

Course, diagnosis and treatment of depressive symptomatology in workers following a workplace injury: A prospective study



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Background

- Prevalence of clinical depression in the general working population: 2-5% (Sanderson & Andrews, 2006)
- Depressive symptoms after a workplace injury are significantly associated with:
 - an increase in time receiving wage replacement benefits (Dozois et al., 1995; Lötters et al., 2006)
 - a longer duration before first RTW (Ash & Goldstein, 1995)
 - future recurrences of work absence (Garcy et al., 1996)
- The prevalence of significant depressive symptoms
 - In workers with MSK injuries: 31-55% (Dersh et al., 2002; Keogh et al., 2000)
 - In workers with unspecified work-related injuries: 35-58% (Kirsh & McKee, 2003)
- Qualitative studies: depression is a common experience (Beardwood et al., 2005; Strunin & Boden, 2004)

Gaps in the Injured Worker Literature

- Incidence and course of depressive symptoms
- Mental health care utilization



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Objectives

In a sample of Ontario lost-time claimants with work-related back and upper extremity injuries...

1. To estimate the prevalence, incidence, and course of depressive symptoms over 6 months post-injury
2. To estimate the prevalence of select mental health treatment use at 6 months post-injury



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Readiness for RTW Cohort Study

- Ontario workers filing a new accepted/pending WSIB lost-time injury claim for a work-related MSK disorder (back or upper extremities)
- Off work due to injury for 5 of the first 14 days post-injury (self-report)
- Telephone interviews and WSIB administrative data
- Baseline (1 month post-injury); follow-up at 6 and 12 months post-injury (completed) and at 24 months post-injury (ongoing)

- Baseline: n=632
 - Participation rate: 632/1038 – 61%
- 6-month follow-up: n=446
 - Retention rate: 446/632 – 71%



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Selection and Attrition Bias Analyses – Key Findings

- Selection Bias Analyses
 - *Using WSIB data, 6 months post-injury*
 - Participants more likely to be women and older workers than non-participants
 - Participants with accepted claims (n=559) have a longer duration on wage replacement benefit and a higher rate of recurrences 6 months post-injury than non-participants
- Attrition Bias Analyses
 - *Comparison of 6-month respondents (n=446) and non-respondents (n=186) on baseline self-reported and WSIB data*
 - Non-respondents are younger and worked more hours/week at time of the injury than respondents

Main Outcome Variables

VARIABLE	MEASURE	ASSESSMENT
High levels of depressive symptoms	<ul style="list-style-type: none"> . Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977) . CES-D score \geq 16 <ul style="list-style-type: none"> - Sensitivity: 64-88% - Specificity: 50-94% (Boyd et al., 1982; Turk & Okifuki, 1994; Williams et al., 2002) 	. Baseline and 6-month follow-up
Depression diagnosis since injury	. "Since your injury, have you been diagnosed with depression?" (yes/no)	. 6-month follow-up only
Use of anti-depressants	. "Are you currently taking anti-depressants?" (yes/no)	. 6-month follow-up only
Consultation with a health professional	. "Are you currently seeing or talking on the telephone to a health professional about your emotional or mental health?" (yes/no)	. 6-month follow-up only

Other Variables

VARIABLE	DEFINITION	ASSESSMENT
RTW Status	<ol style="list-style-type: none"> 1. Sustained 1st RTW (RTW-S): remained at work after the 1st RTW attempt 2. RTW with recurrence(s) of work absence (RTW-R): did not remain at work after the 1st RTW attempt, and may or may not be at work at the time of interview 3. No RTW: never made a RTW attempt 	<ul style="list-style-type: none"> • Baseline and 6-month follow-up

Analysis

- Based on participants who did not self-report a depression diagnosis in the year before injury (n=599 at baseline; n=430 at 6 months)
- Prevalence, incidence, and course of high levels of depressive symptoms
 - Course between baseline and 6 months:
 - **Stable low levels:** **low** at baseline, **low** at 6 months
 - **Emerging high levels:** **low** at baseline, **high** at 6 months
 - **Resolving levels:** **high** at baseline, **low** at 6 months
 - **Persisting high levels:** **high** at baseline, **high** at 6 months
- Prevalence of depression diagnosis since injury and mental health treatment at 6 months

Results – Prevalence of High Levels of Depressive Symptoms

Sample	Prevalence at BASELINE (95% CI) (n=599)	Prevalence at 6 MONTHS (95% CI) (n=430)
Total Sample	42.9 (38.9-46.9)	26.5 (22.3-30.7)
By RTW Status– BASELINE*		
RTW-S	30.0 (24.7-35.4)	
RTW-R / No RTW	54.7 (49.1-60.2)	
By RTW Status – 6 MONTHS*		
RTW-S		17.7 (12.9-22.5)
RTW-R / No RTW		38.6 (31.6-45.6)

* RTW-S: Sustained First RTW

RTW-R: RTW with Recurrence(s) of Work Absence

No RTW: No RTW attempts

Results – Course of High Levels of Depressive Symptoms

Sample	Low Levels at Baseline (n=250)		High Levels at Baseline (n=180)	
	Stable low (low/low) ----- % (95% CI)	Emerging High (low/high) ----- % (95% CI)	Resolving (high/low) ----- % (95% CI)	Persisting High (high/high) ----- % (95% CI)
Total Sample	88.4 (84.4-92.4)	11.6 (7.6-15.6)	52.8 (45.5-60.1)	47.2 (39.9-54.5)
By RTW Status– BASELINE*				
RTW-S	88.3 (83.0-93.5)	11.7 (6.5-17.0)	48.2 (35.1-61.3)	51.8 (38.7-64.9)
RTW-R / No RTW	88.4 (82.2-94.6)	11.7 (5.5-17.9)	54.9 (46.1-63.8)	45.1 (36.3-53.9)
By RTW Status– SIX MONTHS*				
RTW-S	91.6 (87.2-96.0)	8.4 (4.1-12.8)	66.3 (56.5-76.1)	33.7 (23.9-43.5)
RTW-R / No RTW	83.2 (75.6-90.7)	16.8 (9.3-24.4)	38.2 (28.1-48.3)	61.8 (51.7-71.9)

* RTW-S: Sustained First RTW

RTW-R: RTW with Recurrence(s) of Work Absence

No RTW: No RTW attempts

Results – Depression Diagnosis and Treatment

Sample	Received a depression dx n=430 ----- % (95% CI)	Mental Health Treatment at Six Months Post-Injury		
		Using antidepressants n=429 ----- % (95% CI)	Speaking with HCP n=430 ----- % (95% CI)	Antidepressants and/or HCP n=429 ----- % (95% CI)
Total Sample	5.1 (3.0-7.2)	7.9 (5.4-10.5)	4.9 (2.9-6.9)	9.6 (6.8-12.3)
By Course of Symptoms				
Stable Low (low/low)	0.9 (0-2.2)	4.1 (1.5-6.7)	0.9 (0-2.2)	5.0 (2.1-7.8)
Emerging High (low/high)	13.8 (1.2-26.3)	6.9 (0-16.1)	10.3 (0-21.4)	10.3 (0-21.4)
Resolving (high/low)	5.3 (0.8-9.8)	6.3 (1.4-11.2)	2.1 (0-5.0)	7.4 (2.1-12.6)
Persisting High (high/high)	12.9 (5.8-20.1)	20.2 (11.7-28.8)	16.5 (8.6-24.4)	23.8 (14.7-32.9)
By Dx Since Injury				
Not Diagnosed (n=408)		4.9 (2.8-7.0)	2.0 (0.6-3.3)	6.1 (3.8-8.5)
Diagnosed (n=22)		63.6 (43.5-83.7)	59.1 (38.6-79.6)	72.7 (54.1-91.3)

Strengths and Limitations

Strengths:

- Prospective follow-up of depressive symptoms in workers following a workplace injury
- Documentation of depression diagnosis and treatment in injured workers
- Relatively representative sample of lost-time claimants

Limitations:

- Results may not be generalizable to younger injured workers or those with a shorter work absence duration
- Lack of a comparison group
- Use of a cutoff score to categorize depressive symptom level
- Small sample size = wide confidence intervals
- Self-reported nature of depression diagnosis and treatment

Discussion

- Depressive symptoms are pervasive in injured workers (43% and 27% at one month and 6 months, respectively)
 - Prevalence estimates of CES-D ≥ 16 in other populations:
 - General working: 14-23% (Iwata et al., 1989; Wada et al., 2006)
 - Community: 11-25% (Eaton & Kessler, 1981; Carroll et al., 2000; Gruzca et al., 2003)
- Depressive symptoms are a significant issue in those with problematic RTW trajectories

Discussion (2)

- Persistence and resolution are equally likely to occur at 6 months in those demonstrating high levels of depressive symptoms shortly after the injury
 - Consistent with recovery rates of clinical depression in general population studies (54-63% by 6 months) (Keller et al., 1992; Spijker et al., 2002)
 - Depressive symptoms may be a “normal” reaction to injury and will resolve without treatment
- Few claimants with persistently high levels of depressive symptoms are diagnosed (13%) or treated (24%) for clinical depression
 - High depressive symptom levels not necessarily = clinical depression
 - May signify an ↑ risk for clinical depression in this population
- Provision of diagnosis associated with receipt of treatment BUT 27% of workers with a diagnosis were *not* receiving treatment at six months



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Implications and Future Directions

- Early treatment may not be appropriate for transient depressive symptoms
- Education for health care providers
- Future research:
 - Factors that distinguish “normal” reaction to injury from “problematic” and persistent reaction
 - Predictors of optimal recovery
 - Determinants of depression diagnosis and treatment



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