

Guidance or Misdirection? Unpacking the role of feedback in health preference assessments



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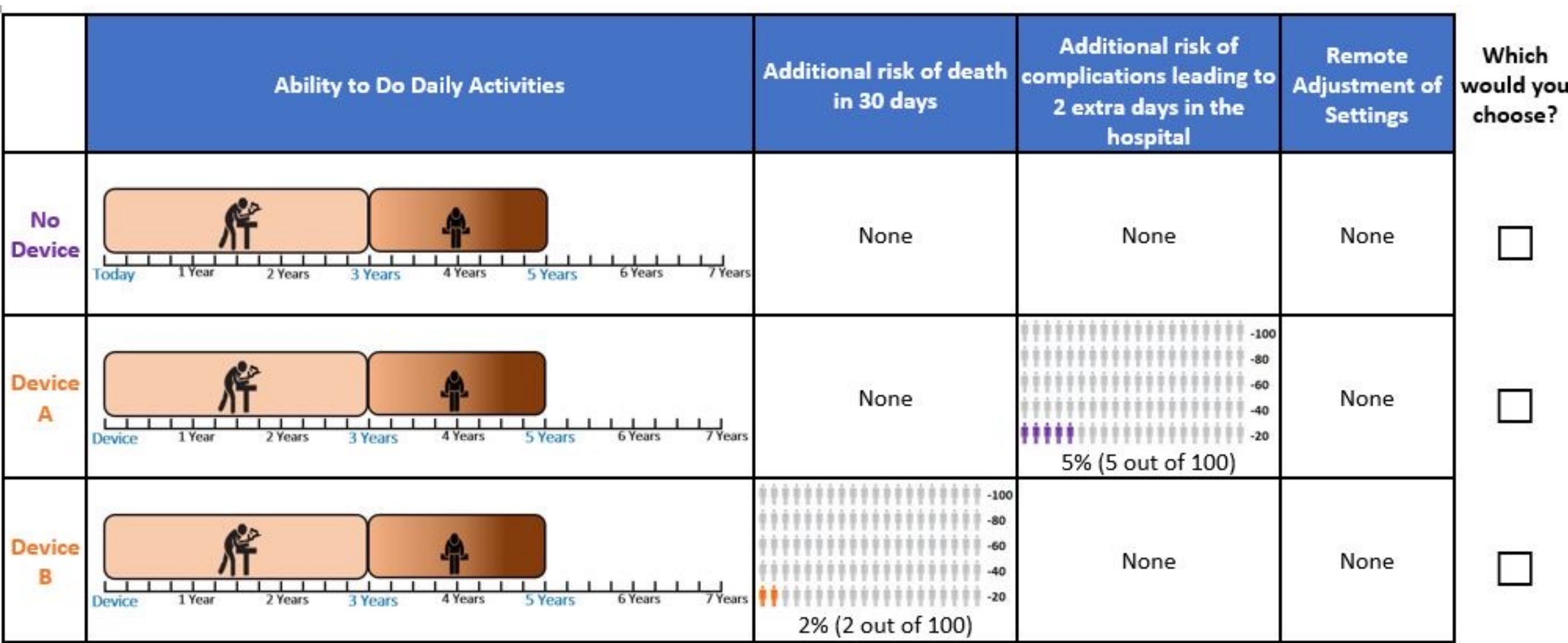
Background/Objective

- **Context:** Discrete choice experiments (DCEs) include tutorials and practice questions to familiarize respondents before the actual experiment (Janssen et al., 2018; Vass et al., 2020).
- **Objective:** To investigate the effect of providing feedback to respondents on a dominated-choice question on subsequent choice behavior.

Methods

- Assessed heart failure patients’ preferences for medical devices using a DCE (n=626).
- Participants presented with a dominated-choice question - Device A/B vs. “No Device” (Figure 1).
 - Device A/B: No benefits, associated risks.
 - “No Device”: No risk or benefit.
- Participants making suboptimal choices [Device A/B; n=340] split into:
 - Feedback group (n = 170): Received feedback & option to revise choice.
 - Control group (n = 170): No feedback.
- **Hypotheses:**
 - Feedback increases choice consistency in subsequent questions.
 - Feedback creates unintended signaling towards the non-dominated (i.e., no device) option.
- Choice behavior analyzed via multinomial and heteroscedastic latent class logit models.

Figure 1. Dominated Choice Question



Results

- Post-feedback, 71% continued to choose suboptimal devices [Device A/B].
- Feedback → increased likelihood of choosing the “No Device” option in subsequent choice questions (p=0.002).
- Providing feedback decreased consistency by 31% (p<0.001).
- However, the effect of feedback on consistency varies across different respondent profiles (identified by 3 latent classes, Figure 2):
 - Class 1 (66%, pro-device) → **no effect**.
 - Class 2 (20%, pro-device, risk-focused) → **consistency ↓**.
 - Class 3 (14%, anti-device) → **consistency ↑**.

Figure 2. Patients’ preferences classified into latent classes – heteroskedastic latent class logit model (the effect of feedback on choice consistency)

	Class 1	Class 2	Class 3
Preference parameters	“Pro-Device”	“Pro-Device”	“Anti-Device”
Physical functioning			
1-year gain in NYHA class II	1.199 (0.496) ***	-0.289 (0.312)	0.903 (0.253) ***
1-year gain in NYHA class III	0.967 (0.117) ***	-0.369 (0.306)	0.569 (0.216) ***
30-day mortality risk (vs 0%)			
2%	-0.188 (0.106) *	-0.309 (0.279)	-0.692 (0.244) ***
5%	-0.603 (0.119) ***	-0.676 (0.319) **	-0.973 (0.283) ***
10%	-1.608 (0.187) ***	-0.222 (0.360)	-1.762 (0.512) ***
15%	-1.327 (0.185) ***	-2.110 (0.669) ***	-1.443 (0.431) ***
In-hospital complication risk (vs 0%)			
5%	-0.100 (0.108)	-0.219 (0.268)	-0.957 (0.252) ***
15%	-0.626 (0.119) ***	-0.519 (0.306) *	-1.819 (0.434) ***
40%	-1.148 (0.141) ***	-1.287 (0.387) ***	-1.144 (0.291) ***
Remote device adjustment (vs no)	0.405 (0.077) ***	-0.529 (0.261) **	0.066 (0.172)
Optout – No Device	-3.554 (0.496) ***	-2.673 (0.571) ***	0.660 (0.318) **
Membership parameters			
CONSTANT	1.519 (0.191) ***	0.316 (0.294)	0.000 (fixed)
Explanatory variables of scale			
Feedback (vs no)	-0.132 (0.105)	-0.700 (0.305) **	0.519 (0.214) **
CLASS SHARE (%)	65.811	19.771	14.415
Model diagnostics			
LL at convergence	-1985.031		
McFadden’s pseudo-R2	0.241		
Number of observations	2632		
Number of respondents	329		

Conclusions

- Feedback can influence choice behavior in DCEs.
- Despite feedback, most respondents maintained their initial choice post-feedback.
 - **Possible reasons:** misunderstanding of the options presented, or beliefs/hope about benefits not represented in the choice question.
- Study highlights potential unintended consequences of feedback in DCEs.
 - Suggests feedback alone may not adequately “train” survey participants.

Acknowledgments

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