

How are debriefing questions used in health discrete choice experiments? An online survey

Running title: Debriefing questions in DCEs

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Precis: Over half of researchers conducting health DCEs use debriefing questions, however many do not analyse, use or report the responses.

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- Supplementary Material A – 1 page, 1 table
- Supplementary Material B – 5 pages
- Supplementary Material C – 2 pages, 1 table

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Abstract

Objectives: Debriefing questions can assess if respondents understand discrete choice experiments (DCEs) and are answering in a way consistent with theories of decision making and utility maximisation. However, there is limited literature about how often debriefing questions are included or how the results are used in health economics. The aim of this study was to conduct a survey of the frequency, type and analysis of debriefing questions in health DCEs.

Methods: We conducted an online survey of authors of published health DCEs, asking about their use of debriefing questions, including frequency, type and analysis. We descriptively analysed the sample characteristics and responses. Free-text questions were analysed with qualitative thematic analysis. **Results:** We received 70 responses (43% response rate), of which 50% reported using debriefing questions. They were most commonly designed to assess difficulty (91%), understanding (49%) and attribute non-attendance (31%) rather than learning effects (3%) or monotonicity (11%). On average, 37% of debriefing questions are analysed (range 0% to 69%) and the results used <50% of the time – usually to exclude respondents or interpret overall results. Researcher experience or confidence with DCEs did not affect their use of debriefing questions. **Conclusions:** These results suggest that while over half of researchers conducting health DCEs use debriefing questions, many do not analyse, use or report the responses. Given the additional respondent burden, there is a need for reliable and valid debriefing questions. In the meantime, the inclusion, analysis, and reporting of debriefing questions should be carefully considered prior to DCE implementation.

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Highlights

- Debriefing questions can assess DCE respondent understanding and adherence to theories of rational, utility-maximising decision making. However, they come at a cost of respondent burden.
- This paper suggests that while over half of researchers conducting health DCEs include debriefing questions, many do not analyse, use or report the responses.
- We recommend researchers undertaking a health DCE carefully consider whether to include debriefing questions, and if so, which questions to include, how they will be analysed, how the results will be used, and how the use of debriefing questions will be reported.

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(current word count = 2233, max 2500)

1. Introduction

Discrete choice experiments (DCEs) are increasingly used in health to obtain a quantitative measure of preferences for healthcare products and services. A recent review identified that the application of DCEs is increasing in geographic scope, areas of application and sophistication of the design and analysis¹. However, questions remain about whether DCE surveys accurately measure individuals' true preferences¹⁻³. The complexity of the language and questions within a survey impacts on data quality and can result in added variance and measurement error⁴. DCEs can be cognitively demanding, and choices that are too difficult can result in less accurate preference data⁵.

Researchers can include debriefing questions at the end of a DCE survey to obtain information about respondents' experience of completing the DCE tasks and the survey more generally.

Debriefing questions can be used to assess if respondents have difficulty with the survey, have understood the choice task and/or are answering consistently with economic theories of decision making (such as consumer theory⁶ and random utility theory^{7,8}). Some of the commonly considered assumptions of rational, utility maximising decision making are completeness, continuity (compensation), attribute non-attendance (a component of continuity), monotonicity (non-satiation or dominance), transitivity and symmetry. Definitions of these can be found in Supplementary Material A. Debriefing questions can be combined with other tests of decision making such as including repeated or dominated DCE choice sets⁹⁻¹¹ or undertaking additional econometric analysis¹².

Responses to debriefing questions can be used to categorise respondents into those who understood what they were asked to do and made utility maximising decisions, and those who did not. This information can then be used to assess the sensitivity of estimation results to the inclusion of non-adherent respondents. If responses by people who did not understand, or who were not utility maximising, are included in the analysis this could bias estimates or result in greater random error¹²⁻¹⁵. However, if apparently irrational choices actually reflect true preferences, excluding them could introduce bias¹¹, particularly if some violations are more common in particular populations, such as those with lower education, older age or reduced health literacy¹⁵.

There has been no systematic research on how DCE researchers use debriefing questions. This paper uses a survey of published DCE authors to identify the frequency, type and analysis of debriefing questions.

2. Methods

We sent an online survey in October 2017 to the corresponding author of each DCE in two systematic reviews covering all health DCEs published from 2009 to 2012¹⁶ and all DCEs valuing generic preference-based measures until 2016¹⁷. Corresponding authors with more than one DCE in the sample were asked to choose one DCE to consider when answering the survey. The full survey instrument is available in Supplementary Material B. All participants gave informed consent (UTS HREC 2009-143P).

The survey asked authors if they included debriefing questions in their DCE, and if so, to classify them as addressing:

- Difficulty of the survey
- Self-reported understanding of the choice tasks
- Completeness of preferences
- Learning effects
- Monotonicity of preferences
- Attribute non-attendance at survey or choice task level

These classifications were chosen based on the relevant assumptions of rational, utility-maximising decision making and the expert opinion of the authors of common types of debriefing questions. We also asked participants: whether they analysed the responses to the debriefing questions, how they used the analysis of the responses to the debriefing questions (to exclude participants, to interpret the final choice model, as an interaction term in the choice model, or other), how many DCEs they had undertaken, how confident they were in the design and analysis of DCEs, and whether their use of debriefing questions had changed in more recent DCEs (defined as a DCE published since 2012 or more recently than the one they responded to the survey about). We asked optional free text questions about the exact wording of their debriefing questions, why debriefing responses were not analysed, other ways the debriefing responses were used, the descriptive results of the debriefing responses analysis, how more recent DCEs were different in their use of debriefing questions and whether the respondent had any other information or thoughts on the use of debriefing questions in DCEs.

Descriptive analysis of the survey sample characteristics and responses was undertaken using SAS 9.4. We compare responders and non-responders in terms of year of publication, type and

number of DCEs in the survey sample and we compare those who did and did not include debriefing questions in terms of year, type and number of DCEs, confidence with DCEs and use of other validity checks. In both cases we use chi-squared tests (or Fishers Exact Test when sample sizes were small). We analyse the free text questions using a qualitative thematic analysis by compiling the free text responses and then coding them descriptively to identify the themes about debriefing questions and understanding with DCEs that emerged inductively¹⁸.

3. Results

There were 161 corresponding authors with valid email addresses for 221 DCEs. We received 70 responses (43% response rate), 63 (90%) with complete data (all questions completed). Twenty-six percent of responders had multiple DCEs in the initial sample and chose one study for their responses.

Characteristics of the DCEs in the survey sample and characteristics of the respondents and their use of debriefing questions are shown in Table 1. We find no differences between responders and non-responders in terms of year of publication ($p=0.51$) or whether the respondent had more than one DCE in the initial sample ($p=0.06$). Responders were more likely to include a methodological sub-study in their DCEs ($p=0.01$), such as randomising DCE respondents to receive different information prior to the choice task and comparing the preference results by information subgroup.

Half of responders ($n=35$, 50%) included debriefing questions. There were no significant differences between those who did and did not include debriefing questions by year ($p=0.44$), type ($p=0.48$), number ($p=0.05$), and confidence ($p=0.50$) with DCEs, or with use of other validity tests ($p=0.35$).

Figure 1 shows the type of debriefing questions asked and how the responses were used. The most common debriefing questions asked about respondent understanding or difficulty. The full list of debriefing questions reported is in Supplementary Material C. Qualitative analysis shows the majority were related to the concept of difficulty, although the questions assessing difficulty and understanding overlapped, and difficulty was used to refer to many different respondent 'actions' (such as choosing (n=8), understanding (n=5), distinguishing between choice sets (n=4), responding (n=3), imagining (n=1) or reading descriptions (n=1)) as well as different survey components (such as questions (n=10), choices (n=8), survey (n=2), task (n=2) or instructions (n=1)). Few debriefing questions were specifically related to utility maximisation. It was not clear which debriefing questions assessed completeness of preferences. Those who reported testing for monotonicity did not provide their debriefing questions.

Figure 1 also shows that, on average, half of respondents analysed the responses to the debriefing questions (range 44 – 59%). The debriefing questions most frequently analysed were also those relating to difficulty or understanding. In contrast, no-one analysed monotonicity or learning effects questions. The reasons given (in optional free text responses) for not analysing debriefing questions were that it was not necessary (n=4), they were only included in the pilot phase (n=2) or it was not pre-specified (n=1).

Over half (59%) of researchers involved in a more recent DCE reported their use of debriefing questions had changed. Among those who gave optional free text responses, 11% reported they no longer included debriefing questions, and 15% reported they now included debriefing questions when previously they had not. In addition, 44% reported they now asked different, more focussed or more detailed questions.

The final free text question asking for any other information or thoughts on the use of debriefing questions in DCEs had a common theme that debriefing questions are important but may not be able to measure the complex assumptions of utility maximisation. Respondents reported using alternative methods to assess understanding, such as focus groups, survey pre-testing, open-ended questions, face to face designs, quizzes, and frequency of non-response. In addition, respondents identified other aspects of decision making that might influence both DCE and debriefing response, such as the time horizon applied by respondents, appropriateness of attributes and levels, task difficulty and mode of administration.

4. Discussion and conclusion

Among our sample of health DCE authors, more than half include debriefing questions. However, many do not analyse the responses or use the results. It appears many users of DCE methods think debriefing questions are important but are not clear what debriefing questions are measuring or how to use the information.

The most common debriefing questions assessed the concepts of respondent difficulty or understanding. Surveys can be ‘difficult’ for several reasons, including unclear wording, unfamiliar concepts or emotionally difficult topics. In the context of DCEs difficulty may be related to the axioms underlying utility maximisation such as preference completeness. Difficult questions in surveys can reduce response rates¹⁹ and increase the use of simplifying strategies²⁰, opt-out selection²¹, non-transitivity of choices²², non-trading²³ and missing responses²⁴. DCEs often aim for tasks with ‘utility balance’ or in the ‘magic-p’ range of 75/25, as these may lead to more precise parameter estimates, although this may also increase choice difficulty^{5,25}.

Given that only 5% of our sample reported excluding DCE responders on the basis of difficulty questions and 25% excluded DCE responders on the basis of understanding questions, it appears many researchers use debriefing questions in their DCE as an informal way to test the ‘difficulty’ of their instrument and how well it has been understood. However, the variation in how these questions are worded means it is unclear what aspect of instrument difficulty they are capturing, and how useful this is, even as an informal check. Given there is a cost to including these questions, in terms of length of survey and respondent burden, it is important that they are both specific and useful.

Several respondents reported assessing understanding and rational decision making through pre- or pilot testing. While focus groups and pre-testing are important and highly useful in developing a high quality DCE²⁶, they may not accurately indicate understanding during primary data collection, where methods and context could be different. Similarly, the debriefing questions used in a qualitative, pre-testing context may focus on different concepts and require different wording than those used in an online or postal survey instrument. Other respondents reported using non-response rates as a form of validity checking, however the use of non-response rates as an assessment of understanding does not account for the many reasons people may not complete the DCE²⁷.

The debriefing questions most clearly addressing a specific assumption of rational, utility maximising decision making were those for attribute non-attendance, and there is some evidence that stated attribute non-attendance questions can identify people who are ignoring one or more attributes¹². It may be that researchers use alternative methods to test assumptions of continuity, monotonicity and transitivity, such as repeated or dominated choice sets. A tool for analysing internal validity tests such as these has recently been developed and tested, and found that

analysis is possible even when the original experimental design did not explicitly include these tests⁹. Some assumptions, such as transitivity, may be more appropriate for assessment through statistical techniques²². However, given there is evidence through think aloud studies that quantitative assessments of rationality do not always work¹¹, including an assessment of respondent rationale for potentially dominated or inconsistent preferences could improve DCE model fit and validity.

There is a need for rigorously designed, reliable and valid debriefing questions to specifically assess difficulty and understanding of DCE instruments and the assumptions of rational, utility maximising decision making. These debriefing questions would need to work together with other methods of assessing validity, and meaningfully inform the DCE analysis enough to justify their inclusion and additional respondent burden. Work to assess where they are best placed in the survey, when and how the responses can best inform a DCE analysis, and how the results can best be reported is also required. In the meantime, those conducting DCEs should report their use of debriefing questions within their publications.

This survey captures the views of researchers with a range of experience in health DCEs conducted over an eight-year period. Limitations include the relatively low response rate, possible recall bias and potential response bias, as people who use debriefing questions may be more likely to answer the survey. We captured the use of debriefing questions by researchers, rather than the proportion of DCEs that include debriefing questions and we may have overestimated use of debriefing questions by allowing individuals with more than one DCE publication during the study period to choose the DCE they responded about. By providing a limited list of potential uses of debriefing questions and assuming respondents defined

‘debriefing questions’ as we did, we may have limited the types of debriefing questions respondents told us about or changed the way they considered their debriefing questions.

The key lesson from this study is to carefully consider the inclusion of debriefing questions prior to implementation of a DCE. If used, the wording should be pre-tested to capture the intended concept, and the statistical analysis plan should specify how the debriefing question responses will be analysed and used. Reporting the inclusion and analysis of debriefing questions in DCE publications would improve transparency.

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6. Tables, Figures and Supplementary Materials

Figure 1

- Title: **Sankey diagram of whether debriefing questions were included, analysed and used in health DCEs 2009 – 2016** (www.sankeymatic.com/build/)
- Legend: Nil

Table 1

- Title: **Characteristics and use of debriefing questions of the survey sample (and their DCEs)**
- Legend: *indicates studies that presented the results of a methodological sub-study as well as the DCE; DCE = discrete choice experiment; n = number in sample

Supplementary Material

- **A – Common assumptions of rational, utility maximising decision making**
- **B – Full survey instrument**
- **C – List of debriefing questions submitted by survey respondents**

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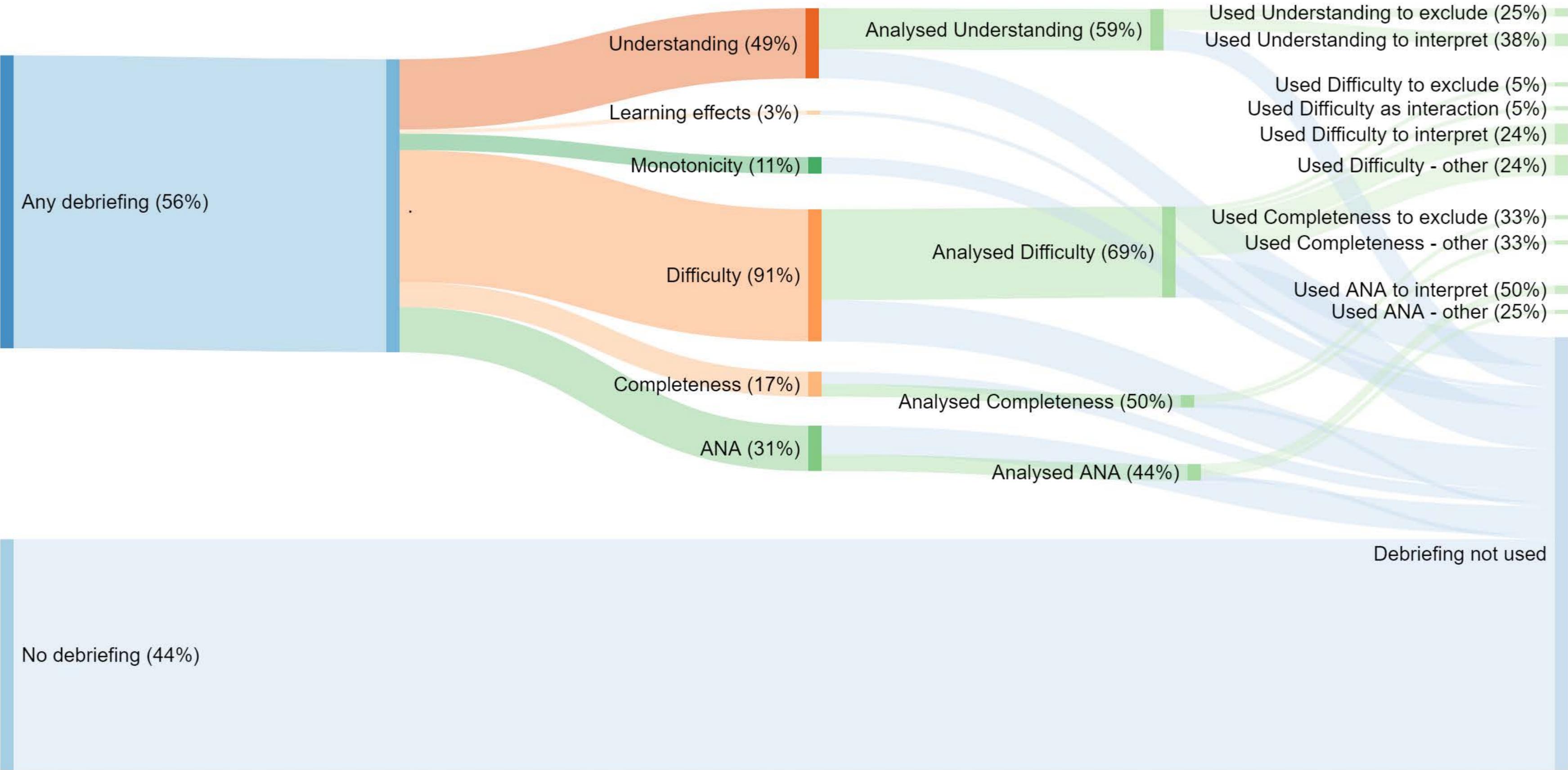
Table 1: Characteristics and use of debriefing questions of the survey sample

	Responders (n=70)	Non-responders (n=99)
Variable	Frequency (%)	Frequency (%)
Year of DCE publication		
Pre-2010	9 (13)	17 (17)
2010	8 (12)	15 (15)
2011	15 (22)	22 (22)
2012	21 (31)	34 (34)
2013	4 (6)	2 (2)
2014	5 (7)	3 (3)
2015	2 (3)	0 (0)
2016	4 (6)	6 (6)
Missing	2	0
Type of study		
Patient or consumer preferences	43 (63)	74 (74)
Patient or consumer preferences with methods*	4 (7)	12 (12)
Health state valuation	10 (15)	2 (2)
Health state valuation with methods*	9 (13)	11 (11)
Other	1 (1)	0 (0)
Missing	3	0
Number of DCEs in the survey sample		
One	52 (74)	85 (86)
More than one	18 (26)	14 (14)
Number of DCE's involved in		
1	8 (14)	

2 to 5	17 (30)	
6 to 10	14 (24)	
More than 10	18 (32)	
Missing	13	
Confidence in design and analysis of DCEs		
Slightly confident	6 (11)	
Moderately confident	23 (40)	
Very confident	25 (44)	
Extremely confident	3 (5)	
Missing	13	
Number of debriefing question types included		
None	28 (44)	
One	11 (18)	
Two	16 (25)	
Three	5 (8)	
Four	2 (3)	
Five	1 (2)	
Missing	7	
Other validity tests included (could choose more than one, so % >100)		
None or missing	30	
Duplicate choice set(s)	20 (50)	
Dominated choice set(s)	24 (60)	
Attribute non-attendance test(s)	2 (5)	
Other test(s)	7 (18)	

*indicates studies ~~including presenting the results of~~ a methodological ~~question or~~ ~~components~~ ~~sub-study~~; as well as the DCE.

DCE = discrete choice experiment; n = number in sample



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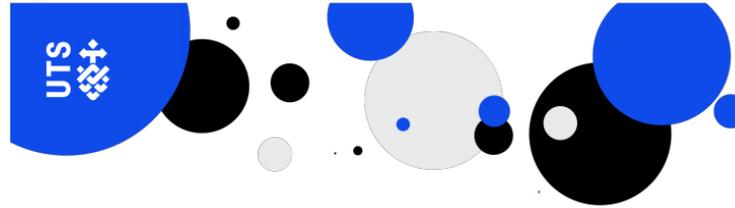
Pearce A, Mulhern B, Watson V, Viney R.

Value in Health, 2019

Supplementary Material A - Common assumptions of rational, utility maximising decision making

Assumption	Definition
Completeness	Individuals know their preferences, and these can be readily uncovered by the researcher
Continuity (aka Compensation)	Individuals can be compensated for a loss in one good by a gain in another
Attribute non-attendance (sub-set of continuity)	Tendency to ignore one or more attributes – can lead to biased coefficient estimates
Monotonicity (aka non-satiation or dominance)	At least as much of everything is at least as good
Transitivity	If A is preferred to B, and B is preferred to C, then A is preferred to C.
Symmetry	The order of evaluation does not affect preferences

aka = also known as



Default Question Block

Survey of debriefing questions in DCEs

Thank you for your interest in our survey. You have been selected to participate in this survey because you published a health DCE in the period 2009-2012. We are interested in whether researchers are testing the assumptions of decision making within their health-based DCEs.

What is the study about? DCEs are based on the theories of utility maximisation, regret minimisation and/or random utility. There are a number of ways to test if individuals are answering DCEs consistently with the assumptions of decision making within these theories. For example, having a choice set repeated twice in a survey (to test preference consistency), or having a choice set where one option is clearly better, or dominates, the alternative (to test preference rationality). Another way is to ask participants directly about how they made their choices (known as debriefing questions). For example:

- "Did you find making a choice confusing?" (testing task understanding & preference completeness) or
- "Did you consider all of the different factors that varied between the options?" (testing attribute non-attendance and monotonicity of preferences)

In this survey we will ask you about your use of debriefing questions in your DCE research. There is other ongoing work looking at other ways to test the assumptions of decision making in DCEs.

How will your information be used? Participation in the survey is voluntary and the information you provide will be kept confidential. All survey invitees will be sent a link to the publication about the survey & results at the conclusion of the project.

Who is conducting this research? This research is being carried out by researchers at the University of Technology Sydney (UTS) and the University of Aberdeen. It is approved by the UTS Human Research Ethics Committee (UTS HREC Ref no. 2009-143P). If you have any questions or concerns about the research, please contact Dr Alison Pearce: alison.pearce@chere.uts.edu.au or +61-2-9514-4735.

To start the survey, please click 'continue'.

The following questions relate to the DCE in your publication:

\$(e://Field/Reference)

If you were not involved in the design/analysis of the DCE and would prefer someone else to complete this survey about the use of debriefing questions in your study, please tick below and enter their name and email address. Otherwise, please click 'continue'.

Please send this survey to:

Which debriefing questions did you include in your DCE?

[please select all that apply]

- Questions about respondents self-reported understanding of the choice tasks (e.g. "Did you understand the concept of making choices?")
- Questions about how difficult respondents found the choice sets (at survey or choice task level) (e.g. "How difficult did you find it to make a choice?")
- Questions about respondents' completeness of preferences
- Questions about learning effects
- Questions about monotonicity of preferences
- Questions about attribute non-attendance at the survey level
- Questions about attribute non-attendance at the choice task level
- I did not include any debriefing questions in my DCE

Please provide the exact text of your debriefing questions

- I have emailed my debriefing questions to alison.pearce@chere.uts.edu.au
- I have pasted the text of my debriefing questions below:

Please tick if you analysed the responses to your debriefing questions about:

[please select all that apply]

- Self-reported understanding
- Choice set or survey difficulty
- Completeness of preferences
- Learning effects
- Monotonicity of preferences
- Attribute non-attendance
- I did not analyse the responses to any of the debriefing questions

Did you use the information from your analysis of the debriefing questions in your analysis of respondents' preference data?

[please select all that apply]

Qualtrics Survey Software

	No, I did not use the information	No, but I used the information to interpret the overall results	Yes, I used responses to exclude some respondents	Yes, I included as an interaction term in the choice model	Other
Self-reported understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Choice set or survey difficulty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completeness of preferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning effects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monotonicity of preferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attribute non-attendance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If not, please explain why not...

If other, please provide details of how you used the information from your analysis of the debriefing questions...

What were the (descriptive) results of your analysis of the debriefing questions?

Did you include the analysis of your debriefing questions in your publication / paper?
[please select all that apply]

- Self-reported understanding
- Choice set or survey difficulty
- Completeness of preferences
- Learning effects
- Monotonicity of preferences
- Attribute non attendance
- No

In principle, would you be willing to share the (blinded) data or results of your debriefing questions with us at a later date, for analysis as part of a larger study of this topic?

- Yes
 Maybe
 No

Other tests of assumptions

Did you include any other tests of the assumptions of decision making in your DCE?
[please select all that apply]

- No
 Yes - included a duplicate choice set (e.g. to test consistency of preferences)
 Yes - included a dominated choice (e.g. to test rationality of preferences)
 Yes - included tests of attribute non-attendance
 Yes - included other tests of assumptions (please specify)

Have you been involved in any more recent DCEs (ie after 2012)?

- Yes
 No

Was the use of debriefing questions in your more recent DCE(s) the same as for the DCE you have described in this survey?

- Yes
 No

If no, how did it differ?

Demographics

How many DCE studies have you been part of in total?

- 1
 2-5
 6-10
 More than 10

How confident are you in the design and analysis of DCEs?

- Extremely confident
- Very confident
- Moderately confident
- Slightly confident
- Not confident at all

Do you have any other information / thoughts about the use of debriefing questions or tests of the assumptions of decision making in DCEs that you would like to share?

End of survey

Thank you for taking the time to complete our survey. If you have any questions or concerns about this research, please contact Dr Alison Pearce: alison.pearce@chere.uts.edu.au or +61-2-9514-4735.

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How are debriefing questions used in health discrete choice experiments? An online survey

Pearce A, Mulhern B, Watson V, Viney R.

Value in Health, 2019

Supplementary Material C - Debriefing questions submitted

Q: Please provide the exact text of your debriefing questions	Stated objectives of debriefing questions
Was it difficult to respond to the questions in this section? Please explain.	Difficulty
You have completed the first section of the survey. Before you go on, please give us some feedback on how you found completing the previous questions 1. How difficult was it to answer the previous questions? 2. How difficult was it to understand the previous questions? Very difficult Fairly difficult Not very difficult Not at all difficult	Difficulty
"Did you find the choice tasks easy/OK/moderately difficult/very difficult"? " Were there attributes of importance that were missing?"	Difficulty ANA
To what extent do you agree with the following statement? - Answering the questions was difficult. Completely agree Agree nor disagree Completely disagree [routing] [if respondents click on the button "completely agree" go to question Question 18, if not: go to Question 17] - Question 17. Why did you find it difficult to answer the questions? [respondents can fill in more than one question] - It was difficult for me to understand a caregiving situation - It was difficult for me to imagine that I was an unpaid carer - It was difficult for me to choose between two caregiving situations - It was difficult for me to read the descriptions of the caregiving situations	Understanding Difficulty Completeness
The question was, obviously, in Dutch, and asked respondents whether they found the choice tasks difficult (level of difficulty).	Difficulty
1) Open field for feedback 2) "I found it easy to tell the difference between health states" 3) "I found it difficult to decide on my answer" 4) "It was easy to understand the questions I was asked"	Understanding Difficulty
How difficult did you find making the choices presented in part 2? 1) Very difficult 2) Quite difficult 3) Not difficult nor easy 4) Quite easy 5) Very easy (NB: an approximate English translation from original survey language)	Difficulty
I rate the difficulty of the survey according to the following scale: very easy/ easy/ moderate/ somewhat hard/ hard/ very hard	Difficulty
In the DCE itself we only had one general open question in which they could give comments. However, with the policy advisors, about 25, we had an oral focus group discussion, after completing the DCE in which we asked about the relevance and difficulty of the tasks, the relevance of attributes, whether we used the right levels, whether they used all attributes in their choice or used short cuts etc. see also the discussion section of our article..	Difficulty ANA choice
On the following 1 to 5 scale please state how easy/difficult you found it to make these choices (please circle your answer): 1: Very easy 5 Very difficult	Difficulty
How difficult did you find this survey?	Difficulty
3 questions on a 5 point scale ranging from agree to disagree: 1) It was easy to understand the questions I was asked 2) I found it easy to tell the difference between the health states I was asked to think about 3) I found it difficult to decide on my answers to the questions	Understanding Difficulty

Q: Please provide the exact text of your debriefing questions	Stated objectives of debriefing questions
Included the debriefing questions in our pre-testing and pilot work - particularly in face to face cognitive interviews - as reported in the paper – specifically designed to assess understanding through dominated choice set, but we no longer have access to the final version of the pretesting docs.	Understanding Difficulty
I will need to check the exact wording but respondents were asked to rate the difficulty of the task on a 5 point scale.	Difficulty
Questions on difficulty (Exact text in Danish)	Difficulty ANA survey
For every choice task, after choosing, respondents were asked, "How certain are you?" with a horizontal VAS partitioned by 10 tics, ranging from "Very uncertain" to "Very certain".	Difficulty
<p>1. How clear did you find the information as provided in this questionnaire? (answering options: very clear, clear, neutral, unclear, very unclear)</p> <p>2. What is your opinion about the questions that were asked within this questionnaire? (answering options: very easy, easy, not difficult, not easy, difficult, very difficult)</p> <p>3. What is your opinion about the number of questions that were asked in this questionnaire? (answering options: too many, many, ok, few, very few)</p>	Understanding Difficulty
<p>Did you find the questions on these 16 screens easier or harder than most surveys you do?</p> <p>How clear was the presentation of the health states?</p> <p>How difficult was it to choose between the pairs of health states on each screen?</p> <p>Did you have a strategy for choosing between the pairs of health states on each screen? (Each of these were multiple choice questions. The last question had these response items: I did not have a strategy I focused on a just a few aspects of the health states I focused on the aspects that were highlighted in yellow I considered most of the aspects I considered all of the aspects Other (** which then gave people a free text box to explain **))</p>	Understanding Choice ANA choice
<p>The instructions that were given on the computer made it clear what I needed to do</p> <p>It was easy to understand the questions I was asked</p> <p>I found it difficult to decide</p> <p>I found it easy to tell the difference between the health states I was asked to think about</p>	Understanding Difficulty
Did you find difficult to make the choices? How easy was to distinguish between health states?	Understanding Difficulty Completeness
My debriefing questions were not included as text in the DCE itself - rather they were asked verbally to the respondent in a face to face pilot study, after they completed the DCE.	Understanding Difficulty ANA survey ANA choice

ANA – Attribute non-attendance