The effectiveness of a novel multidimensional behavioural-based intervention on people with non-specific chronic low back pain: A case series

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O'Sullivan K, Dankaerts W, O'Sullivan L, O'Sullivan P
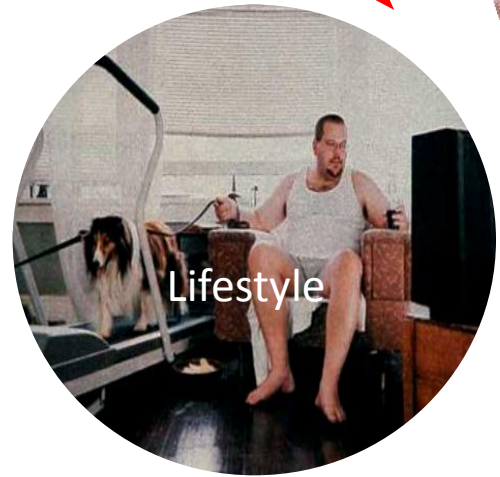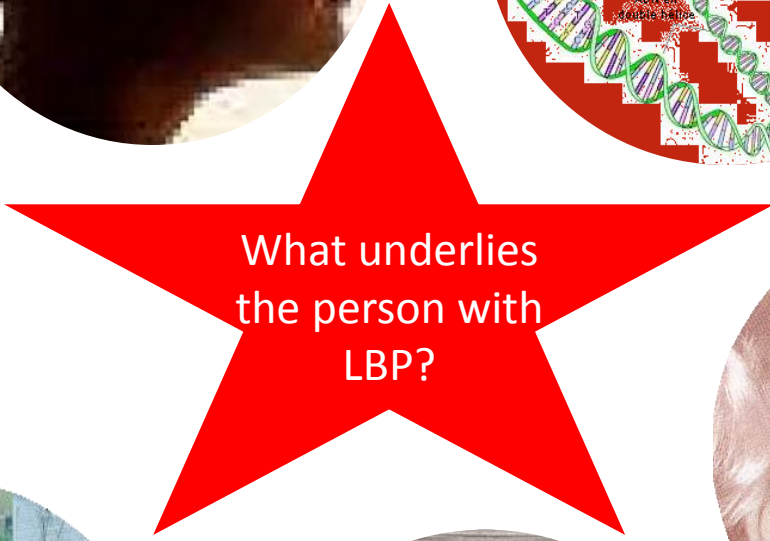
We only see what we are looking for!
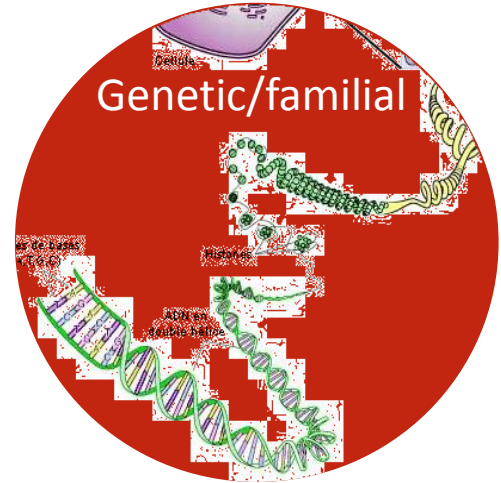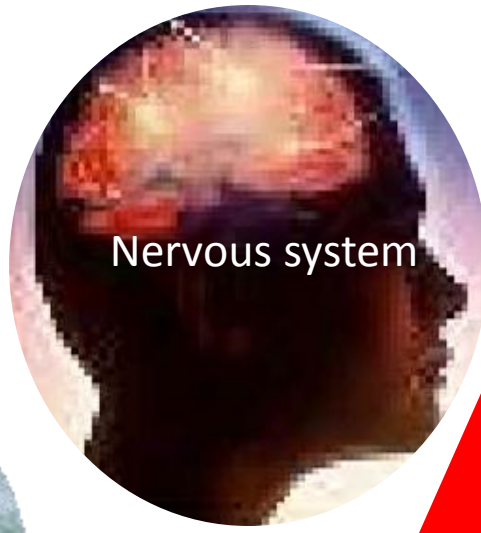
Management of coldsores?

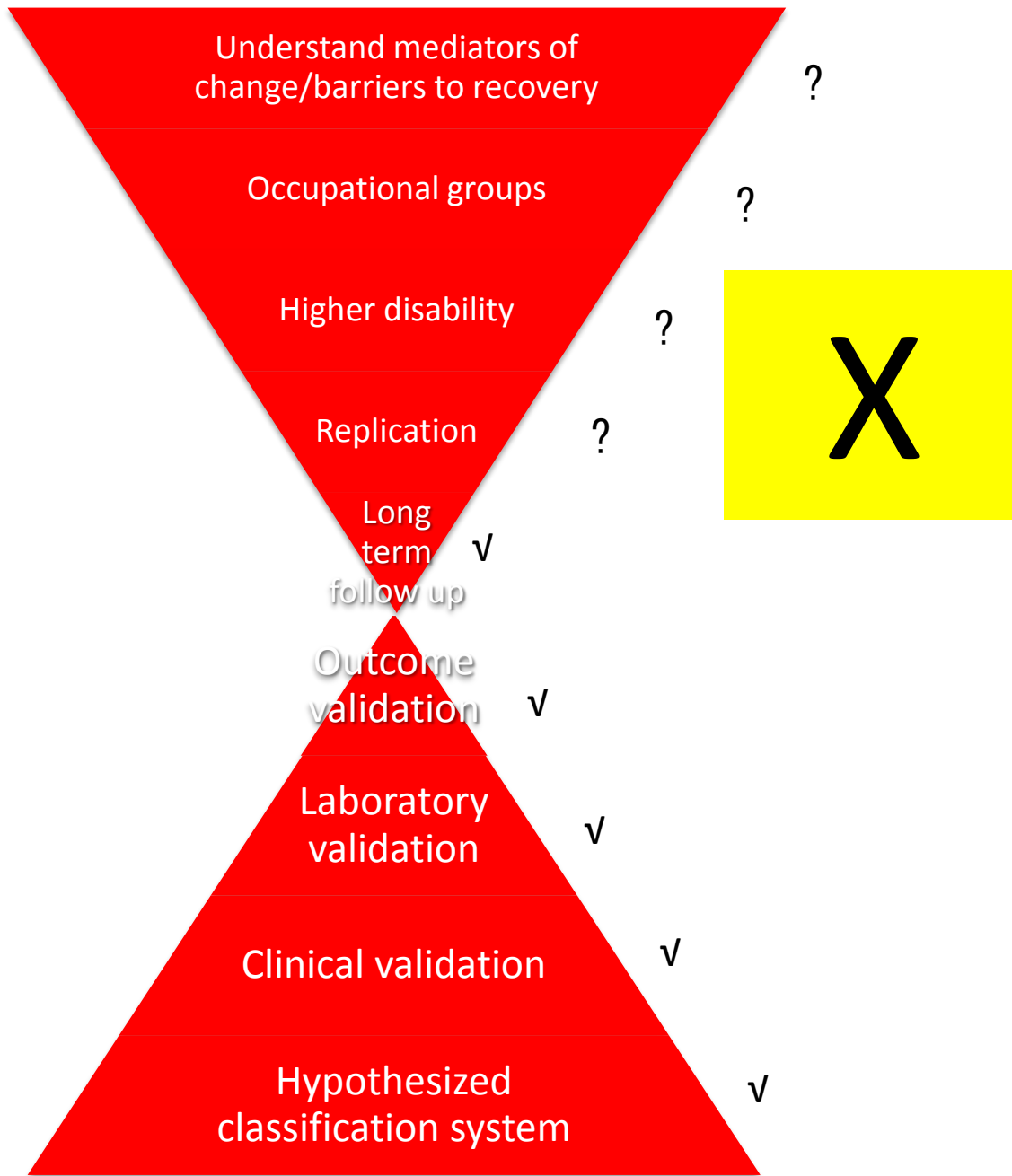
Both the "trigger" and the "vulnerability" are NB... <u>even if hard to change</u>

What if I developed LBPP at that time - psychosomatic?

Nervous system

Genetic/familial

Patho-anatomical

What underlies the person with LBP?

Cognitive and Psychosocial

Physical

Lifestyle

Introduction

- Most interventions for non-specific chronic low back pain (NSCLBP) display small effect sizes

- Classification-based Cognitive Functional Therapy (CB-CFT)

- individualised behavioural intervention

- targeting multiple BPS dimensions

- retraining provocative postures and movements

- cognitive reconceptualisation of pain

- targeting of psychosocial barriers to recovery

- Recent RCT (Fersum et al 2013) CB-CFT significantly more effective than MT & Exercise

Understand mediators of
change/barriers to recovery ?

Occupational groups ?

Higher disability ?

Replication ?

Long
term
follow up √

Outcome
validation √

Laboratory
validation √

Clinical validation √

Hypothesized
classification system √

X

Inc / exc criteria

- Awaiting pain management
- 18-65 years
- NSCLBP > 6 months
- NSCLBP was primary pain
- NSCLBP interfered with function
- NSCLBP was aggravated by changes in posture, movement or physical activity
- No specific spinal pathology (malignancy, fracture, infection, spinal stenosis, spondylolisthesis, inflammatory or bone disease)
- Normal LL reflexes
- Not pregnant or < 6 months postpartum
- No pain-relieving medical procedure in previous 3 months
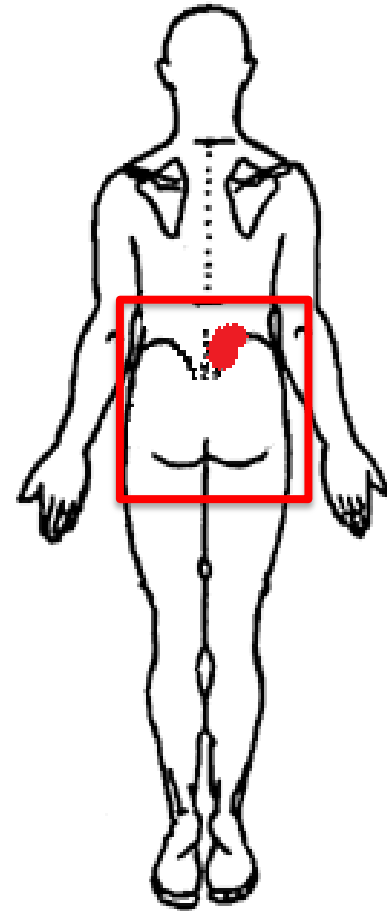
Participants

Gender	14F / 12M
Age	44.3(9.7) years
Height	171(10)cm
Mass	88.3(18.7)kg
BMI	30.1(5.3)
CLBP duration	141(120) months
Number of pain sites	4.3(1.9)
STarT Back risk profile	14 / 8 / 4 (high-mod-low)

Methods

- Multiple case-series (n=26) design study
- 3 phases (A1-B-A2)
- **A1:** 3 baseline measurements over 2 months
- **B:** CB-CFT intervention program (1:1), with mean 7.7 treatments (over avg of 12 weeks)
- **A2:** no-treatment follow-up lasting 12 months

Data

- ODI
- NRS
- A range of (physical and psychosocial) secondary outcomes were evaluated

- N=26 at baseline
- N=24 completed intervention (1 - procedure, 1 - RTA)
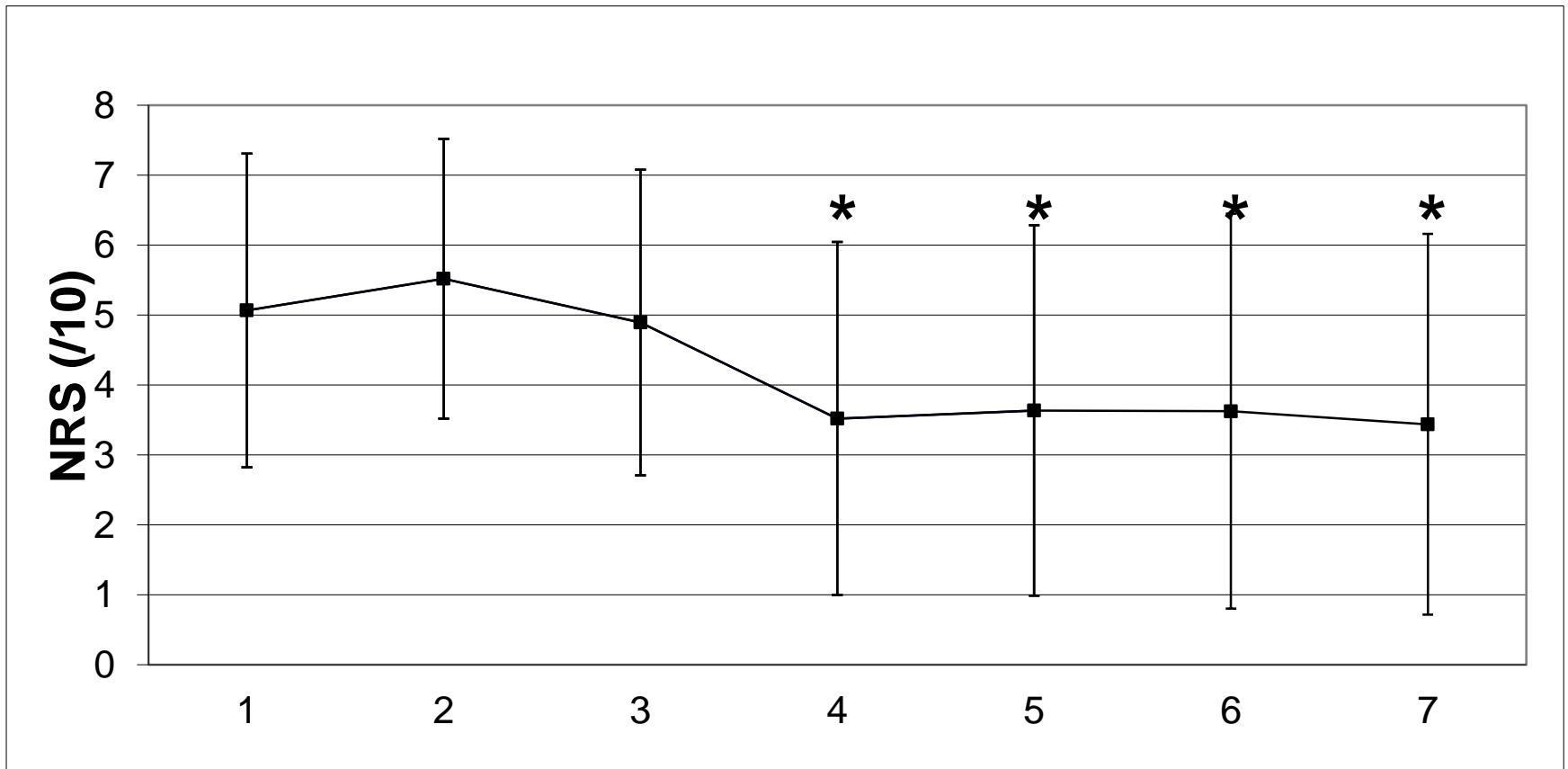- N=23 at 3 / 6 months
- N=21 at 12 months

- GLM RM ANOVA / Friedman's (Bonferroni) compared NRS / ODI across 7 time intervals – ITT (LOCF) analysis

Cognitive functional therapy to manage disabling LBP on pain clinic wait list
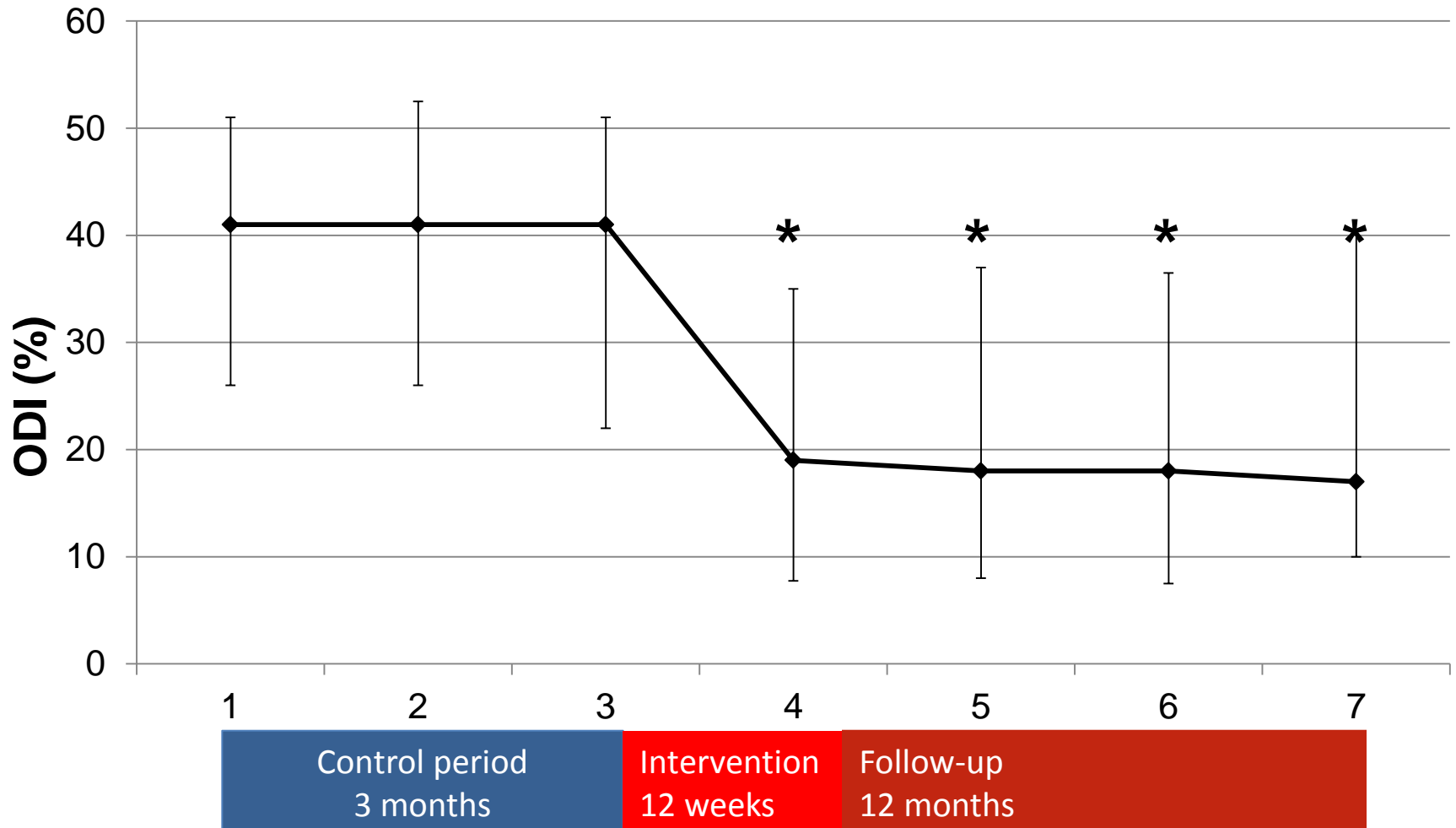
Cohen's D = 0.85 (large effect size)

Cognitive functional therapy to manage disabling LBP on pain clinic wait list
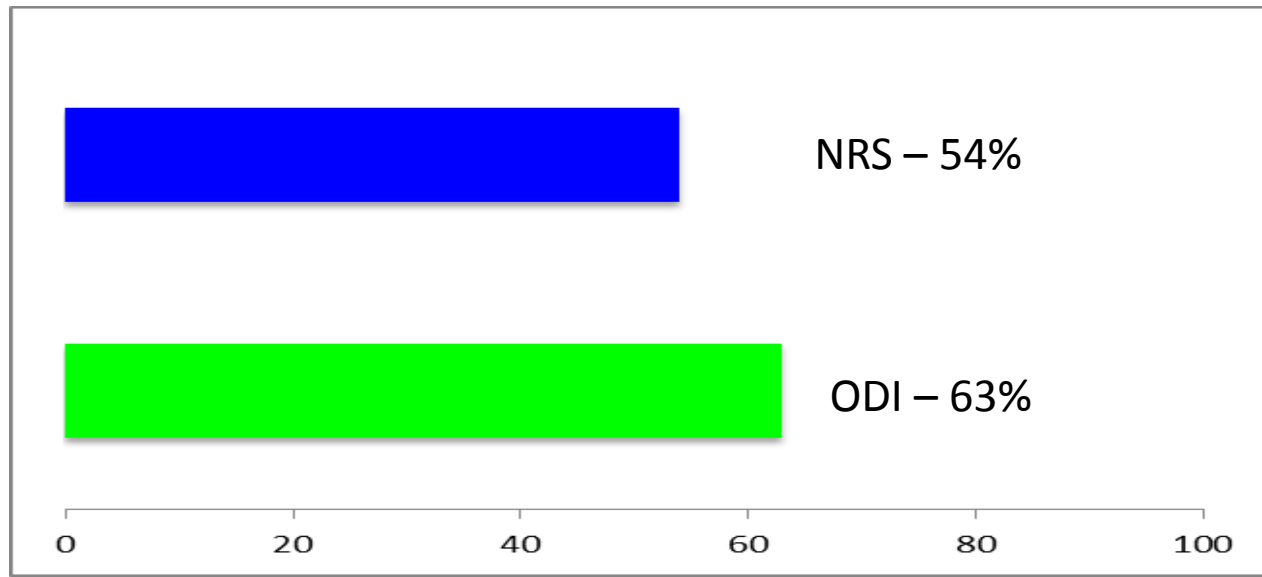

Cohen's D = 0.65 (medium effect size)

Minimally Important Change – (> 30% reduction) at 12 months follow-up Ostelo et al 2008

Changes observed from baseline

- Median ODI at 1 year was reduced by 22 points (54%) from baseline

- Mean NRS at 1 year was reduced by 1.5 points (31%) from baseline

Proportion exceeding MIC of 30%

NRS – 54%

ODI – 63%

| 0 | 20 | 40 | 60 | 80 | 100 |

What changed?

Secondary outcome measures

Outcome	Baseline	Post Intervention	Six Months	Twelve Months	p
Depression	13(0-38)	4(0-34)	5(0-26)	2(0-26)	0.002*
Anxiety	7(0-36)	3(0-30)	2(0-34)	3(0-34)	0.004*
Stress	16(0-38)	8(0-36)	10(0-38)	7(0-38)	0.053
BBQ	23(11-39)	38(19-45)	36.5(17-44)	34.5(17-44)	<0.001*
FABQ	16(1-24)	3.5(0-17)	4.5(0-21)	8(0-24)	<0.001*
PCS	29.5(3-51)	4.5(0-32)	8(0-36)	8.5(0-31)	<0.001*
PSEQ	32(9-59)	51(21-60)	48.5(15-60)	51(15-60)	<0.001*
STarT Back	6(2-9)	2(0-7)	2.5(0-9)	2(0-9)	<0.001*
Physical activity[a]	7045(2603)	7260(2786)	N/A	N/A	0.77
Usual sitting posture[a]	73.5(42.2)	76.0(40.3)	N/A	N/A	0.76

Within-group responses?

Patient pathways
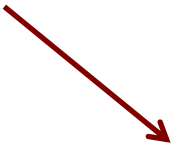
Retain biomedical beliefs

Acceptance of biopsychosocial model

Lack of Independence
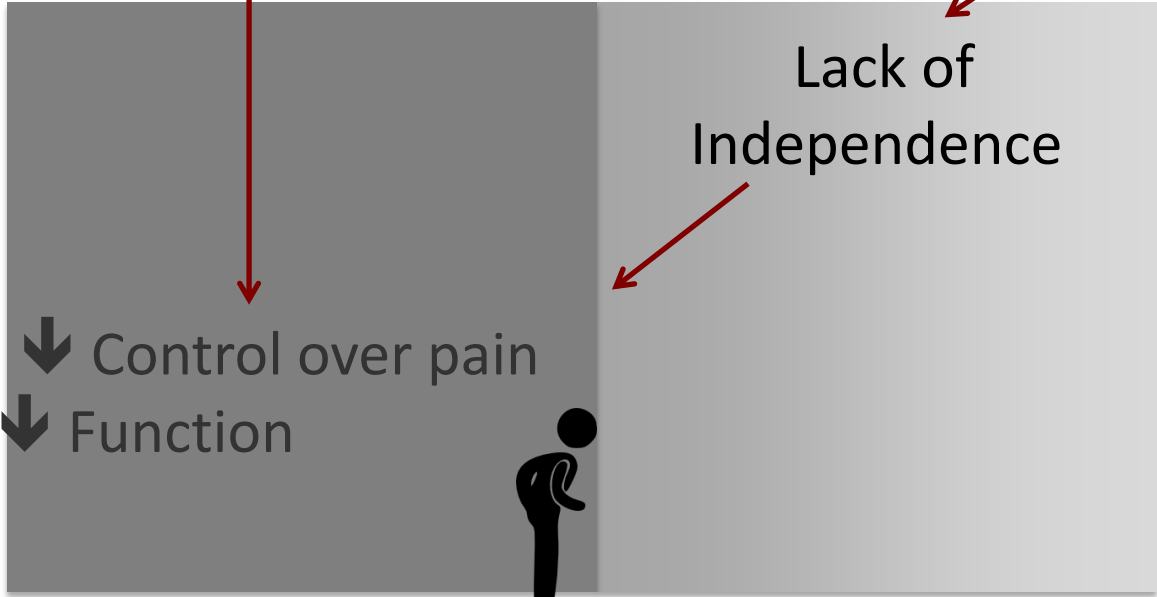
Achieving Independence

⬇ Control over pain
⬇ Function

Control over pain
Return to normal

non-responders

unclear responders

responders

Bunzli et al 2013

Conclusions

- Case series only!
- Decent effect sizes (?in a group with less natural recovery)
- Results support RCT data that targeted multidimensional interventions may be more effective
- Next: Replication in blinded, multi-centre RCT

Acknowledgements

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