

## BACKGROUND

In the Neonatal Intensive Care Unit (NICU), advances in medical technology have allowed us to resuscitate neonates at increasingly earlier gestational ages (GA) and lower birth weights (BW), who otherwise would have died. However, some of these infants have a low chance of survival with treatment, or may survive with significant morbidity and shortened life expectancy. There are limited resources available within the NICU, meaning that sometimes difficult decisions need to be made about which newborn infants to treat.

*How, then, should resources be allocated in the NICU?*

Previous research into this question looks at:

- Ethical theories of resource allocation: utilitarianism, egalitarianism and prioritarianism
- Empirical evidence: views of healthcare practitioners and parents

This research is novel in its use of empirical evidence, its focus on a sample of the general public, and its examination of factors underlying decision-making in the NICU.

## AIMS

- 1) To investigate the views of a group of the general public about resource allocation decisions in the NICU, and see how this relates to the philosophical literature.
- 2) To apply empirical findings to inform normative discussion on resource allocation in the NICU

## HYPOTHESES

- 1) That respondents would be more inclined to maximize outcomes when forced to choose between patients with a large discrepancy between predicted outcome
- 2) That inclinations would be associated with demographic characteristics and personality traits.
- 3) That responses to Taurek's philosophical thought experiment would be associated with responses to NICU trade-off scenarios.
- 4) That responses would be more inclined to egalitarian resource allocation in resource-rich settings and utilitarian allocation in resource-poor settings.

## METHODS

109 respondents from the US completed a quantitative survey on the online platform Mechanical Turk. The survey consisted of:

- Trade-off scenarios where respondents were forced to choose between two neonates requiring the same bed, based on their outcomes
- Demographic questions
- A standard philosophical thought experiment
- Questions where respondents had to answer behind a 'veil of ignorance'
- 3 validated personality tests: Need for Cognition scale, Empathic Concern Index, and the Social and Economic Conservatism Scale

## DATA ANALYSIS

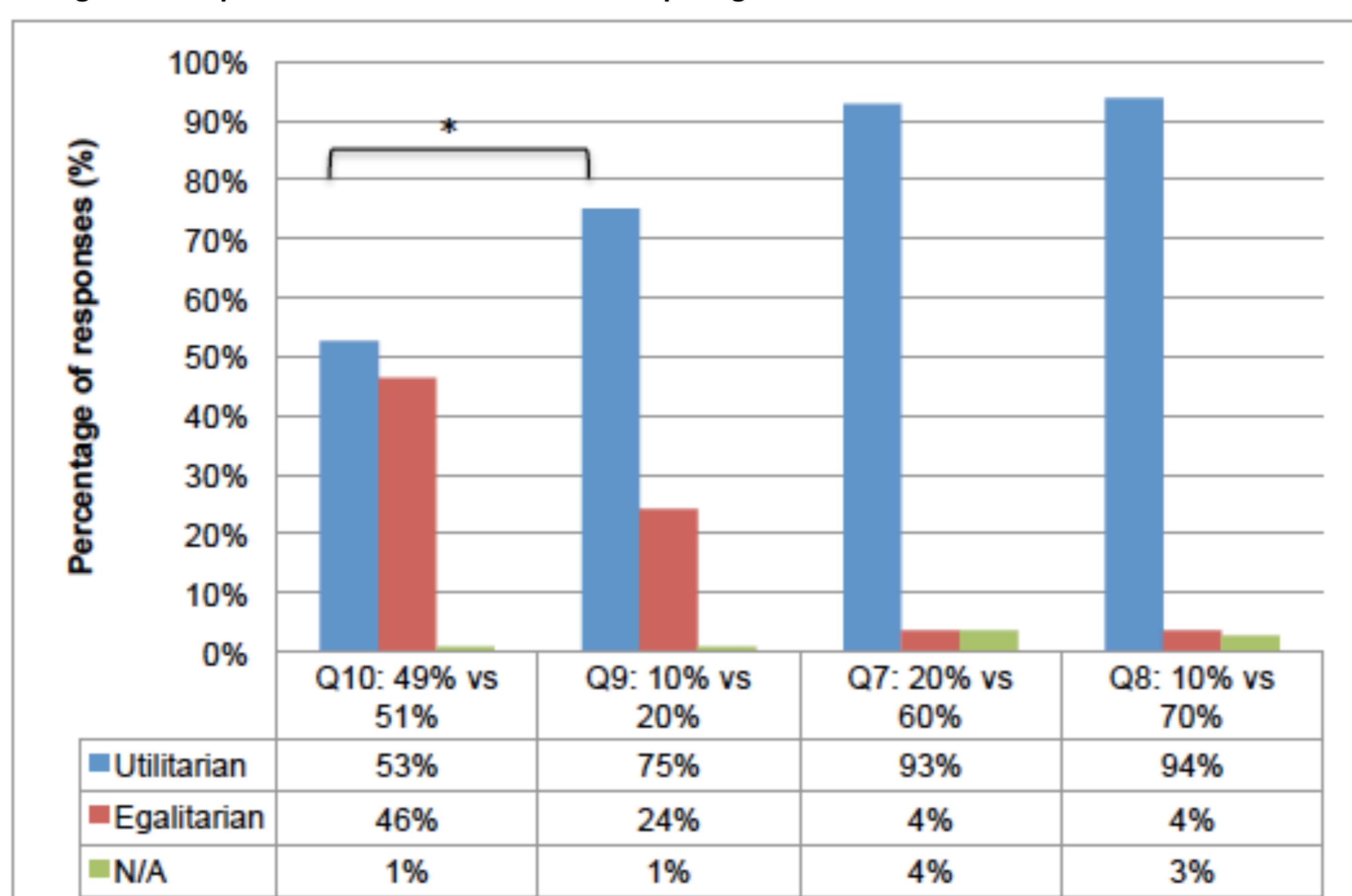
Data analysis was performed using IBM SPSS Statistics version 22.0 for Mac. Fisher's exact test was performed to test the first hypothesis, and independent samples t tests were conducted to compare mean egalitarian and utilitarian respondents to key indicator questions.

## RESULTS

**Example question:** There is one bed available in the NICU and two critically ill infants who will die if they are not admitted to the NICU. One of the infants has an X% chance of survival with treatment, while the other has a Y% chance of survival. Do you:

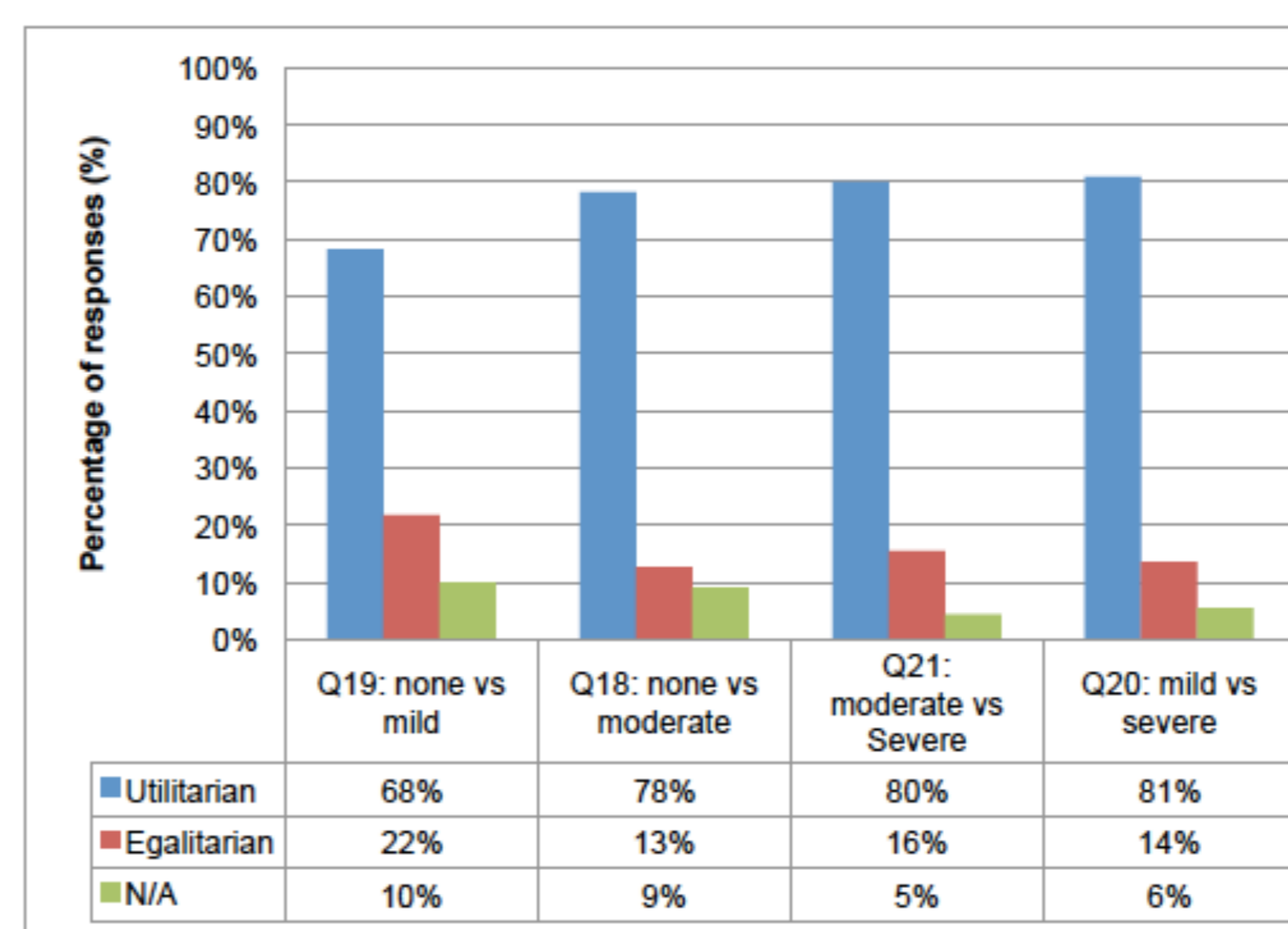
- Admit the infant with the Y% (higher) chance of survival. [Utilitarian response]
- Admit the infant with the X% (lower) chance of survival. [N/A response]
- Toss a coin to decide which infant to admit. [Egalitarian response]

Figure 1: Responses to trade-off scenarios comparing infants with different chances of survival



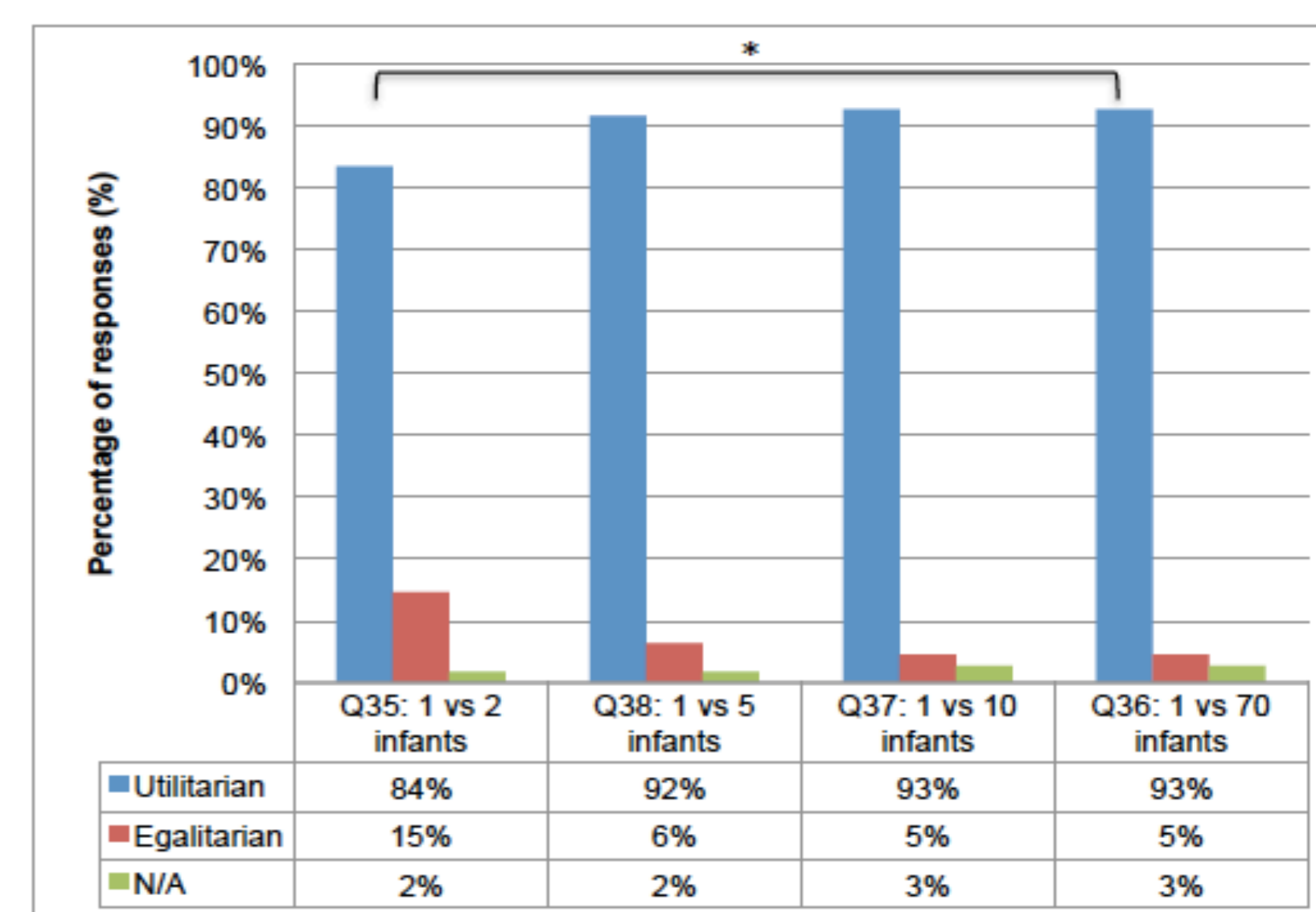
\* indicates statistically significant difference

Figure 2: Responses to trade-off questions comparing infants with different degrees of disability



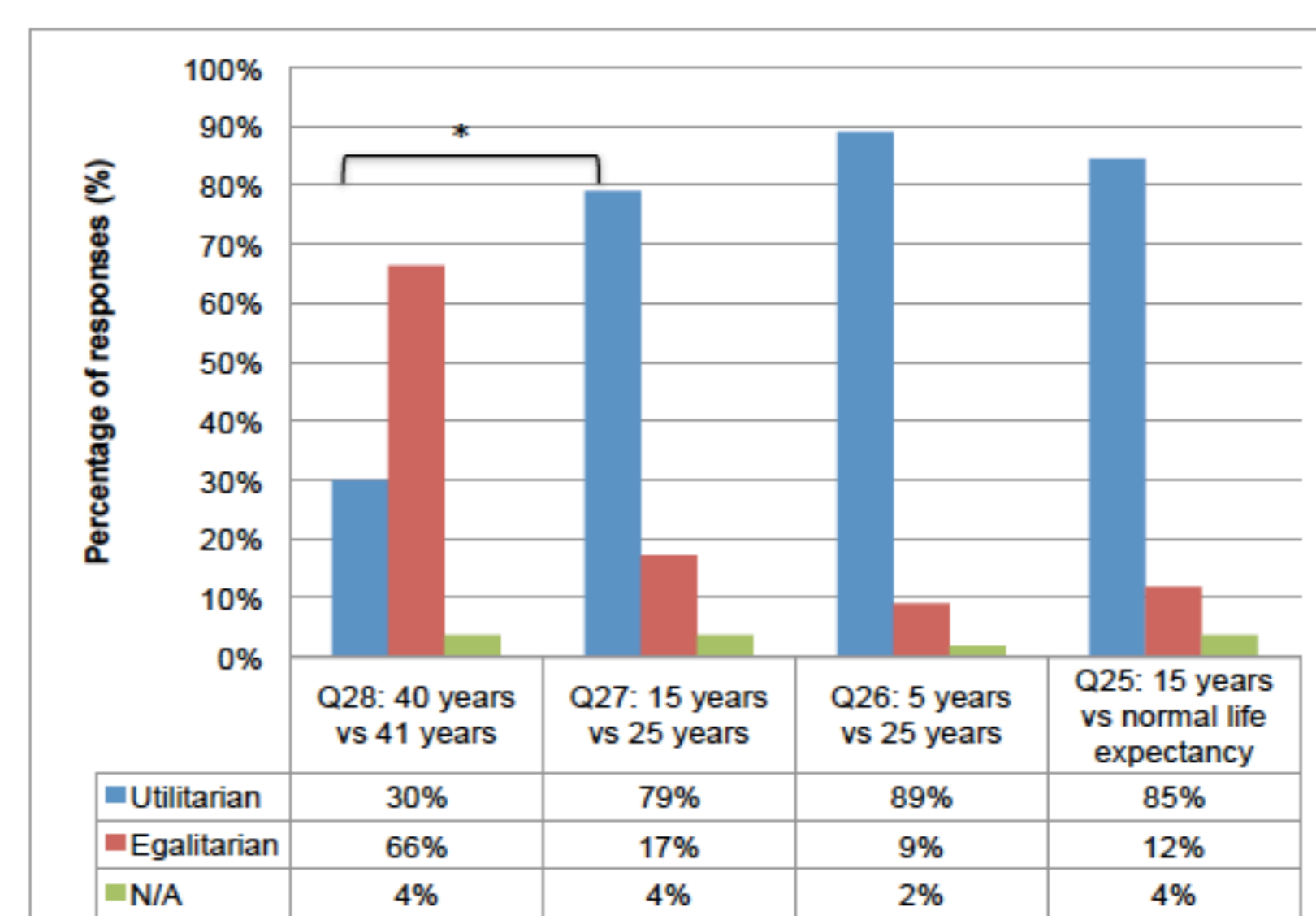
\* indicates statistically significant difference

Figure 3: Responses to trade-off questions comparing infants with different costs of treatment



\* indicates statistically significant difference

Figure 4: Responses to questions comparing infants with different life expectancies



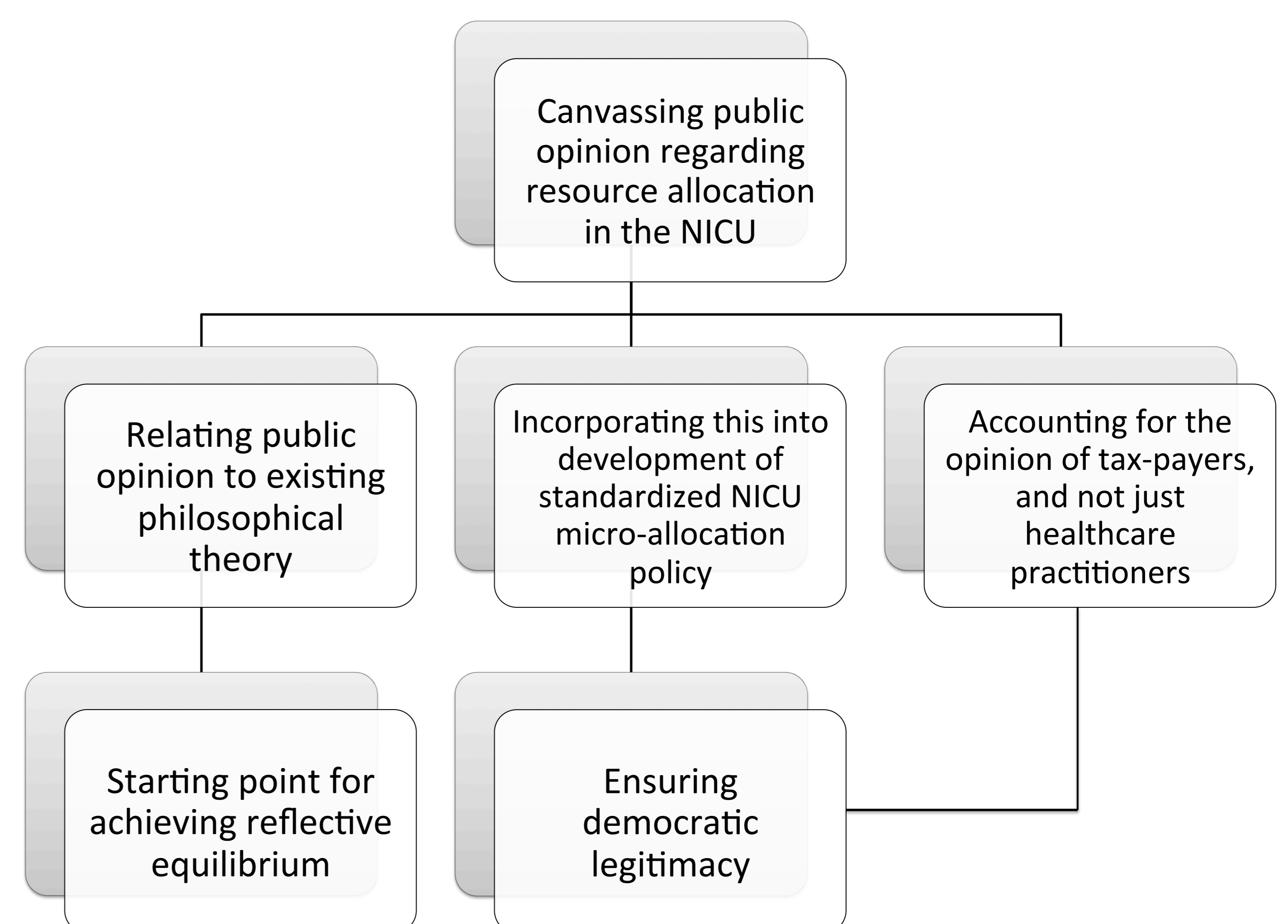
\* indicates statistically significant difference

The majority of respondents chose the utilitarian option in each trade-off scenario, throughout the questionnaire. As discrepancy between outcomes decreased, however, there was a statistically significant increase in egalitarian responses to trade-off scenarios and decrease in utilitarian responses (Figures 1-4).

Females and parents were more likely to choose the egalitarian response in some scenarios. Responses were not influenced by age, marital status, highest level of education, personality traits or a 'veil of ignorance'.

## SIGNIFICANCE

Caveat: Although the sample size of this study is not large enough to generalise to the general public, the findings of this study can contribute to discussion on the practice of healthcare practitioners and development of standardized policy on micro-allocation in the NICU.



## CONCLUSION

