

Return to work in women after work-related musculoskeletal injuries in Western Australia 2014-2016

Dr Sonu Thapa
MBBS AFOEM Registrar

Project supervisors: Prof. Lin Fritschi &
Associate Prof. Alison Reid
Curtin University School of Public Health, WA
Educational supervisor: Dr Heather Campbell

Outline

- Introduction
- Literature review
- Overview of study methodology
- Results
- Conclusion & recommendations

Hypothesis

- Women take longer time off from work following occupational musculoskeletal injury than men.

Introduction

Australian workforce

- 12.5 million (2013- 2014)
- 4.3% (531,800) - work-related injury/ illness
 - Huge economic burden - \$61.8 billion (4.1% of GDP)
 - Musculoskeletal injury- common

(Australian Bureau of Statistics [ABS] 2014; Greiner, Nolan & Hogan, 2012)

Introduction

- WorkCover WA (Western Australia)
 - 32,721 work-related injury/ disease claims (2014-15)
 - 55% (overall claims) - musculoskeletal injury
 - Rest- wound/amputation/internal organ damage/fractures
 - 53% (overall claims)- lost time claims
 - 2 X male workers

(WorkCover WA, 2012 & 2014a)

Injury classification, Australian Safety and Compensation Council (ASCC), 2008

Major group	Sub group	Minor group
Musculoskeletal and connective tissue disease	Spinal vertebrae and intervertebral disc diseases - dorsopathies	Eg: Disc displacement, prolapse, degeneration or hernia; Back pain, lumbago, and sciatica
	Diseases of muscle, tendon and related tissue	Eg: Tendinitis; Epicondylitis; Muscle/tendon strain (non-traumatic)
	Diseases involving the synovium and related tissue	Eg: Synovitis; tenosynovitis; Ganglion, trigger finger
	Other soft tissue diseases	Eg; Bursitis; Occupational overuse syndrome
	Joint diseases (arthropathies) and other articular cartilage diseases	Eg: Osteoarthritis/arthropathies; Meniscal pathology
Traumatic joint/ligament and muscle/tendon injury	Trauma to joints and ligaments	Eg: Dislocation/Whiplash
	Trauma to muscles and tendons	Eg: Trauma to muscles/tendon
	Soft tissue injury due to trauma	Eg: Back injury/ Back spasm

Literature review

Women in the workforce

- Australia
 - 42.6% - 2016 (36% - 1978)
 - increased risk of
 - work-related injury/illness
 - musculoskeletal injury

(Parliament of Australia, 2013)

Literature review

Risk of injury in men and women

- Overall Injury higher in men (1.4 X)
- Women higher risk - musculoskeletal injury
(Involved in manual handling & high physical demand work)

Gender differences explained by:

- Differences in muscle co-ordination, strength, movement strategy
- under reporting
- easy dismissal - women's concerns

(Berecki-Gisolf et al. 2015; Smith & Mustard, 2004)

Literature review

Return to work in men and women

- Australia (2013- 14)
 - time-off from work - 61% workers
 - Minimal gender difference (62%m vs 60%f)

- Delayed return to work
 - Increasing age
 - Female sex
 - Occupation- labouring/ manual handling work
 - Having dependents
 - Psychosocial issues

(ABS, 2014; Johnson & Fry, 2002; Krause et al., 2001)

Do women take longer time off from work following occupational musculoskeletal injury?

Aim

- Evaluate number of days lost from work by female workers in comparison to male workers after workplace musculoskeletal injury.

Methods

- **Study design** - Retrospective cohort study
- **Time period**- July 2014 to March 2016
- **Dataset**- WorkCover WA database system
- *Curtin University* Health Research Ethics Committee approval

Methods

Demographics

- Total number – 5,870 musculoskeletal injury claims
- Male/ female workers
- Age- 18 to 65 yrs
- Lodged workers' compensation claim - WorkCover WA
 - Lost time claim
- Occupation
 - Australian and New Zealand Standard Classification of Occupations (ANZSCO)
- Occupational musculoskeletal injury
 - Australian Safety and Compensation Council (ASCC), 2008 classification

Methods

Statistical analysis

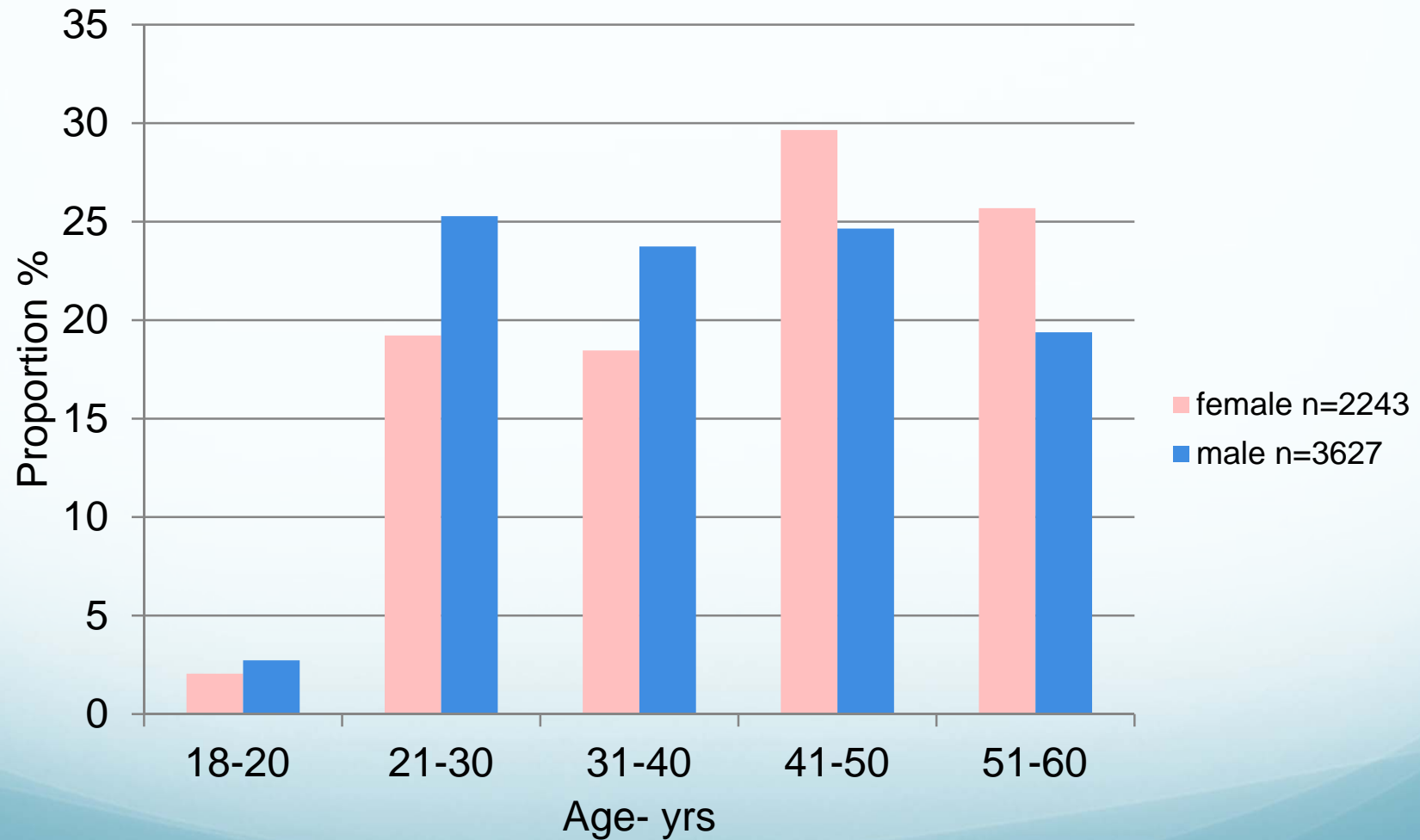
- STATA Version 14.0 statistical software
 - Univariate analysis
 - Multivariate analysis
- Excel software
 - Exponentiate log-transformed days lost

Results

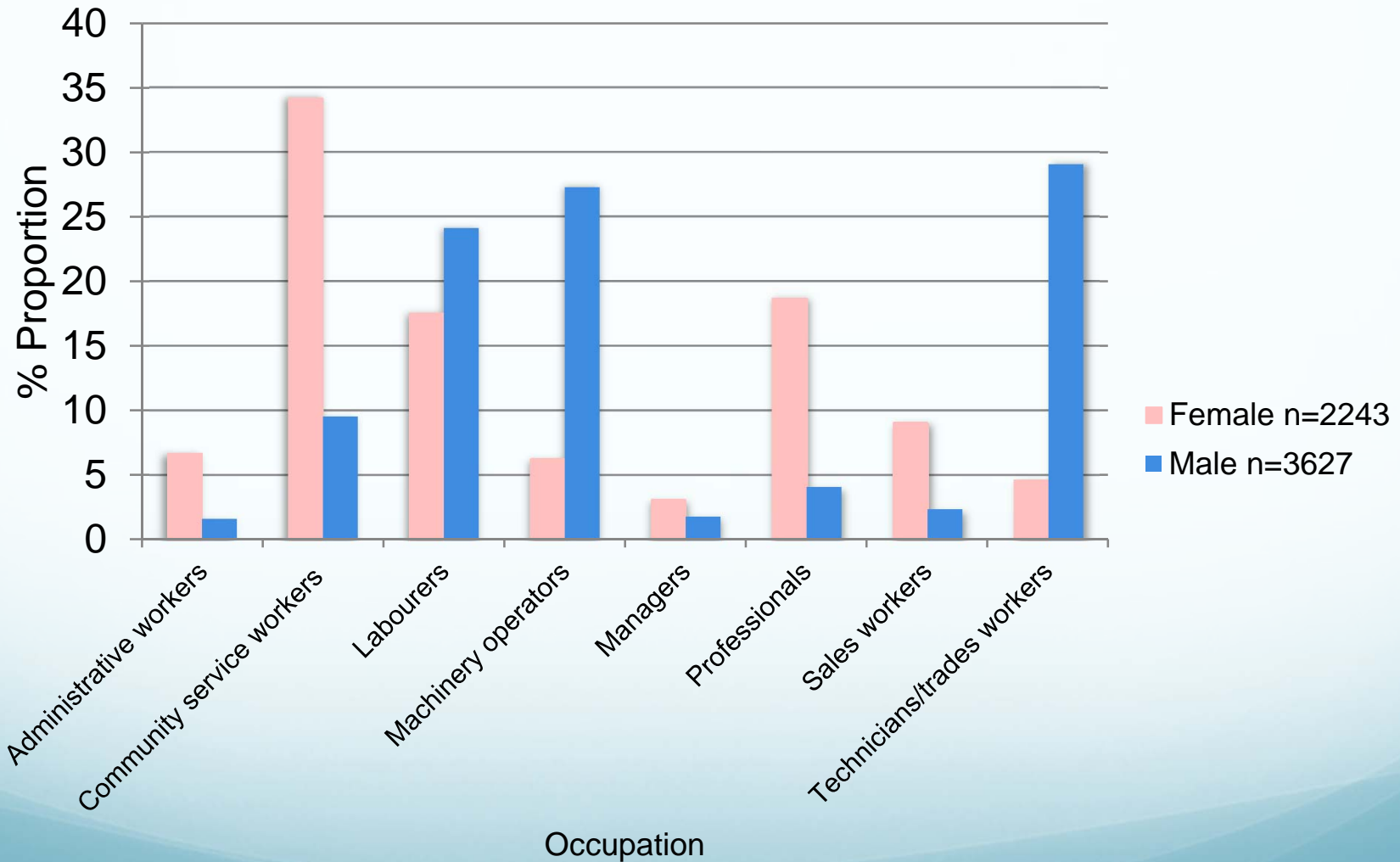
Total lost-time musculoskeletal injury claim in both gender



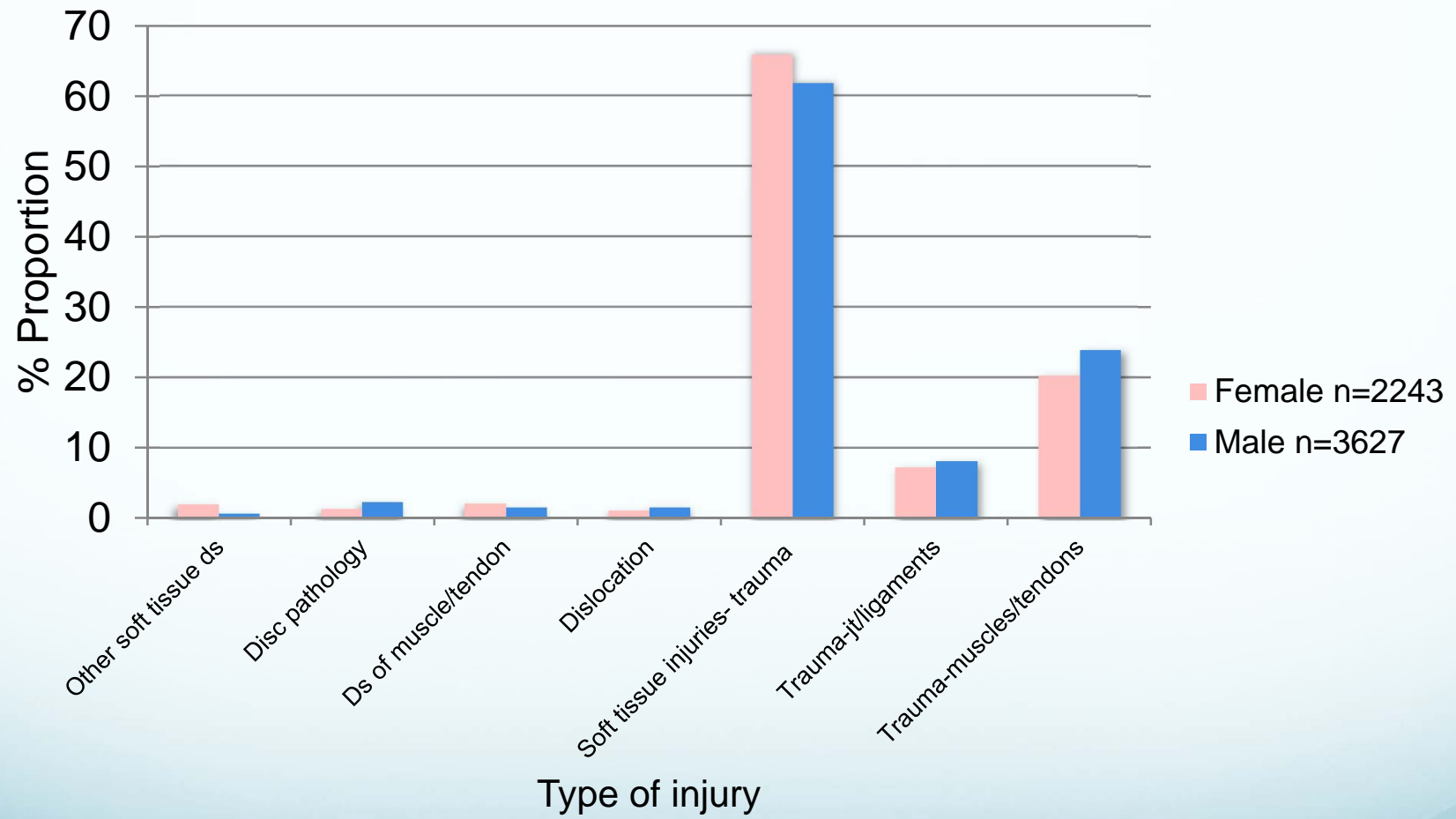
Proportion of occupational musculoskeletal injury between female and male gender in comparison to age



Proportion of occupational musculoskeletal injury between female and male gender in comparison to occupation



Proportion of occupational musculoskeletal injury between female and male gender in comparison to type of injury



Univariate and Multivariate analysis for days lost from work following occupational musculoskeletal injury

		Univariate analysis	Multivariate analysis
Gender	n	B(coeff) [95%CI]	B(coeff) [95%CI]
Male	3,627		
Female	2,243	0.99 [0.92- 1.08] <i>p</i> =0.87	1.1[0.99- 1.21] <i>p</i> =0.05

Adjusted factors- age, occupation, type of injury

Example: Days lost from work following injury

Occ/injury	Age (yrs)	<i>Days lost</i>	
		female	male
Labourer/soft tissue injury-trauma	20	14.1	12.8
	60	19.3	17.6
Community worker/disc pathology	20	26.7	24.3
Technician/ disc pathology	40	39.3	35.8

Limitations of study

- **Reliance on Workers' compensation claim database**
 - For Injury type classification
 - Lack of information in the database
 - Duration of claim
 - Co-morbidities
 - Severity of injury
 - Injury management
 - Psychosocial factors
 - Pre- injury
 - During claim period

Conclusion

- Total number of days taken off from work
 - More in female workers
 - Following work-related musculoskeletal injury
- Significant factors in delayed RTW
 - Age
 - Occupation
 - Type of injury

Conclusion

- Scope of further study
 - gender difference accounting for absenteeism
 - evaluation of
 - Co-morbidities
 - specific job task within an occupation
 - severity and specific type of injury
 - medical management of the injury
 - psychosocial issues

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Number and proportion of occupational musculoskeletal injury between female and male gender in comparison to age

Age (yrs)	Female		Male	
	n	%	n	%
18-20	46	2.05	99	2.73
21-30	431	19.22	917	25.28
31-40	414	18.46	861	23.74
41-50	665	29.65	894	24.65
51-60	576	25.68	703	19.38
61-65	111	4.95	153	4.22
	2,243	100	3,627	100

Number and proportion of occupational musculoskeletal injury between female and male gender in comparison to occupation

Occupation	Female		Male	
	n	%	n	%
Clerical/administrative workers	150	6.69	60	1.65
Community/personal service workers	766	34.15	347	9.57
Labourers	393	17.52	876	24.15
Machinery operators/drivers	140	6.24	990	27.30
Managers	69	3.08	66	1.82
Professionals	419	18.68	148	4.08
Sales workers	203	9.05	86	2.37
Technicians/trades workers	103	4.59	1,054	29.06
	2243	100	3627	100

Number and proportion of occupational musculoskeletal injury between female and male gender in comparison to type of injury

Type of injury	Female		Male	
	n	%	n	%
Other soft tissue disease	44	1.96	24	0.66
Disc displacement, prolapse, degeneration	31	1.38	85	2.34
Diseases of muscle, tendon and related	47	2.10	55	1.52
Dislocation	25	1.11	59	1.63
Soft tissue injuries due to trauma	1,477	65.85	2,241	61.79
Trauma to joints and ligaments	163	7.27	297	8.19
Trauma to muscles/ tendons	456	20.33	866	23.88
H7	2243	100	3627	100

Slide 29

H7

I'm not sure I understand the difference. Tendons, joints etc are all STIs. Can you explain what STIs due to trauma means and how it differs from the other categories?

Heather, 3/04/2017

Univariate and Multivariate analysis for days lost from work following occupational musculoskeletal injury

		Univariate analysis	Multivariate analysis
Age (yrs)	n	B(coeff) [95%CI]	B(coeff) [95%CI]
18-20			
21-30	1348	1.13[0.87-1.47] <i>p=0.4</i>	1.12[0.87-1.46] <i>p=0.4</i>
31-40	1275	1.4[1.07- 1.81] <i>p=0.012</i>	1.43[1.10- 1.86] <i>p=0.007</i>
41-50	1559	1.4[1.08- 1.81] <i>p=0.012</i>	1.45[1.12-1.88] <i>p=0.005</i>
51-60	1279	1.30[1.004- 1.7] <i>p=0.05</i>	1.37[1.05- 1.77] <i>p=0.02</i>
61-65	264	1.45[1.07-2] <i>p=0.018</i>	1.54[1.13-2.1] <i>p=0.006</i>

Univariate and Multivariate analysis for days lost from work following occupational musculoskeletal injury

Occupation		Univariate analysis	Multivariate analysis
	n	B(coeff) [95%CI]	B(coeff) [95%CI]
Clerical/administrative workers	210		
Community/personal service workers	1113	1[0.8-1.25] p=0.97	1.05[0.84-1.31] p=0.7
Labourers	1269	1.27[1.02-1.59] p=0.035	1.41[1.12-1.76] p=0.003
Machinery operators/drivers	1130	1.14[0.91-1.43] p= 0.24	1.25[0.99-1.57] p=0.058
Managers	135	1.07[0.77-1.49] p=0.67	1.1[0.79-1.52] p=0.6
Professionals	567	0.85[0.67-2.27] p=0.2	0.86[0.68-1.1] p=0.2
Sales workers	289	1.02[0.78- 1.34] p=0.88	1.09[0.83- 1.42] p=0.54
Technicians/trades workers	1157	1.05[.84-1.32] p=0.66	0.2[0.95- 1.51] p=0.12

Univariate and Multivariate analysis for days lost from work following occupational musculoskeletal injury

Type of injury		Univariate analysis	Multivariate analysis
	n	B(coeff) [95%CI]	B(coeff) [95%CI]
Other soft tissue disease	68		
Disc displacement, prolapse, degeneration	116	1.52[0.96-2.4] p=0.07	1.6[1.02-2.5] p=0.04
Diseases of muscle, tendon and related	102	1.06[0.66- 1.68] p=0.8	1.03[0.65-1.63] p=0.9
Dislocation	84	0.84[0.52-1.37] p=0.5	0.91[0.56-1.48] p=0.7
Soft tissue injuries due to trauma	3718	0.62[0.43- 0.89] p=0.01	0.63[0.44-0.9] p= 0.01
Trauma to joints and ligaments	460	0.6[0.41-0.88] p=0.009	0.63[0.43-0.93] p=0.02
Trauma to muscles/ tendons	1322	0.57[0.4-0.82] p=0.003	0.57[0.4-0.83] p=0.003

Major group	Sub group	Minor group
Musculoskeletal and connective tissue disease	Spinal vertebrae and intervertebral disc diseases - dorsopathies	<ul style="list-style-type: none"> ▪ Disc displacement, prolapse, degeneration or hernia ▪ Back pain, lumbago, and sciatica ▪ Neck pain, cervicalgia ▪ Spinal vertebrae and intervertebral discs diseases, not elsewhere classified
	Diseases of muscle, tendon and related tissue	<ul style="list-style-type: none"> ▪ Tendinitis ▪ Epicondylitis ▪ Frozen shoulder (adhesive capsulitis) ▪ Fasciitis ▪ Muscle/tendon strain (non-traumatic) ▪ Diseases of muscle, tendon and related tissue, not elsewhere classified
	Diseases involving the synovium and related tissue	<ul style="list-style-type: none"> ▪ Synovitis and tenosynovitis ▪ Ganglion, trigger finger, Dupuytren's contracture ▪ Diseases of synovium and related tissue, not elsewhere classified
	Other soft tissue diseases	<ul style="list-style-type: none"> ▪ Bursitis ▪ Occupational overuse syndrome ▪ Fibromyalgia, fibrositis and myalgia ▪ Complex regional pain syndrome ▪ Other specified soft tissue diseases, not elsewhere classified
	Joint diseases (arthropathies) and other articular cartilage diseases	<ul style="list-style-type: none"> ▪ Osteoarthritis/osteoarthrosis ▪ Inflammatory arthritis/arthropathies ▪ Infectious arthritis/arthropathies ▪ Meniscus degenerate/detached/retained/chronic tear ▪ Other chronic joint and ligament diseases
Traumatic joint/ligament and muscle/tendon injury	Trauma to joints and ligaments	<ul style="list-style-type: none"> ▪ Dislocation ▪ Trauma to joints and ligaments not elsewhere classified
	Trauma to muscles and tendons	<ul style="list-style-type: none"> ▪ Trauma to muscles ▪ Trauma to tendon ▪ Trauma to muscles and tendons, not elsewhere classified