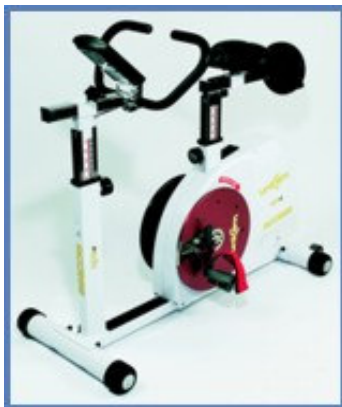
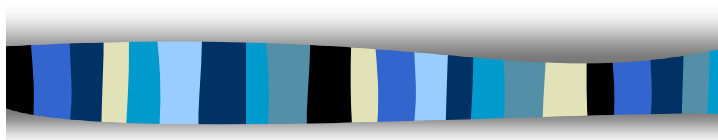


The Effectiveness of the TPS with TKR Patients – A Pilot Study

Queens Medical Centre Nottingham June 2004
Author: Katherine Ready – Mentor: David Whitaker





Objectives

- To determine the effectiveness of the TPS on AROM and length of hospital stay of TKR patients
- To evaluate the feasibility of its use within the daily workload of orthopaedics



Hypothesis

- Subjects who use the TPS will demonstrate an increase in AROM of the operated knee and a reduction in hospital length of stay compared to subjects who receive only the routine exercise programme



■ **Inclusion Criteria:**

- TKR patients
- History of OA
- Under 85 years of age

■ **Exclusion Criteria:**

- Rheumatological conditions other than OA
- AROM of less than 60° Flex on the un-operated knee
- No SLR on the un-operated knee
- Medically unstable
- Cardiac or neurological history affecting ability to exercise

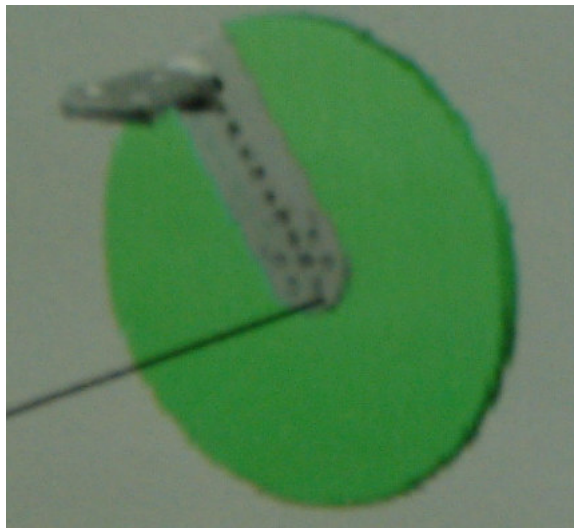


Procedure

- 1st 15 pts to meet the criteria started TPS with routine exc programme and the 2nd 15 carried out the routine exc programme only
- Routine exc programme (3 times daily):
 - Ext GAPS (5 mins)
 - Knee Flex with sliding board (x15)
 - IRQ's (x15)

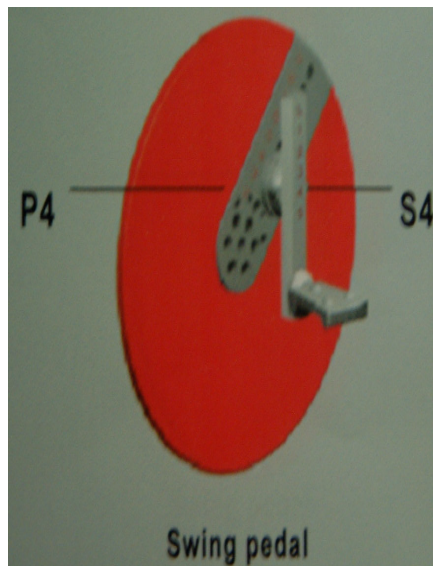
Procedure – TPS Group

- 1 static pedal



Procedure – TPS Group

- Swing pedal set 10° lower than active Flex and seat adjusted





Procedure – TPS Group

- No resistance used
- Pt to work and Borg RPE level 13 for 10 mins
- Settings recorded on the data collection table
- Knee Flex was recorded immediately post TPS and an ice pack applied
- Routine exc programme carried out throughout day



Borg RPE Scale

- Want to rate pt's perception of exercise which should reflect how strenuous the exercise feels
- Incorporates feelings of physical stress, effort and fatigue
- 6 – No exertion at all
- 7-8 – Extremely light
- 9 – Very light
- 10-12 – Light
- 13-14 – Somewhat hard
- 15-16 – Hard
- 16-18 – Very hard
- 19 – Extremely hard
- 20 – Maximal exertion

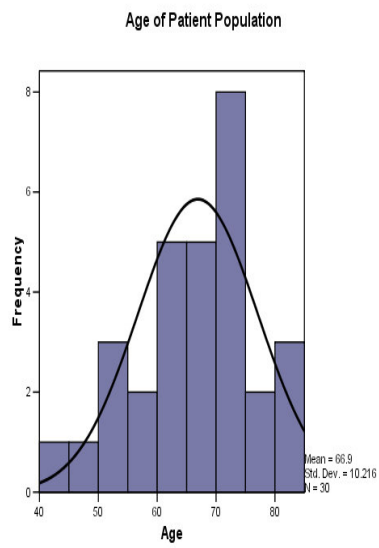


Procedure – both groups

- Active knee Flex was recorded at the same time daily by the same physio
- All patients to record frequency of exercises on log sheet which was checked daily and collected on discharge
- All other aspects of in-patient care were as normal
- Date of discharge was recorded
- Data was analysed using SPSS with CI set to 95% and $p < 0.05$
- Conclusions drawn

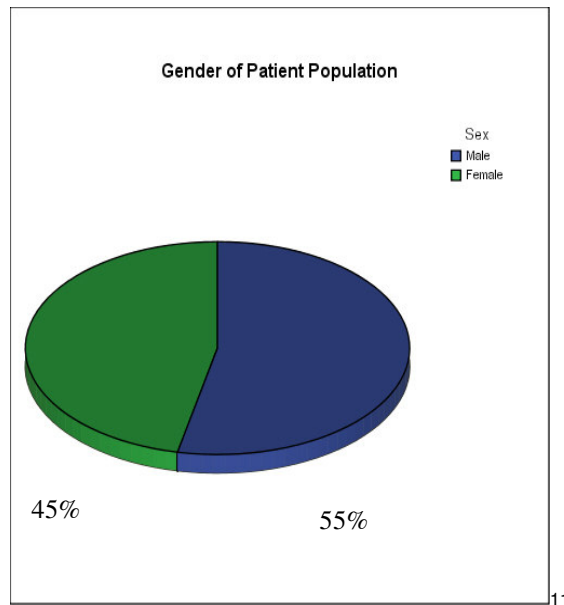
Results


■ Patient Population – Age



Results

■ Patient Population - Gender



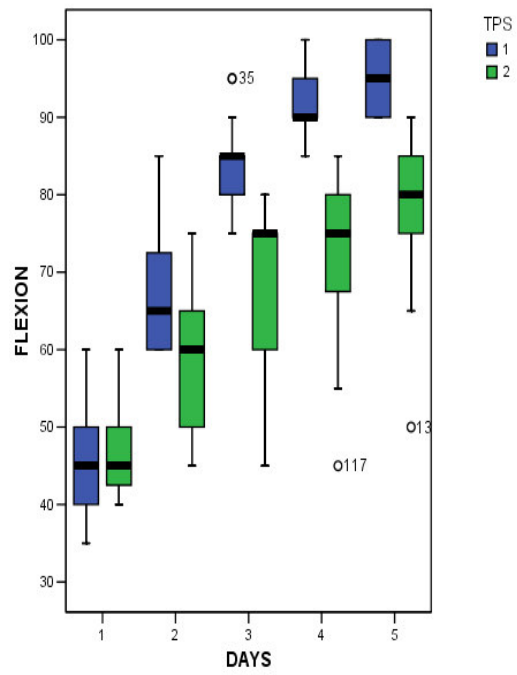


■ Flexion days 2-6

Results

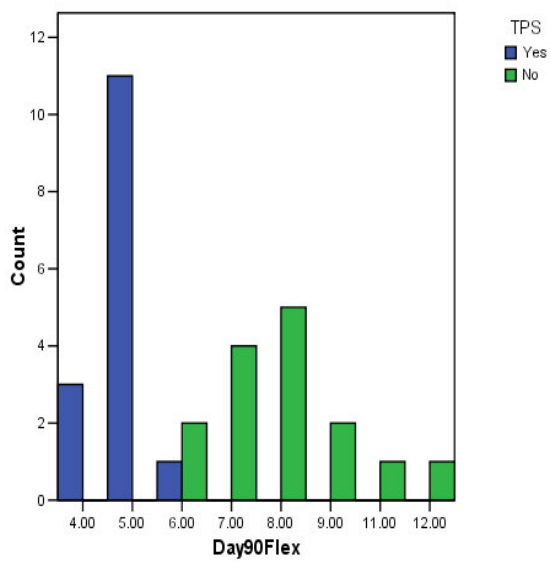
Day	TPS	No.of Pts	Mean Flex	P Value
2	Yes	15	46.33	0.313
	No	15	47.33	
3	Yes	15	67.67	0.13
	No	15	59.33	
4	Yes	15	84	0.000
	No	15	68.67	
5	Yes	13	91.92	0.000
	No	15	72.33	
6	Yes	2	95	0.038
	No	15	77.67	

Results – Flex TPS vs. Exc



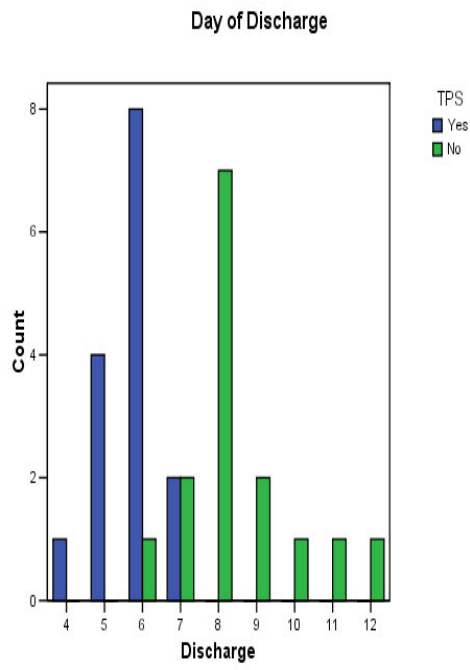
Results

Day 90 Flex Achieved





Results





Implications

- Treatment Time
- Patient Selection
- Cost - ↓ length of stay by
~ 2 to 3 days
 - £433 per night ∴
£1299 per pt
 - 328 TKR in 2003



Conclusions

- Small sample size is the main limiting factor
- TPS group had ↑ Flex, achieved 90° earlier and had a ↓ length of stay
- Can be incorporated into daily treatment time
- Potential for reducing costs
- Further research is necessary with a large randomised sample size to increase the reliability and validity of the results