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Why did we perform this research?



Visual displays can be used to communicate complex medical information effectively to audiences, including healthcare professionals and patients.^{1,2} However, visual displays that are poorly designed, including those that are unsuitable for specific audiences, can cause confusion and potentially mislead viewers^{1,2}

Published biomedical research is increasingly accessible to lay audiences through social media and open-access publication,³⁻⁵ but visuals are rarely tested to determine audience understanding^{1,2,6}

Using an online survey, we sought to assess the confidence of a lay audience in understanding figure types commonly used to present oncology clinical trial data, as well as the audience's interpretation of the figure content

Primary objective

Inform the design of effective visuals aimed at, or accessed by, lay audiences

Secondary objective

Inform survey design

How did we perform this research?

A 40-question online survey assessing four figure types typically available in oncology publications was distributed to participants



Figure 1. Kaplan-Meier plot presenting overall survival

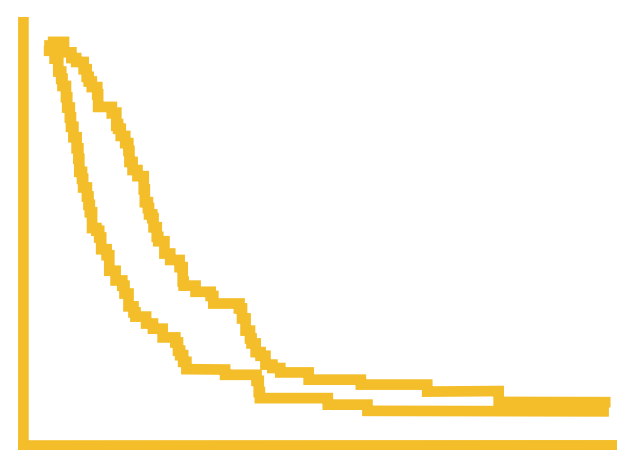


Figure 2. Swimmer plot presenting objective response



Figure 3. Line graph presenting change in health-related quality of life

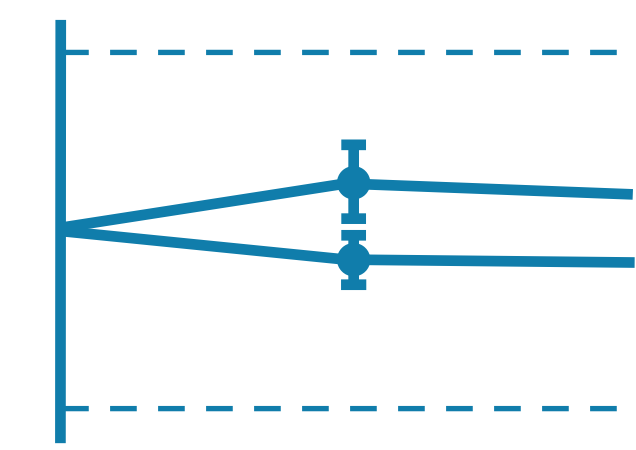
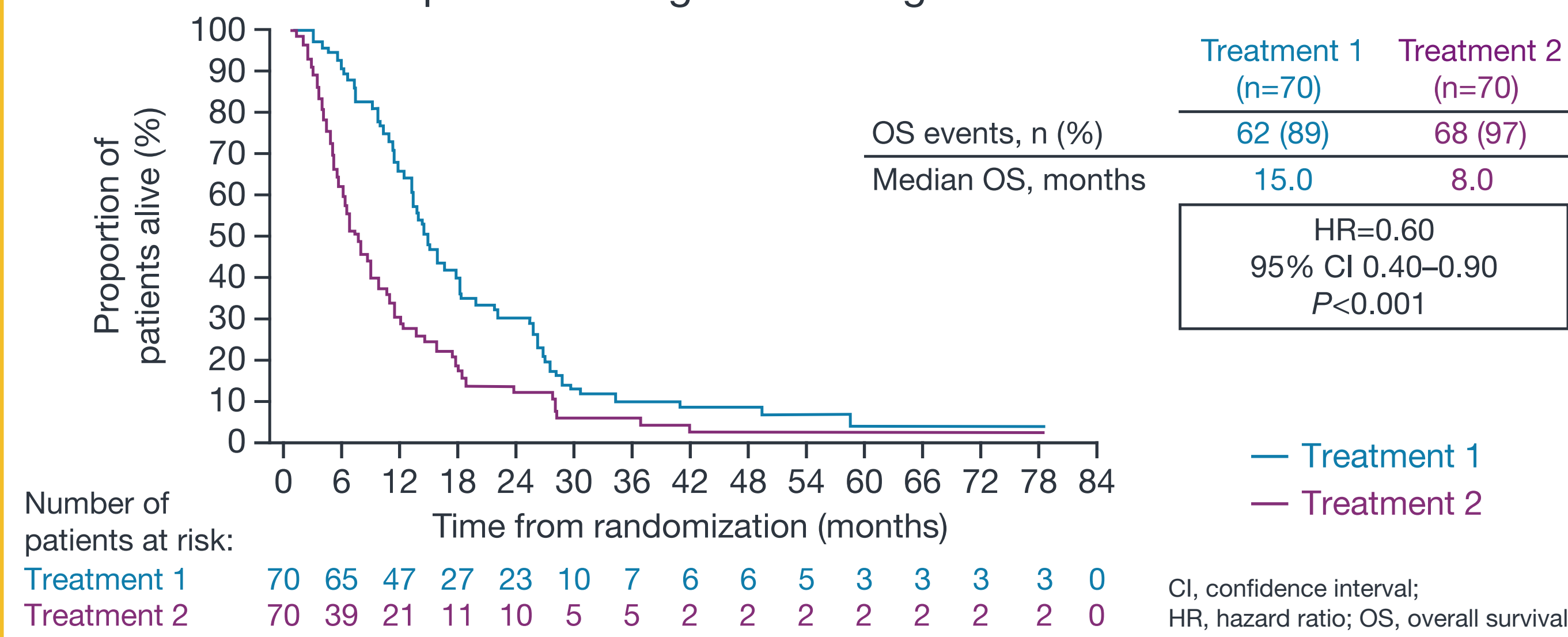


Figure 4. Tornado plot presenting incidence of adverse events



Example: Survey Figure 1 assessed participants' understanding of a typical Kaplan-Meier figure showing overall survival



For this initial research, we sent the survey to a lay audience consisting of colleagues, friends and family. Eligible participants were required to be aged ≥18 years and not have had an academic or career background in life sciences (beyond an undergraduate degree)

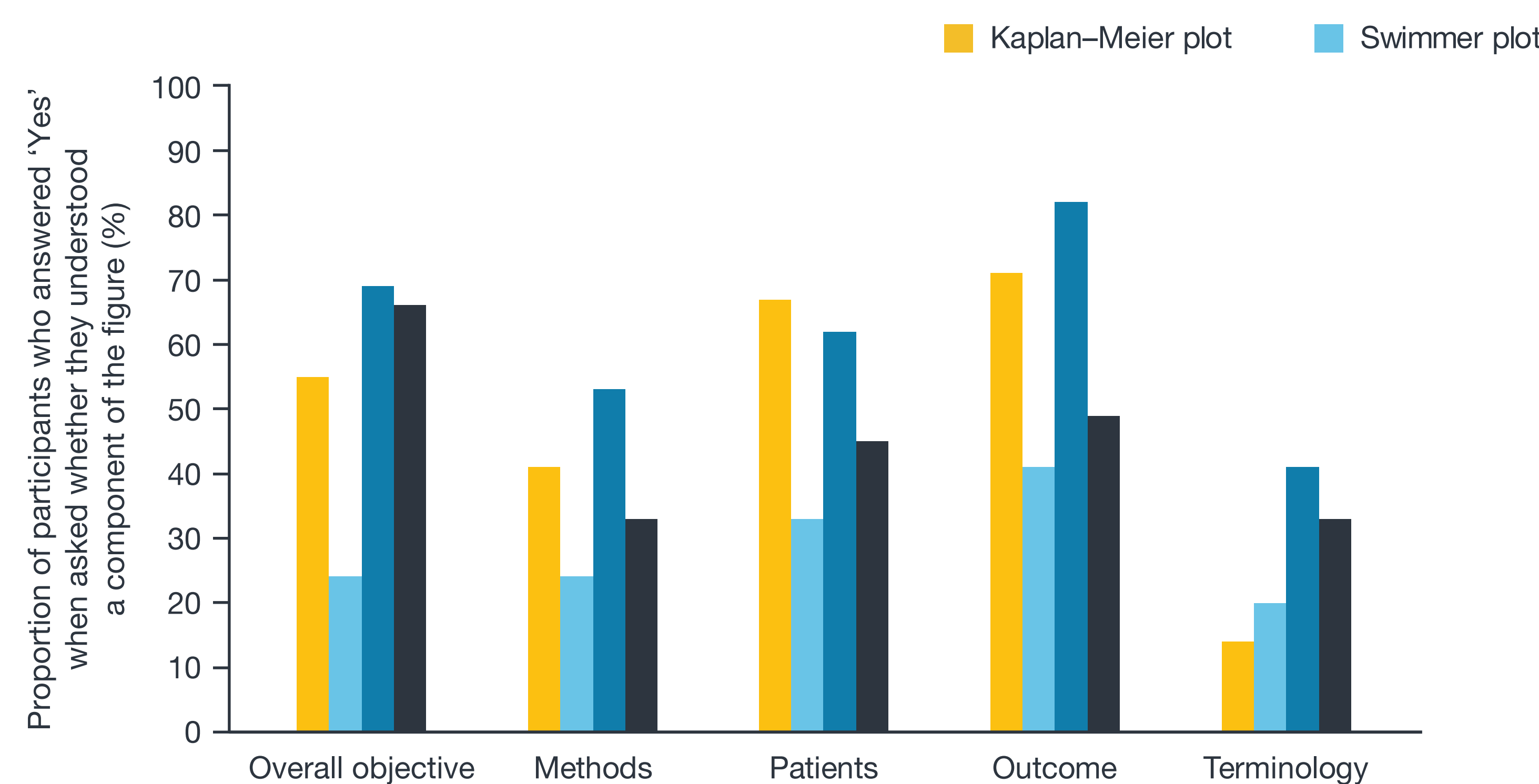


To ensure that figures were representative of those that lay audiences might encounter through social media/open-access publishing, we did not include figures specifically designed for a lay audience

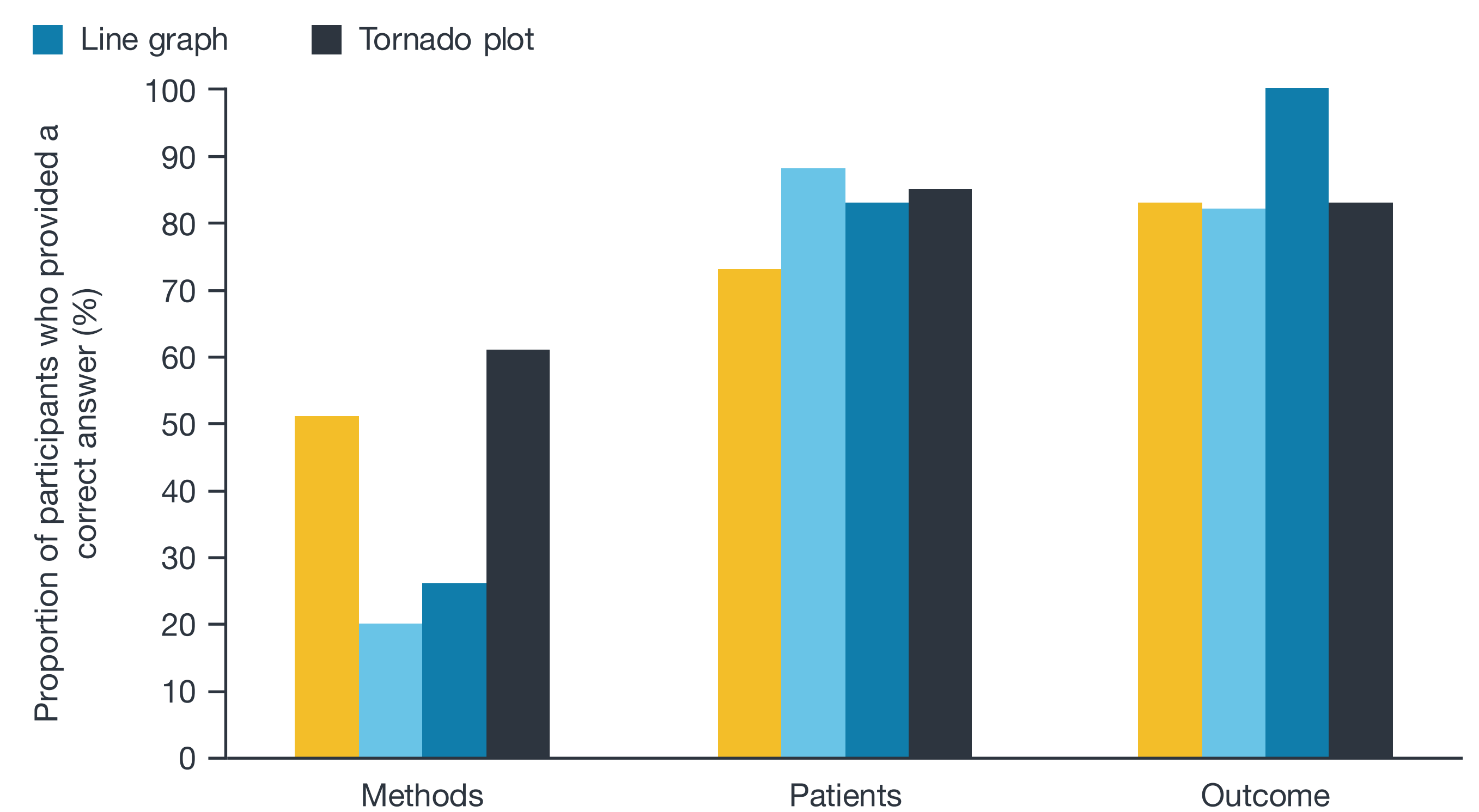
The full survey is accessible via the QR (Quick Response) code at the bottom of this poster

What were the main findings of our research?

Participants were not confident in their understanding of four figure types commonly included in oncology publications



Participants were mostly successful when asked to interpret figure components relating to 'Patients' and 'Outcome'



Participants were not confident in their understanding of terminology used in the survey figures



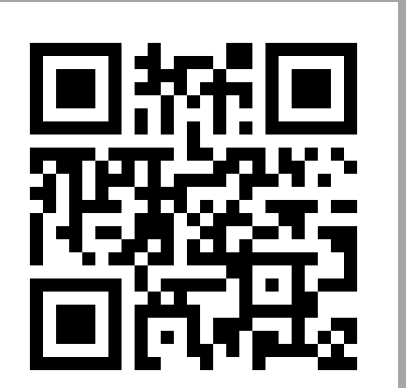
Three of the figures included at least one term that was not understood by at least half of the survey participants



The most commonly recommended improvement to the figures in this survey was to define or explain terminology

Scan QR code for:

- Poster
- Presenter discussion with survey participant
- Survey
- Data used for analyses



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Conclusions

- In this lay audience survey, participants were not confident in their understanding of the figures or terminology, but participants were mostly successful when asked to interpret the outcome of each figure
- Participants provided valuable insights into improving the design of figures accessible by lay audiences
- Plain-language objectives are important to consider when designing accessible biomedical figures
- Refining our survey and partnering with a patient advocacy group may provide further insights into how to improve the design of biomedical figures that are accessible to lay audiences, which could help inform the development of future publications content

References

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Author disclosures

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