

Poster

Early Indications Human-Centered Decision Aids Help People Make More Appropriate Care Decisions

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Abstract

Background: Conditions like chronic low back, hip, and knee pain and low-risk prostate cancer are frequently over-treated. The Agency for Healthcare Research and Quality reports that for chronic low back pain, spinal fusion surgery increased from 61,000 in 1993 to 465,000 in 2011. This has not improved outcomes or reduced disability rates. Patients frequently catastrophize their pain and avoid beneficial activities like walking. Likewise, men with low-risk prostate cancer often react with fear and opt for more invasive treatments like surgery over active surveillance. These are often stressful decisions that patients do not make based solely on data and information but contain strong emotional factors as patients consider the tradeoffs and the short- and long-term effects on their lives and those of their partners and families. A previous randomized controlled trial showed that a multimedia program created with a human-centered approach reduced anxiety. Web-based multimedia decision aids created with patient input through a human-centered approach may better engage patients; address their emotions, concerns, and understanding; and promote calm deliberation.

Objective: Our objective was to gain insight into whether patients who viewed the chronic low back pain, chronic hip osteoarthritis (OA) pain, chronic knee OA pain, and low-risk prostate cancer multimedia decision aids developed with patient input and a human-centered approach are now more interested in less aggressive (non-surgical) treatment options. We also aimed to gain insight into whether patients who view multimedia decision aids designed with a human-centered approach about conditions such as end stage renal disease, benign prostatic hyperplasia, and early-stage invasive breast cancer now understand that there is more than one way to treat their condition, if they now have a better understanding the pros and cons of their treatment options, and if they now have a better sense of which treatment(s) make the most sense for them.

Methods: Web-based multimedia decision aids developed using a human-centered approach were prescribed to patients who needed to make a treatment decision and engage in shared decision making about chronic low back pain, chronic hip or knee pain due to OA, low-risk prostate cancer, and a variety of other conditions where shared decision making is needed. After viewing a multimedia decision aid program, patients could opt to take a standard Web-based survey. An open field was also provided to allow patients to provide additional thoughts or comments. The program was viewed by over 50,000 patients across over 300 US hospitals and providers; 7300 of those patients completed surveys.

Results: A total of 7300 surveys from July 1, 2012, through November 4, 2015, across 15 decision aids found that 97% now understand there is more than one way to treat their condition, 95% better understand the pros and cons of treatments, and 90% have a better sense of which treatment(s) are right for them. Of those with low back, hip, or knee pain or low-risk prostate cancer, 36%-42% reported a change of mind and now lean away from aggressive treatment (2826 with low back pain [36%], 1176 with hip pain [42%], 1759 with knee pain [38%], and 466 with low-risk prostate cancer [37%]). Patient comments also revealed improved understanding of patient conditions and how serious they may or may not be; many reported less anxiety and felt they would now be able to have better shared decision making conversations with their physicians.

Conclusions: A significant number of patients (37%-44%) who viewed Web-based multimedia decision aids for chronic low back, hip, or knee pain or low-risk prostate cancer indicated that they are now interested in less aggressive treatment options (such as physical therapy for pain or active surveillance for prostate cancer). Patient comments reinforced that patients felt less anxious about chronic pain or low-risk prostate cancer and understood they had time to make a decision and did not have to rush into more aggressive or invasive treatments like surgery. Most patients who viewed Web-based multimedia decision aids created with a patient-informed, human-centered approach about the conditions mentioned above as well as conditions such as early-stage invasive breast cancer, end-stage renal disease, benign prostatic hyperplasia, and uterine fibroids reported now understanding they have more than one treatment option, the pros and cons of those options, and which option makes the most sense for them. Human-centered decision aids that address patient concerns, experiences, and emotions can help people make more appropriate care decisions.

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KEYWORDS

decision aids; multimedia; patient decision aids; patient-centered care; human-centered care; care decisions; shared decision making; informed decision making

This poster was presented at the Connected Health Symposium 2016, October 20-21, Boston, MA, United States. The poster is displayed as an image in [Figure 1](#) and as a PDF in [Multimedia Appendix 1](#).

Figure 1. Poster.

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Background
Chronic low back, hip, and knee pain and low-risk prostate cancer are often treated with surgery before other options. Terms like "herniated disc" lead people to catastrophize their pain. Men with low-risk prostate cancer often opt for surgery out of fear. An RCT showed a multimedia program created with a human-centered approach reduced anxiety.* Human-centered decision aids (DAs) also address emotions, understanding, and promote calm deliberation.

Methods
Web-based multimedia DA programs combine animation with conversational narration to help people understand their condition, treatment options, and the treatments' benefits and harms. The programs were developed using a human-centered approach. Physicians, hospitals and health plans prescribed the programs to patients who viewed them at home on any web-enabled devices (computer, smart phone, etc). Program run times varied from 17 to 56 minutes and included interactions to help people consider their personal values and preferences. After viewing a program, people were presented with an optional online survey with multiple choice and open-ended questions.

Results
17,635 patient surveys across 15 multimedia DA programs were completed between July 1, 2012 and November 4, 2015:

- 97%** now understand there's more than one way to treat their condition
- 96%** now have a better understanding of the pros and cons of their treatment options
- 92%** now have a better sense of which treatment(s) make the most sense for them

Of the 8,817 patients who took the survey after viewing DAs for chronic low back, hip, or knee pain or low-risk prostate cancer, 37-44% are now interested in less aggressive treatment like surgery:

- 3,779 with low back pain (37%)
- 1,797 with hip pain (43%)
- 2,492 with knee pain (40%)
- 749 with low-risk prostate cancer (44%)

Diagram: Illustration of a spine with a bulging disc. Text: "Most people have bulging discs that aren't causing any major problems." Below it, a person is shown with "Back Pain" and "Stress and Anxiety" leading to "Muscle Tension".

Patient comments from the chronic low back pain DA program:

"I feel encouraged I might be able to use exercise to help my situation and avoid surgery."

"I liked learning the anatomy and knowing that most of the things we have heard of being problems and causing pain are not really causes or much of a concern."

Conclusion
Most patients who viewed human-centered DAs reported a better understanding of their options and which treatment best fit with their values and preferences. Many people with chronic low back, hip, or knee pain or low-risk prostate cancer also indicated they are now interested in less aggressive treatments. Patient comments indicated people also felt less anxious about chronic pain or low-risk prostate cancer, understood they did not have to rush to a decision and had time to consider their options. The 2015 update of the Cochrane Review of Patient Decision Aids found DAs created 55% more informed values-based choices. While this was an opt-in survey, results found that these type of human-centered DAs that strive to understand and address patient concerns, helped 92% make more informed values-based choices.

*Parker, S., Zupurky, J., Ma, H., & Siegel, C. (2013, October). Randomized controlled trial demonstrates a web-based multimedia program used prior to first-time colonoscopy decreased patient anxiety, sedation requirement and procedure time while increasing knowledge. Dartmouth-Hitchcock Medical Center, Geisel School of Medicine at Dartmouth. Poster presented at the Meeting of the American College of Gastroenterology, San Diego, CA.

Multimedia Appendix 1

Poster.

[\[PDF File \(Adobe PDF File\), 2MB-Multimedia Appendix 1\]](#)

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