



The role of persistent pain in work absence, health & employment after a disabling work-related injury

Kathleen Dobson, PhD
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IWH Speakers Series

Land Acknowledgement

We wish to acknowledge this land on which the Institute for Work & Health operates.

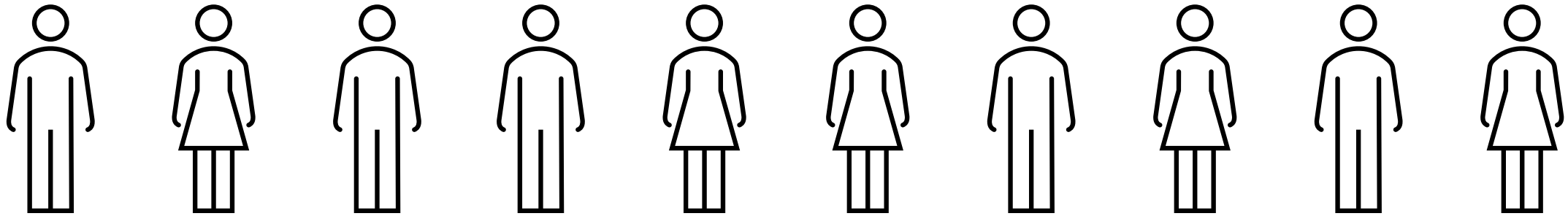
For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and the Mississaugas of the Credit. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Funding & Acknowledgements

This work was supported by the Ontario Workplace Safety & Insurance Board

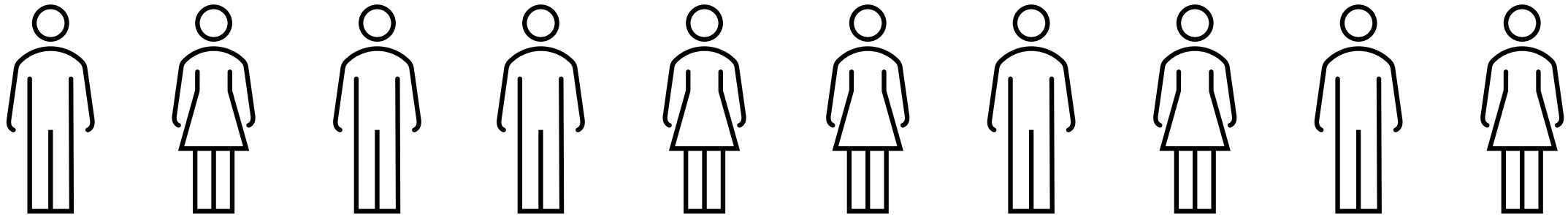


A question

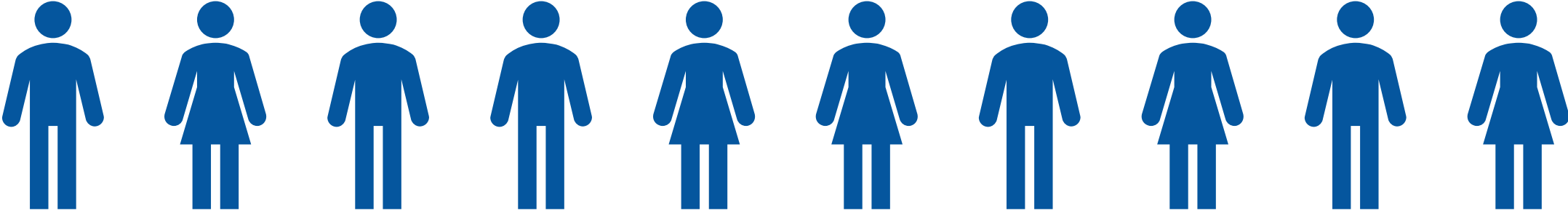


How many of these workers...

Experienced pain after their work-related injury?

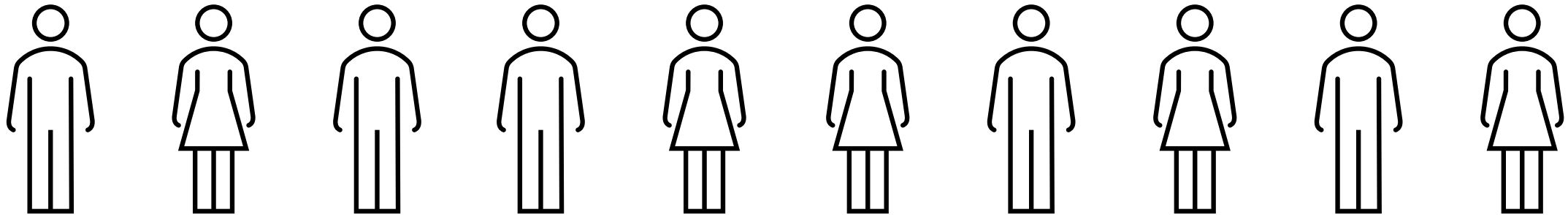


Maybe all of them



How many of these workers...

Experienced pain *a year and a half* after their work-related injury?



Workplace
Original research

Impact of persistent pain symptoms on work absence, health status and employment 18 months following disabling work-related injury or illness

 Kathleen G Dobson ¹,  Cameron Mustard ^{1, 2},  Nancy Carnide ^{1, 2},  Andrea Furlan ^{1, 3},  Peter M Smith ^{1, 2}

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PDF



PDF +
Supplementary
Material

Background: Work-related Injury

- Unintentional injury is a leading cause of death and disability among working-aged adults
- 1 of 6 injuries requiring medical attention are caused by work exposures
- 35% of work-related injuries or illness result in periods of disability or work absence



Background: Pain

Acute pain

- May follow an injury
- Low, moderate, severe intensity

Chronic pain

- Pain of moderate to severe intensity
- Recurrent or persistent
- Lasts at least 3 months
- Accompanied by functional impairment
- Cannot be better described by an alternate medical diagnosis

18.5% of Canadian adults report chronic pain

- ~5%: no activity restrictions
- ~10%: some activity restrictions
- ~ 4%: significant activity restrictions




Created by Gan Khoun Lay
from the Noun Project

Research Questions

1. How prevalent is persistent pain 18 months after a disabling work-related injury or illness?
2. Among workers who have a disabling work-related injury, how does persistent pain impact health, length, and cost of a disability leave?

Workplace
Original research

Impact of persistent pain symptoms on work absence, health status and employment 18 months following disabling work-related injury or illness 

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Supplementary
Material

Study Cohort: OLAWIS

Ontario Life After Workplace Injury Study (OLAWIS)

- Describe the long-term outcomes of workers who had a compensation claim for wage replacement benefits due to a physical injury or illness

Ontario Workplace Safety and Insurance Board (WSIB)

- Covers medical care services, and wage replacement benefits for workers whose recovery from a work-related injury or illness requires an absence from work

OLAWIS Recruitment & Sample

9,745 randomly selected eligible WSIB claimants (June 2019-March 2020)

- Injury date: January – October 2018
- 3,889 not contacted
- 3,040 unreachable by WSIB

2,816 reached by WSIB

- 867 refused to participate
- 275 ineligible or could not be contacted

1,674 consented to contact by interviewers

- 385 unreachable by interviewers
- 125 refused to participate
- 32 deemed ineligible

1,132 participated in interview

OLAWIS Recruitment & Sample

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1,132 participated in interview

OLAWIS Cohort:

< 3 months, short duration: 358
3–12 months, medium duration: 374
12–18 months, long duration: 400

Study Measures

- Drawn from WSIB administrative records and an interviewer-administered telephone questionnaire 18 months after the initial injury occurred
- 94% of claimants consented to linking their survey responses to their administrative records

How prevalent is persistent pain 18 months after a disabling work-related injury or illness?

Persistent Pain

(1) Pain Interference

- During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?
- n=1,131

(2) Pain Intensity

- On a scale from 0 to 10, how would you rate your pain due to your injury at the PRESENT TIME (that is right now), where 0 is no pain and 10 is pain as bad as it could be?
- n=878

How prevalent is persistent pain 18 months after a disabling work-related injury or illness?

No Persistent Pain

- Pain did not interfere with normal activities

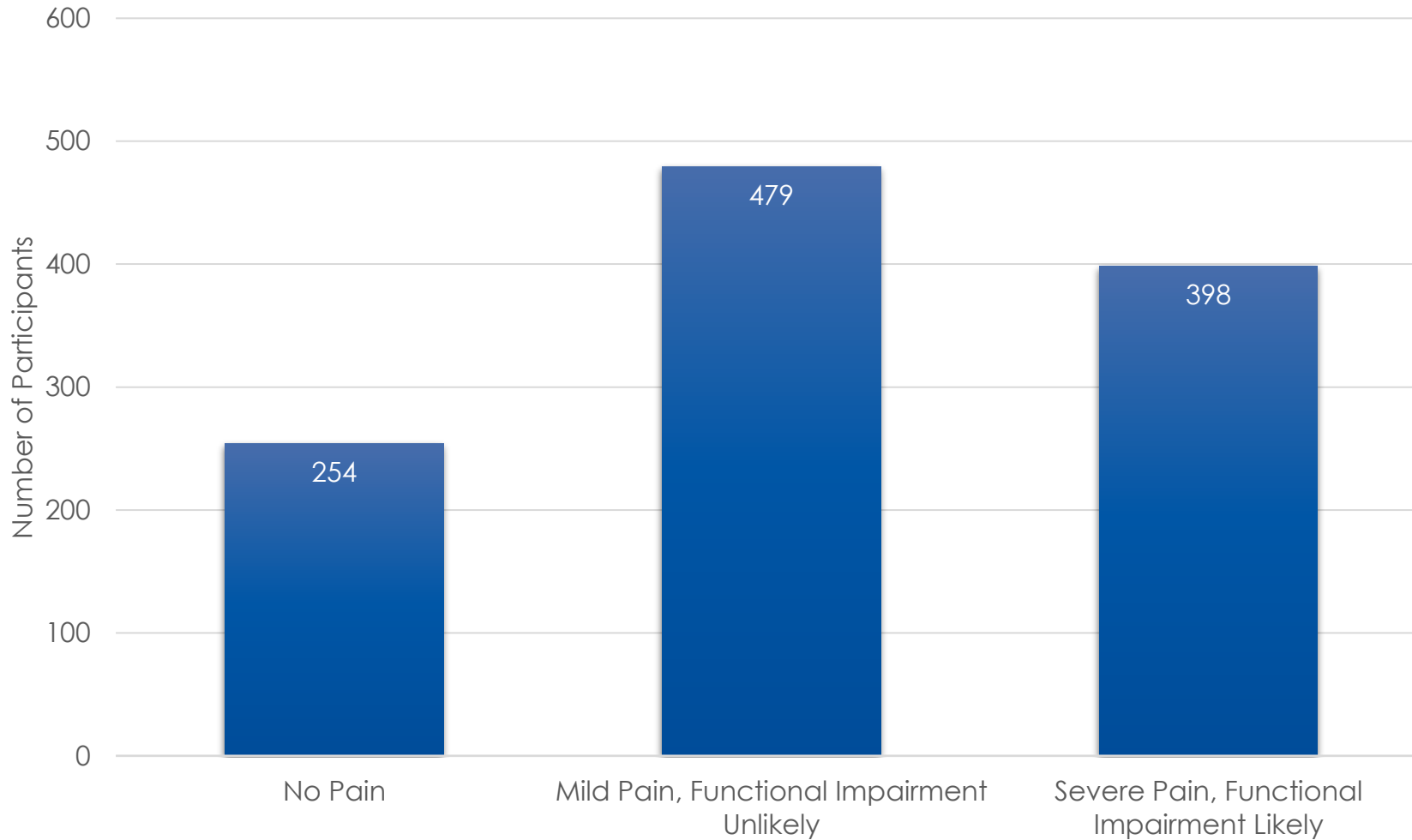
Mild Persistent Pain,
Functional Impairment Unlikely

- Pain Interference - A little bit
- Pain Interference - Moderate, with Pain Intensity < 6/10

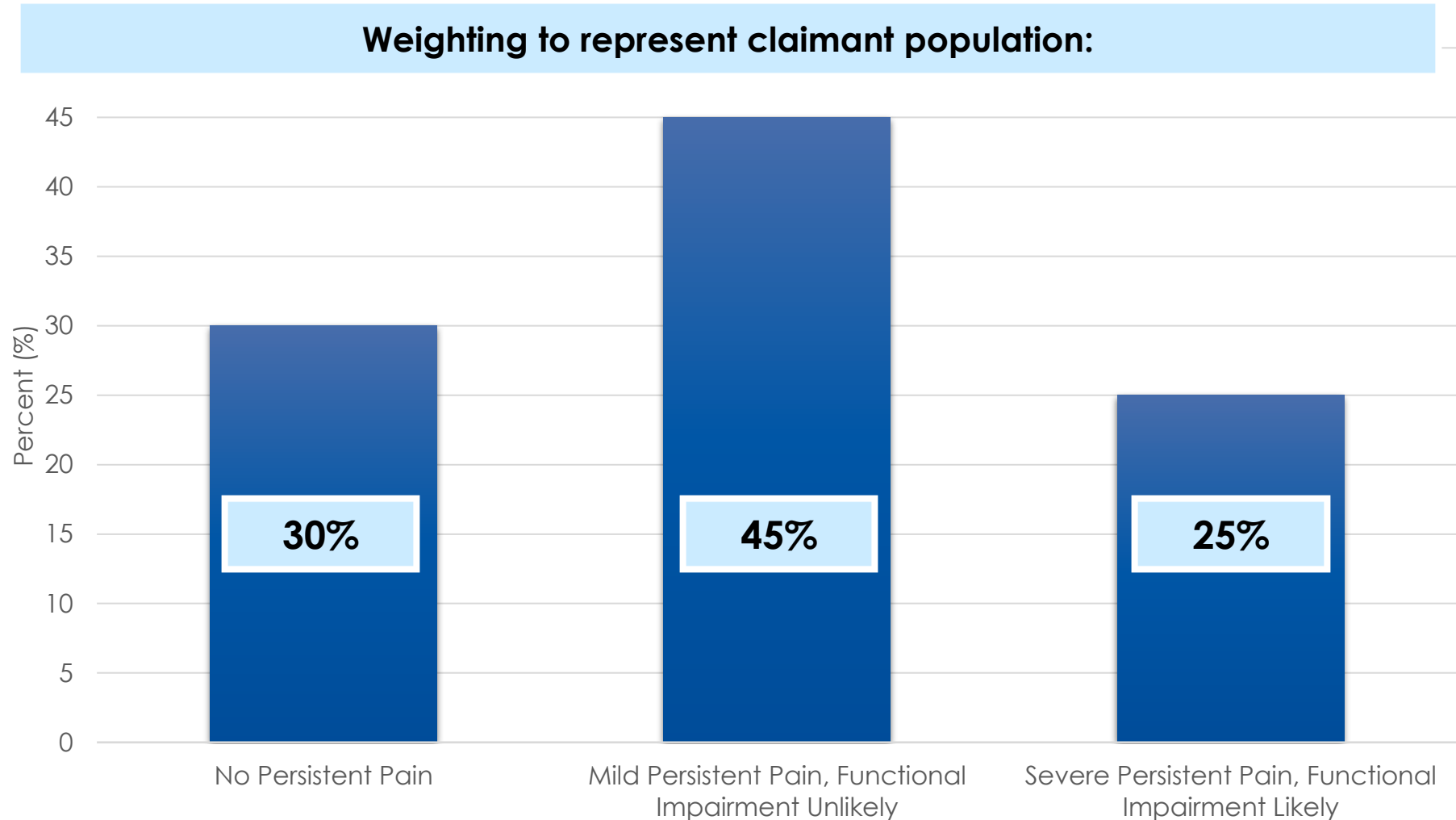
Severe Persistent Pain,
Functional Impairment Likely

- Pain Interference - Quite a Bit, Extremely
- Pain Interference - Moderate, with Pain Intensity of $\geq 6/10$

How prevalent is persistent pain 18 months after a disabling work-related injury or illness?



How prevalent is persistent pain 18 months after a disabling work-related injury or illness?



Participant Characteristics, by Pain Level

	No Pain (N=254) %	Mild Pain (N=479) %	Severe Pain (N=398) %
Age mean (SD)	44 (14)	48 (12)	49 (12)
Female sex	39	46	45
Industry at time of claim			
Health Care & Social assistance	15	16	14
Construction, Utilities, Mining, Agriculture, Forestry	13	15	14
Transportation & Warehousing	13	12	15
Manufacturing	9	15	12
Other Services (except Public Administration)	13	13	12
Retail, Wholesale Trade	9	7	9
Educational Services	11	9	6
Accommodation/ Food Services/ Arts/ Entertainment	8	6	10
Public Administration	8	5	5
Other	4	3	3
Nature of Injury			
Sprain, Strain, or Dislocation	45	50	51
Fracture	14	12	12
Superficial or Open Wound	11	13	9
Internal Injury	13	12	13
Other	5	4	3
Unknown	13	10	13
Prevalence of Chronic conditions, Pre-Injury			
Back Problems	11	19	18
Arthritis	9	18	21
Migraine	13	18	18
Mood Disorder	6	5	7
High Blood Pressure	13	14	18

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How does persistent pain impact health, length and cost of a disability leave?

Disability Claim and Return-to-work factors

Wage-replacement duration

- < 3 Months
- 3 – 12 Months
- 12 – 18 Months

Total number of loss of earnings (LOE) days

Total amount of LOE benefits (\$)

Total amount of healthcare expenditure benefits (\$)

Return to work and Recovery status at 18-month follow-up

	All Respondents (n=1131)	No Pain (N=254)	Mild Pain, Functional Impairment Unlikely (N=479)	Severe Pain, Functional Impairment Likely (n=398)
Current employment status, (%)				
Working with at injury employer	62	65	65	55
Working with different employer	16	19	17	12
Not currently working	23	16	18	33
Currently using WSIB services, n (%)	20	4	15	36
Benefit Duration (%)				
1 day-3 months	32	47	34	19
3-12 months	33	37	34	29
12-18 months	35	16	32	52
Loss of Earnings Benefit Duration (days), mean (SD)	71.93 (88.40)	55.30 (64.10)	62.45 (80.40)	93.58 (105.13)
Loss of Earnings Benefit, \$, mean (SD)	\$7,885 (11,087)	\$6,026 (7,215)	\$7,223 (10,391)	\$9,890 (13,461)
median	\$4,132	\$3,206	\$3,450	\$5,183
Healthcare Benefits, \$, mean (SD)	\$7,398 (13,186)	\$4,064 (6,551)	\$6,335 (11,378)	\$10,841 (17,122)
median	\$2,657	\$1,466	\$2,144	\$5,288

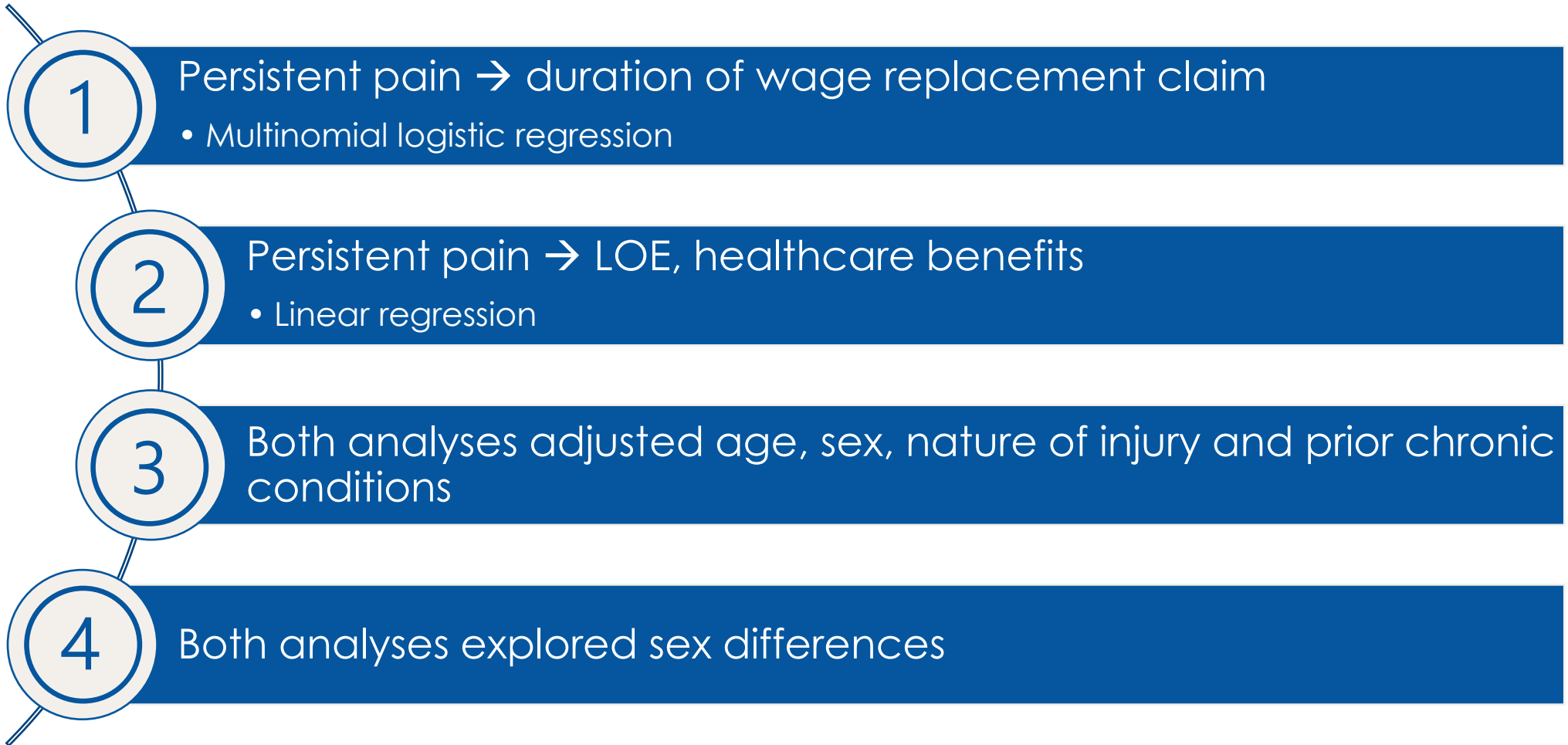
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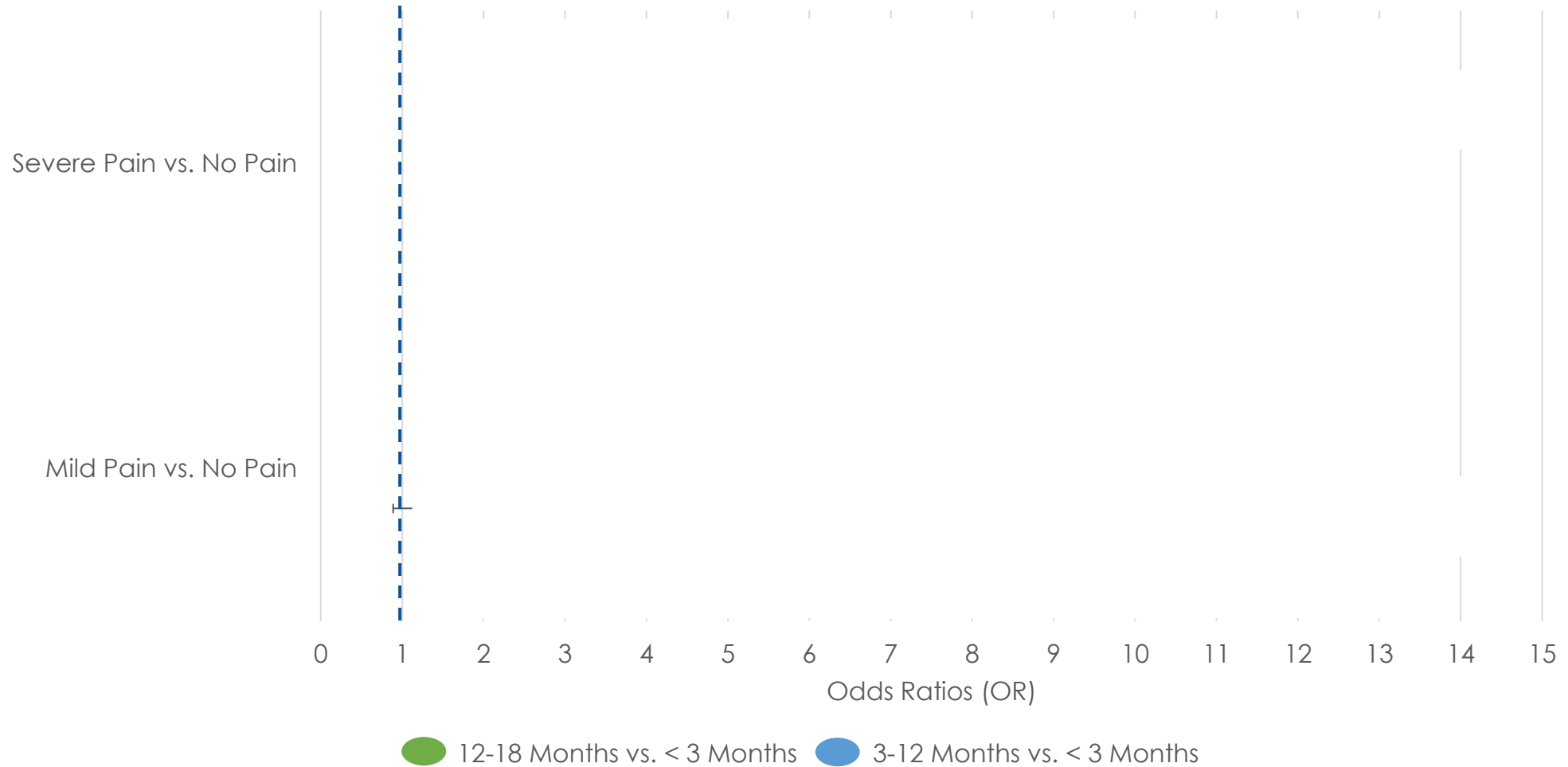
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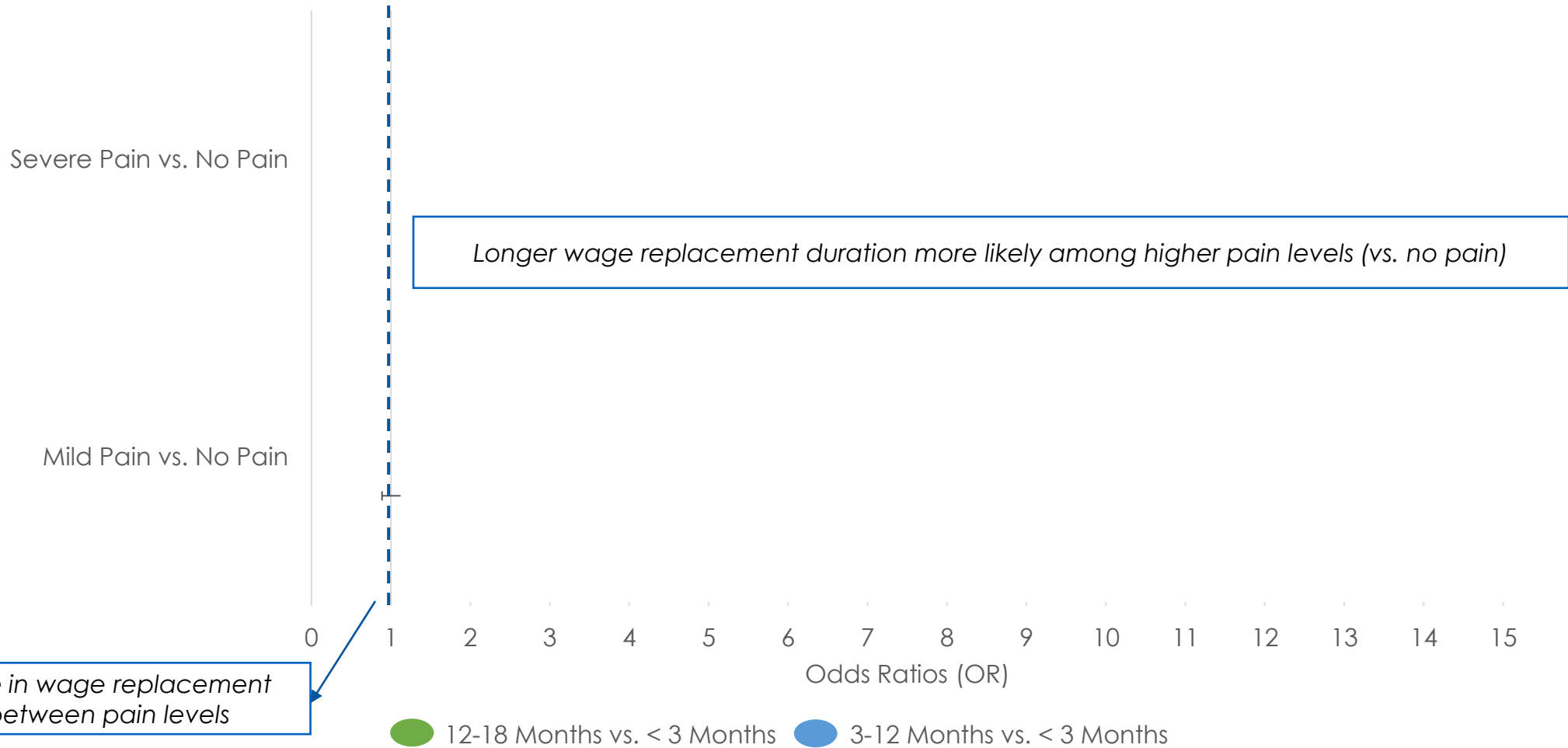
Analysis



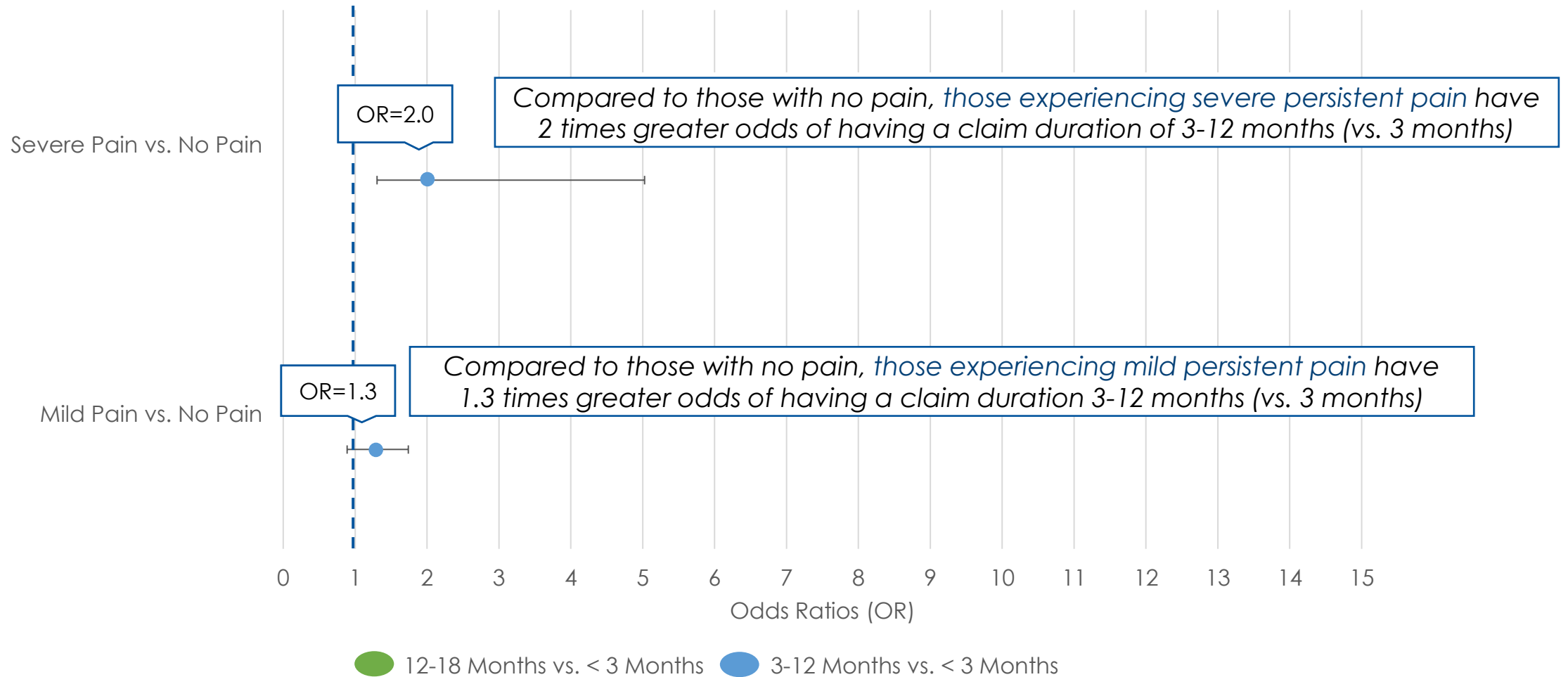
Persistent Pain & Wage Replacement Duration (Reference: Benefit Duration Less than 3 Months)



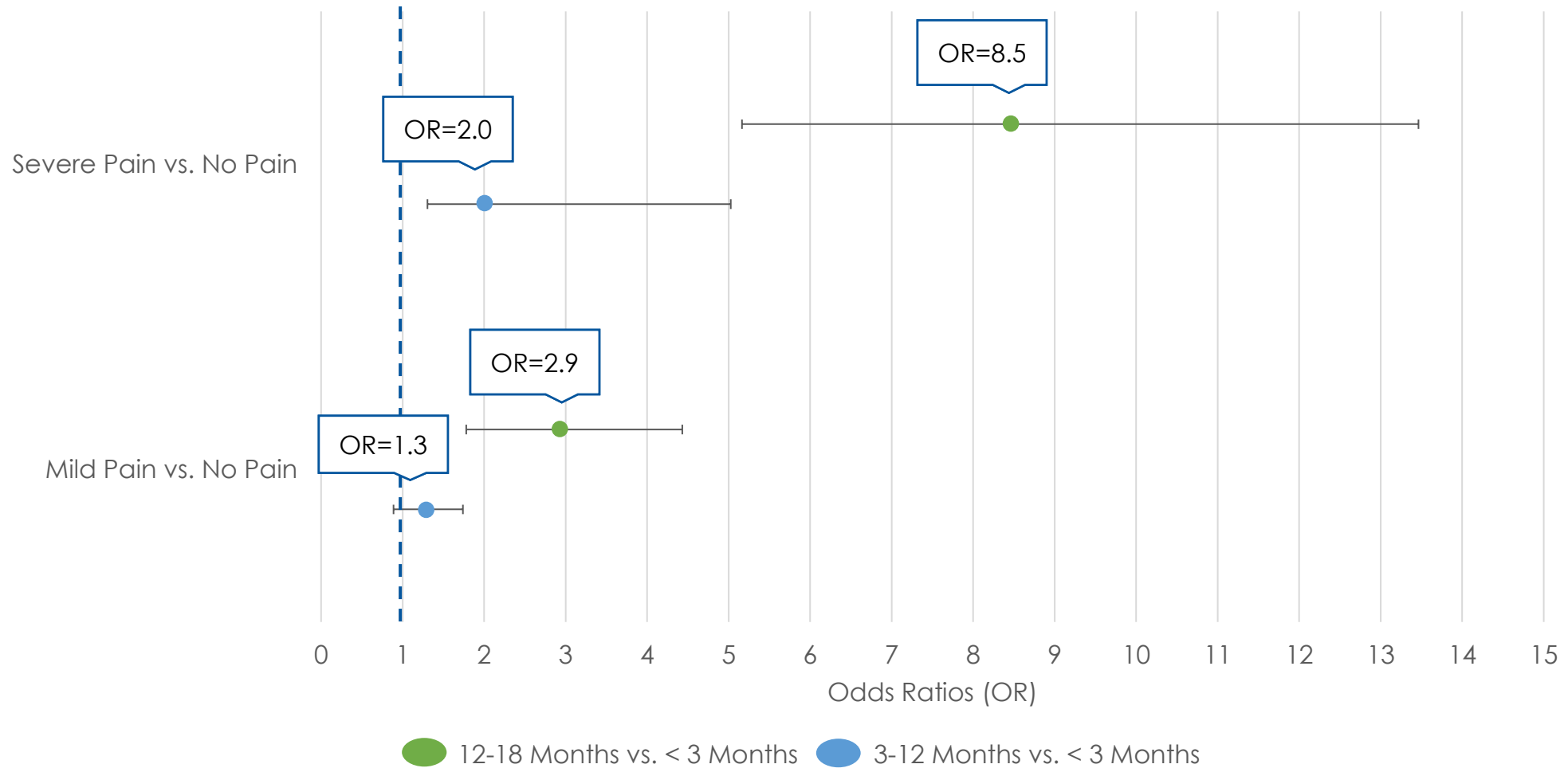
Association between Persistent Pain & Wage Replacement Duration (Reference: Benefit Duration Less than 3 Months)



Persistent Pain & Wage Replacement Duration 3-12 Months (vs. < 3 Months)



Persistent Pain & Wage Replacement Duration 12-18 Months (vs. < 3 Months)



Persistent Pain, Loss of Earning Benefits, and Healthcare Benefits

	Effect Estimate (%)	95% CI (%)	
1: Total Number of LOE Days			
Mild Pain, Functional Impairment Unlikely vs. No Pain	11.6	-8.7	32.0
Severe Pain, Functional Impairment Likely vs. No Pain	51.1	30.0	72.2
2: Total Amount of LOE Benefits			
Mild Pain, Functional Impairment Unlikely vs. No Pain	13.4	-7.9	34.8
Severe Pain, Functional Impairment Likely vs. No Pain	47.7	25.4	69.9
3: Total Amount of Healthcare Expenditure Benefits			
Mild Pain, Functional Impairment Unlikely vs. No Pain	47.9	22.5	73.2
Severe Pain, Functional Impairment Likely vs. No Pain	125.9	99.7	152.2

Bold values indicate statistically significant estimate at the $\alpha = 0.05$ level

Analyses adjusted for age, sex, nature of injury and prior chronic conditions

Persistent Pain, Loss of Earning Benefits, and Healthcare Benefits

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Persistent Pain, Loss of Earning Benefits, and Healthcare Benefits

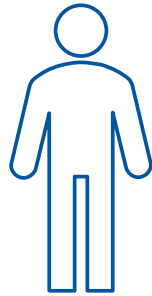
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Put in (hypothetical) context

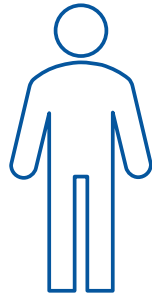
Age: 30s
Sex: Male
Work Injury: Sprain, strain, or dislocation
Health Status: No prior chronic conditions



	No Pain
LOE Duration, Days	55
LOE Benefits, \$	\$3,206
Healthcare Benefits, \$	\$1,466

Put in (hypothetical) context

Age: 30s
Sex: Male
Work Injury: Sprain, strain, or dislocation
Health Status: No prior chronic conditions



	No Pain	Mild Pain	Severe Pain
LOE Duration, Days	55	61 (+6)	83 (+28)
LOE Benefits, \$	\$3,206	\$3,636 (+\$400)	\$4,735 (+\$1,500)
Healthcare Benefits, \$	\$1,466	\$2,168 (+\$700)	\$3,312 (+\$1,800)

Placing findings into context

Study Question 1

How prevalent is persistent pain 18 months after a disabling work-related injury or illness?

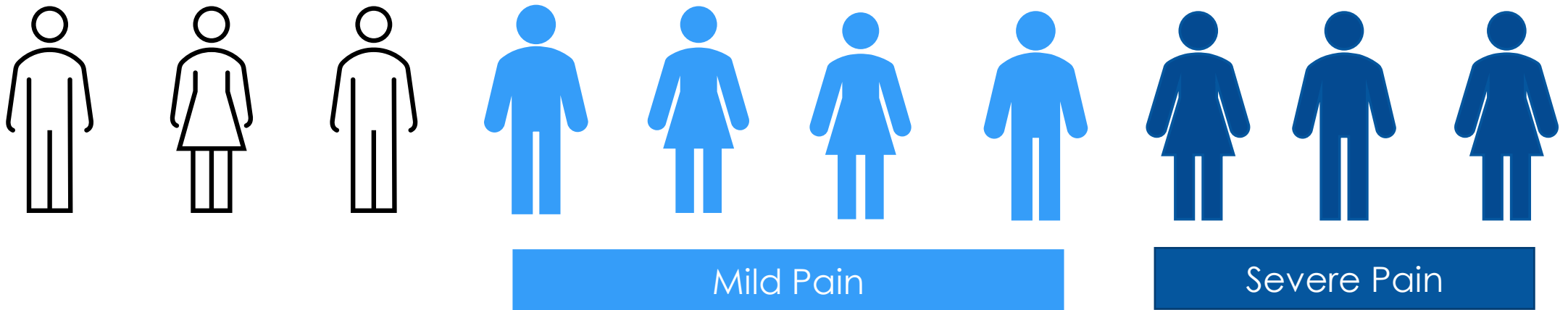
70% of workers experiencing some level of persistent pain 18-months after their work-related injury



Study Question 2

Among workers who have a disabling work-related injury, does it have an impact on health, length and cost of a disability leave?

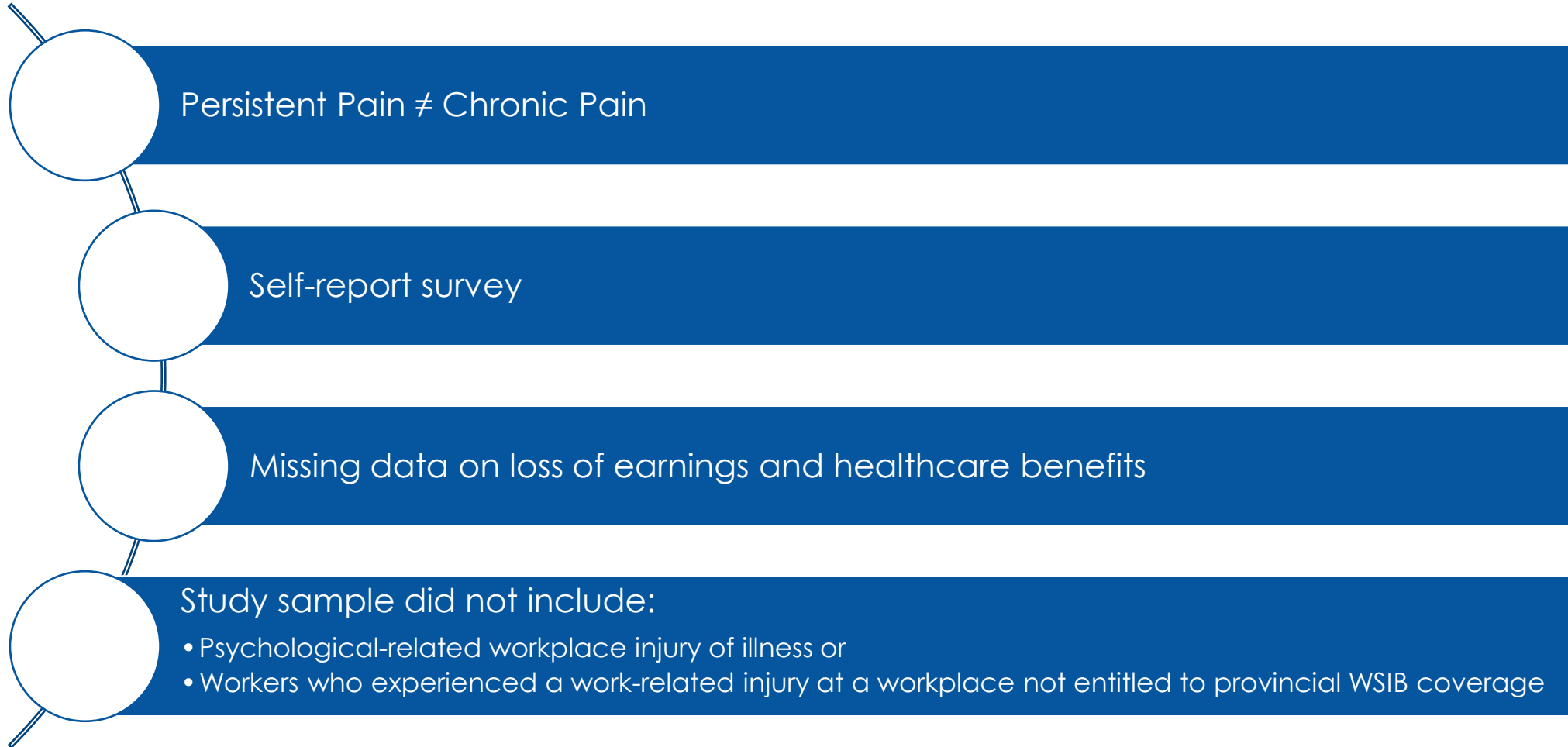
Dose-response effect: the more severe the pain, the longer and more expensive the wage-replacement claim



Findings in Context

- Prevalence of severe persistent pain in OLAWIS: 6x higher than the Canadian adult population
 - OLAWIS Cohort: Oversampled longer claims
- Findings suggest that persistent pain of severe intensity arising from a work-related injury impedes the ability to return to work
- Prior chronic conditions did not attenuate the association of persistent pain and return to work outcomes

Study Limitations



Future Directions

Future Directions

OLAWIS Research

- Exploring how persistent pain influences onset of chronic conditions

Field of Research

- Longitudinal follow-up of pain after a work-related injury
- Role of healthcare access and healthcare use in the association between pain and return-to-work outcomes

Awareness

- Accommodations for workers experiencing persistent pain

Thank you

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Let's have a conservation.

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