Impact of a Patient Decision Aid with an Interactive Values Component on Decisional Conflict Associated with Total Knee Arthroplasty (TKA)

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Knee replacement: A difficult decision

- Irreversible treatment
- No single therapy is appropriate for all
- Know little about procedure
- Uncertainty is high—benefits/harms
- Social support/barriers
- Unaware of their own values

It is important to help patients reduce uncertainty and make decisions that are concordant with their beliefs and values.

Conflict Theory

- Potential for making irreversible (regretted) decision
- Struggle between opposing choices
- Unpleasant psychological state
  - Stress
  - Anxiety
  - Hesitation

Decisions Aids and Values Clarification Methods

Decision aids help patients...
- understand possible options
- understand possible consequences of each option
- participate in decision-making at a desired level
- consider personal values when evaluating the consequences
- make a decision consistent with values

How does ACA work?

- Breaks down options (surgery/no surgery) into attributes (characteristics)
- Asks patient to make trade-offs
- Asks patient:
  - Provide value for each attribute
  - Decide which product is preferred
  - Provides them with what’s most influential

Disclosure

I have no financial relationships to disclose.

Janis & Mann, Decision Making, 1977

Edwards & Elwyn, Health Expectations, 2006

Llewellyn-Thomas, Values Clarification in Shared Decision-Making in Health Care, 2009
Aim

Evaluate the added value (if any) of an explicit interactive values clarity exercise (ACA) coupled with a video-based decision aid in reducing conflict.

Participants

Eligibility

- Self-report of knee OA diagnosis by MD (with X-ray)
- OA interfered with daily activities
- Pain (4/10) most days in last 3 months
- Ever considered/talked to MD about TKA

ACA Program

Attributes

- Risk of a serious complication (lung clot, pneumonia, or heart attack)
- Extremely rare risk of death from surgery
- Need for another operation after 15 years
- Number of days in the hospital
- Need for rehabilitation and walking aids
- Having little or no pain when you walk
- Having little or no pain at night
- Being able to do activities like shopping or golfing with little or no difficulty 6 months from now


Decisional Conflict Scale

- Subscales
  - Informativeness
  - Values clarity
  - Support
  - Uncertainty
  - Effective decision
- 0 (low) to 100 (high)


Analysis

- Descriptive
  - Patient demographics
  - Knee injury and Osteoarthritis Outcome Score (KOOS), 0-100 (0=worse)
- Inferential statistics
  - ANOVA
    - Tukey's range test – multiple comparisons
    - Used compound comparisons – Group 1 vs 2 vs 3
  - ANCOVA – also accounts for potential confounders
    - i.e. DCS post = DCS pre + Group + Covariate

Change in Decisional Conflict Scale Scores

<table>
<thead>
<tr>
<th></th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>38.8</td>
<td>29.2</td>
</tr>
<tr>
<td>Videobooklet</td>
<td>42.7</td>
<td>21.6</td>
</tr>
<tr>
<td>Videobooklet+ACA</td>
<td>37.4</td>
<td>23.4</td>
</tr>
</tbody>
</table>

Conclusions

- Uncertainty about decision decreased in all groups
- However, videobooklet group alone showed greatest reduction in uncertainty
- ACA did not provide any additional value in reducing patients’ uncertainty about treatment for knee OA

Limitations

- Respondent fatigue - mean-to-variance ratio
- Differences in pre-intervention score & knee symptoms - ANCOVA
- Self-selection bias
- Immediate post

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Results

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Video-booklet</th>
<th>Video-booklet + ACA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female (%)</td>
<td>70</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>Age, mean years</td>
<td>64</td>
<td>63</td>
<td>62</td>
</tr>
<tr>
<td>White (%)</td>
<td>71</td>
<td>70</td>
<td>56</td>
</tr>
<tr>
<td>Retired (%)</td>
<td>42</td>
<td>40</td>
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</tr>
<tr>
<td>Employed (%)</td>
<td>36</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>BMI (mean)</td>
<td>32</td>
<td>34</td>
<td>32</td>
</tr>
<tr>
<td>Disease duration (mean, years)</td>
<td>11</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Knee symptoms (mean, KOOS)*</td>
<td>42</td>
<td>45</td>
<td>40</td>
</tr>
<tr>
<td>Quality of life (mean, KOOS)</td>
<td>29</td>
<td>28</td>
<td>25</td>
</tr>
</tbody>
</table>

* Videobooklet group significantly higher vs Video-booklet+ACA group (p<0.05). No other statistically significant difference by group.