Based Study

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### Background

Rates of suicidality are elevated among those with chronic pain.<sup>1</sup> Usual pain/discomfort and pain intensity may be pain-specific mechanisms underlying associations with suicidality among chronic pain conditions.

### Objectives

- 1. Describe the lifetime prevalence of suicidality according to the usual presence and intensity of pain among those with arthritis, migraines, and back pain.
- 2. Evaluate associations between usual pain/discomfort and suicidality among pain conditions.

### Methods

**Sample**  
2012 Canadian Community Health Survey – Mental Health Supplement (N = 25,113)

**Measures**  
*Chronic pain characteristics*

- Chronic pain condition (arthritis, migraine, back pain)
- Usual pain/discomfort (yes, no)
- Usual pain intensity (mild, moderate, or severe)

*Suicidality*

- Lifetime suicide ideation, plans, or attempts

*Covariates*

- Sociodemographics
- Lifetime anxiety, mood, or substance use disorder diagnosis

### Analytic Plan

- Weighted cross-tabulations described suicidality prevalence among pain characteristics and pain conditions.
- Multiple logistic regressions evaluated associations between usual pain and suicidality among pain conditions.

**References**  
1. Braden JB, Sullivan MD. Suicidal thoughts and behavior among adults with self-reported pain conditions in the national comorbidity survey replication. J Pain 2008;9(12):1106-1115.

Table 1. Prevalence of Pain Conditions and Characteristics

Total N = 25,113						
	Arthritis		Migraine		Back pain	
	5,465 (16.7)		2,598 (10.3)		5,205 (18.1)	
Usual pain	Yes	No	Yes	No	Yes	No
%	54.9	45.1	39.8	60.2	52.1	47.9
Pain intensity						
Mild	24.9	-	27.7	-	26.1	-
Moderate	54.5	-	52.6	-	53.1	-
Severe	20.6	-	19.7	-	20.9	-

Note. Values represent weighted %

Figure 1. Rates of Suicidality Among Those With/Without Usual Pain

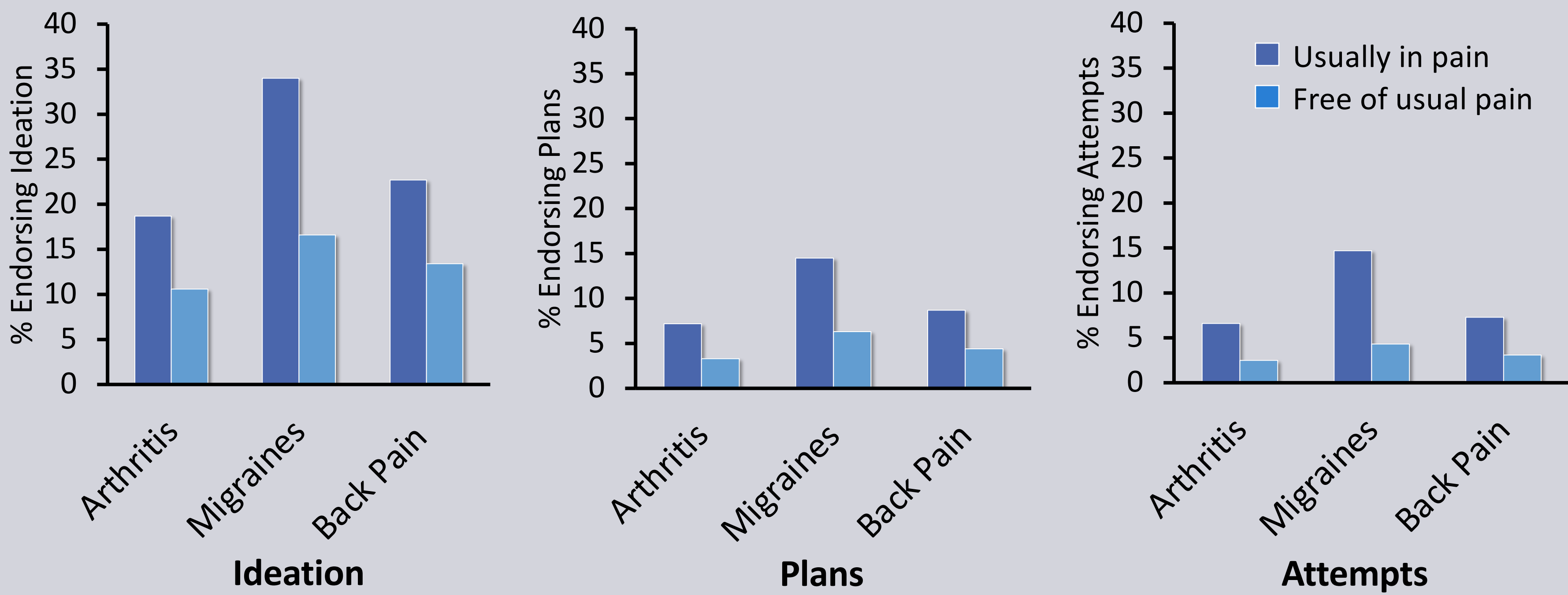


Figure 2. Rates of Suicidality Across Levels of Usual Pain Intensity

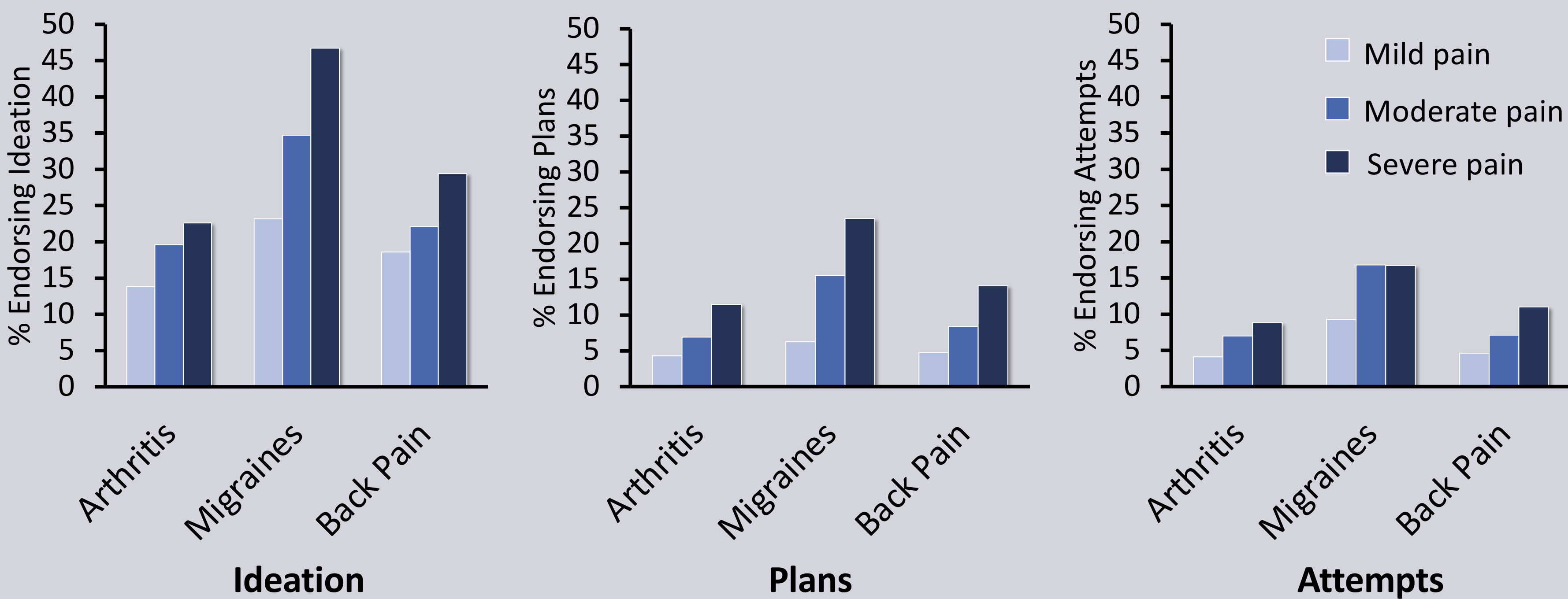


Table 3. Associations Between Usual Pain and Suicidality Among Pain Conditions

	OR (95% CI)	AOR (95% CI)	AOR2 (95% CI)
Ideation			
Usual pain			
Arthritis	1.95 (1.49-2.56)***	1.72 (1.27-2.33)***	1.37 (0.98-1.94)
Migraine	2.59 (1.89-3.55)***	2.66 (1.83-3.88)***	<b>1.79 (1.19-2.68)**</b>
Back pain	1.89 (1.55-2.32)***	2.11 (1.67-2.66)***	<b>1.59 (1.23-2.05)***</b>
Plans			
Arthritis	2.27 (1.58-3.25)***	2.02 (1.34-3.06)***	1.45 (0.92-2.27)
Migraine	2.55 (1.54-4.23)***	2.32 (1.29-4.16)**	1.42 (0.79-2.55)
Back pain	2.04 (1.50-2.76)***	2.18 (1.54-3.08)***	<b>1.55 (1.04-2.31)*</b>
Attempts			
Arthritis	2.78 (1.85-4.16)***	2.36 (1.48-3.77)***	1.64 (0.98-2.75)
Migraine	3.81 (2.03-7.13)***	3.75 (1.79-7.84)***	<b>2.49 (1.25-4.98)**</b>
Back pain	2.49 (1.77-3.51)***	2.49 (1.66-3.71)***	<b>1.68 (1.10-2.58)*</b>

Note. Reference = absence of usual pain/discomfort; AOR = adjusted odds ratio controlling for age, sex, marital status, income, education, and race/ethnicity; AOR2 = adjusted odds ratio controlling for sociodemographic variables, lifetime mood disorder, substance use disorder, and generalized anxiety disorder; CI = confidence interval  
\*p < .05, \*\*p < .01, \*\*\*p < .001

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### Results

Table 2. Sociodemographics Among Those With and Without Usual Pain

	Arthritis		Migraine		Back pain	
Usual pain	Yes	No	Yes	No	Yes	No
Age <sup>a</sup>	60.9 (0.5)	63.5 (0.4)	46.2 (0.6)	39.3 (0.6)	54.0 (0.5)	49.2 (0.5)
Sex						
Male	37.0	39.3	33.7	28.4	43.4	48.8
Female	63.0	60.7	66.3	71.6	56.6	51.2

Note. Values represent weighted %  
<sup>a</sup>Values represent mean (standard error)

### Weighted Cross-Tabulations

#### Rates of suicidality were:

- Greater among those usually in pain, compared to without (**Figure 1**).
- Increased alongside the intensity of usual pain/discomfort (**Figure 2**).
- Highest among those with migraines, across pain characteristics.

### Multiple Logistic Regressions

Table 3: Associations between usual pain and suicidality among pain conditions\*

#### Usual pain was associated with:

- Increased odds of suicide ideation and attempts among those with migraines.
- Greater odds of suicide ideation, plans, and attempts in back pain.

### Post-Hoc Analysis

#### Associations between pain intensity and suicidality among pain conditions\*

#### Severe pain was associated with:

- Elevated odds of suicide ideation (AOR=2.19, 95% CI [1.07-4.48], p<.05) in migraines.
- Increased odds of suicide plans (AOR=3.11, 95% CI [1.42-6.80], p<.01) in back pain.

\*Adjusting for sociodemographics and psychiatric conditions

## Conclusions

Usual pain/discomfort and severe pain are potential mechanisms underlying associations with **suicidality** among those with **migraines** and **back pain**, but **not** arthritis.