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Optimising methods for communicating survival data to patients undergoing cancer surgery ☆

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ABSTRACT

Background: Patients undergoing cancer surgery require outcome data to inform decisions, but communication of numerical risk is difficult. This study assessed patient understanding of survival data presented in different formats.

Methods: Semi-structured interviews in which patients interpreted four presentation formats of survival data (three graphical and one narrative) were audio-recorded. The interviewer and a blinded observer (listening to the audio-recordings) scored patients' understanding of each format. Logistic regression examined associations between understanding and clinical and socio-demographic details.

Results: Seventy participants with colorectal cancer were interviewed and 67 [95.7%, 95% confidence intervals (CIs) 90.9–100%] correctly interpreted a simplified Kaplan–Meier survival curve. A high proportion accurately understood data presented as a bar chart or pictograph (94.3%, 95% CIs 88.7–99.9% and 92.9%, 95% CIs 86.7–99.0% respectively). Standard narrative alone was least well understood ($n = 53$, 75.7%, 95% CIs 65.4–86.0%). Multivariable analyses demonstrated that older and female patients had poorer overall understanding (OR 0.93 per year, 95% CIs 0.87–0.98, $p = 0.01$ and OR 0.24, 95% CIs 0.07–0.86, $p = 0.03$).

Conclusion: Patient understanding of survival data was higher when presented with graphs compared to narrative alone. Further work examining understanding in the clinical context and before surgery is recommended before this can be used routinely.

1. Introduction

Informing patients of the potential advantages of cancer surgery primarily includes communication of expected survival benefits synthesised from available evidence. It is necessary to effectively explain operative risks and to describe the longer term consequences of surgery on patient's health. In most healthcare settings this is the responsibility of the operating surgeon. Ensuring that information is understandable and relevant will also meet patients' information needs and the standards required for informed consent for surgery.[1–3]

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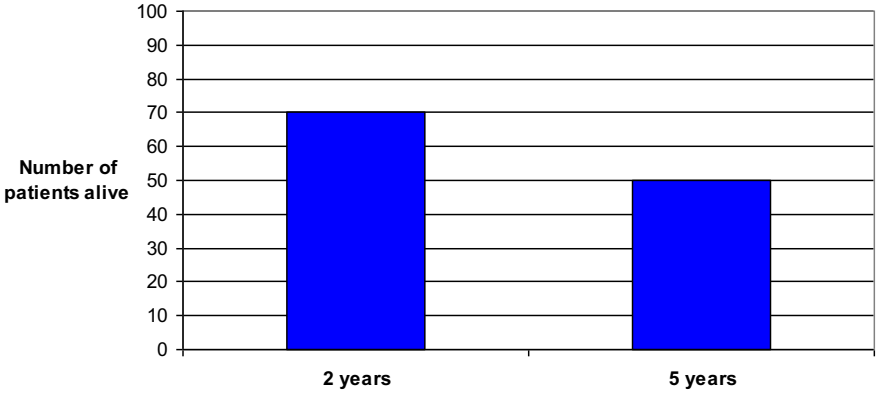
Communicating survival information effectively is complex because of the sensitive nature of the information and the potential problems with misunderstanding numerical concepts. Recent work has shown that after cancer surgery patients prefer surgeons to initiate these discussions and that most patients want to discuss this type of sensitive data.[4–7] Options to improve patient understanding of survival data are to supplement traditional narrative consultations with graphs in a simple clear format or to use pictographs illustrating proportions of alive patients.[5,8] The aim of this study was to examine patient understanding of different graphical presentation types of survival data or information expressed as narrative alone and to investigate whether understanding was influenced by clinical and socio-demographic variables.

2. Materials and methods

Patients were identified from the colorectal multi-disciplinary cancer team records at University Hospitals Bristol NHS Foundation Trust. Eligible for the study were those with carcinoma of the colon, rectum or anus that had completed, were undergoing or awaiting potentially curative treatment, including

Scenario A: A 60 year old man has bowel cancer, and is discussing the operation with the surgeon.

The topic of survival is discussed. To help explain this, the doctor shows the patient this diagram.

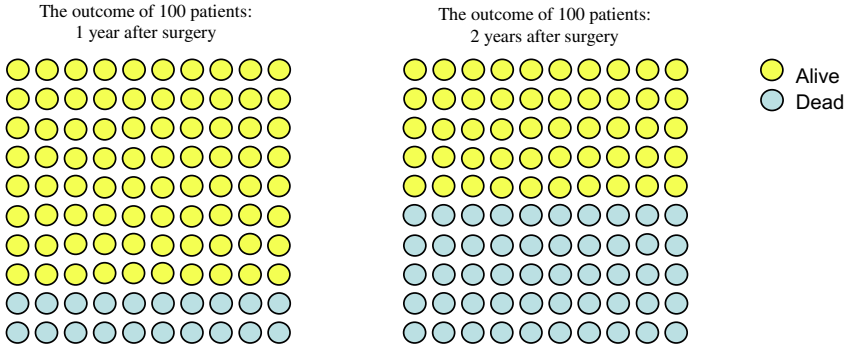


Question 1. How many patients are alive after 2 years? (answer 70)

Question 2. How many patients are alive after 5 years? (answer 50)

Scenario B: A 50 year old man has cancer of the gullet and is discussing the operation with the surgeon.

The topic of survival is discussed. To help explain this, the doctor shows the patient a diagram.



Question 1. How many patients are alive after 1 year? (answer 80)

Question 2. How many patients are dead after 2 years? (answer 50)

Fig. 1 – Scenarios A and B and survival data presented as a bar chart (A) or a pictograph (B) with the questions asked of participants to assess understanding.