Shared Decision Making in Patients with Osteoarthritis of the Hip and Knee: Results of a Randomized, Controlled Clinical Trial

Kevin J. Bozic, MD, MBA, Jeffrey Belkora, PhD, Vanessa Chan, MPH, Jiwon Youm, MD, Tianzai Zhou, BS, John Dupax, MD, Angela Nava Bye, MA, ATC, Clarence Braddock, III, MD, MPH, FACP, Kate Cherist, MBA, James Huddleston III, MD
Department of Orthopaedic Surgery
University of California, San Francisco

Disclosures/Conflicts of Interest

- Research Support:
  - AHRQ, NIH, RWJF, CHCF, UC CHQI, CMS
- Consultant:
  - Institute for Healthcare Improvement, Pacific Business Group on Health
  - Visiting Scholar, Harvard Business School
- Governance/Leadership Roles:
  - AAOS (Council on Research and Quality)
  - AAHKS (Health Policy, EBPC)
  - COA (Past-President)
  - OREF (Board of Trustees)
  - UCSF Medical Center (HTAP)
  - CJRR (Chair)

Shared Medical Decision Making (SDM)

Physician providers:
- Expert clinical knowledge of conditions, treatment options and associated risks, benefits, and limitations of evidence.

Patient:
- Personal input of their tolerance for risk, preferences for lifestyle, and guiding values.

Benefits of Shared Decision Making

- Improved knowledge
- Better perception of risks, benefits and potential harms
  - Decreased medico-legal risk
- Greater satisfaction, participation, and confidence in decisions
- Decreased decision uncertainty
- Positive psychological outcomes
  - Anxiety, depression, quality of life, and well-being
Challenges to Implementing SDM in Orthopaedics

- Limited training, familiarity with SDM
- Issues with evidence
  - Gaps in evidence, CER on risks, benefits, alternatives
  - Difficult to consolidate, synthesize
- Cultural norms among patients, physicians
- Logistics, costs, efficiency
- Incentives?
  - Fee for service payment system

Observational study examining association between decision aids and rates of TJR and costs with Group Health

- Decision aids associated with 26 percent fewer hip replacement surgeries, 38 percent fewer knee replacements, and 12–21 percent lower costs over six months.

Group Health study finds “shared decision making” may reduce medical procedures

Caveat: Surgery rates HIGHER among patients with 'prevalent OA' who were considered 'better candidates for surgery'!

Conclusion: SDM steers marginal surgical candidates away from surgery, appropriate surgical candidates towards surgery.

Purpose

To evaluate the impact of decision and communication aids on patient knowledge, efficiency of decision making, treatment choice, and patient and provider satisfaction in patients with advanced OA of the hip and knee.

Methods
Measurements/Outcomes

- Primary outcome
  - Patients reached an informed decision after 1st visit
- Patients
  - Knowledge
  - Stage in Decision Making
  - Treatment Choice
  - Satisfaction
- Surgeon
  - Appropriate of patient questions
  - Satisfaction

Results: Primary Outcome

- Patients who arrived an at informed decision after their first office consultation

<table>
<thead>
<tr>
<th></th>
<th>Control Group (N=60)</th>
<th>Intervention Group (N=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No informed decision</td>
<td>40 (66.7%)</td>
<td>25 (41.7%)</td>
</tr>
<tr>
<td>Informed decision</td>
<td>20 (33.3%)</td>
<td>35 (58.3%)</td>
</tr>
</tbody>
</table>

P<0.01

Secondary Outcome: Patient Confidence

- Confidence in knowing what questions to ask their doctor

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Control (N=62)</th>
<th>Intervention (N=61)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Consultation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;I know what questions to ask my doctor&quot;</td>
<td>6.7 ± 2.4</td>
<td>7.9 ± 2.1</td>
<td>0.0034</td>
</tr>
</tbody>
</table>

Secondary Outcome: Stage in Decision Making

How far along are you with this decision?

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Control (N=62)</th>
<th>Intervention (N=61)</th>
<th>Total (N=123)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have already chose an option</td>
<td>10 (16.1%)</td>
<td>15 (25.0%)</td>
<td>25 (20.5%)</td>
<td>0.06</td>
</tr>
<tr>
<td>Close to choosing an option</td>
<td>12 (19.4%)</td>
<td>16 (26.7%)</td>
<td>28 (23.0%)</td>
<td></td>
</tr>
<tr>
<td>Considering the different options</td>
<td>24 (38.7%)</td>
<td>24 (40.0%)</td>
<td>48 (39.3%)</td>
<td></td>
</tr>
<tr>
<td>Not yet thought about all the options</td>
<td>16 (25.8%)</td>
<td>5 (8.3%)</td>
<td>21 (17.2%)</td>
<td></td>
</tr>
</tbody>
</table>
Secondary Outcome: Surgeon Satisfaction

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Control (N=62)</th>
<th>Intervention (N=61)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>How appropriate was the content of the patient's questions?</td>
<td>4.9 ± 1.8</td>
<td>7.2 ± 1.7</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>How satisfied were you with the efficiency of the consultation?</td>
<td>5.5 ± 2.3</td>
<td>7.7 ± 1.9</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>What was your overall satisfaction of this consultation?</td>
<td>5.1 ± 2.0</td>
<td>7.7 ± 1.8</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Secondary Outcome: Choice of Treatment

**No Difference**

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Control (N=62)</th>
<th>Intervention (N=61)</th>
<th>Total (N=123)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Which treatment do you want to do to treat your hip or knee osteoarthritis?”</td>
<td></td>
<td></td>
<td></td>
<td>0.48</td>
</tr>
<tr>
<td>Non-operative treatment</td>
<td>19 (30.6%)</td>
<td>22 (36.7%)</td>
<td>41 (33%)</td>
<td></td>
</tr>
<tr>
<td>Surgery</td>
<td>43 (69.4%)</td>
<td>38 (63.3%)</td>
<td>81 (66.4%)</td>
<td></td>
</tr>
</tbody>
</table>

Results: Duration of Office Visit

**No Difference**

<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Control (N=62)</th>
<th>Intervention (N=61)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time of entire patient visit</td>
<td>51.0 ± 21.1</td>
<td>53.5 ± 23.8</td>
<td>0.38</td>
</tr>
<tr>
<td>Time spent with surgeon</td>
<td>21.0 ± 7.2</td>
<td>20.9 ± 6.8</td>
<td>0.91</td>
</tr>
</tbody>
</table>
Conclusions

- SDM tools can be used to incorporate medical knowledge, patient preferences/values into medical decision making
- Benefits to patients, providers
  - Enhance knowledge, decision quality/confidence
  - Improve efficiency of consultation
  - Identify appropriate candidates for surgery
- Important in facilitating adoption of SDM tools into routine orthopaedic practice
- Important policy implications in value-based care

Thank You!!!