Adaptation of a Benefit Trade-Off Instrument to Elicit Inequality Aversion in the United States

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INTRODUCTION

- Distributional cost-effectiveness analyses evaluate equity and effectiveness of interventions. Inequality aversion (IA) is a crucial parameter representing the trade-off between reducing health inequality and total population health gains.
- A United Kingdom (UK) survey elicited a general population IA parameter using a benefit trade-off (BTO) instrument.[1] Adaptation requires a rigorous process to ensure relevance to existing disparities and the local healthcare system. **Our objective was to adapt the survey and BTO instrument for the United States (US).**

METHODS

- We identified elements from the original UK survey that needed adaptation or supplementation to align with the US context and to ensure both survey comprehension and adequate logical response rate for the BTO exercise.
- The survey was modified through a rigorous, iterative process, using inputs from the literature and collaboration from an international working group. Critical steps in the localization of the BTO included integration of the US context on disparities and modifications to survey design to improve comprehension.
- Pre-testing and soft launch were performed to make final modifications, especially regarding comprehension.

Survey adaptation → **Context** → **Comprehension** → **Pre-test** → **Soft launch**

Context

- As an introduction, the survey started with questions on **participants' views on health inequalities and attitudes in health**, drawn from prior US national surveys.
- We presented health inequalities within the country using **Quality-Adjusted Life Expectancy** (QALE) estimates, sourced from published literature and derived from the CDC's Social Vulnerability Index (SVI).[2]
- Descriptions of both **'Better Off' and 'Worse Off'** groups were provided and contextualized in terms of length and quality of life.
- The QALE estimates were then also used for the BTO exercise to calculate the Atkinson inequality aversion parameter.

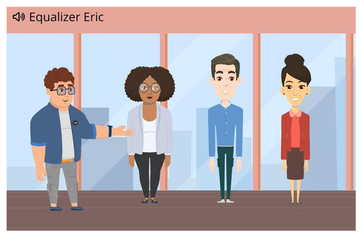
BETTER OFF	WORSE OFF
Higher average income	Lower average income
Higher education	Lower education
More proficient native English speakers	Less proficient native English speakers
More have jobs	Fewer have jobs
Have better housing and transportation	Have worse housing and transportation options
Less likely to experience racial discrimination	More likely to experience racial discrimination

In the United States, the Better Off group lives **more years in full health**. This means that they generally **live longer** and in **better health**.

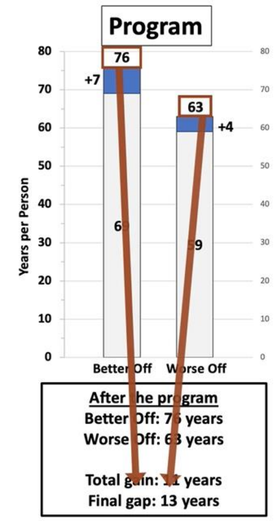
Contextual framing of the Better Off and Worse Off groups

Comprehension

- Enhancing survey comprehension focused on facilitating understanding of US health inequalities and of the BTO exercise, aiming to improve logical response rate.
- We produced an **instructional video** to guide participants in interpreting the BTO graphs.
- We added graph comprehension check questions to verify participants' ability to proceed to the BTO exercise.
- Adapting the original UK **animated video**, we tailored the script and animations to the US audience and themes. We added an introductory segment presenting the BTO exercise and outlining the choices to be made by the participants.



Screenshot of the animated video of characters discussing their differing perspectives



Screenshot of the instructional video explaining the BTO graphs

RESULTS

- Iterative rounds of pre-testing resulted in re-phrasing of survey items for clarity, inclusion of screener questions related to graph comprehension and graph interpretation checks preceding the BTO.
- Soft launch modifications included adding an exclusion criterion for the graph comprehension questions and a video autoplay feature.
- Combined, these updates to the survey increased **the logical response rate from 33.3% to 62.5%.**

CONCLUSION

- An existing BTO exercise to elicit inequality aversion parameters was transferrable to the US context and can be applied to additional settings to support the expanded application of equity analysis.
- Information on the baseline distribution of health disparities can be used to inform the local equity context.
- Adding a second training video and more robust comprehension questions will improve the rate of logical response within the sample.

FUNDING ACKNOWLEDGEMENT

- The PAVE Center was established with a PhRMA Foundation Center of Excellence in Value Assessment Award.
- The authors thank Professor Richard Cookson of University of York and Marie-Anne Boujaoude from University of Melbourne for their expertise on adaptation for this study.
- This study was funded by Genentech, Inc.

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