

The Effects of Presenting Uncertainty in Health Risk Information on Behavioural Intention and Psychosocial Outcomes



THE UNIVERSITY OF SYDNEY

Jovana Sladakovic, Jolyn Hersch, Robin Turner, Jesse Jansen, Kirsten McCaffery

Background

- ❖ Uncertainty is an inherent part of communicating health risk information, yet is largely understudied. ¹
- ❖ Commonly health professionals emphasise the benefits of procedures, often without mentioning harms like overdiagnosis. ²
- ❖ Quantifying overdiagnosis is a challenge and estimates vary widely. ³
- ❖ There is debate about whether consumer information should present the uncertainty around health risk estimates such as overdiagnosis estimates. ^{1,4}
- ❖ The impact of presenting uncertainty using quantitative ranges (e.g. 20-40%) compared to point estimates is poorly understood. ⁵

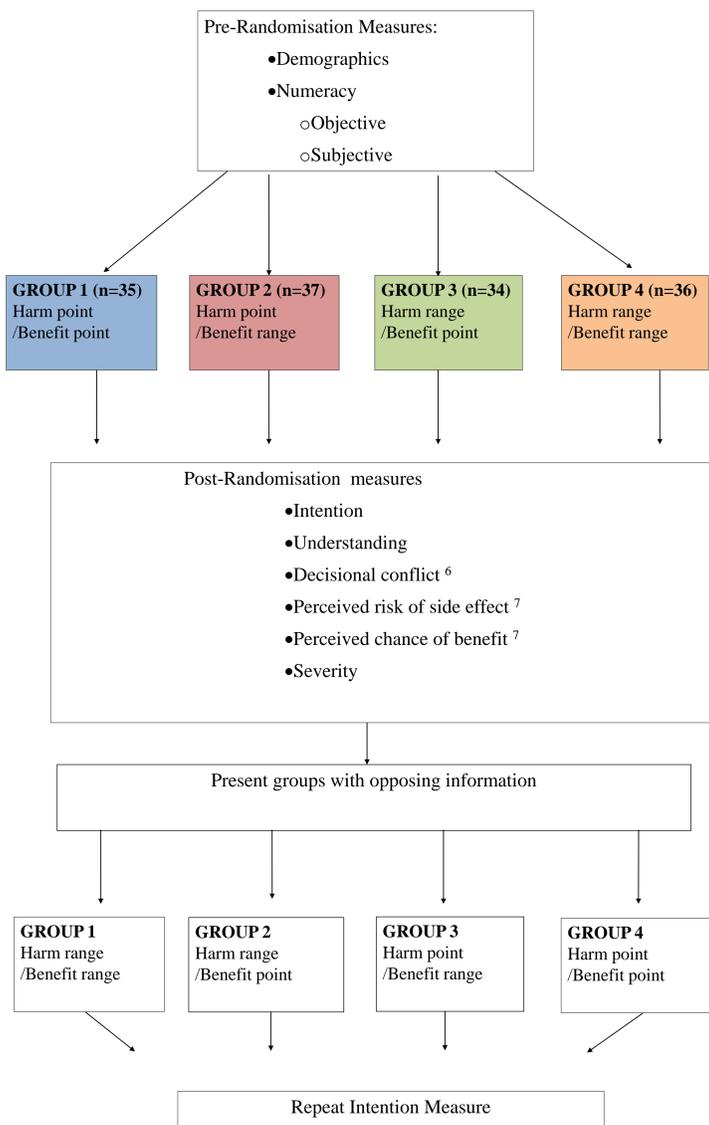
Aim

- ❖ To determine the effects of presenting quantitative uncertainty of benefit and harm information on intention and other psychosocial outcomes.

Method

- ❖ Randomised online study with 147 university students
- ❖ Read a hypothetical scenario about a migraine drug with chances of benefit (symptom relief) and harm (side effect)
- ❖ Participants were randomised into one of four conditions

Experimental Design



Health Scenarios

Presented below is a hypothetical scenario describing your visit to your local doctor. Please read the scenario carefully and then answer the questions that follow. When considering your answer, please imagine yourself as facing the described scenario and answer as you would in that situation

Increasingly you have been experiencing severe headaches, a pulsating pain on one side of your head, nausea and high sensitivity to light and noise during these severe headache episodes. Distressed, you visit your doctor, who after assessment informs you that you are suffering from Migraines. She suggests a new drug, Drug X, which is known to relieve migraine symptoms. The Doctor explains that “71% of people who take Drug X will be relieved of the symptoms and discomfort caused by the migraine, but there is also a chance of unwanted side effects. In particular, 19% of people who take the drug may experience moderate swelling of the face and lips, for the duration of the medication use.”

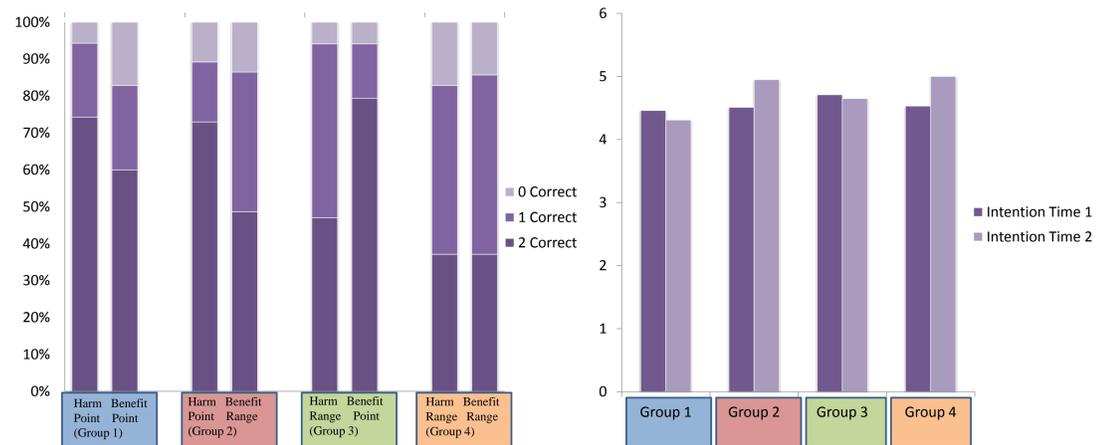
Group 2
63 - 79%
19%

Group 3
71%
11 - 27%

Group 4
63 - 79%
11 - 27%

Results

- ❖ No significant differences in *intention* across the four groups ($p=.93$) but there was an increase in intention between time 1 and time 2 in Group 4 (harm and benefit presented initially as ranges, then point estimates) (4.53 vs 5.00, $p=0.02$).
- ❖ Significant difference in *understanding* (0, 1, or 2 questions correct) for harms ($\chi^2=15.28$, $df=2$, $p < .001$) and benefits ($\chi^2=11.19$, $df=2$, $p=.004$); where presenting uncertainty decreased understanding of harms (all correct: 73.6% vs 42.0% of participants) and benefits (69.6% vs 43.1%), respectively.
- ❖ There were no significant differences in perceived risk, perceived benefit, decisional conflict, nor perceived severity.



Discussion

- ❖ Reducing uncertainty surrounding harms and benefits appears to increase intention (Group 4)
- ❖ Adding uncertainty decreases understanding, regardless of whether the information is about harms or benefits
- ❖ These findings may help develop optimal ways to present overdiagnosis information to patients
- ❖ Future research is needed to examine effects of presenting quantitative uncertainty in real medical situations.

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