

“A treatment success score reflecting preferences of key stakeholders caring for children with a surgical condition”

C0121

Using Stated-Preferences Methods to Develop a Summary Metric to Determine Successful Treatment of Children with a Surgical Condition to Compare across Hospitals

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Introduction

Each year in the UK, approximately half a million children undergo an operation.¹

Evidence suggests that unwarranted variation between hospitals exists in the management and outcomes of children undergoing specialised surgery.^{1,2}

Reducing this unwarranted variation is important.

To meaningfully combine data across multiple surgical conditions of childhood, an outcome measure that can describe how successfully a child with any surgical condition has been treated is needed.

We used a Discrete Choice Experiment (DCE) to create a single summary measure describing treatment success of a child with a surgical condition

Methods

- A study protocol was completed before data was collected and published before data was analysed and interpreted.³
- Identification of descriptive system:**
 - Attributes and attribute levels identified using literature searches, review of Core Outcome Sets in paediatric surgery and focus groups with parents and surgeons.
 - Planned and emergency operations, hospital-treated infections, quality of life and survival included in the descriptive system (Figure 1).
- Experimental design:**
 - D-efficient design with an additional choice task representing a palliative care scenario used as anchor.
 - Avoided implausible combinations, used overlaps and graphics.
- Sample:** Three groups of stakeholders completed the DCE: 1) parents of a child with a surgical condition and people treated for surgical condition as a child; 2) healthcare professionals caring for children with a surgical conditions and 3) members of the general population.

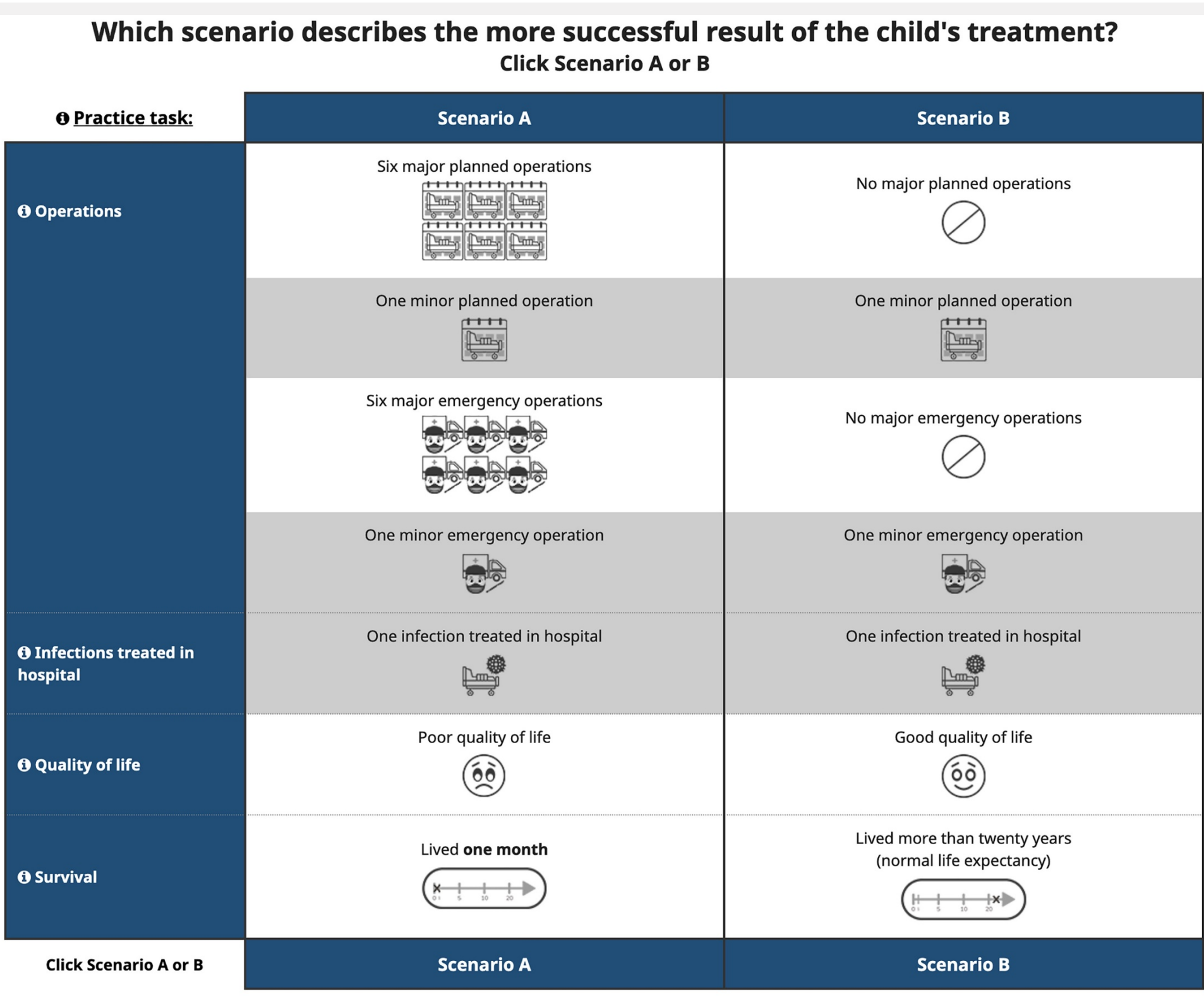


Figure 1. Example of choice task completed by participants

Discussion

- Improving outcomes for children with surgical conditions requires an understanding of whether hospitals’ observed outcomes differ to their expected outcomes.
- Combining data across multiple childhood surgical conditions requires development of an outcome measure that is clinically meaningful and deemed important by key stakeholders.
- We have developed such outcome measure using a stated-preference study conducted using best-practice guidance for DCEs.
- This Treatment Success Score can now be used to determine whether hospitals’ observed outcomes for children with surgical conditions differ to their expected outcomes.**

Methods

- Statistical evaluation:**
 - An uncorrelated mixed multinomial logit with normal distributions specified for all attributes was estimated.
 - Comparison of preferences across stakeholders was conducted using normalised importance value of attribute (NIVA) with associated 95% confidence intervals
 - An online multi-stakeholder focus group was conducted to select group of preferences to inform summary metric
 - Selected group of preferences used in a palliative space scale mixed logit model to generate algorithm where 1 highest score and best combination of attributes, 0 to palliate and negative values combinations of attributes worse than to palliate.

Results

- 253** parents or carers or treated as a child, **114** healthcare professionals and **753** members of the general population completed the survey.
- All stakeholders view quality of life and duration of survival as **the most important determinants of treatment success (Figure 2)**.
- Preferences from members of the general population **were excluded** from the final summary metric (Figure 3).

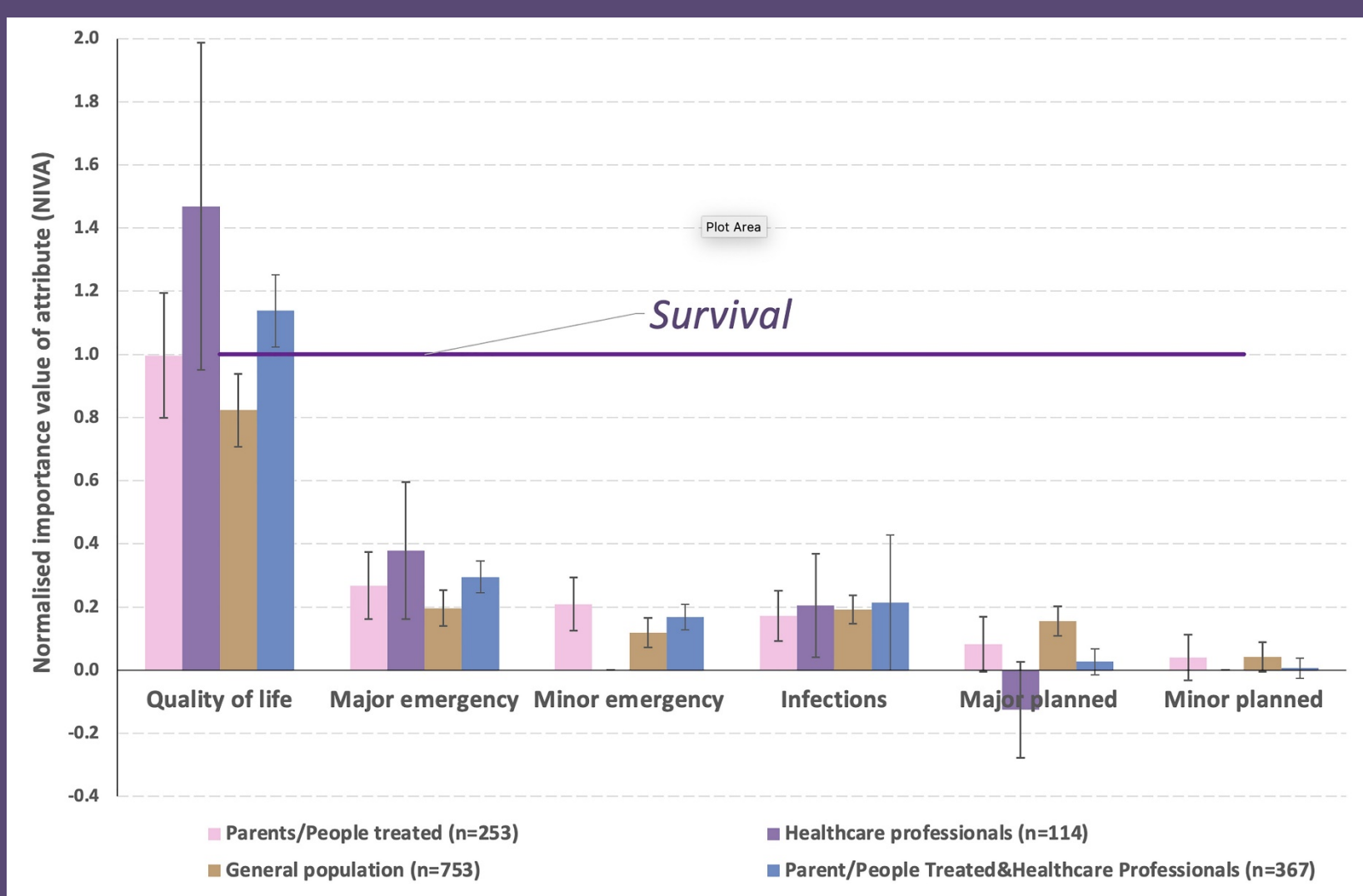


Figure 2. Normalised importance value of attribute with associated 95% confidence intervals presented for each stakeholder group separately and combined for parent/people treated and healthcare professionals. Survival attribute is the reference.

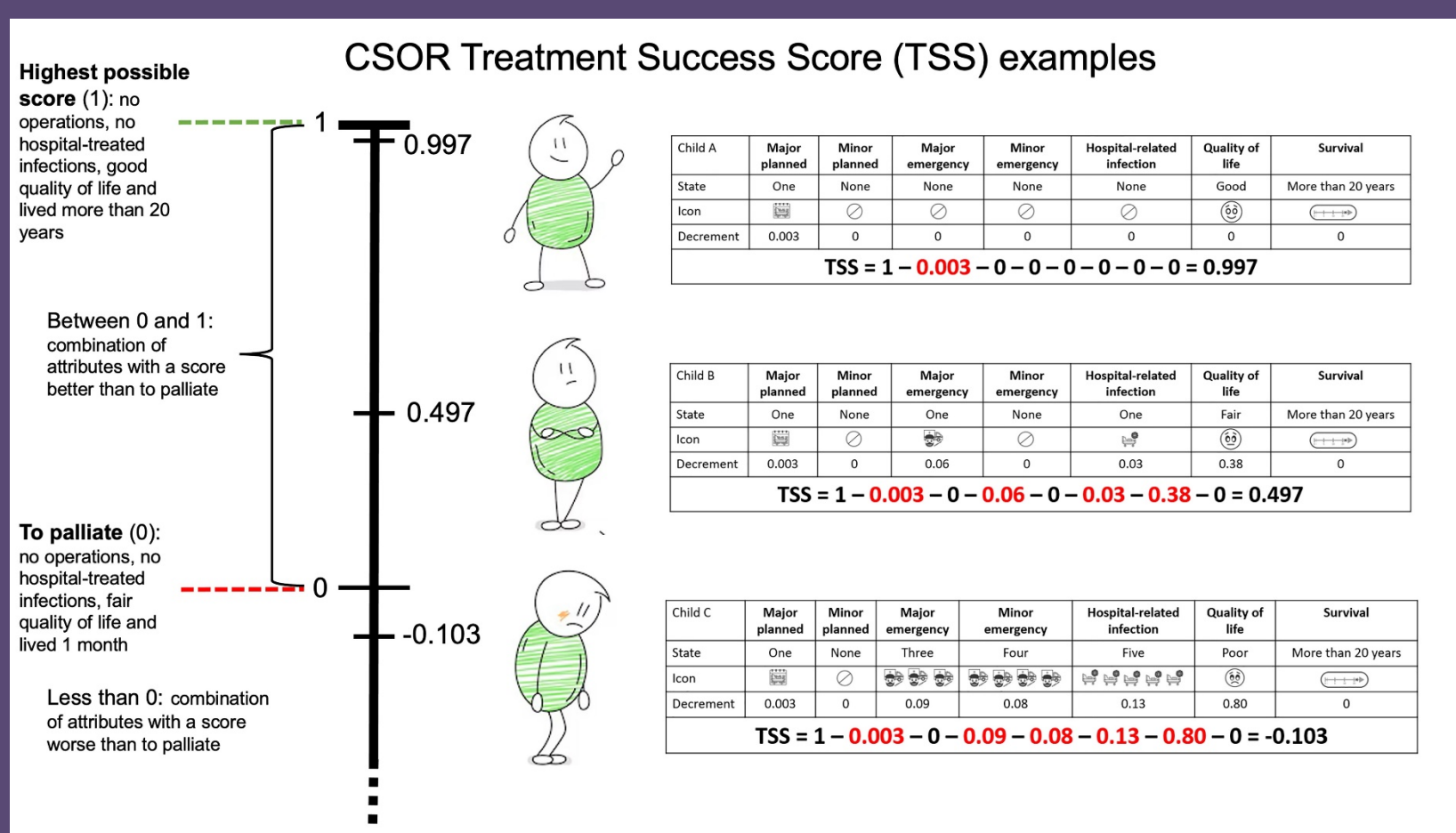


Figure 3. Examples of the treatment score success using coefficients on the palliative space scale
Child icon obtained from Freepik.com (<https://www.freepik.com/free-vector/illustrations>)

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