Joint Awareness - Patient Reported Outcomes after Total Knee Replacement (TKR)

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Disclosure

- Our department is collaborating with Zimmer-Biomet in various research studies.

- No personal disclosure related to the present topic
Introduction ● Methods ● Results ● Conclusion

- Vejle Hospital (265 beds - 2426 employed)
- Orthopaedic Department (34 / 24 beds - 216 employed)
- A big unit for Elective Joint Replacement Surgery
Introduction ● Methods ● Results ● Conclusion

How to measure patient satisfaction?
Qualitative or quantitative measurements?

Traditionally – Oxford Knee Score (OKS)

• For how long have you been able to walk before the pain from your knee becomes severe?
  • no pain – 16-30 min – 5-15 min - around the house only – not at all severe on walking

• Have you been troubled by pain from your knee in bed at night?
  • No nights – only 1-2 nights – some nights – most nights – every night
New assessment tool - The Forgotten Joint Score (FJS)

Joint Awareness:
- Any unintended perception of a joint
- Patient Related Outcome Measures (PROM)
- Low awareness – the ultimate goal

FJS:
- 12 Items
- Published in 2012

More activity related PROM

Examples of questions:
1. Are you aware of your artificial joint......
   when you are walking for more than 15 minutes?
2. Are you aware of your artificial joint......
   In bed at night?

○ never ○ almost never ○ seldom ○ sometimes ○ mostly.....
Aim:

To compare Oxford Knee Score (OKS) and Forgotten Joint Score (FJS) in the same patients 5 years after Total Knee Replacement.
Study design: - 200 consecutive patients - 5 yr`s follow – up  
- OKS and FJS Questionnaire send by mail to patients

<table>
<thead>
<tr>
<th>OKS Questionnaire</th>
<th>FJS Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Spring 2015)</td>
<td>(Spring 2015)</td>
</tr>
<tr>
<td>12 questions</td>
<td>12 questions</td>
</tr>
</tbody>
</table>
| • Functional outcome    | • Functional outcome, pain, stability and daily living …but additional  
| • Pain, Stability       | • Activity and Sport   |
| • Daily living          |                         |
| Score: (4-0) 4 is best outcome  
(0-48) 48 point = 100 % satisfaction  
**High** score means well knee  
All questions to be answered  | Score: (0-4) 0 is best outcome  
**Low** score means high satisfaction  
Not all questions to be answered  |

All responses are summed, divided by no of completed items – multiplied by 25  
(0-100) finally score substracted from 100

To compare OKS and FJS!  
Need to convert the scores to a comparable 100 percent scale
Questionnaires were anonymized

Respond rate  = 91.4 %
## Overall satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Oxford Knee Score (n=160)</th>
<th>Forgotten Joint Score (n=160)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction</td>
<td>85.47 %</td>
<td>71.39 %</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>
Satisfaction - subdivision

![Bar chart showing satisfaction fractions for different percentage ranges.

- **OKS**: Blue bars for 0-20%, 21-40%, 41-60%, 61-80%, and 81-100% satisfaction.
- **FJS**: Red bars for 0-20%, 21-40%, 41-60%, 61-80%, and 81-100% satisfaction.

Satisfaction Fraction

- **0-20%**: Low satisfaction in both OKS and FJS.
- **21-40%**: Moderate satisfaction in both OKS and FJS.
- **41-60%**: High satisfaction in both OKS and FJS.
- **61-80%**: Very high satisfaction in both OKS and FJS.
- **81-100%**: Almost full satisfaction in both OKS and FJS.
### Results

<table>
<thead>
<tr>
<th>Oxford Knee Score (n=160)</th>
<th>Forgotten Joint Score (n=160)</th>
<th>Both OKS and FJS</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 % satisfaction</td>
<td>21 patients</td>
<td>15 patients</td>
</tr>
<tr>
<td></td>
<td>21 patients</td>
<td></td>
</tr>
</tbody>
</table>

Remaining 6 ptts

- 4 had FJS > 95 %
- 2 had FJS at 85 %
### Results

<table>
<thead>
<tr>
<th></th>
<th>Oxford Knee Score (n=160)</th>
<th>Forgotten Joint Score (n=160)</th>
<th>Both OKS and FJS</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 95 % satisfaction</td>
<td>51 patients (32 %)</td>
<td>36 patients (23 %)</td>
<td>29 patients (18 %)</td>
</tr>
</tbody>
</table>

- 22 patients have not reached 95 % in FJS
- Range 55 to 95 % satisfaction
- 5 patients have FJS scores below 80
## Highest Satisfaction

<table>
<thead>
<tr>
<th>Questions</th>
<th>OKS (n=160) Number of patients with 100% satisfaction</th>
<th>FJS (n=160) Number of patients with 100% satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Washing</td>
<td>140 = 87.5%</td>
<td>116 = 72.5%</td>
</tr>
<tr>
<td>Household Shopping</td>
<td>130 = 81.3%</td>
<td>92 = 57.5%</td>
</tr>
<tr>
<td>Knee give away</td>
<td>123 = 76.9%</td>
<td>88 = 55.0%</td>
</tr>
<tr>
<td>Bath or Shower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In bed at night</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sitting in a car</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Lowest Satisfaction

<table>
<thead>
<tr>
<th>Questions</th>
<th>OKS (n=160)</th>
<th>100% satisfaction</th>
<th>FJS (n=160)</th>
<th>100% satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kneeling, Using a dustpan</td>
<td>29 = 18.1%</td>
<td>Standing up from low position</td>
<td>43 = 26.9%</td>
<td></td>
</tr>
<tr>
<td>Knee Pain</td>
<td>81 = 50.6%</td>
<td>Standing long period</td>
<td>46 = 28.8%</td>
<td></td>
</tr>
<tr>
<td>Climbing stairs</td>
<td>97 = 60.6%</td>
<td>Walk on uneven ground</td>
<td>54 = 33.8%</td>
<td></td>
</tr>
</tbody>
</table>
### Sport: A new question in FJS

<table>
<thead>
<tr>
<th>Awareness performing favorite sport?</th>
<th>Number</th>
<th>Satisfaction %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>35</td>
<td>21.9</td>
</tr>
<tr>
<td>Almost never</td>
<td>29</td>
<td>18.1</td>
</tr>
<tr>
<td>Seldom</td>
<td>18</td>
<td>11.3</td>
</tr>
<tr>
<td>Sometimes</td>
<td>11</td>
<td>6.9</td>
</tr>
<tr>
<td>Mostly</td>
<td>6</td>
<td>3.8</td>
</tr>
<tr>
<td>Not relevant</td>
<td>61</td>
<td>38.1</td>
</tr>
</tbody>
</table>
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Perspectives:

• Patient expectations today
• Time calls for new PROM’s to measure outcome and satisfaction after TKR

Conclusions

1. Significant higher OKS compared to FJS.

2. FJS is a more sensitive tool to measure Patient Outcome compared to OKS

3. FJS has a different approach in terms of asking the patient.

4. The questions with the highest and lowest satisfaction cover similar areas in both questionnaires
Conclusions:

- Better discriminatory power
- Less ceiling effect
- Appealing to patients with high performance
- Picks up subtle differences
Thank you for your attention