ScienceDirect

Contents lists available at sciencedirect.com
Journal homepage: www.elsevier.com/locate/jval

Preference-Based Assessments

Exploring Social Preferences for Health and Well-Being Across the Digital Divide: A Qualitative Investigation Based on Tasks Taken From an Online Discrete Choice Experiment

Becky Field, PhD, Katherine E. Smith, PhD, Clementine Hill O'Connor, PhD, Nyantara Wickramasekera, MSc, Aki Tsuchiya, PhD

ABSTRACT

Objectives: Increasingly, discrete choice experiments (DCEs) are conducted online, with little consideration of the digitally excluded, who are unable to participate. Policy makers or others considering online research data need clarity about how views might differ across this "digital divide." We took tasks from an existing online DCE designed to elicit social preferences for health and well-being outcomes. We aimed to explore (1) how telephone interview participants answered a series of choice tasks taken from an online DCE and (2) whether and how decision making for these tasks differed between digitally excluded and nonexcluded participants.

Methods: We conducted semistructured telephone interviews with members of the public (n = 27), recruited via an existing social research panel. Data were analyzed thematically to identify key approaches to decision making.

Results: Twelve participants were classed as "digitally excluded," and 15 as "digitally nonexcluded." Responses were similar between the 2 samples for most choice tasks. We identified 3 approaches used to reach decisions: (1) simplifying, (2) creating explanatory narratives, and (3) personalizing. Although these approaches were common across both samples, understanding the exercise seemed more challenging for the digitally excluded sample.

Conclusions: This novel study provides some assurance that the participants' views over the choice tasks used are similar across the digital divide. The challenges we identified with understanding highlight the need to carefully examine the views held by the digitally excluded. If online data are to inform policy making, it is essential to explore the views of those who cannot participate in online DCEs.

Keywords: digital exclusion, discrete choice experiments, health preference elicitation, qualitative research, semistructured interviews, telephone interviews, well-being.

VALUE HEALTH. 2025; 28(2):285–293

Highlights

- Discrete choice experiments (DCEs) can elicit health and well-being preferences for informing policy and are increasingly undertaken online, but those who are digitally excluded cannot participate in such exercises, so their views and preferences are excluded from informing policy decisions. Whether their views and preferences are similar or different from those who can participate in online DCEs is unknown.
- We identified no clear differences in views about health and well-being outcomes across the digital divide; however, task comprehension was more challenging for some digitally excluded. We used qualitative telephone interviews, taking tasks from an existing online DCE survey, to explore whether and how social preferences for health and well-being differ between a digitally excluded and a nondigitally excluded sample. This is a novel approach that could be used by other DCE-related studies.
- Although this study found no difference in views across the digital divide, it is still important for online studies of social preferences to explore the views of the digitally excluded, given that resource allocation decisions should be based on a broad understanding of social preferences. If decision makers are to consider such online data for policy making, it is essential to explore the views of those who cannot participate in online DCEs.

Introduction

Given limited resources, policy makers may look to preference-elicitation studies to inform them about public preferences and contribute to resource allocation decisions.[1] Using preference-elicitation exercises to value health states is well established,[2] with interest growing in eliciting preferences for well-being states.[3,4] Discrete choice experiments (DCEs) are one way to quantify preferences for health and well-being.[2,5-7] DCEs involve respondents choosing between 2 or more scenarios that use a set of attributes with specified levels. Each respondent is given multiple choice tasks and responses are analyzed statistically to quantify how the different levels of each attribute determine respondents' choices.[8,9]

This article forms part of a larger project,[10] that elicited social preferences for health and well-being outcomes via several online DCE surveys (Wickramasekera et al, unpublished data),[11] in which respondents considered outcomes for society, rather than for themselves.[12,13] Despite the popularity of DCEs, few studies explore qualitatively how and why people make decisions when completing the choice tasks.[5,14]

Using online surveys to elicit quantitative preferences for health and online DCEs in particular is a growing trend.[5] However, disadvantages include the exclusion of people who do not use the internet. This means that encouraging policy makers to take account of social preferences elicited through online surveys

Table 1. The 7 well-being attributes and levels.

Well-being attributes	Levels
Effect of physical health: this is about how a person's physical health affects their activities.	None of the time, little of the time, some of the time, most of the time, or all of the time
Effect of emotional problems: this is about how a person's emotional problems affect their activities.	None of the time, little of the time, some of the time, most of the time, or all of the time
Loneliness: this is about whether people feel lonely for whatever reason and left out from others.	Hardly ever, some of the time, or often
Household spending money: this is the amount of money that a household has each month after their tax, national insurance, pension contributions, and their housing costs (eg, rent and mortgage payments) have been paid. It is the amount of spending money that the whole household has left to spend each month, including on bills, groceries, and leisure activities.	£690/month (ie, £170/week) £1040/month (ie, £260/week) £1380/month (ie, £340/week) £1730/month (ie, £430/week) £2080/month (ie, £520/week)
Employment: this is about people's main daily activity.	Full-time employment (includes self-employment and being on leave) Part-time employment (includes self-employment and being on leave) Job seeking (unemployed and looking for employment) Full-time education/training/apprenticeship Taking care of a family member with chronic illness or disability Not working and not looking for paid employment (eg, retired, looking after the family/home or volunteering)
Quality of housing: this is about whether somebody's home (1) is in a good state of repair, (2) has reasonable facilities for cooking and washing, and (3) provides reasonable warmth when it is cold outside.	Good, fair, or poor
Neighborhood safety: this is about the area people live in and how safe they feel within their immediate neighborhood.	Hardly ever, some of the time, or all of the time

Note. Source:[10].

risks systematically ignoring the voice of the digitally excluded. If individuals who do not use the internet have similar preferences to other members of the general public, this may not be concerning. However, it is not known whether this is the case. The potential role of financial and technical barriers in digital exclusion[15] suggests a need to empirically assess the social preferences in the digitally excluded alongside those who are not. This study took tasks from an existing online DCE survey that used a suite of well-being indicators, aiming to explore the following:

1. How telephone interview participants answered a series of choice tasks taken from an online DCE.
2. Whether and how decision making for these tasks differed between digitally excluded and nonexcluded participants.

Methods

We conducted one-to-one telephone interviews with digitally excluded and nonexcluded members of the public, asking participants to discuss their decisions for 6 choice tasks resembling DCE tasks. By definition, digitally excluded people cannot participate in an online survey. Furthermore, comparing an in-person DCE survey of the digitally excluded with an online survey of the digitally nonexcluded would conflate digital status and the mode of survey administration. Thus, we used telephone interviews and preposting interview booklets with the choice tasks to examine qualitatively how participants arrived at their choices. Although each task resembled a choice task in a DCE, the data were not analyzed econometrically (given that there are not enough choice tasks for econometric modeling). Rather, we focused on analyzing whether there were differences in how participants in each group made decisions and identifying common approaches.

Development of the Choice Tasks

Attributes and levels for the choice tasks used in this study were developed for the online DCE survey reported elsewhere.[2,3] The attributes and levels are presented in Table 1. These original DCE surveys aimed to elicit public preferences to inform public health economics decision modeling, using items from the UK Household Longitudinal Study (UKHLS).[16]

Our study used 6 choice tasks, each consisting of 2 scenarios to choose from, with no indifference option. All tasks are summarized and presented in Table 2 (for all tasks as presented to participants, see Appendix 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2024.11.001).

These tasks were taken from 120 choice tasks used in 2 online DCE surveys conducted for the wider project, always including at least 2 tied attributes. They elicited preferences from a social perspective,[12,13] by asking participants to consider an imaginary group of people. Further restrictions encouraged participants to take the same considerations into account. Some were unrealistic. For example, to make a given level of household spending money have the same impact across households, scenarios specify household size and composition; to encourage choices made based on the scenarios alone and not what scenarios may lead to. Instructions specified that, after 1 year, people's lives return to what they are now.

Those surveys were developed with digitally nonexcluded participants, using presurvey testing and qualitative interviews to

Table 2. Summary of all the 6 choice tasks.

Aspects of life	Accomplish less because of physical health	Accomplish less because of emotional problems	Feel lonely and left out from others	Monthly (weekly) household spending money	Employment situation	Quality of home	Concerned about the safety of neighborhood
Task 1 Situation A	Some of the time	Some of the time	Hardly ever	£690/month (£170/week)	Part-time employed	Fair	All the time
Task 1 Situation B	Little of the time	Some of the time	Often	£690/month (£170/week)	Full-time employed	Fair	Some of the time
Task 2 Situation A	Little of the time	All of the time	Hardly ever	£2080/month (£520/week)	Part-time employed	Fair	All the time
Task 2 Life situation B	None of the time	All of the time	Some of the time	£2080/month (£520/week)	Job seeking	Fair	Some of the time
Task 3 Situation A	Little of the time	All of the time	Some of the time	£1730/month (£430/week)	Part-time employed	Good	All the time
Task 3 Situation B	None of the time	None of the time	Some of the time	£690/month (£170/week)	Part-time employed	Poor	Some of the time
Task 4 Situation A	All of the time	Most of the time	Some of the time	£2080/month (£520/week)	Job seeking	Poor	Some of the time
Task 4 Situation B	Most of the time	None of the time	Some of the time	£690/month (£170/week)	Job seeking	Fair	Hardly ever
Task 5 Life situation A	All of the time	All of the time	Often	£2080/month (£520/week)	Full-time education*	Poor	Hardly ever
Task 5 Situation B	None of the time	Most of the time	Often	£1040/month (£260/week)	Full-time employed	Good	Hardly ever
Task 6 Situation A	None of the time	Most of the time	Hardly ever	£1040/month (£260/week)	Taking care of family†	Good	Some of the time
Task 6 Situation B	None of the time	Little of the time	Often	£690/month (£170/week)	Not working‡	Good	All the time

*Full-time education/training/apprenticeship.
†Taking care of family member with chronic illness/disability.
‡Not working, not looking for paid employment; see Appendix 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2024.11.001 for all 6 choice tasks presented in full, in the participant booklet.

test participant comprehension.[2,3] The phrase "Aspects of life" was used to refer to attributes and "Life situation" for scenarios. Presurvey testing conducted for the original online DCEs did not aim to confirm the suitability of the tasks for a digitally excluded sample or for telephone interviews. No further pretesting was conducted.

Sampling and Recruitment

A purposive sample aimed to recruit 15 digitally excluded and 15 digitally nonexcluded individuals (N = 30). We recruited via a social research organization's (National Centre for Social Research; https://natcen.ac.uk/centre-deliberative-research) random probability-based UK general population panel. Self-reported internet use ("once a week or less"/"more than once a week") was used for digital exclusion and nonexclusion. Data indicated that the digitally excluded panel members had lower financial status and tended to be older; however, it was not practical to match the digitally nonexcluded sample with the digitally excluded, for both financial status and age. We decided to match financial status, but not age, and only recruited those who reported their financial status as "just about getting by" or "finding it hard." Thus, the 2 samples could be characterized as digitally excluded and older and digitally nonexcluded and younger; however, we refer to them in terms of digital status. Self-reported voting behavior at the last general election was monitored to ensure some diversity of political views. Participants were drawn from one of 3 geographical areas (in Scotland and northern England), served by the wider project's policy partners. Participants received a pounds sterling £60 shopping voucher.

Data Collection

Telephone interviews were conducted by 3 National Centre for Social Research interviewers in 2022, using an interview guide developed iteratively, summarized in Table 3 (see Appendix 2 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2024.11.001, for the full interview guide).

An interview booklet (see Appendix 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2024.11.001) was posted to participants before the interview, to refer to during the interview. Telephone consent was taken. All interviews were audio recorded. Interviews involved an introduction, 2 practice choice tasks (the first of which was easier and had a "right" answer), 6 choice tasks, and a debrief about how participants found the tasks. Interviewers recorded participant choices for each task and answered postinterview reflective questions about the interview process and participant understanding (see Appendix 3 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2024.11.001). Audio recordings were professionally transcribed, checked for accuracy, and anonymized.

Ethical approval was obtained from the University of Sheffield, School of Health and Related Research, Division of Population Health research ethics committee.

Table 3. Summary of interview content.

Introduction	Interviewers explained task instructions and the 7 aspects of life (attributes)
Practice task 1	Interviewers were instructed that there is a "right" answer, ie, B
For participants choosing A or sounding confused/lost, interviewers were instructed to ask:	Can you tell me, why you chose A?. Remember… [interviewer summarizes key points and explains in simple terms how B dominates A]; if necessary, talks through each aspect asking which is better.
Practice task 2	Interviewers were instructed that there is no "right" answer.
After the practice tasks, interviewers were instructed to say: "As we continue, the tasks get more challenging, with more aspects to compare between the two life situations…"	
Practice tasks 1 and 2, tasks 1-6 Main question:	Can you tell me, why did you choose A or B?
Follow-up questions/prompts (by interviewer judgment, depending on responses to the main question)	• How difficult/easy did you find selecting a life situation? • What sorts of things did you think about when making your choice? • How difficult/easy to imagine advising policy makers? How did you go about this? • How did you compare the two situations? For example, pen to highlight how many positive outcomes in one column? Process all information in your head? • Were there certain aspects of the seven you focused on particularly? If so, why? • How did you actually compare the two situations? For example, pen to highlight how many positive outcomes in one column? Process all the information in your head? (If long hesitations/changing answer or answering without hesitation/quickly, explore reasons)

Analysis

An inductive and deductive thematic analysis[17] was conducted using NVIVO R1 (Lumivero) to organize and code data. An initial coding frame was developed by the researchers, informed by our research aims. All transcripts were read for familiarization and coded by the first author (B.F.). The initial coding frame was developed iteratively as additional codes were added to capture aspects of the data that seemed important but did not map to our initial codes. After reading each transcript, B.F. noted reflections on participant understanding. Six coded transcripts (3 digitally excluded and 3 nonexcluded) were reviewed by a coauthor (C.H.O.C.). This identified no substantial differences in coding between the 2 researchers. A descriptive analysis[18] focused on explanations given for choices in each task, assessing whether digitally excluded and nonexcluded participants differed in terms of their discussion of each choice task, their decision-making approaches, and our assessment of their understanding. The authors reviewed candidate themes and discussed potential interpretations jointly, leading to several iterations of themes and subthemes. To assist this, codes (see Appendix 4 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2024.11.001) were grouped into similar categories for each task and compared across tasks, while themes identified across all choice tasks were developed iteratively (see Appendix 5 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2024.11.001), using constant comparison and attention to negative cases.[19] We identified 3 main approaches used. Each transcript was categorized as using a main or dominant approach, by B.F. and K.S. There were high levels of agreement when categorizing the data according to the main approach used. Areas of disagreement were resolved by discussion. For example, there were some minor exceptions in relation to specific sections of text about whether approaches were being combined or whether just one was used. However, these did not affect the overall categorization of a given transcript. An interpretative account[18] then aimed to link themes and subthemes together to explain the approaches people used to make their choices and potentially formed their preferences for each choice task.

Results

Overall, we found that choices for most of the 6 tasks did not substantially differ between the 2 samples. We identified participants from both samples used 3 distinct approaches to reaching decisions about the tasks they had been set: (1) simplifying, (2) personalizing, and (3) creating explanatory narratives. However, analysis suggests that digitally excluded participants struggled more with understanding the exercise.

Participant Characteristics

In total, 28 participants were recruited, 13 digitally excluded and 15 digitally nonexcluded. One digitally excluded participant began but did not complete the interview. This participant is not included in the following description and analysis. Ages ranged from 41 to 83 years, with 18 women and 9 men. The digitally excluded formed an older sample, with a mean age of 61.3 years compared with a mean age of 56 years for the digitally nonexcluded. Participant characteristics are presented in Table 4.

Participant Responses to Choice Tasks

Participant responses for each choice task, by digital status, are presented in Table 5.

Table 5 shows that the digitally excluded and nonexcluded participants did not have significantly different preferences for tasks 1, 2, 4, and 6; however, they did for tasks 3 and 5.

How Did Participants Make Their Decisions?

We identified 3 main approaches participants used to choose between scenarios: (1) simplifying, (2) creating explanatory narratives, and (3) personalizing.

We categorized 10 transcripts as demonstrating mainly "creating explanatory narratives," 7 demonstrating mainly a "simplifying" approach, and 5 demonstrating mainly a "personalizing" approach. However, these approaches were not mutually exclusive, and most participants used a combination of these approaches. One was categorized as using an almost even

Table 4. Main characteristics of participants.

Participant characteristic	Digitally excluded (n = 12)	Digitally nonexcluded (n = 15)
Gender		
Male	4	5
Female	8	10
Age band		
40-49	1	3
50-59	6	8
60-69	2	2
70-79	2	2
80-89	1	-
Age: mean (SD)	61.3 years (10.9)	56 years (9.9)
How voted 2019		
Conservatives	3	3
Labour	2	6
Scottish National Party	1	3
Liberal Democrats	2	1
Green Party	-	1
Not applicable	4	1
Current internet use		
Several times a day	-	11
Daily	-	4
Weekly	4	-
Monthly	1	-
More than once a month	2	-
No access	5	-
Self-reported financial status		
"Just about getting by"	6	10
"Finding it difficult"	6	5
Interview length: mean (SD)	60 minutes (19.6)	56 minutes (10.7)

Note. Not applicable: did not vote or no data available.

combination of all 3 approaches, whereas 4 did not seem to use 1 dominant approach. These 4 transcripts demonstrated little inference of additional information.

Simplifying

The simplifying approach involved focusing on some attributes over others and using this to guide decision making. The 2 attributes most often focused on were employment and household spending money.

When participants discussed an attribute (unless they said explicitly that it was not important to guiding their decision), we interpreted the mention to mean the attribute was important, and no mention meaning less value, to participants. For example, it was common for participants to discuss the employment and spending money attributes in more detail than other attributes with different levels. This was evident in tasks 1, 2, 5, 6 and also when different employment categories and different spending money amounts were both presented (tasks 5, 6).

The spending money attribute also attracted more focus than other attributes with different levels, in tasks where different amounts were presented (tasks 3, 4, 5, and 6). For example, in task 4, monthly household spending ("£2080/month" in A and "£690/month" in B) was one of the most commonly discussed attributes.

The amounts of money were also important to some, particularly when other attributes were at low levels; this seemed to guide their choice, as the following examples illustrate:

> "I'm going to have to prioritise…choose A because the money is winning me over…If B was 1080, or say 1480, I might have thought, there is a difference, but not a big difference. But there is a big difference. I'm going for A" (P1214, digitally excluded, task 4 and chose A)

> "Money for the household...A is a lot better than…B, so that would take a lot of stress off the household, knowing that you can pay for things" (P1072, digitally nonexcluded, task 4 and chose A)

Focusing on some attributes, such as employment or spending money amounts may reflect participant values whereas at the same time a way of simplifying the tasks to enable focused decision making.

Creating explanatory narratives

Participants often created their own narratives by inferring information not provided and by linking potential impacts of one attribute to another, either to explain how a scenario might have arisen or to consider what might happen in the future. These narratives were perhaps a way of trying to make scenarios understandable or believable, which seemed crucial for some participants to be able to engage and inform their choices.

Some participants inferred how scenarios came about. This was illustrated within task 6, for example, in which situation A ("taking care of a family member with chronic illness/disability") involved higher household spending than situation B ("not working/not looking for paid employment"). One participant explained this could be due to people in scenario A receiving benefits for caring and creating a positive scenario based on information inferred, not provided.

Several participants also inferred information not provided to explain the level of emotional problems presented in task 6 ("most of the time" in A compared with "little of the time" in B).

> To make their choice, many participants needed to be able to make sense of each situation holistically. This "sense-making" sometimes stretched into the future, despite instructions stating that, after 1 year, people's lives returned to what they are now. For example, in task 6, loneliness was "often" in B versus "hardly ever" in A, and some inferred that not working may lead to loneliness or other problems in the future.

Creating sense-making narratives played an important part in participant decision making, stretching scenarios beyond the parameters set by the exercise. Inferring how the scenarios came about and what they might lead to also suggests that some participants may have considered the scenarios as dynamic, rather than the static outcomes intended.

Personalizing

Some participants drew on personal experience to guide their choices, discussing attributes of resonance to them, given their life experiences. We identified 2 particular ways in which participants personalized responses, likely due to the abstract and unrealistic nature of the exercise.

Personal perspectives. Participants were asked to choose which situation policy makers should try to achieve, our intention being to elicit social perspectives. Many used personal experiences and preferences to inform their decision making; however, they did then shift from the personal to make their decisions from a social perspective. However, some seemed to

Table 5. Proportion of participants choosing life situation A for each choice task by digital status.

Choice task	Digitally excluded life situation A (n = 12)	Digitally nonexcluded life situation A (n = 15)	Difference in proportions	Z-test of proportions (*P* value)*
Choice task 1	42%	53%	−9%	.561
Choice task 2	50%	73%	−23%	.210
Choice task 3	75%	40%	35%	.063
Choice task 4	33%	13%	20%	.205
Choice task 5	58%	7%	51%	.004
Choice task 6	75%	80%	−5%	.751

*Null hypothesis: the proportions of those choosing life situation A are not different across the 2 samples. *P* values indicate that tasks 3 and 5 are the only ones with a statistically significant difference by digital status, at significance levels of 10% and 5%, respectively.

choose the scenario they would prefer as individuals. It was often difficult to judge whether participants had used personal life experiences as a basis for their social preference or simply gave their personal preference. This may mean that not all preferences elicited were ones that each participant would want to be reflected in policy.

Choosing what feels familiar or more realistic. Instructions asked participants to choose which scenario was preferable; however, some seemed to choose the scenario that felt more familiar or realistic to them and/or represented their own situation.

Participants drawing on personal experience also sometimes aligned with lower levels presented for some attributes, such as concern for the safety of their neighborhood, money issues, or relatives in poor health. Thus, such personal experiences often seemed to play an important role in their choices.

It was difficult for participants to make decisions in an abstract sense, perhaps particularly when preoccupied by stressful life circumstances. Choosing what feels familiar or more realistic, based on their life experience, was clearly identified in participants articulated this. This suggests that these participants may have interpreted the choice tasks as inviting judgments on the plausibility of each scenario rather than on which was more socially desirable. Quotes illustrating each approach as presented earlier are presented in Table 6.

Comparison Across the Digital Divide

Approaches taken to choosing a scenario did not seem to vary greatly by digital status (as shown by the illustrative quotes in Table 6, drawn from both samples). However, more digitally excluded participants seemed to have difficulty understanding the exercise compared with the digitally nonexcluded. This was notable in practice task 1, in which there is a "right" answer (no scenario A attributes were better than in scenario B; some were worse, ie, a test of logical consistency). If participants chose A, interviewers explained why B was the correct answer before asking participants again. The 2 participants who continued to choose scenario A for practice task 1, despite the interviewer's explanations, were digitally excluded. Furthermore, 15 of the 17 participants that both the interviewer and researcher reflections identified as having understood the tasks (either easily or after the interviewer's help) were digitally nonexcluded participants. All of the 6 identified by the interviewer and researcher reflections as probably not understanding the exercise overall were digitally excluded participants. This suggests a possible link between digital status and face validity, reflecting ability to comprehend this telephone-based choice exercise.

Discussion

We aimed to explore how participants answered 6 choice tasks taken from a DCE, using telephone interviews, analyzing whether and how decision making for these tasks differed by digital status.

We found choices more than the 6 tasks were not that different between the 2 samples and decision-making approaches were similar; however, digitally excluded participants experienced more challenges in interpreting the exercise as intended. This may suggest that social preferences for the relative value of health and well-being states are similar for the digitally included and excluded samples. It may also indicate that face validity may be lower for the digitally excluded.

We identified participants from both groups using 3 distinct approaches to make their choices: (1) simplifying, (2) creating explanatory narratives, and (3) personalizing. Simplifying involved focusing on some attributes (eg, employment) more than others and using this to guide decision making. This could reflect participant values, as others suggest;[20,21] however, it may also suggest participants focusing on a subset of attributes to simplify a complex choice task, as considered by Mulhern et al.[21] We interpreted participants focusing on some attributes more than others as implying they were valued more than those not mentioned. However, we also acknowledge that some attributes may not have been discussed if interviewers chose not to prompt given time pressures or concerns about participant understanding or engagement.

Participants also created explanatory narratives, which inferred information not provided. This strategy mirrors findings from studies exploring the construction of preferences using DCEs.[20,22] This involved narrativizing how attributes might affect each other (eg, loneliness easing with employment) or imagining how scenarios might have come about and what may happen in the future, as ways of understanding the scenarios and choosing one. This suggests some participants understood the scenarios as dynamic, with interacting attributes influencing future outcomes, and not as the static well-being outcomes as intended. Inferring information about what may happen in the future suggests that participants had not retained, understood, or could not accept the instruction that "after one year, their lives will return to what they are now." We imposed this instruction to try and ensure that choices were made based on information contained in the scenarios, yet often we sensed that participants needed to develop an explanatory narrative around a scenario to be able to reach a decision. This suggests

Table 6. Selected quotes to illustrate approaches used to choose between scenarios.

Approach used	Illustrative quote
Simplifying: this involved focusing on some valued attributes more than others, to guide choices (eg, employment and household spending money)	"…on balance I would choose A because they're working, disciplined, self-reliant etc" (P1322, digitally excluded, task 2, and chose A)
	"Money for the household...A is a lot better than…B, so that would take a lot of stress off the household, knowing that you can pay for things" (P1072, digitally nonexcluded, task 4, and chose A)
Creating explanatory narratives: this involved inferring how scenarios came about and/or what may happen in the future	"Taking care of family members, you need support yourself for that. You need time. So, money's coming in to pay the bills, and that's not affecting their physical health. And they're not lonely, and the house is good. All over, that is a nice situation because you've got somebody looking after you. You would get disability or benefits of some kind for them." (P1072, digitally nonexcluded, task 6, and chose A)
	"I'm concerned they've got emotional problems all the time…I'm concerned that they're taking care of a family member with chronic illness and disability and those might be intertwined...." (P1097, digitally nonexcluded, task 6, and chose A)
	"...if you weren't working…loneliness would set in because you weren't working, and it's just a cause of a lot of problems." (P1174, digitally excluded, task 6, and chose A)
Personalizing: this involved choosing from a personal perspective and/or choosing what feels familiar and/or more realistic	"…. So I definitely prefer B for myself. Yes. Well, the policymaker should probably aim for that as well…" (P1007, digitally nonexcluded, task 4, and chose B)
	"...you need the money to live a better life. I suffer from anorexia, because I can't afford to go out and buy the food that I want…Now, because of the money I get, I can't afford to eat the good stuff. I've got to buy the crap stuff…So of course I'd pick the £260 a week." (P1040, digitally excluded, task 6)
	"It said about safety in the neighbourhood again. That is the main problem… as I've said before it's all the guns and there's robberies and lots of drug-taking…This is what is happening in my area. So I'm just judging like that." (P1062, digitally nonexcluded, task 3, and chose A)
	"The employment situation, taking care of a family member with chronic illness or disability, well, I think that's a great thing. Because I've got a chronic illness…my daughter tries her best to look after me, but she has to work…I've got that COPD... it's chronic…my daughter's always there for me, so I talk about my problems with her…I think, if anybody with emotional problems, if they could talk with somebody, it would help a lot" (P1237, digitally excluded, task 6, and chose A)
	"….This person's in my situation, A. Taking care of a family member with chronic illness or disability. Emotional problems, aye. The reason I'm going for that, is I see myself in there…. [Interviewer: 'Yes, and would you say that's a better situation than situation B?'] No. I would say B is a better situation …" (P1013, digitally excluded, task 6, and chose A)

Note. P denotes participant number.
COPD indicates chronic obstructive pulmonary disease.

that participants require more ongoing support and guidance with such abstract tasks than we provided. Some suggest that health preference-elicitation exercises can involve combinations of attributes and levels that seem implausible to participants, thus affecting the acceptability and realism of the task.[23] This means that participants cannot imagine such states, let alone value and choose between them. That participants rarely have existing preferences but are rather constructed in response to tasks given is well acknowledged.[23,24] Our findings echo this assertion and it may explain why participants from both groups in our study created their own narratives, to make sense of the scenarios and to construct responses. Our findings indicate sense-making narratives play an important part in participant decision making and should be examined by researchers using choice-based valuation methods such as DCEs, given that these kinds of explanatory narratives can stretch scenarios beyond the parameters set by the exercise, for example, into future trajectories.

Participants also referred to personal circumstances and experiences to explain their decision making. Similarly, Mulhern et al[21] reported that personal subjective factors influenced DCE responses, highlighting that the way personal experiences interact with DCE valuation processes and the extent to which they influence preferences vary among participants, as areas requiring further research.

There is a limited assessment of whether and how people understand DCEs.[25] Qualitative research is more commonly used in the developmental stages of DCE design.[5,14] Therefore, our findings help address an important research gap. Moreover, our focus on the digitally excluded is a unique contribution given the increased use of online methods to elicit preferences to inform policy decisions, many of which have particularly acute impacts on already marginalized communities. The Challenges we have identified with understanding highlight the need for those generalizing or extrapolating from

preference data generated online, to examine preferences held by the digitally excluded.

Limitations

Our purposive sample had several limitations. The digitally excluded sample was a digitally excluded-and-older sample: 7 of 12 digitally excluded participants were older than 60 years compared with 3 of 15 digitally nonexcluded participants. Difficulty in interpreting the tasks that we attributed to digital exclusion is likely associated with older age.[26,27] However, although we cannot distinguish the effect of digital status from that of age, those who are digitally excluded in the real world are also older,[28] and efforts to accommodate the digitally excluded would only work if they also accommodated older people. In addition, self-reported voting at the last general election was used to achieve diversity of views. More digitally excluded participants reported voting Conservative than the digitally nonexcluded, more of whom reported voting Labour or Green. This could be related to the respective age compositions.

There are some limitations associated with the choice tasks used. The original DCE, from which the tasks were taken, mostly used items from the UKHLS.[16] This was because the original DCE aimed to provide relative preferences across 7 well-being items of the UKHLS,[16] resulting in a complex set of statements for the DCE. The UKHLS[16] items were incorporated into a synthetic population ("digital twin") of the GB, built as part of the wider project.[29] Thus, in this qualitative study, we had limited flexibility in changing the wording of each item. We accept that the original online DCE was complex; however, it arguably offered a suitably challenging exercise to explore how different types of participants deal with choice tasks.

We selected telephone interviews as the data collection method, given that this qualitative research aimed to understand how telephone interview participants answered a series of choice tasks taken from an online DCE and whether and how decision making for these tasks differed between digitally excluded and nonexcluded participants.

This method facilitated limited nonverbal communication and interviewer support, given that people completing online surveys do so without interviewer assistance, yet tension remained, given that we also wanted to understand how participants approached the tasks. In-person interviews may have allowed more exploration of this than telephone interviews. Moreover, interviewers had to balance prompting, instruction, and further explanations for those struggling to understand, while encouraging participants to feel confident to express themselves and completing interviews on time. The extent to which participants were encouraged to explain their choices or asked about attributes that they had not explicitly mentioned varied across interviews.

Conclusions

Using 6 choice tasks, taken from a DCE, in telephone interviews, supported by a pre-posted interview booklet, we found that most choices participants made did not vary substantially by digital status. This provides some reassurance that social preferences for the relative value of health and well-being states are similar for digitally included and excluded groups. However, we need to be cautious about the reliability of this finding given that there was some variation in participant comprehension. Digitally excluded participants more often seemed to struggle with interpreting instructions for this exercise involving choices from a decision makers perspective. The views of people who are digitally excluded should not be excluded from general population preference-elicitation exercises, because resource allocation decisions should be based on a sufficiently broad understanding of social preferences within communities. Online DCEs are increasingly popular;[5] however, they exclude people with no or limited internet access. This needs to be explicitly acknowledged, particularly when the elicited preferences are intended to inform policy decisions. This means that we need more studies comparing social preferences across the digital divide to establish whether our results are generalizable or transferable. This should be done with care because there are comprehension issues. Developing methods to seek views from those who cannot participate in online DCEs, as this novel study has done, is essential if decision makers are to consider such online data for policy making.

Author Disclosures

Author disclosure forms can be accessed below in the Supplemental Material section.

Supplemental Material

Supplementary data associated with this article can be found in the online version at https://doi.org/10.1016/j.jval.2024.11.001.

Article and Author Information

Accepted for Publication: November 5, 2024

Published Online: December 14, 2024

doi: https://doi.org/10.1016/j.jval.2024.11.001

Author Affiliations: Sheffield Centre for Health and Related Research (SCHARR), University of Sheffield, Sheffield, England, UK (Field, Wickramasekera, Tsuchiya); Faculty of Humanities and Social Sciences, Department of Social Work and Social Policy, University of Strathclyde, Glasgow, Scotland, UK (Smith, O'Connor); School of Social and Political Sciences, University of Glasgow, Glasgow, Scotland, UK (O'Connor); School of Economics, University of Sheffield, Sheffield, England, UK (Tsuchiya).

Correspondence: Becky Field, PhD, Sheffield Centre for Health and Related Research (SCHARR), University of Sheffield, Regent Court, 40 Regent St, Sheffield, England S1 4DA, United Kingdom. Email: b.field@sheffield.ac.uk

Authorship Confirmation: All authors certify that they meet the ICMJE criteria for authorship.

Funding/Support: Funding for this study was provided by the UK Prevention Research Partnership (https://mrc.ukri.org/research/initiatives/prevention-research/ukprp/) (grant MR/S037578/2), which is funded by the British Heart Foundation, Cancer Research UK, Chief Scientist Office of the Scottish Government Health and Social Care Directorates, Engineering and Physical Sciences Research Council, Economic and Social Research Council, Health and Social Care Research and Development Division (Welsh Government), Medical Research Council, National Institute for Health Research, Natural Environment Research Council, Public Health Agency (northern Ireland), The Health Foundation, and Wellcome. For the purpose of open access, the authors have applied a Creative Commons Attribution license to any author-accepted manuscript version arising from this submission.

Role of the Funders/Sponsors: The funders had no role in the design of the study or in the collection, analysis, and interpretation of data and results.

Acknowledgment: This research was conducted as part of the Systems Science in Public Health and Health Economics Research Consortium (https://sipher.ac.uk/), and we thank the whole team for the valuable input and discussions that have informed this paper. The authors also

thank the National Centre for Social Research team and all the participants who took part in this research.

REFERENCES

1. Karimi M, Brazier J, Paisley S. How do individuals value health states? A qualitative investigation. *Soc Sci Med*. 2017;172:80–88.
2. Mulhern B, Norman R, Street DJ, Viney R. One method, many methodological choices: a structured review of discrete-choice experiments for health state valuation. *Pharmacoeconomics*. 2019;37(1):29–43.
3. Brazier J, Peasgood T, Mukuria C, et al. The EQ-HWB: overview of the development of a measure of health and wellbeing and key results. *Value Heal*. 2022;25(4):482–491.
4. Peasgood T, Mukuria C, Carlton J, Connell J, Brazier J. Criteria for item selection for a preference-based measure for use in economic evaluation. *Qual Life Res*. 2021;30(5):1425–1432.
5. Soekhai V, de Bekker-Grob EW, Ellis AR, Vass CM. Discrete choice experiments in health economics: past, present and future. *Pharmacoeconomics*. 2018;37(2):201–226.
6. Mukuria C, Peasgood T, McDool E, Norman R, Rowen D, Brazier J. Valuing the EQ health and wellbeing short using time trade-off and a discrete choice experiment: a feasibility study. *Value Heal*. 2023;26(7):1073–1084.
7. Yiu HHE, Al-Janabi H, Stewart-Brown S, Petrou S, Madan J. The use of composite time trade-off and discrete choice experiment methods for the valuation of the Short Warwick-Edinburgh Mental Well-Being Scale (SWEMWBS): a think-aloud study. *Qual Life Res*. 2022;31(9):2739–2751.
8. Viney R, Lancsar E, Louviere J. Discrete choice experiments to measure consumer preferences for health and healthcare. *Expert Rev Pharmacoecon Outcomes Res*. 2002;2(4):319–326.
9. Ryan M, Gerard K, Currie G. Using discrete choice experiments in health economics. In: Jones AM, ed. *The Elgar Companion to Health Economics*. 2nd ed. Edward Elgar Publishing; 2012:437–446.
10. Meier P, Purshouse R, Bain M, Bambra C, Bentall R, Birkin M, et al. The SIPHER consortium: Introducing the new UK hub for systems science in public health and health economic research. *Wellcome Open Res*. 2019;4.
11. Ta A, Van Landeghem B, Tsuchiya A. Eliciting public preferences across health and wellbeing dimensions: an equivalent income value set for SIPHER-7. *Heal Econ*. 2024;33:2723–2741.
12. Dolan P, Olsen JA, Menzel P, Richardson J. An inquiry into the different perspectives that can be used when eliciting preferences in health. *Health Econ*. 2003;12(7):545–551.
13. Tsuchiya A, Watson V. Re-thinking 'the different perspectives that can be used when eliciting preferences in health.'. *Health Econ*. 2017;26(12):e103–e107.
14. Vass C, Rigby D, Payne K. The role of qualitative research methods in discrete choice experiments: a systematic review and survey of authors. *Med Decis Mak*. 2017;37(3):298–313.
15. Allman K. UK digital poverty evidence review 2022. Digital Poverty Alliance. Published. https://digitalpovertyalliance.org/wp-content/uploads/2022/06/UK-Digital-Poverty-Evidence-Review-2022-v1.0-compressed.pdf; 2022. Accessed February 25, 2024.
16. Understanding Society. The UK household longitudinal study. https://www.understandingsociety.ac.uk/. Accessed June 26, 2024.
17. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77–101.
18. Ritchie J, Spencer L, O'Connor W. Carrying out qualitative analysis. In: Lewis J, ed. *Qualitative Research Practice. A Guide for Social Science Students and Researchers*. Sage; 2003:219–262.
19. Silverman D. *Doing Qualitative Research*. 3rd ed. Sage; 2010.
20. Ryan M, Watson V, Entwistle V. Rationalising the "irrational": a think aloud study of discrete choice experiment responses. *Health Econ*. 2009;18(3):321–336.
21. Mulhern B, Bansback N, Brazier J, et al. Preparatory study for the revaluation of the EQ-5D tariff: methodology report. *Health Technol Assess (Rockv)*. 2014;18(12):1–191.
22. San Miguel F, Ryan M, Amaya-Amaya M. 'Irrational' stated preferences: a quantitative and qualitative investigation. *Health Econ*. 2005;14(3):307–322.
23. Devlin NJ, Shah KK, Mulhern BJ, Pantiri K, van Hout B. A new method for valuing health: directly eliciting personal utility functions. *Eur J Heal Econ*. 2019;20(2):257–270.
24. Payne JW, Bettman JR, Schkade DA. Measuring constructed preferences: towards a building code. *J Risk Uncertain*. 1999;19(1-3):243–270.
25. Pearce A, Harrison M, Watson V, et al. Respondent understanding in discrete choice experiments: a scoping review. *Patient*. 2021;14(1):17–53.
26. Decalf VH, Huion AMJ, Benoit DF, Denys MA, Petrovic M, Everaert KCMM. Older People's preferences for side effects associated with antimuscarinic treatments of overactive bladder: a discrete-choice experiment. *Drugs Aging*. 2017;34(8):615–623.
27. Milte R, Huynh E, Ratcliffe J. Assessing quality of care in nursing homes using discrete choice experiments: how does the level of cognitive functioning impact upon older people's preferences? *Soc Sci Med*. 2019;238:112466.
28. Gulliford M, Alageel S. Digital health intervention at older ages. *Lancet Digit Heal*. 2019;1(8):e382–e383.
29. Wu G, Heppenstall A, Meier P, Purshouse R, Lomax N. A synthetic population dataset for estimating small area health and socio-economic outcomes in Great Britain. *Sci Data*. 2022:9.