



# The mental health of injured workers with a physically disabling injury

Kathleen Dobson, PhD

IWH Speakers Series

January 28<sup>th</sup>, 2025

# Topic of Today's Presentation

Journal of Occupational Rehabilitation  
<https://doi.org/10.1007/s10926-024-10254-3>



## Uncovering Mental Health Profiles of Workers with a Physically Disabling Injury or Illness Using the Complete State Mental Health Framework

Kathleen G. Dobson<sup>1,2</sup> · Yu-Chun Chien<sup>1</sup> · Nancy Carnide<sup>1,2</sup> · Andrea D. Furlan<sup>1,3,4</sup> · Peter M. Smith<sup>1,2</sup> · Cameron A. Mustard<sup>1,2</sup>

Accepted: 7 November 2024  
© The Author(s) 2024

### Abstract

**Background** Complete mental health encompasses both mental illness (MI) symptoms and positive mental health (PMH). Distinct profiles of MI and PMH have not been explored among injured workers. This study describes latent mental health profiles among workers with a disabling physical work injury/illness and identifies differences in sociodemographic and return-to-work factors, health correlates, and disability claim duration and cost between profiles.

**Methods** 1132 Ontario workers with a physical work-related injury/illness who received lost-time claim benefits were surveyed 18 months post-injury. MI was defined by the self-reported presence of a mood and/or anxiety disorder diagnosed by a healthcare professional pre- or post-injury. The *Mental Health Continuum Short Form* measured aspects of PMH. Claim information was obtained via administrative records. Latent profile analysis identified the unique number of MI and PMH profiles. Chi-Square and ANOVA tests compared sociodemographic, return-to-work, health, and claim outcomes between classes.

# Research team and funding

---

**Analyst:** Yu-Chun Chien

**Funder:**

**Collaborators:**

Cameron Mustard  
Nancy Carnide  
Andrea Furlan  
Peter Smith



**Project:** [Ontario Life After Work Injury Study: Understanding the long-term recovery and labour market outcomes of injured workers in Ontario](#)

# Key Takeaways

---

- How we define “mental health” is important
- The mental health of injured workers is not “one size fits all”
- There is an association between return-to-work outcomes of injured workers and their mental health profile

Canada NewsWire

1 in 3 Canadians Would Quit Their Job for Better Mental Health Benefits, GreenShield Research Reveals

Oct 3

Benefits and Pensions Monitor

Canadian workers' mental health has declined since 2020, what can employers do?

8 days ago • By Josh Welsh

HRReporter

Mental health claims in Canada soar by 10% in 2023, report

May 1, 2024 • By Jim Wilson

What *is* mental health?

...n at work just as important as  
...ocates

Business Wire

Anxiety, Depressive and Panic Disorders Top Workplace Mental Health Requests, According to International SOS

Yesterday

PT Psychology Today

How mental health is shaping America's labor landscape.

8 days ago • By Jamillah Moore

# World Health Organization Definition of Mental Health

---

- Mental health is more than the absence of mental disorders. Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community.

**How do we measure this in work & health research?**

# Defining “complete mental health”

**(Positive) Mental health (PMH):** a dynamic state of emotional, psychological, and social well-being in which individuals:

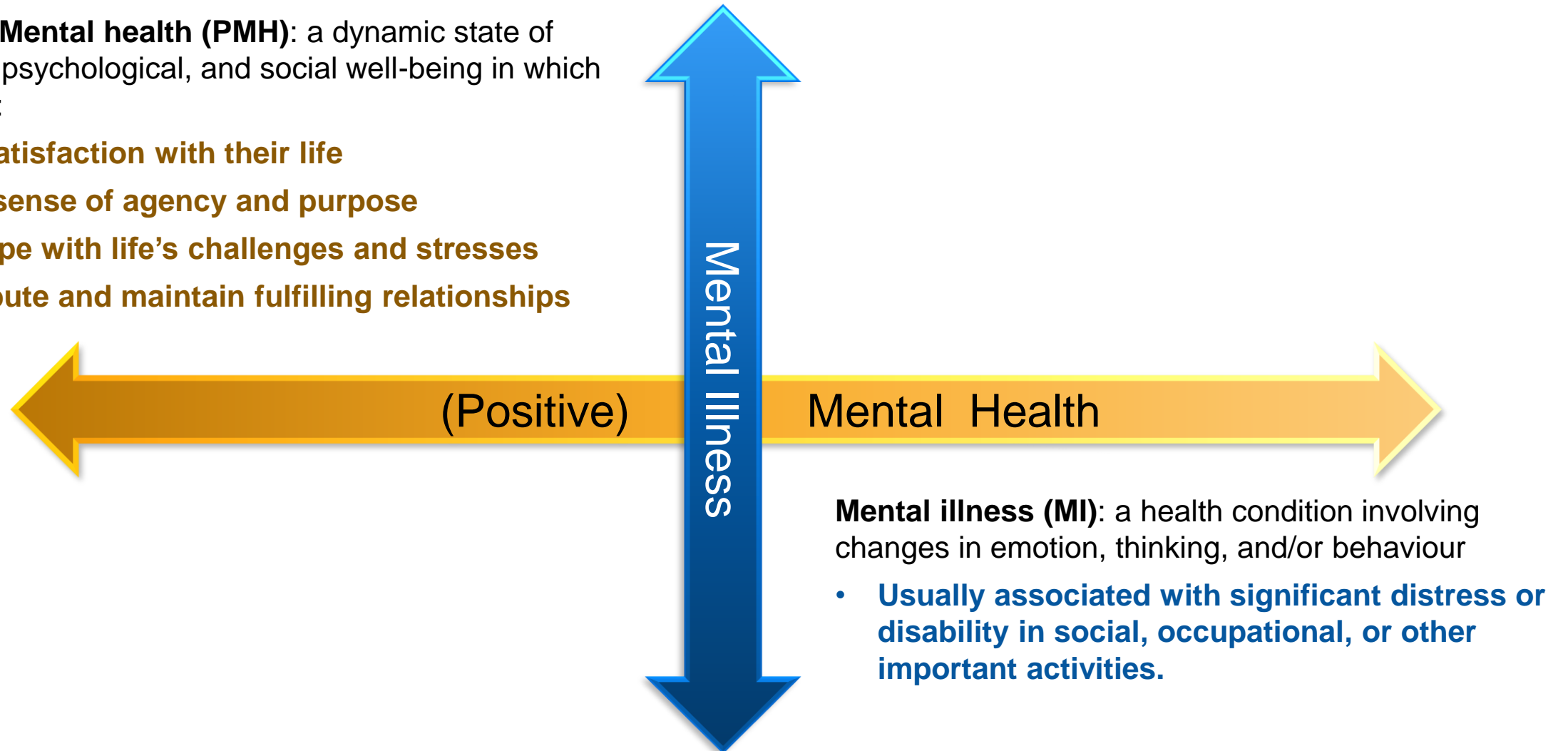
- **Have satisfaction with their life**
- **Feel a sense of agency and purpose**
- **Can cope with life’s challenges and stresses**
- **Contribute and maintain fulfilling relationships**



# Defining “complete mental health”

**(Positive) Mental health (PMH):** a dynamic state of emotional, psychological, and social well-being in which individuals:

- **Have satisfaction with their life**
- **Feel a sense of agency and purpose**
- **Can cope with life’s challenges and stresses**
- **Contribute and maintain fulfilling relationships**



**Mental illness (MI):** a health condition involving changes in emotion, thinking, and/or behaviour

- **Usually associated with significant distress or disability in social, occupational, or other important activities.**



# Why is conceptualizing mental health in this way important?



Not everyone experiences mental health in the same way

Focusing on the  
complete mental  
health of injured  
workers



# Injured workers & complete mental health

- In 2022, more than 800,000 work-related injuries were recorded in Canada\*
- **14 – 17%:** Prevalence of severe psychological distress 1-2 years after a work injury
- Experiencing a **physical work injury can greatly impact mental health**
  - Changes in physical functioning, social roles, social interaction contributes to isolation, stigma, physical pain, and coping ability
- Mental illness after a work injury **reduces the probability** of sustained return to work

# By understanding the complete mental health of injured workers

---

- Identify those who are languishing and have mental illness symptoms
- Identify injured workers with flourishing mental health
- Further understand what role mental health plays in return to work



# Study objectives

---

- **Objective 1:** Uncover the number of underlying complete mental health groups (latent classes) among individuals who experienced a disabling physical work-related physical injury or illness
- **Objective 2:** Explore the sociodemographic, health, and return to work characteristics of complete mental health groups
- **Objective 3:** Quantify differences in the length and cost of a worker's disability claim between complete mental health groups

# Study cohort: OLAWIS

---

## **Ontario Life After Workplace Injury Study (OLAWIS)**

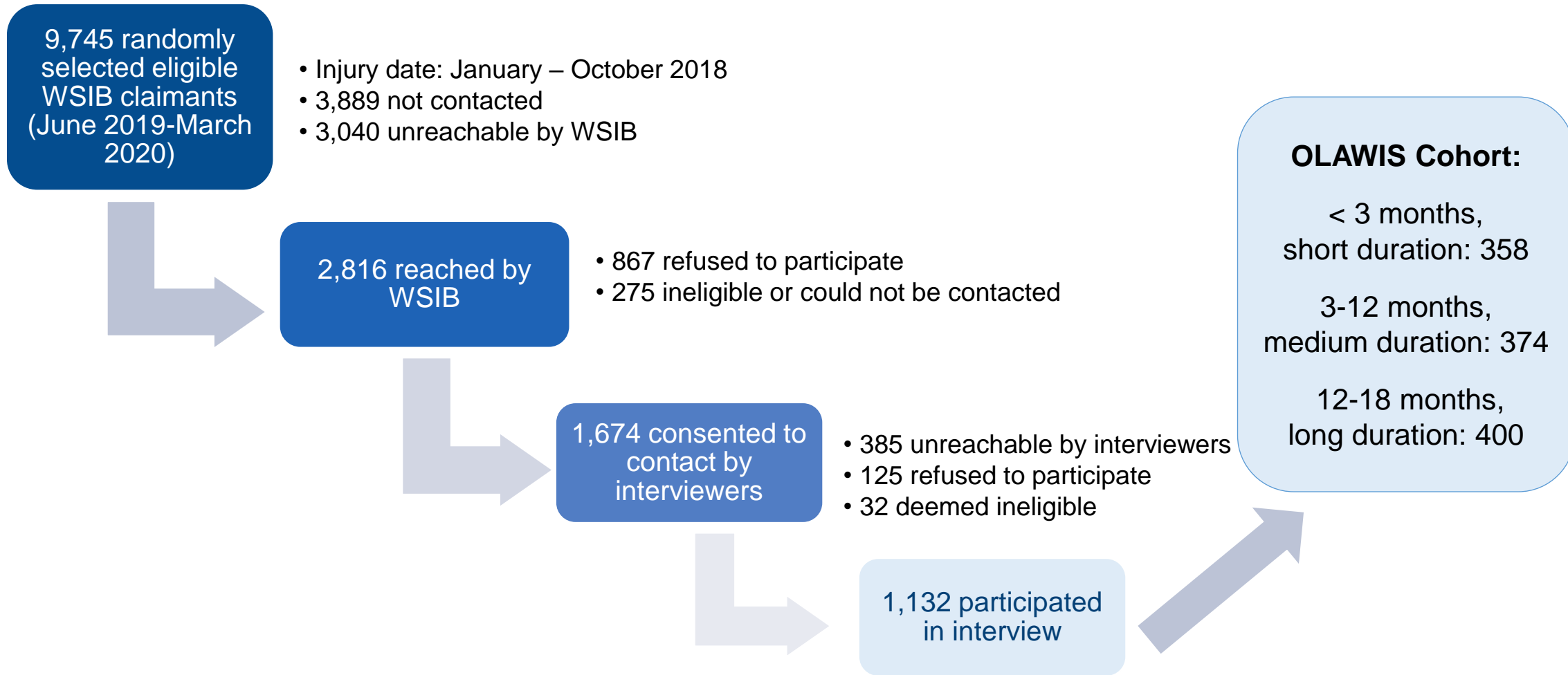
Describe the long-term outcomes of workers who had a compensation claim for wage replacement benefits due to a physical injury or illness

## **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

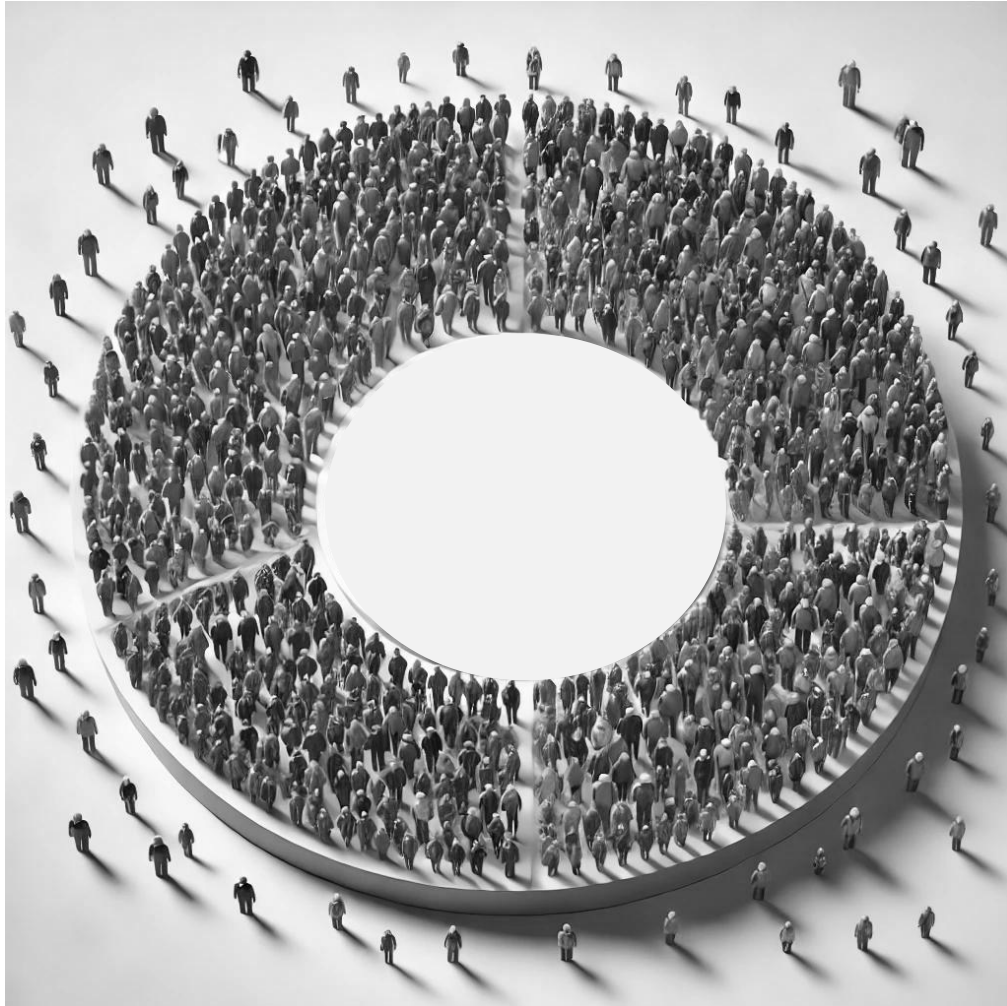


# Objective 1

Uncover latent complete mental health classes



# Latent Class Analysis



Groups = "Latent classes"



# Steps in a Latent Class Analysis

Start by “building” a complete mental health model in statistical software

Explore variations of the model, specifying different numbers of mental illness and positive mental health latent classes

Determine the most appropriate model

- Statistical criteria (e.g., AIC, BIC statistics)
- Generalizability

Interpret the model

- Describe the different mental illness and positive mental health latent groups
- Explore variable distributions
- Name the different latent groups

# Complete Mental Health: Mental Illness Variables

## We Asked:

- Have you ever been diagnosed with a **mood disorder (depression, bipolar, mania, dysthymia)** by a health professional?
- Have you ever been diagnosed with an **anxiety disorder (phobia, obsessive-compulsive disorder or a panic disorder)** by a health professional?

## Participants Could Answer:

- No
- Yes, before my work injury
- Yes, after my work injury

# Positive Mental Health Variables

## Self-Rated Overall Mental Health

- **We asked:** In general, would you say your mental health is...
- **Response Options:** excellent, very good, good, fair, or poor

## Emotional Well-being

- **We asked:** Over the past month how often have you been: **happy; interested in life; felt satisfied with life**
- **Response Options:** every day, almost every day, about 2-3 times a week, about once a week, once or twice, or never

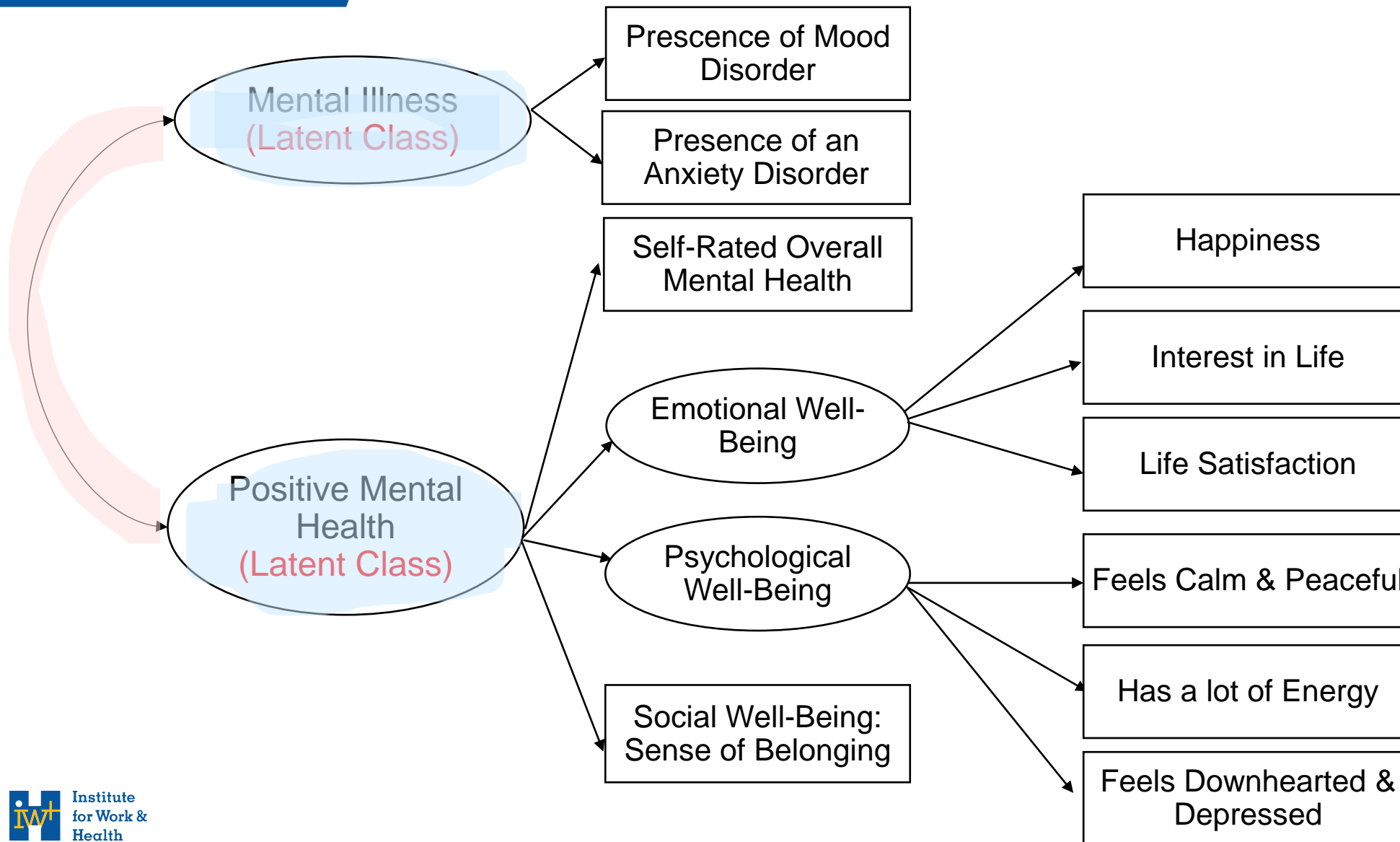
## Psychological Well-being

- **We asked:** Over the past month how often have you felt: **Calm & peaceful, had a lot of energy, felt downhearted and depressed**
- **Response Options:** none of the time, a little of the time, some of the time, most of the time, or all of the time

## Social Well-being

- **We asked:** How would you describe your **sense of belonging** to your local community:
- **Response Options:** very strong, somewhat strong, somewhat weak, or very weak

# Complete Mental Health Model



# Most appropriate model

---

4

Latent mental illness  
classes

Latent positive mental  
health classes

3



# Distribution of mental illness variables



**Class 1: 8%**

Highest prevalence of mental illness post work injury



**Class 2: 10%**

Highest prevalence of mental illness before the work injury



**Class 3: 42%**

Low prevalence of mental illness

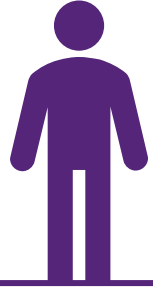


**Class 4: 40%**

Lowest prevalence of mental illness

Class/ Group	Mood disorder diagnosis			Anxiety disorder diagnosis		
	None	Prior to the work injury	After the work injury	None	Prior to the work injury	After the work injury
	%	%	%	%	%	%
1 (n=91)	8	40	52	34	20	45
2 (n=116)	9	52	38	36	37	27
3 (n=470)	96	3	1	91	7	2
4 (n=455)	98	2	0	92	6	2

# Positive Mental Health Latent Classes



Languishing PMH

Class 1: 14%



Moderate PMH

Class 2: 25%



Flourishing PMH

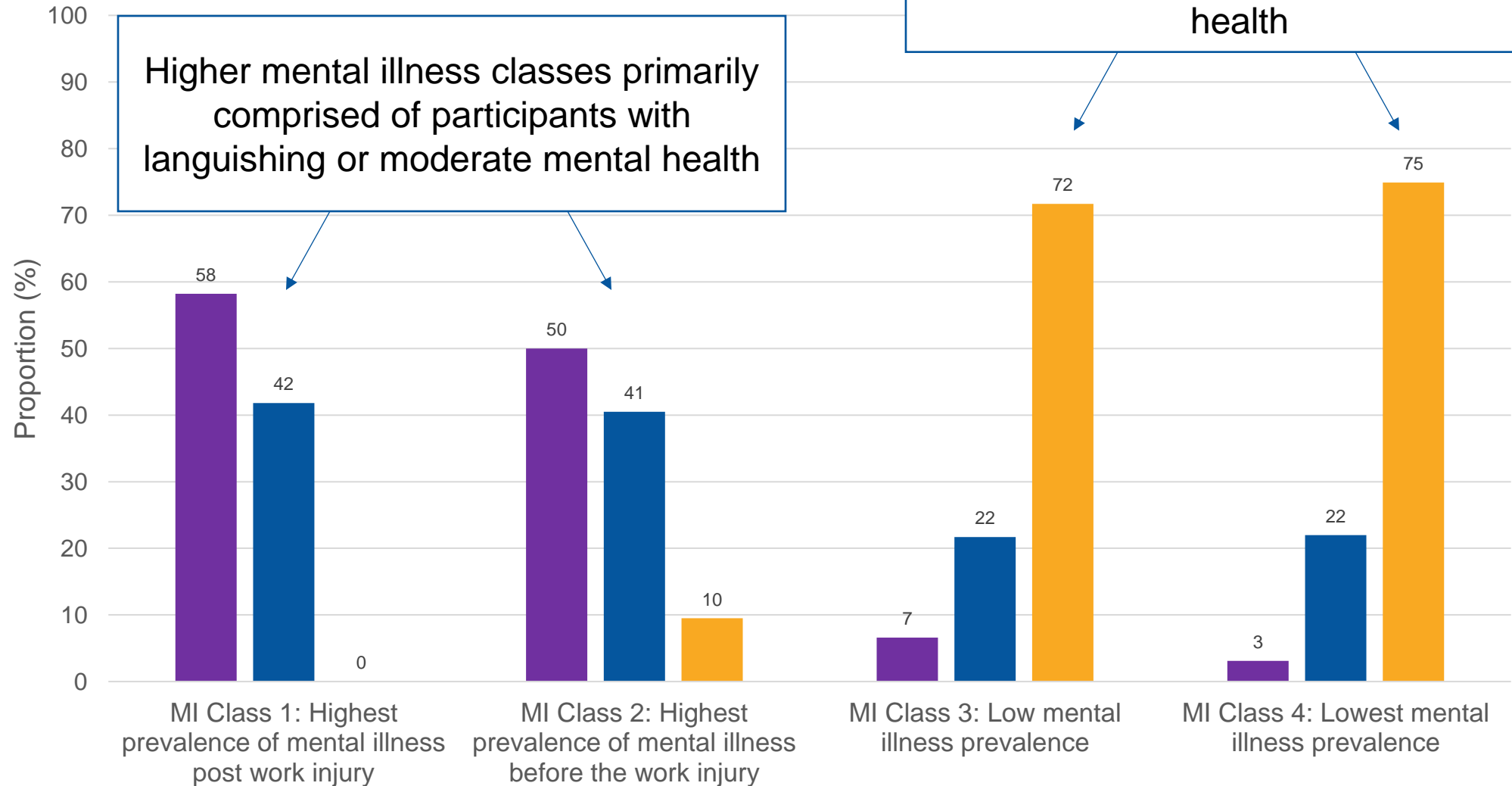
Class 3: 61%

Positive Mental Health Latent Classes

	Class 1 (n=156) %	Class 2 (n=287) %	Class 3 (n=689) %
<b>Perceived mental health: Poor or Fair</b>	92	49	4
<b>Emotional Well-Being Variables</b>			
<b>Felt happy in the past month: Never</b>	27	1	0
<b>Had interest in life in the past month: Never</b>	19	2	0
<b>Life satisfaction in the past month: Never</b>	37	5	0
<b>Psychological Well-Being Variables</b>			
<b>Feels calm and peaceful in the past month: None of the time</b>	33	8	2
<b>Has a lot of energy : None of the time</b>	28	13	2
<b>Feels downhearted and depressed in the past month: Most or all of the time</b>	76	15	1
<b>Social Well-being Variable</b>			
<b>Sense of belonging: Very or Somewhat weak</b>	67	35	16



# Proportion of Participants in Each Latent Mental Illness Class, by Positive Mental Health Class, by Positive Mental Health Class



# Objective 2

Sociodemographic, health, and  
return to work characteristics of complete mental health latent profiles

# Objective 2 Measures

## Sociodemographic variables:

- Age
- Sex
- Highest level of education,
- Country of birth
- Household partner and/or dependents
- Annual household income
- Industry at the time of their work-related injury/illness

## Health-related variables:

- Nature of the work injury
- Chronic health conditions diagnosed by a healthcare professional
- Currently receiving healthcare services for injury/illness
- Pain interference
- Hours of sleep per night
- Codeine use (e.g., Tylenol #3 or #1)
- Oxycodone use (e.g., Percocet, Percodan)
- Other opioid use (e.g., hydromorphone, morphine, MS Contin, Demerol)
- Alcohol consumption
- Cannabis use in the past year

## Return-to-work variables:

- Financial difficulties during disability claim,
- Current work status
- OLAWIS sample group
  - < 3 months,
  - 3 – 12 months,
  - 12 – 18 months

# Differences between Latent Mental Illness Groups

Compared to the low prevalence mental illness groups, more participants in the higher mental illness groups reported that...



Identified as women



Single Martial Status



Had not returned to work



Longer claim duration



Financial concerns



Still receiving healthcare for injury



Other health conditions



Less sleep



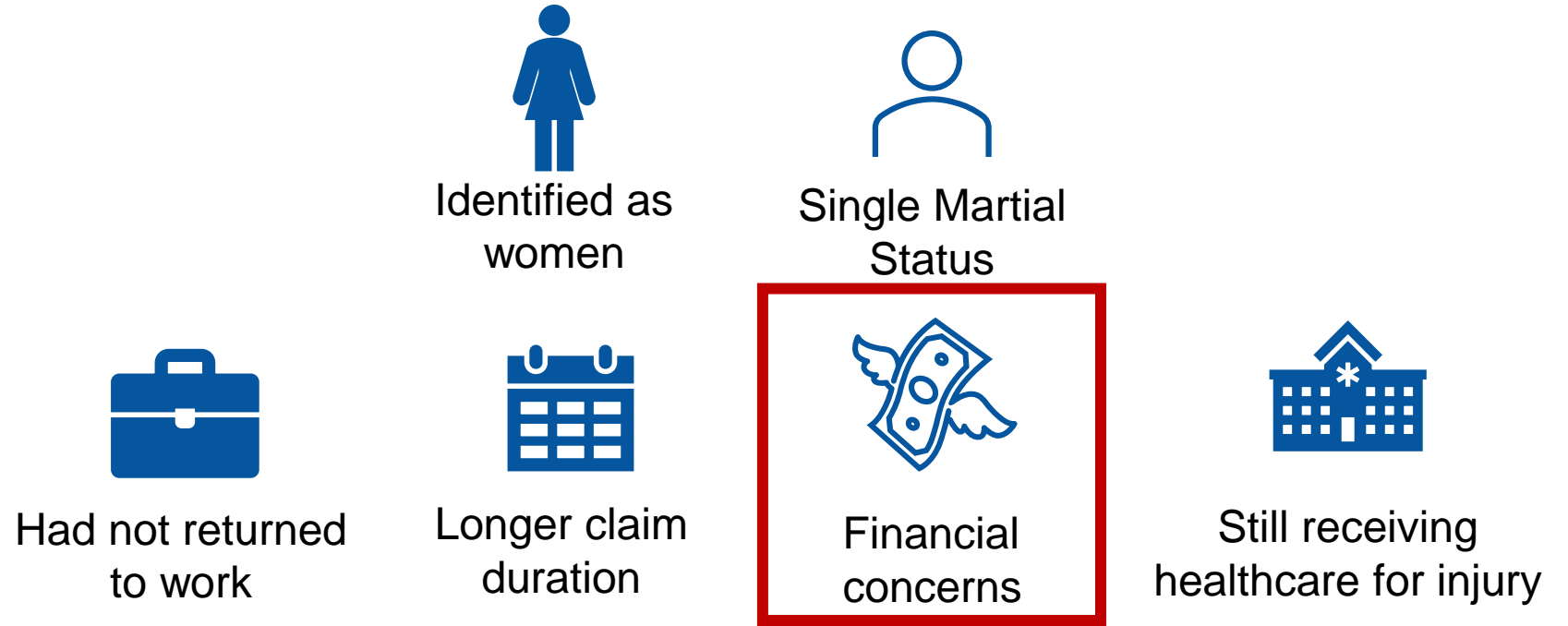
Higher pain levels



Using oxycodone or opioid

# Differences between Latent Mental Illness Groups

Compared to the low prevalence mental illness groups, more participants in the higher mental illness groups reported that...



	C1: High MI prevalence before the work injury (n=91)	C2: High MI prevalence after the work injury (n=116)	C3: Low prevalence (n=470)	C4: Lowest Prevalence (n=455)
Financial concerns during claim	%	%	%	%
No	19	31	51	56
Yes	81	67	48	44
Missing	0	2	1	0

# Differences between Positive Mental Health Groups

Compared to the **flourishing** group, more participants in the **moderate** or **languishing** groups reported...



Single Martial Status



Other health conditions



Had not returned to work



Longer claim duration



Financial concerns



Still receiving healthcare for injury



Less sleep



Higher pain levels



Using oxycodone or opioid



Cannabis use in the past year

# Differences between Positive Mental Health Groups

Compared to the **flourishing** group, more participants in the **moderate** or **languishing** groups reported...



Single Martial Status



Other health conditions



Had not returned to work



Longer claim duration



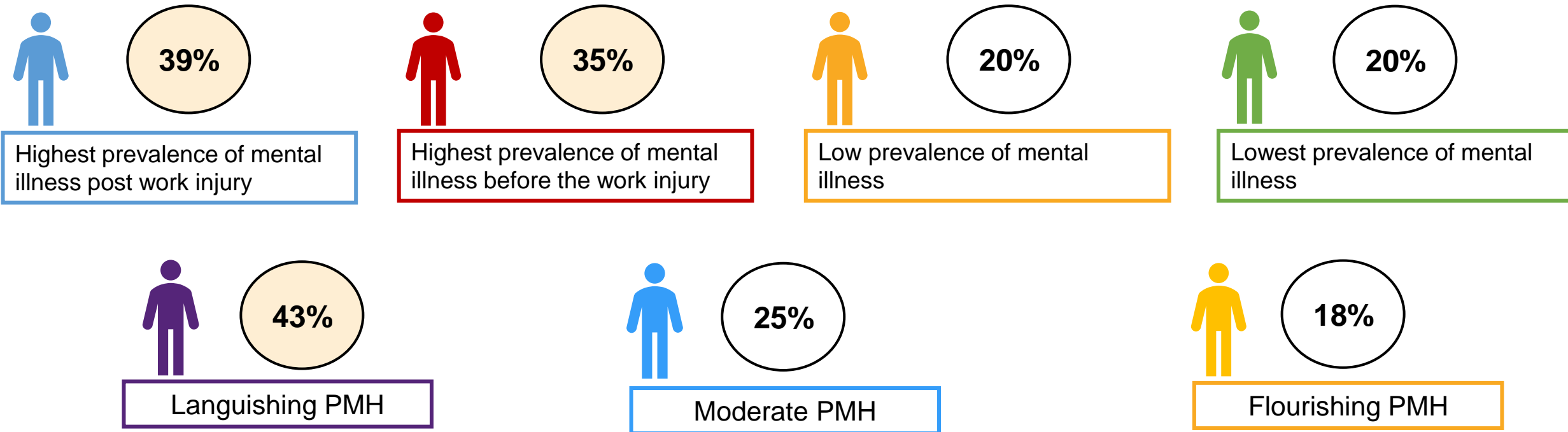
Financial concerns



Still receiving healthcare for injury

	Positive Mental Health Latent Classes		
	C1: Languishing (n=156)	C2: Moderate (n=287)	C3: Flourishing (n=689)
	%	%	%
Still Receiving Healthcare for Injury 18 Months after their Work Injury/Illness	<b>49</b>	<b>37</b>	<b>25</b>

# A greater proportion of participants with high mental illness prevalence or languishing mental health had not returned to work 18-months after their work injury





## **Objective 3**

The length & cost of disability claim of complete mental health latent profiles

# Claim Related Variables

---

- Ascertained from WSIB administrative records
- Total number of loss of earning (LOE) benefit days
- Total amount of loss of earning (LOE) benefit dollars
- Conducted an ANOVA test to test mean differences between latent classes

# Distribution of Loss of Earning Benefit Days and Amount, by Latent Mental Illness and Positive Mental Health Class

	LOE Days			LOE Claim Amount		
	Median	IQR	<i>p</i>	Median	IQR	<i>p</i>
<b>Mental Illness Latent Classes</b>						
Highest prevalence of mental illness post work injury	46	(20, 82)	0.008	\$4,448	(\$1,869, \$7,935)	0.083
Highest prevalence of mental illness before the work injury	57	(17, 123)		\$4,489	(\$1,402, \$11,290)	
Low prevalence of mental illness	46	(10, 96)		\$4,408	(\$1,303, \$10,791)	
Lowest Prevalence of Mental Illness	32	(8, 83)		\$3,572	(\$993, \$8,552)	
<b>Positive Mental Health Latent Classes</b>						
Languishing	59	(26, 114)	<0.001	\$5,180	(\$2,144, \$11,241)	0.001
Moderate	41	(10, 107)		\$4,360	(\$1,108, \$10,257)	
Flourishing	32	(8, 86)		\$3,612	(\$1,054, \$9,214)	

**IQR:** Interquartile range (25<sup>th</sup> percentile, 75<sup>th</sup> percentile)

# Distribution of Loss of Earning I by Latent Mental Illness Class

## LOE Amount:

- No statistical difference between latent classes in terms of the cost of the claim of each group

	LOE Days			LOE Claim Amount		
	Median	IQR	<i>p</i>	Median	IQR	<i>p</i>
<b>Mental Illness Latent Classes</b>						
Highest prevalence of mental illness post work injury	46	(20, 82)	0.008	\$4,448	(\$1,869, \$7,935)	0.083
Highest prevalence of mental illness before the work injury	57	(17, 123)		\$4,489	(\$1,402, \$11,290)	
Low prevalence of mental illness	46	(10, 96)		\$4,408	(\$1,303, \$10,791)	
Lowest Prevalence of Mental Illness	32	(8, 83)		\$3,572	(\$993, \$8,552)	

## LOE Days:

- Statistically significance difference in the length of a claim
- The lowest prevalence of mental illness class having the smallest median (32 days)
- The high prevalence of mental illness *before* the work injury having the highest median (57 days)
- High mental illness post work injury and lowest prevalence of mental illness classes had similar median (~46 days)

# Distribution of Loss of Earning Benefit Days and Amount, by Positive Mental Health Class

	LOE Days			LOE Claim Amount		
	Median	IQR	<i>p</i>	Median	IQR	<i>p</i>

- As PMH class moves from flourishing to languishing, the number of LOE days and claim amount increase
- This difference was found to be statistically significant for each LOE variable.

Positive Mental Health Latent Classes	Median	IQR	<i>p</i>	Median	IQR	<i>p</i>
Languishing	59	(26, 114)	<0.001	\$5,180	(\$2,144, \$11,241)	0.001
Moderate	41	(10, 107)		\$4,360	(\$1,108, \$10,257)	
Flourishing	32	(8, 86)		\$3,612	(\$1,054, \$9,214)	

IQR: Interquartile range (25<sup>th</sup> percentile, 75<sup>th</sup> percentile)

# Summarizing Findings & Discussing Next Steps

# Summarizing Findings



## Objective 1:

**Four mental illness** latent classes and **three positive mental health classes** were found

Mental illness and positive mental health were strongly **correlated**



## Objective 2:

More participants in the higher mental illness and languishing mental health classes reported:

- **Financial concerns**
- **Had not yet returned to work**
- **Presence of other chronic conditions**
- **Still receiving healthcare for their injury**



## Objective 3:

**Duration of LOE claims** were longer among **higher prevalence mental illness groups**

**Duration and cost of LOE claims** were **higher among languishing and moderate positive mental health groups**

# Moving research on the complete mental health of injured workers forward

---

Cross-sectional cohort



Explore complete mental health longitudinally over the return-to-work period

Sample size



Larger samples to further explore nuanced complete mental health profiles

Initial model of mental illness and positive mental health



Increase robustness of the complete mental health model



# Concluding Remarks

---

1

**Acknowledge** the importance of complete mental health of injured workers

2

Further **explore** how positive mental health impacts injured workers in the return-to-work process

3

**Identify** ways to support the complete mental health of injured workers

# Thank you

---

## Kathleen Dobson, PhD



[kdobson@iwh.on.ca](mailto:kdobson@iwh.on.ca)

Associate Scientist, Institute for Work & Health  
Assistant Professor (Status), Dalla Lana School of Public Health, University of Toronto  
Lecturer, Department of Economics, University of Toronto



This document/slide is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License: <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

# Keep up on evidence-based practices from IWH

---



Sign up online for our monthly e-alerts, our quarterly newsletter, event notifications and more: [iwh.on.ca/subscribe](https://iwh.on.ca/subscribe)



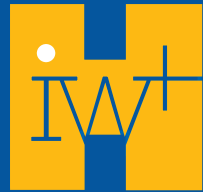
Follow @iwhresearch on X:  
[x.com/iwhresearch](https://x.com/iwhresearch)



Connect with us on LinkedIn:  
[linkedin.com/company/institute-for-work-and-health](https://linkedin.com/company/institute-for-work-and-health)



Subscribe to our YouTube channel:  
[youtube.com/iwhresearch](https://youtube.com/iwhresearch)



**Institute  
for Work &  
Health**

Research Excellence  
Safe Work  
Healthy Workers