

A Web-Based Methotrexate Decision Aid for Patients with Rheumatoid Arthritis

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Background

- Patient decision aids are designed to make explicit the decision to be made, present benefits and harms of treatment options, clarify individuals' preferences, and guide discussion at a clinic visit.
- The majority of decision aids on arthritis treatments are in printed formats. Although informative, they tend to be less engaging for users.
- We applied the concept of *edutainment* (i.e., education that engages through entertainment) to develop a web-based decision aid, called ANSWER (Animated, Self-serve, Web-based Research tool), for patients with rheumatoid arthritis (RA).
- ANSWER presents information on methotrexate (MTX) in print, voice recording, and animated stories created with Adobe Photoshop.

Purpose

- To assess the extent to which ANSWER reduces patients' decisional conflict, and improves their medication knowledge and skills of being *effective healthcare consumers*.

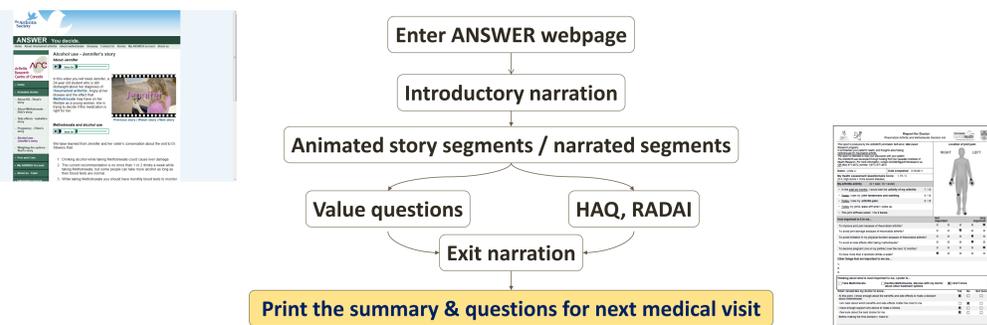
ANSWER: a decision aid for patients considering MTX for RA (Figure 1)

- ANSWER provides information on benefits and harms of 2 options related to MTX:
 - Start MTX now.
 - Refuse MTX and talk to my doctor about other medical treatment options.
- Features 6 animated patient stories about RA and MTX (Figure 2).
- Interactive questionnaire for value clarification.
- 1-page summary of patient's health status, knowledge of options, values for outcomes, and preferred option.

Figure 2: Screenshots of ANSWER Animated Stories



Figure 1: User Interaction



Methods

- Pre-post study design.
- **Eligibility:** 1) physician-diagnosed RA; 2) prescribed MTX but were unsure about starting it; 3) internet access.
- Before and after using the ANSWER, participants completed the following:
 - Decisional Conflict Scale¹ (Primary Outcome).
 - MTX in RA Knowledge Test² (MiRAK).
 - Effective Consumer Scale³ (EC-17).
- Demographic and health status data were collected at baseline.

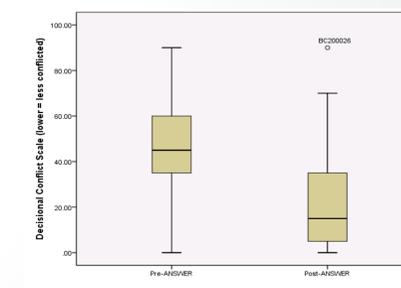
Results

- 30 participants were recruited between November 2011 and April 2012 in British Columbia, Alberta and Ontario, Canada (Table 1).
- Patients' decisional conflict and MTX knowledge improved after using the ANSWER, but effective consumer attributes did not (Table 2; Figure 3).
- The literature suggest that a Decisional Conflict Scale score ≤ 25 is associated with follow-through with decisions.¹ Prior to using ANSWER, 4 participants (13.3%) met this criteria, versus 21 (70%) after completing this decision aid.
- After using the ANSWER:
 - 14 (46.7%) decided to take MTX.
 - 6 (20.0%) decided to refuse MTX & talk to doctor about other options.
 - 10 (33.3%) remained unsure.

	N = 30
Age	54.9 years (SD=14.9)
Women	23 (76.7%)
University (attended/graduated)	22 (73.3%)
Married	22 (73.3%)
Employed	13 (43.3%)
Retired/homemaker	13 (43.3%)
Disability leave	4 (13.3%)
Annual family income \geq CAN\$40,000	11 (36.7%)
Disease duration – median	1.0 years (IRQ=0.3-5.0)
Health Assessment Questionnaire	1.16 (SD=0.68)

	Before (SD)	After (SD)	Difference (95% CI)	p
Decisional Conflict Scale (0-100; lower=better)	49.50 (23.17)	21.83 (24.12)	-27.67 (-15.44, -39.89)	<0.001
MiRAK (0-60; higher=better)	30.62 (9.62)	41.67 (6.81)	11.03 (6.73, 15.34)	<0.001
EC-17 (0=100; higher=better)	68.24 (12.46)	72.94 (12.74)	4.71 (-1.81, 11.22)	0.15

Figure 3: Box Plot, Decisional Conflict Scale



Conclusion:

- Patients' decisional conflict and MTX knowledge improved after using the ANSWER. Our results show similar changes to other studies evaluating decision aids in chronic diseases.⁴ The lack of a statistically significant change in the EC-17 might be related to the small sample size. It might also reflect the fact that it takes time to develop effective consumer attributes, such as how to find resources.
- The results should be interpreted with caution due to the lack of a control group. Further research into the application of edutainment in patient decision aids and education programs is warranted.

References:

1. O'Connor A. User Manual - Decisional Conflict Scale. Ottawa: Ottawa Hospital Research Institute; 2005.
2. Ciciriello S et al. Development and validation of the Methotrexate in Rheumatoid Arthritis Knowledge Test (MiRAK). *Internal Medicine Journal*. 2010; 40(S3):ARP17.
3. Kristjansson E et al. Development of the effective musculoskeletal consumer scale. *Journal of Rheumatology* 2007; 34(6):1392-1400.
4. Stacey D et al. Decision aids for people facing health treatment or screening decisions. *Cochrane Database Systematic Review*. 2011;10.

ANSWER. You decide.
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