



Embracing Seven Years of Functional Testing at a Mine

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Managing Director, JobFit Systems International

Thank you



Funding

Australian Coal Association Research Program

ACARP Project C14045

‘Validating the JobFit System Functional Assessment Method’



Researchers

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Assoc Prof Robin Burgess-Limerick BMHS (Hons) PhD CPE

Overview



- How big is the problem of sprains and strains and who's problem is it?
- How have we tried to fix it in the past and did it work?
- What does a JobFit System PEFA look like and what does it tell us?
- How has it been researched and what are the results?
- What do the results mean to us and what can we learn from the experiences of others?



There's a lot of work to do

Something you probably do know:

- Mining industry worker numbers are increasing and injury rates are decreasing ☺
- We need another 86,000 more workers between 2008 to 2020 ... Even more reason to look after the ones we've got!

We could be doing better



Something you may not know:

- 32 million = value of mining stat claims in Qld
- 1st = rank of average cost of claim by industry
- 33.5% = increase in mining claim cost
- \$211,300 = average case cost in mining
- \$4,150,143,300 in one year!



We all have responsibilities



Something you probably do know:

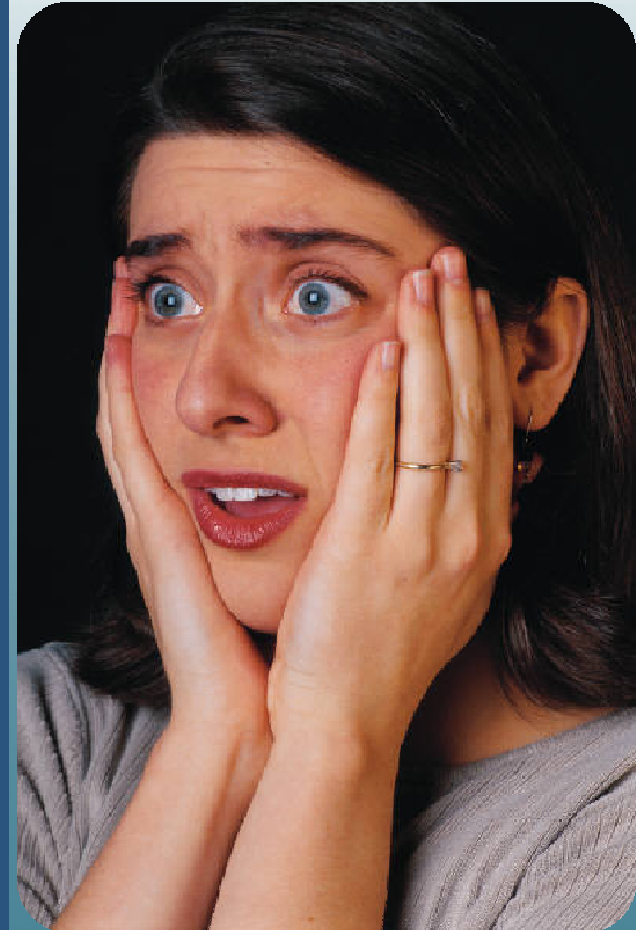
- The Queensland Workplace Health and Safety Act 1995 Section 28 (1) states “An employer has an obligation to ensure the workplace health and safety of each of the employer’s workers at work”.

It's bigger than you think



Something you may not know:

- 5.9% = percentage of Australian GDP of economic cost of workplace injuries...\$57.5 Billion (mining industry is 8% GDP)
- 3% = percentage borne by employers
- 49% = percentage borne by injured workers PLUS the pain!



We need to try new things

Multifactorial injuries require a multifactorial approach

- Work
 - Equipment
 - Processes
 - Training & behaviour
- Workers
 - Medicals & X-rays
 - Past WC history
 - Musculoskeletal screens



PEFAs are risk assessments



Pre-Employment Functional Assessment

Periodic-Employment Functional Assessment

Post-Employment Functional Assessment

= job specific short form functional capacity
evaluation that measures a person's capacity to
perform work at that time

Good to Excellent Reliability demonstrated

PEFAs are comprehensive



- Informed consent
- Medical history questionnaire
- Musculoskeletal screen
- Fitness test
- Postural tolerances (job-specific)
- Lifting and carrying (job-specific)
- **Individual Feedback**
- Overall score

PEFAs from real job demands



- JobFit System software compares worker capabilities to job demands
- Job demands database is used to develop job-specific assessment criteria
- Data matching capability is used to give PEFA score



Real job demands



JobFit System 2007 Demo Database - JobFit System 2007.12.15.0

Global company - Main Copy

Search

Default Admin User

Jobs

Jobs

Advanced Job Search...

Add a New Job...

Copy Job(s)...

JobFit Functions

Department Manager

Injury Prevention

Worker Rehabilitation

Find Risks

JobFit System

Workers

Tasks

Jobs

Reports

System Setup

Help & Support

Job Reports

Select Job: Dragline Operator

Which report would you like to view: Standard Job Report

View Report Options

Print Email Save Export Find Page Width

JOB REPORT

Dragline Operator

POSTURAL TOLERANCES

	N	O	F	C	NT
Back					
Bend Forward	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bend Backward	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rotate Left	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rotate Right	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Combined	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Neck					
Head Down	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Head Up	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rotate Left	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rotate Right	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Combined	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shoulder					

MATERIAL HANDLING

	Awkward Load
Floor Lift	
Occasional	35.00 kg
Frequent	0.00 kg
Continuous	0.00 kg
Bench Lift	
Occasional	35.00 kg
Frequent	10.00 kg
Continuous	0.00 kg
Shoulder Lift	
Occasional	0.00 kg
Frequent	0.00 kg
Continuous	0.00 kg
Above Shoulder Lift	

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Home Job List Dragline Operator Job Reports

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Objective matching



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Search

Default Admin User

Workers

Workers

Advanced Worker Search...

Add a New Worker...

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Find Risks

JobFit: "001 - Peter Employment" vs "Dragline Operator"

Worker Injury Prevention Job Injury Prevention Rehab by Department Rehab by Job Rehab by Task

Compare using data from site: Global company - Main Copy

001 - Employment, Peter

Dragline Operator

Drill Operator [Pre-Employment]

Design a Job

Select Workers

Select Jobs

Clear

Summary Postural Tolerances Material Handling Grip Strength Health & Hygiene Human Factors PPE Environment

Add Task(s) to Job Hide Task(s) from Job

001 - Peter Employment

Requirement	Suitable	Postural Tolerances			Material Handling			Grip Strength			Health & Hygiene			Human Factors			PPE			Environment			
		✓	X	NT	✓	X	NT	✓	X	NT	✓	X	NT	✓	X	NT	✓	X	NT	✓	X	NT	
Dragline Operator [Including Tasks Listed Below]	<input type="checkbox"/>	27	0	16	13	2	6	6	0	0	2	1	0	1	4	0	0	0	0	0	0	0	0
Dozer operation	<input type="checkbox"/>	22	0	21	12	0	9	6	0	0	1	1	0	0	2	0	0	0	0	0	0	0	
Dragline cable, coupling	<input type="checkbox"/>	19	0	24	11	1	9	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dragline cable, moving	<input type="checkbox"/>	13	0	30	14	1	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dragline cable, positioning	<input type="checkbox"/>	12	0	31	11	1	9	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Alerts

JobFit System score: (none) Notes & Comments 21/08/2011 Save

Home Job List Dragline Operator Job Reports Worker List Peter Employment JobFit: "001 - Peter Employment" vs "Dragline Operator"

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Clear risk identification



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Default Admin User

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Workers

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Find Risks

JobFit: "001 - Peter Employment" vs "Dragline Operator"

Worker Injury Prevention Job Injury Prevention Rehab by Department Rehab by Job Rehab by Task

Compare using data from site: Global company - Main Copy

Select Workers

Select Jobs

Clear

001 - Employment, Peter

Dragline Operator

Drill Operator [Pre-Employment]

Design a Job

Summary Postural Tolerances **Material Handling** Grip Strength Health & Hygiene Human Factors PPE Environment Task Overview

Dragline cable, coupling Filter: Show all items

Material Handling	Task Requirement	Worker Score	Fit?
Floor Lift			
Occasional	NT	25.0kg	○
Frequent	NT	19.0kg	○
Continuous	NT	14.5kg	○
Bench Lift			
Occasional	35.0kg	30.0kg	✗
Frequent	0.0kg	22.5kg	✓
Continuous	0.0kg	17.5kg	✓
Shoulder Lift			
Occasional	0.0kg	30.0kg	✓
Frequent	0.0kg	22.5kg	✓

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Processing Results

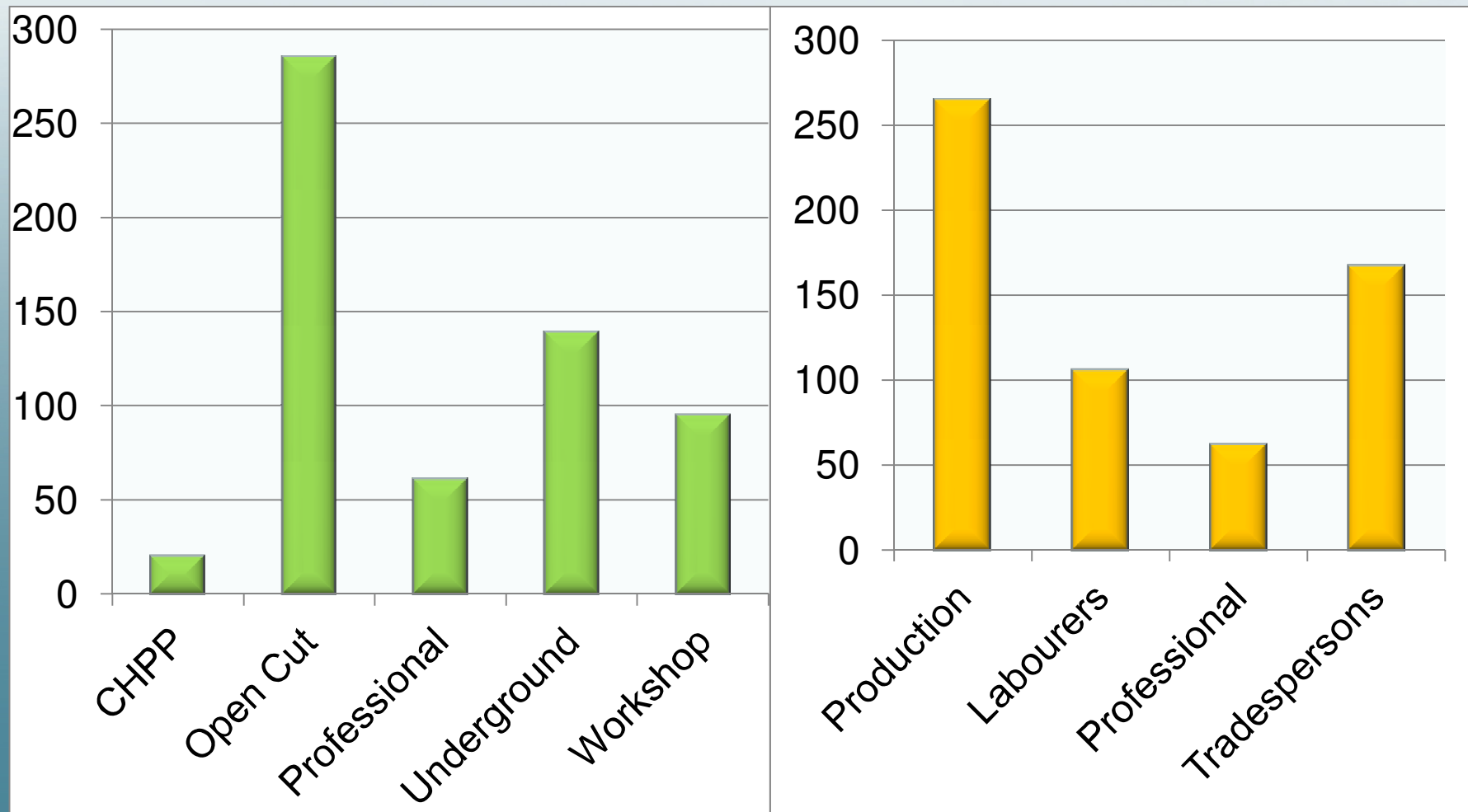




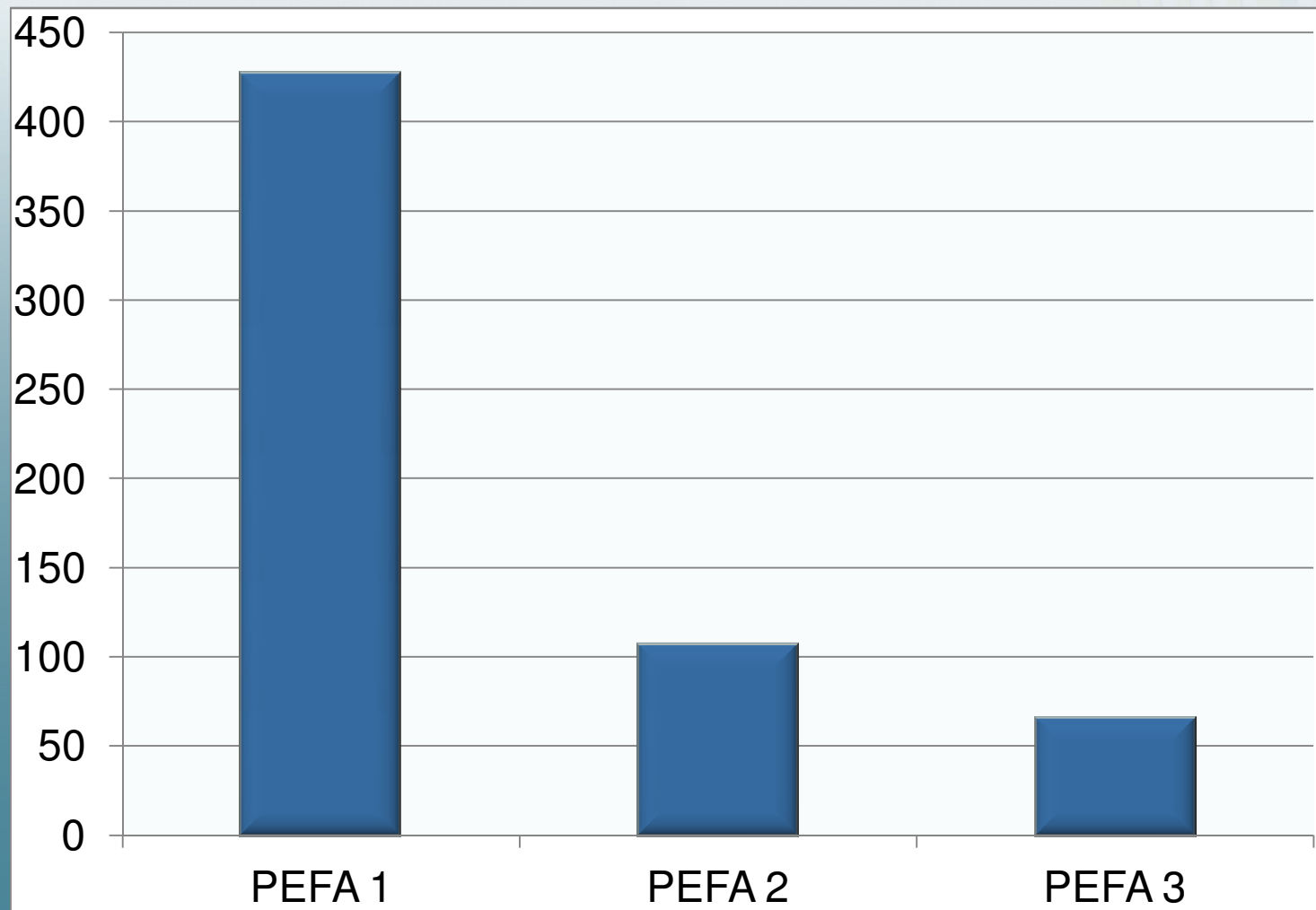
The Participants

- Large Queensland coal mine with OC and UG operations; part of their recruitment process
- 1019 PEFAs ...Excluded not hired, wrong job and female ... 600 records remained in the study
- Average age 37.3 years (range 17 - 62yrs)
- Open Cut workers oldest
- Tradespersons youngest

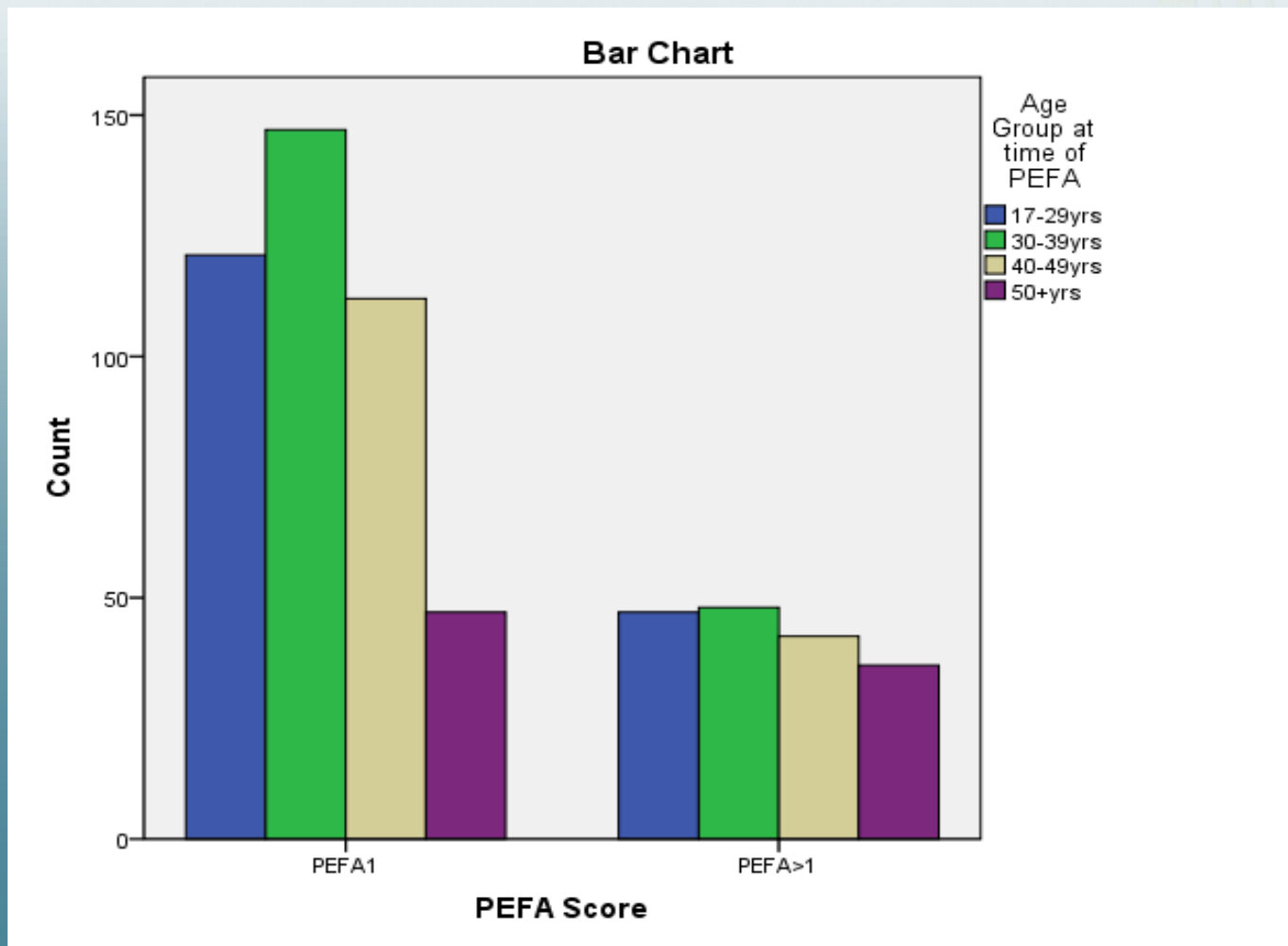
Departments and Occupations



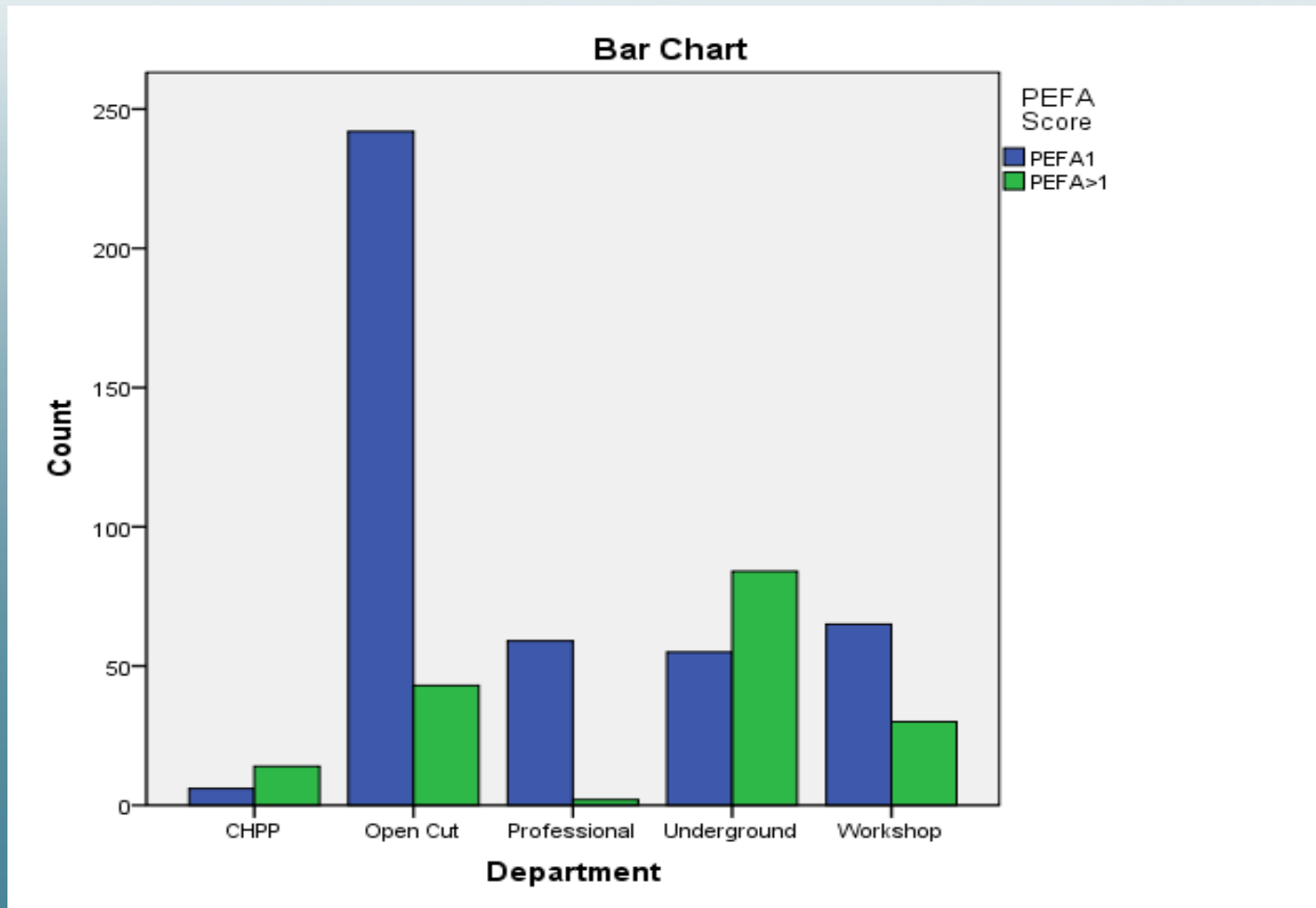
Most met the job demands



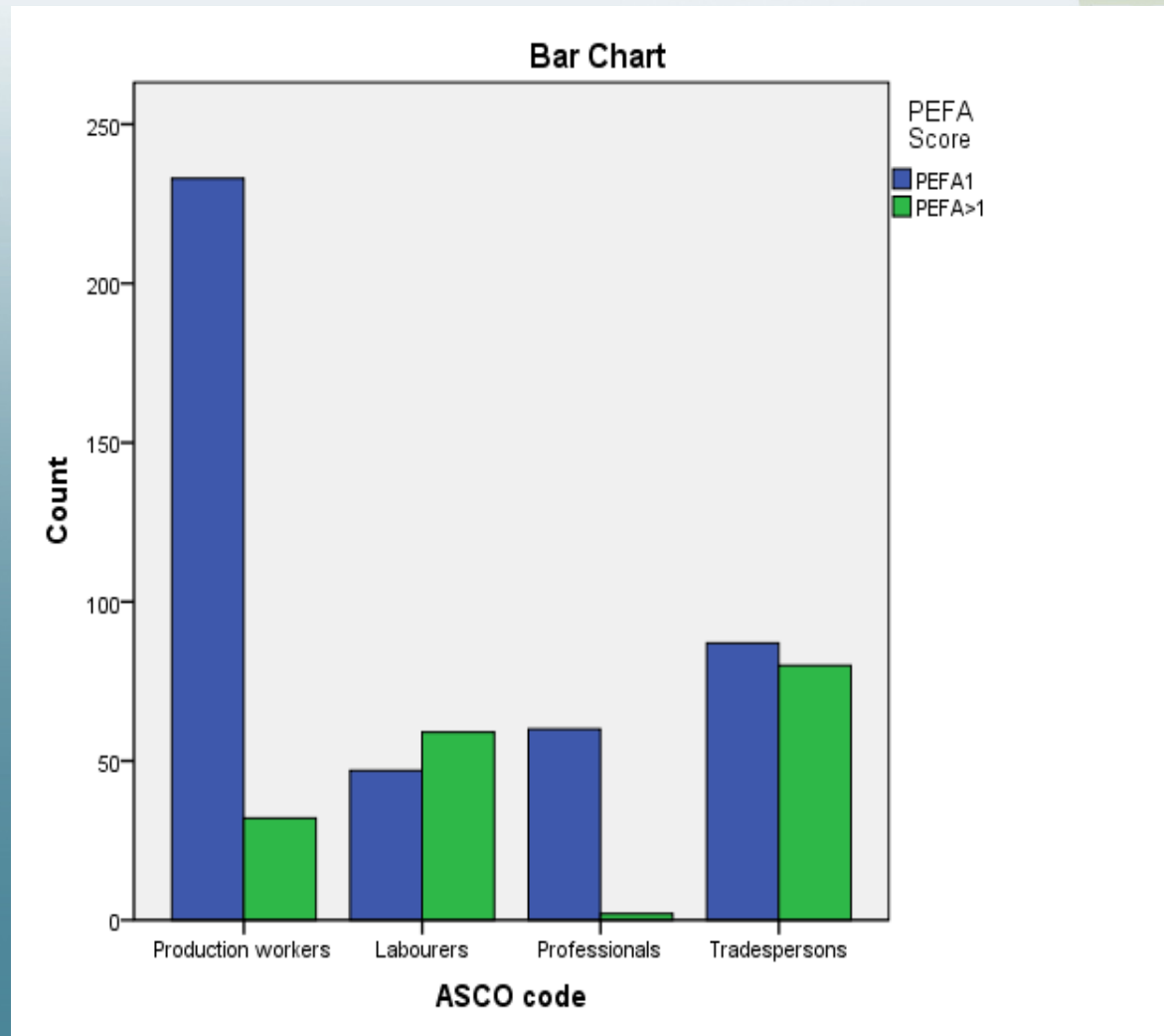
Age & PEFA was not significant

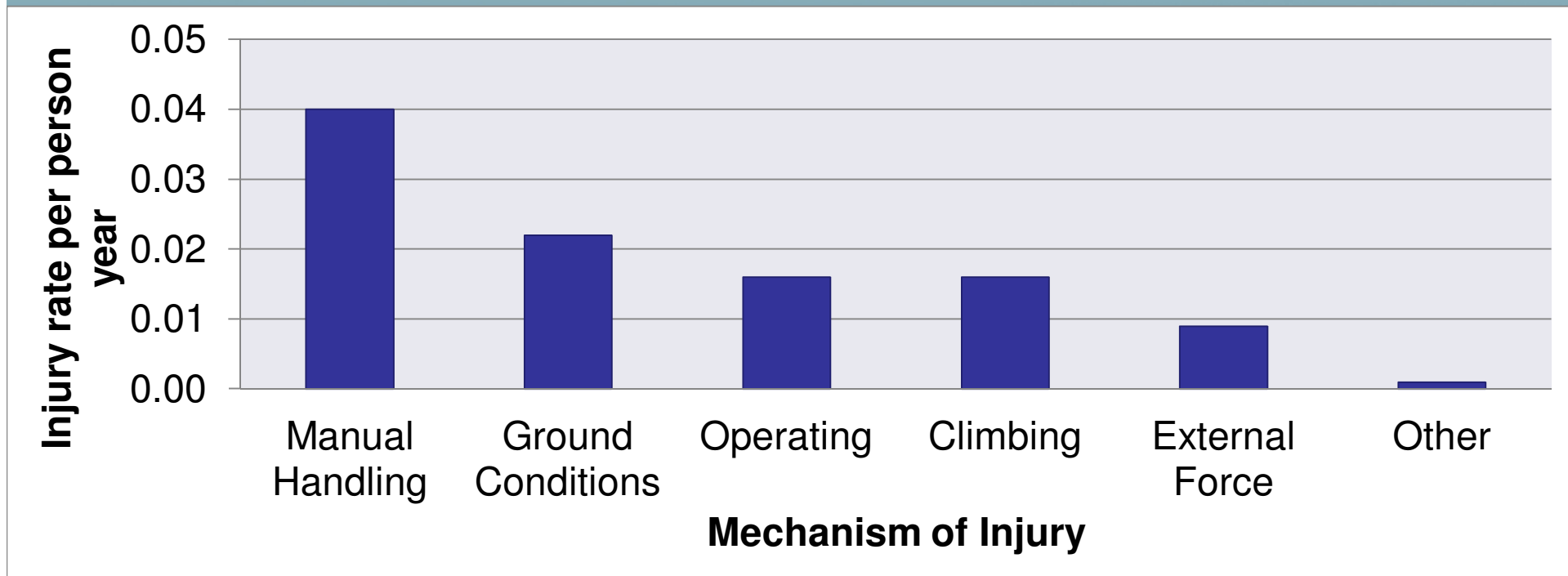
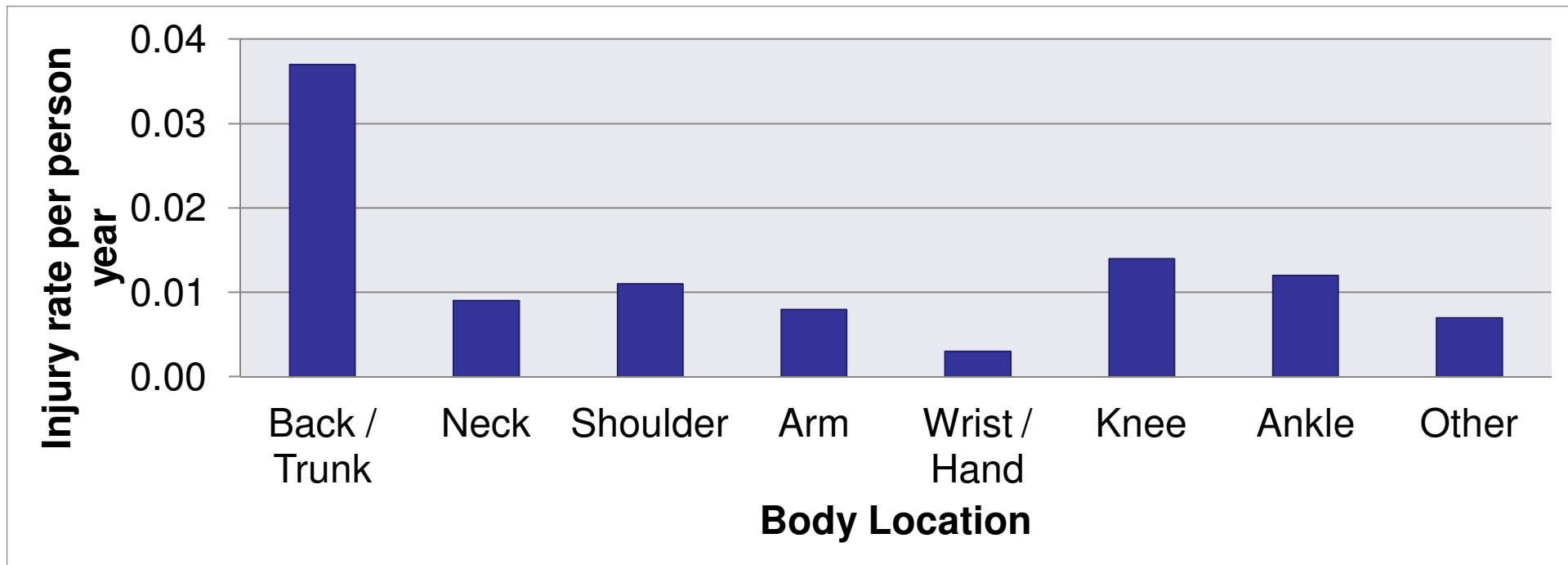


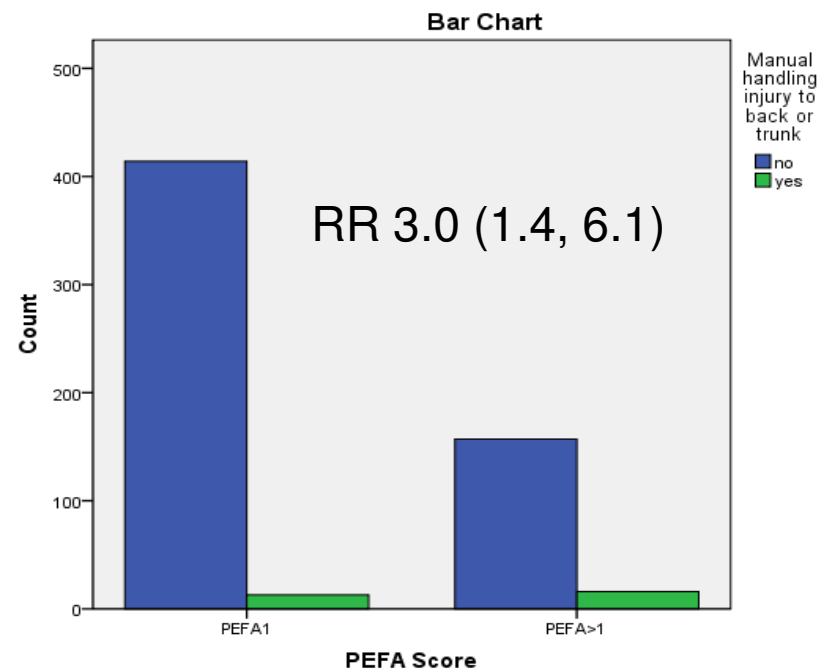
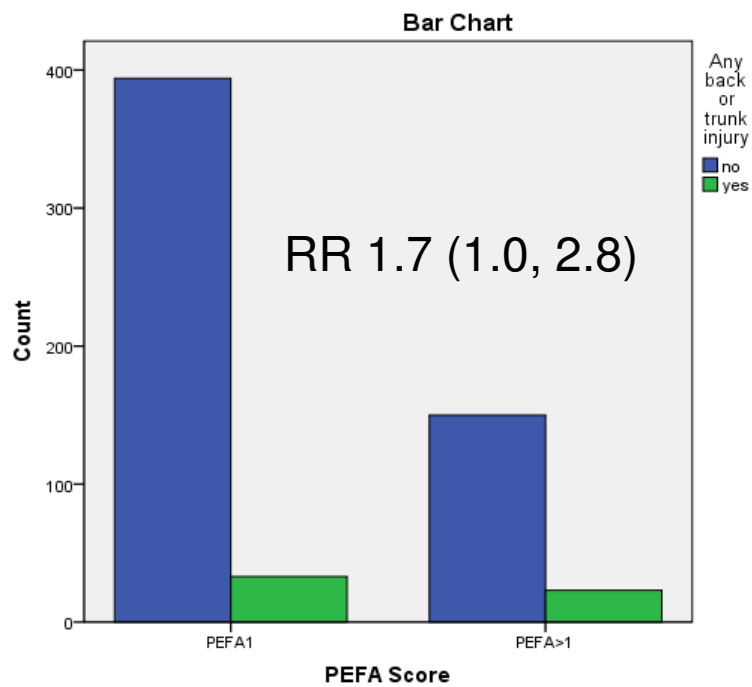
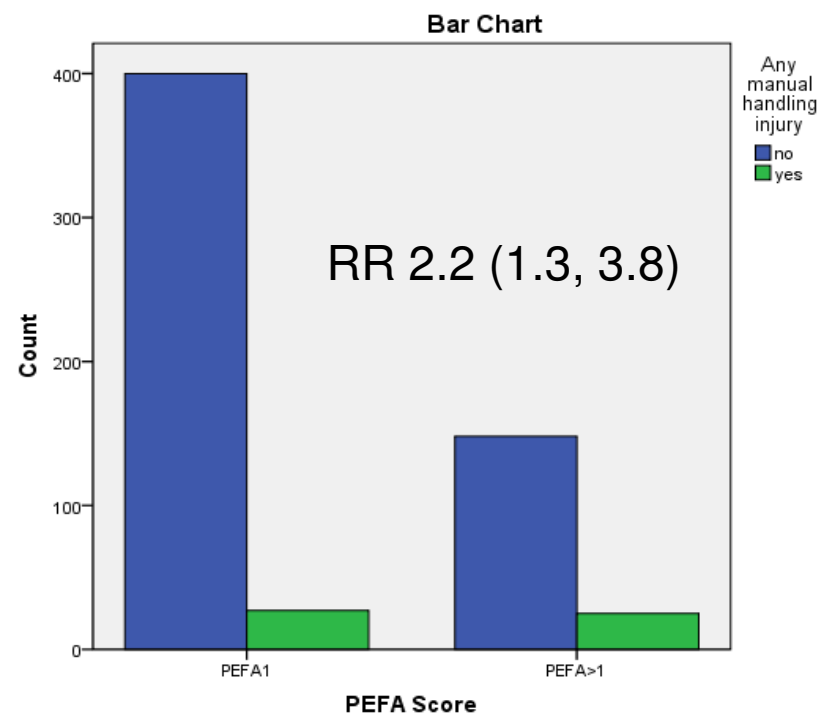
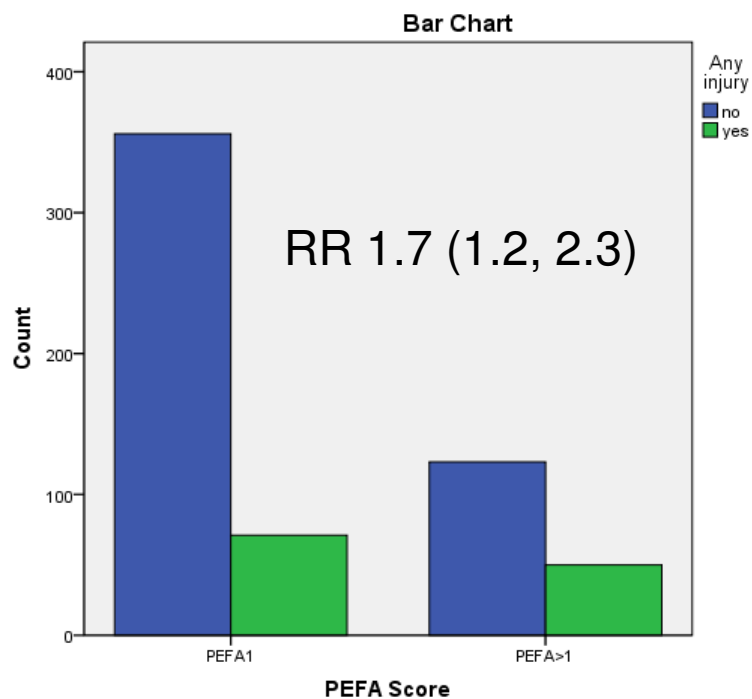
Dept & PEFA was significant



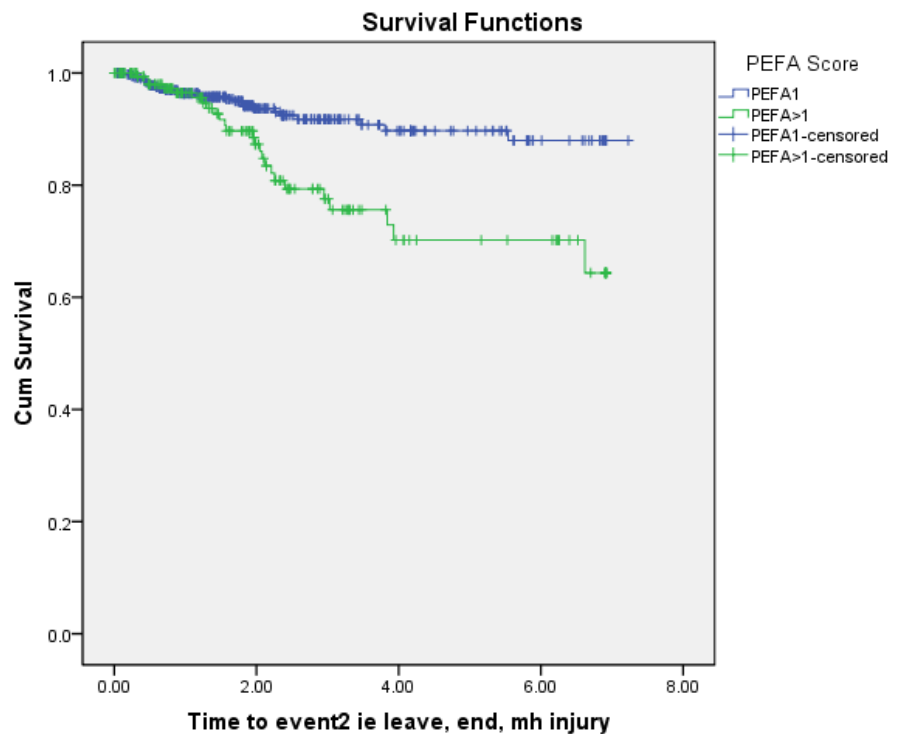
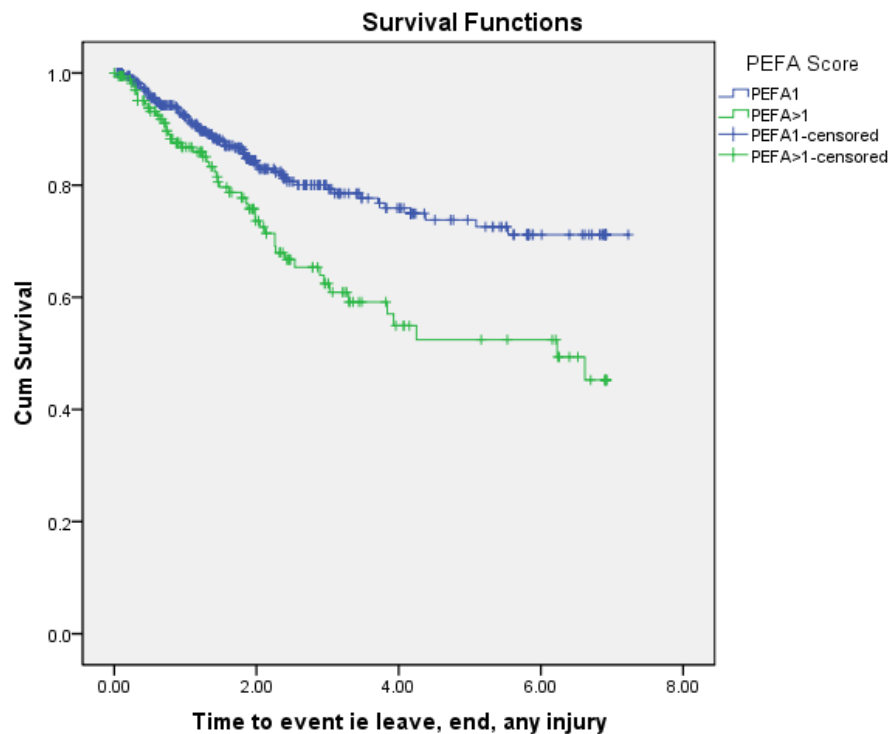
Job & PEFA was significant







PEFA & Survival



Workers who do not meet their job demands are more likely to be injured sooner.

Employers and workers decide



Learning from others



Poor Planning

Test \neq job

Pass / Fail

No follow up

No job mods

It's all part of the solution



- JobFit System PEFAs identify the risk
- Employers and workers accept the risk
- We all have to work together to manage the risk





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