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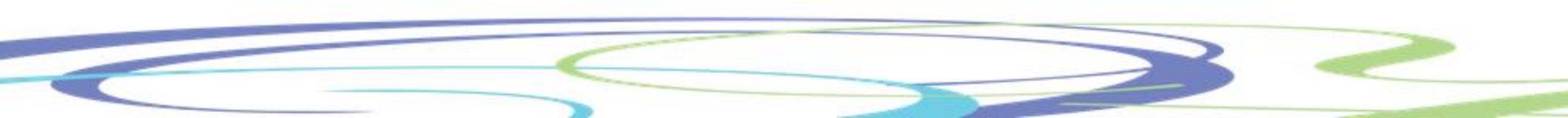
Developing and Leading an Evidence Based Orthopaedic Physiotherapy Service

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Overview

- Implementation of research evidence in physiotherapy
- Good research – reality of replicating in real world
- Modifications to implement
- Ground up ideas – research in the workplace



What is a quality, evidence based physiotherapy service?

- Delivery of the right (evidence based) interventions
 - In the right way
 - At the right time
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- Within the constraints of the local health economy and service pressures



Problems with implementation of research evidence in physiotherapy

- Reluctance to participate in generating the evidence
- Continue to use and adopt low-value interventions with no evidence base
- Failure to get new, high-value interventions into practice
E.g. UK BEAM; SST, MINT



The MRC Spine Stabilisation Trial: A randomised controlled trial to compare surgical stabilisation of the lumbar spine with an intensive rehabilitation programme for patients with chronic low back pain.


Jeremy Fairbank, Helen Frost, James Wilson-MacDonald, Ly-Mee Yu, Karen Barker, Rory Collins . *BMJ* (2005) 330:1233-9.

- 349 patients aged 18-55 with CLBP; 176 (s) & 173 (r).
- Spinal fusion or 3 week rehabilitation programme based on CBT principles.
- Primary O/M = ODI & SWT @ 2 years
- Found no significant differences between groups.



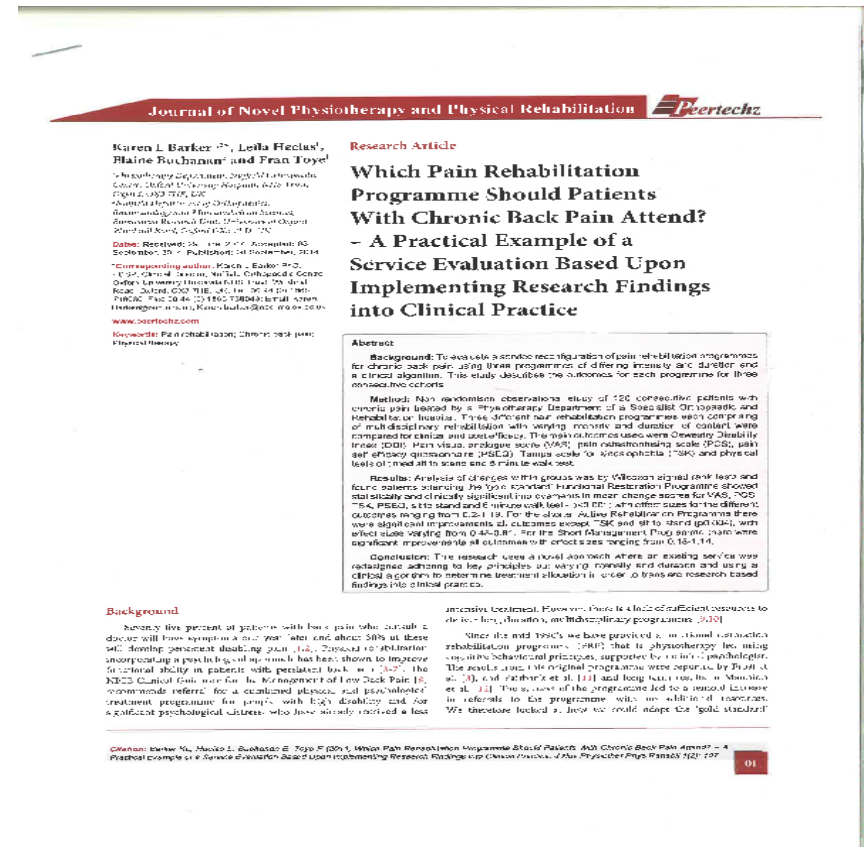
Comparison of spinal fusion and non-operative treatment in patients with chronic low back pain: long-term follow-up of three randomized controlled trials.

Mannion, Brox, Fairbank Spine 2013; 13 (11): 1438-48.


- 3 trials surgery vs. rehab; N=473 recruited; 261 reviewed at average of 11 years.
 - After an average of 11 years follow-up, there was no difference in patient self-rated outcomes between fusion and multidisciplinary cognitive-behavioural and exercise rehabilitation for CLBP.
 - The results suggest that, given the increased risks of surgery and the lack of deterioration in non-operative outcomes over time, the use of lumbar fusion in CLBP patients should not be favoured in health care systems where multidisciplinary cognitive-behavioural and exercise rehabilitation programmes are available.
 - **Only in 2016 that NICE back pain guidance [draft] recommends rehab not spinal fusion**
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Transition of gold-plated research evidence to standard clinical environment

- SST results led to a tenfold increase in referrals for FRP, with no additional resources.
- NHS politics when trying to move monies from surgical to rehabilitation budget cost centres
- How to adapt the 'gold standard' programme from SST to make it affordable, enable delivery within resources available allowing for commissioning and financial constraints, yet still effective?

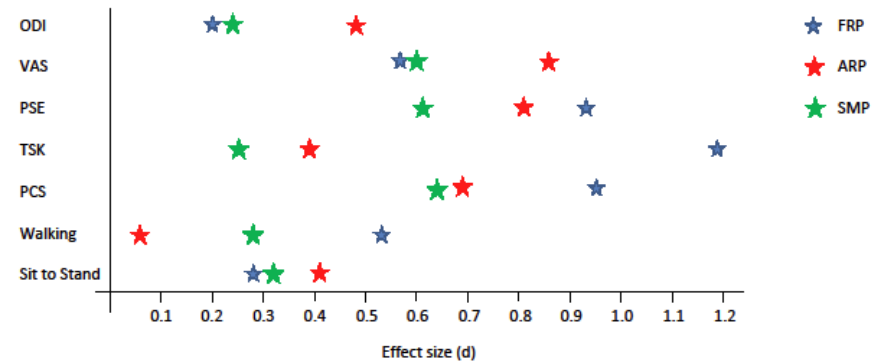


© Barker LK, Hecus L, Buchanan B, Toye F (2014) Which Pain Rehabilitation Programme Should Patients With Chronic Back Pain Attend? - A Practical Example of a Service Evaluation Based Upon Implementing Research Findings into Clinical Practice. *Journal of Novel Physiotherapy and Physical Rehabilitation* 1(1): 1-11


- Compared profile of patients from published trials to our referred population.
 - Reconfigure programme to offer ones of shorter duration and less intensity – FRP, ARP, SMP with selection algorithm.
 - We aimed to test the screening algorithm devised to characterise patients and to test the assumptions behind the redesigned programme using a non randomised observational study.
 - Secondly, we sought to compare the cost of delivering the different rehabilitation programmes.
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Results

- The results from first 40 patients allocated to each of the three programmes demonstrated that significant improvements were made by patients in all groups.
- These improvements in outcome were observed in the cohorts of patients undergoing programmes of lesser duration and intensity than the original validated programme.
- FRP = £2,750; ARP = £1,950, SMP = £699.
- Patient population from real life – no artificial inclusion / exclusion criteria

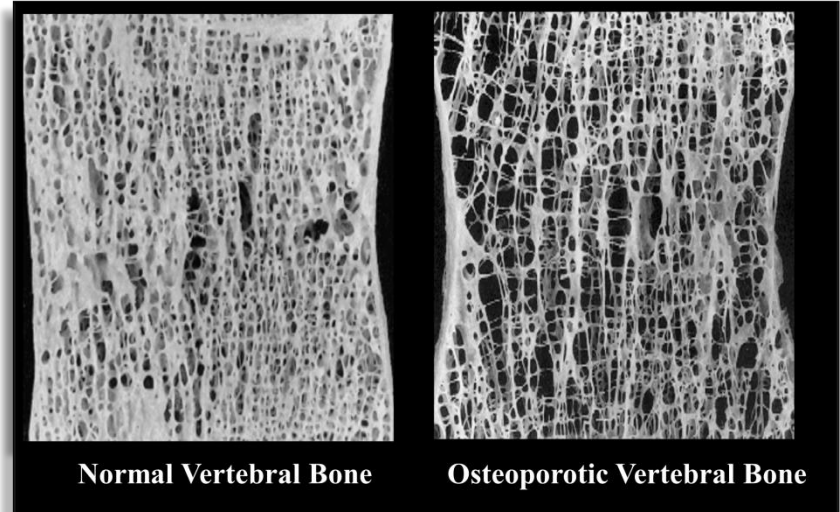


Conclusions


- Not RCT – does not compare programmes as different baseline characteristics through use of selection algorithm.
 - Small numbers (120), but clinically and statistically significant changes.
 - We further found that the shorter programmes were popular with patients, as they did not require patients with lesser levels of disability to take 3 weeks off work, or away from their homes.
 - SMP programme is now offered in both the daytime and evening to facilitate patients remaining within the workplace.
 - Similarly, the most disabled patients have benefitted from a more graduated introduction to rehabilitation with the ARP programme, rather than struggled with the change from little activity to a daily 6 hour programme.
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Osteoporosis

The screenshot shows the International Osteoporosis Foundation website. At the top, there is a navigation menu with links for 'ABOUT US', 'WHAT WE DO', 'OSTEOPOROSIS & MUSCULOSKELETAL DISORDERS', 'DATA & PUBLICATIONS', 'GET INVOLVED', 'MEETINGS & EVENTS', and 'NEWS & MULTIMEDIA'. A prominent blue banner features the text: 'WOMEN OVER 50 WILL EXPERIENCE OSTEOPOROTIC FRACTURES. AS WILL MEN' with a 'ouch!' speech bubble. Below this, the 'Vertebral Fracture Teaching Program' is highlighted. A section titled 'Vertebral Fracture Initiative' includes an image of vertebrae and a 'START THE COURSE NOW' button. On the right, there are social media sharing options and a 'Reprints' section.



Osteoporosis Class

- 6 week group; all osteoporosis patients unless cardiac screen failure for exercise safety.
 - Baseline Ax, 6 week programme, Ax end programme and at 3/12.
 - Programme – 6 weekly sessions of 2 hours: 1 hour group exercise, 30 mins education & 30 mins hydrotherapy.
 - Outcomes: tragus to wall, shoulder flexion, ankle dorsiflexion, TLS test, SLS test, 6 min walk & VAS
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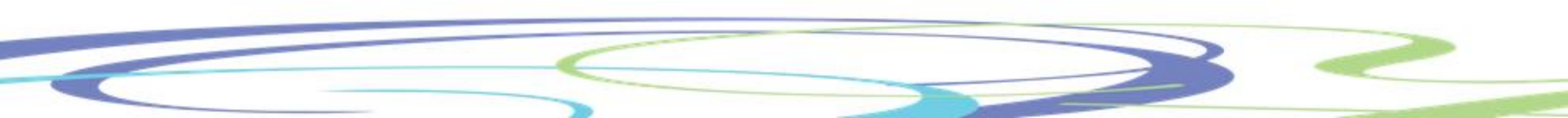
Osteoporosis Class – Audit Results

- The mean age of participants was 78 years; with an average of 8 years since diagnosis, 2 previous vertebral fractures and a mean kyphosis Cobb angle of 57 degrees.
- Height improved by a mean of 0.27 cm [unchanged in 6, decreased in 5, improved in 19 patients – **NS**].
- Tragus to wall improved by a mean of 2.5 cm [improved in 26 , unchanged in 4 patients; **p>0.001**].
- Shoulder flexion improved by 10 degrees [**N.S.**]; [Ankle Dorsiflexion – minimal changes only [**N.S.**]
- Timed Load Stand Test – improved by 8.1 seconds [improved in 22, unchanged in 2, decreased in 6 **p =0.02**].
- Single Leg Stance improved by 6.6 seconds [improved 22, unchanged in 4, decreased in 4 **p=0.002**].
- 6 minute walk improved by a mean of 48 metres, improved in 28, unchanged and decreased in 1 each; with an improvement in the CR10 effort test of 0.8 **p<0.001**].
- Confidence to manage symptoms improved by 3 points on a 10 point scale [improved 29 **p=0.05**]
- **Conclusion: The class had good adherence and improved the confidence of the participants to manage their condition. The improvements were present 3 months after completing the class.**

Physiotherapy Rehabilitation for Osteoporotic
Vertebral fracture.

HTA: 10/99/01

ISRCTN: 4911786



Action Research

- Recent developments in pain rehabilitation emphasise the importance of promoting psychological flexibility
- Acceptance and Commitment Therapy (ACT) is one approach that has been shown to be effective for the treatment of chronic musculoskeletal pain
- However, studies have shown that introducing innovative approaches such as ACT into established healthcare can cause some anxiety for professional groups.
- We used Action Research to evaluate the implementation of ACT to a physiotherapy led pain rehabilitation programme.

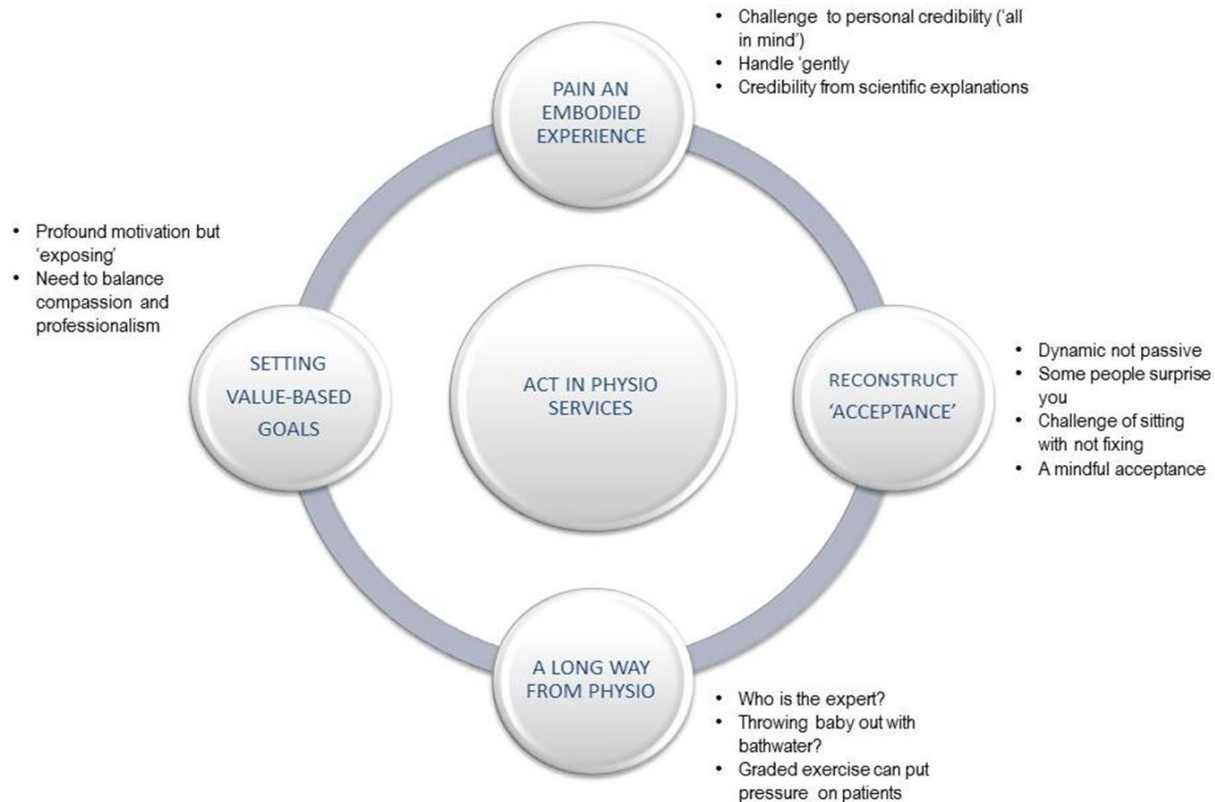


Action Research

- PARIHS framework & Emancipatory Action Research approach.
- Followed team through a year of introducing ACT.
- The clinical lead of the service was supported through the study in a facilitatory model of critical companionship.



Results



Kneeling after Uni-compartmental Knee Replacement

Routine completion OKS for PROMS & 12 month surveillance in clinic

7

During the past 4 weeks.....

Could you kneel down and get up again afterwards?

Yes, easily

With little difficulty

With moderate difficulty

With extreme difficulty

No, impossible

4

3


2

1

0




Responses

- “I was told not to kneel”
 - “not tried”!
 - “I never kneel”
 - “Mr Dodd told me I wouldn’t be able to kneel”
 - “I just assumed I would not be able to kneel”
 - “My neighbour told me not to”
- 

Intervention

Given to the Kneeling group @ 6 weeks

(offered to routine group @ 1 year)

- 30 minute Physiotherapy session
 - Verbal & written info on kneeling
 - Discussion on kneeling
 - Instruction & demonstration of kneeling
 - Patient encouraged to kneel on soft mat
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Analysis Q7 OKS


Groups	Change In Score	<i>p</i> value
Kneeling	1.31	0.005
Routine	0.32	

Mann-Whitney *U*



Summary

- Clinicians & Researchers have to work together to improve EBM in physiotherapy
 - Research is a part of everyone's job description and responsibility
 - It is essential to long term survival of our profession

 - Big RCTs and high quality research teams important
 - So are good ideas and proof of concept studies from grass roots
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References

- Jeremy Fairbank, Helen Frost, James Wilson-MacDonald, Ly-Mee Yu, Karen Barker, Rory Collins The MRC Spine Stabilisation Trial: A randomised controlled trial to compare surgical stabilisation of the lumbar spine with an intensive rehabilitation programme for patients with chronic low back pain. *BMJ* 2005; 330:1233-9.
 - Mannion A, Brox J, Fairbank J. Comparison of spinal fusion and non-operative treatment in patients with chronic low back pain: long-term follow-up of three randomized controlled trials. *Spine* 2013; 13 (11): 1438-48
 - Barker KL, Heelas L, Buchanan E, Toye F. Which pain rehabilitation programme should patients with chronic back pain attend? A practical example of a service evaluation based upon implementing research findings into clinical practice. *Journal of Novel Physiotherapy and Physical Rehabilitation* 2014, 1 (2) 107.
 - Barker KL, Heelas L, Toye F. Introducing Acceptance and Commitment Therapy to a physiotherapy led pain rehabilitation programme: An Action Research Study. *Br J Pain* 2016; 10:22-28.
 - Jenkins CJ, Barker KL, Pandit H, Dodd CAF, Murray DW. After Partial Knee Replacement patients can kneel but they need to be taught to do so: A Single-Blind Randomized Controlled Trial. *Physical Therapy* 2008; 88: 1012-21.
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