

Online, interactive Option Grid™ decision aids: shifting user preferences

Peter Scalia¹, Marie-Anne Durand¹, Rachel Thompson¹, Marjan Faber², Jan Kremer², Glyn Elwyn¹

¹ *The Dartmouth Institute, New Hampshire, United States of America*

² *Radboud university medical center, Nijmegen, Netherlands*

Background

Randomized trials have shown that decision aids modify user preference, yet little is known about the *active ingredients* embedded in the decision aid that shift user preference. The web-based **Option Grid™** interactive journey enables us to identify which information elements are most valued by users, and whether they are associated with preference shift. Our aim was to determine whether Option Grid interactive decision aids shifted user preference, and which information elements embedded in the tools were associated with that shift.

Methods

We conducted a cross-sectional analysis of data derived from the usage of interactive Option Grid tools to determine whether or not users shifted their preference. All interactive decision aids completed by users who created an account on the Option Grid website between June 1, 2015 and January 31, 2016 were eligible for inclusion. The five most-used Option Grid decision aids were analyzed for this study. The McNemar-Bowker paired test was used to compare preference shift before and after the use of the tool. Five multinomial regression analyses were conducted (one for each of the five Option Grid decision aids) to investigate possible associations between information elements and preference shift.

Results

The amniocentesis, angina, breast cancer, Prostate Specific Antigen (PSA) test, and statins Option Grid decision aids were included for analysis. Among those five, the breast cancer ($p < 0.001$), PSA ($p = 0.011$), and statins ($p < 0.001$) tools shifted user preference. Users of the breast cancer Option Grid who initially were uncertain or who preferred the 'lumpectomy with radiotherapy' treatment option shifted their preference toward the 'mastectomy' treatment option. Information elements regarding the potential for the cancer to return, the possibility of lymph gland removal, and whether or not the patient will lose their hair all shifted preference toward mastectomy. Users of the PSA tool typically chose more conservative options, shifting their preference toward not having a PSA test or becoming uncertain after completing the interactive Option Grid. Information on the meaning of having a high, or normal, PSA level and its link to cancer shifted user preference. Data on the overall risk of the test and the risks associated with prostate biopsy also influenced preference. All the information elements in the statins Option Grid shifted user preference away from starting a statin or changing their diet toward being physically active. For the angina Option Grid, preferences shifted toward medical management and away from stenting or uncertainty. What the treatment involved, the likelihood that the treatment lowered heart attack risk and how well the treatment worked all influenced the direction of the preference shift for those who went through the angina interactive tool. Amniocentesis Option Grid users did not shift their preference in any direction that was statistically significant.

Conclusion

Option Grid decision aids provide insight into the information elements that seem to influence change in preference. Identifying the *active ingredients* of decision aids can transform the design of these tools to better support decision making.