

## Supplemental Material

### Are conference presentations accessible? Insights from an online survey to improve equity

James L. Wells<sup>a</sup>, Zen Faulkes<sup>b</sup>, Noofa Hannan<sup>c</sup>, Emily L. Messina<sup>d</sup>, Mike Morrison<sup>e</sup>, Anja Petersen<sup>f</sup>, Heather Robertson<sup>g</sup>, and Lauren C. Strother<sup>h</sup>

<sup>a</sup>CMC Connect, IPG Health Medical Communications, Manchester, UK; <sup>b</sup>McMaster University, Hamilton, ON, Canada; <sup>c</sup>Caudex, IPG Health Medical Communications, Toronto, ON, Canada, UK; <sup>d</sup>CMC Affinity, IPG Health Medical Communications, Mountain Lakes, NJ, USA; <sup>e</sup>Curvenote, ChiangMai, Thailand; <sup>f</sup>Complete HealthVizion, Chicago, IL, USA; <sup>g</sup>IPG Health Medical Communications, Manchester, UK; <sup>h</sup>CMC Connect, IPG Health Medical Communications, London, UK

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## 1. Audio summary of the poster

For an audio summary of the poster, please follow the [link to figshare](#) or scan the QR code below:



## 2. Link to the survey

To take the survey, please follow the [link to surveymonkey](#) or scan the QR code below:



## 3. Methods

### *Survey and Data Collection*

Potential conference attendees were queried regarding their accessibility needs and management strategies, evaluations of presentation formats (numerical scale: 1-hard; 5-easy to gain information), and recommended improvements they would like to see implemented to enhance information delivery. The survey questions are reported on page 6 of this supplement. The survey design was reviewed by Compliance and Ethics committee at IPG Health. Responses were collected anonymously using the polling website SurveyMonkey (<https://www.surveymonkey.com>). The 23-question survey was distributed (16 August–7 September 2022) via social media platforms (Twitter, LinkedIn, etc.) and targeted to both a more general audience (including #AcademicTwitter and #MedTwitter) and to disability and accessibility groups (including #ActuallyAutistic, @AskADHD, #Disability, #DisabilityInclusion, #DisabledinSTEM, #DigitalAccessibility, #DocsWithDisabilities, #Dyslexia, #Dyspraxia, #Hyperlexia, #Irlen, #NEISvoid, #OCD, #Synesthesia, #UXDesign, #Neurodiversity #NEISvoid #UXDesign).

We reached out to larger organisations from the USA, Europe, Australia, and Canada to reach a broad demographic (including, but not limited to, universities and medical centers at diverse locations, the Healthcare Communications Association, the Society for Health Communication, and firstmedcommsjob.com).

### *Data Analysis*

Responses to questions with predefined answer choices were analysed using descriptive statistics. Free responses were screened and binned into categories (auditory [captions, link sound to hearing aid, use microphones, better acoustics], sensory [reduce extraneous stimuli in poster halls, lighting not too bright / too dim, background noise, provide quiet spaces], visual [larger font printouts, braille options, larger signage and screens, colour-blindness checkers, high-contrast colours, space for service animals], mobility

[reduce space between events, stairs/levels, provide more seating], health safety [mask and vaccination regulations, large well-ventilated rooms, virtual access]). Then these categorizations were independently reviewed by a different author and analysed using descriptive statistics.

Phi correlation between reported accessibility needs / disabilities and management strategies was determined. A threshold of 0.30 or greater was used to indicate a moderate relationship. A Xi square test was not used because both the variables were binary and respondents could belong to multiple groups.

#### 4. Supplemental tables

**Supplemental Table 1.** Accessibility aids by category of need / disability

	Visual	Hearing	Processing	Mobility	Sensory
Hearing aids		✓			
Interpreter					
Reading lips		✓			
Translation software					
Text-to-speech reader					
Paper or downloaded versions of slides	✓		✓		✓
Reading slide text in an oral presentation		✓	✓		✓
Recording device					
Virtual access	✓		✓		✓
Mobility aids				✓	
Ear plugs or headphones			✓		✓
Sunglasses					✓
Fidget spinners or other stimming device			✓		✓
Speaking assistive technology					
Service animal					
Medication			✓		✓
My accessibility needs do not require significant management					

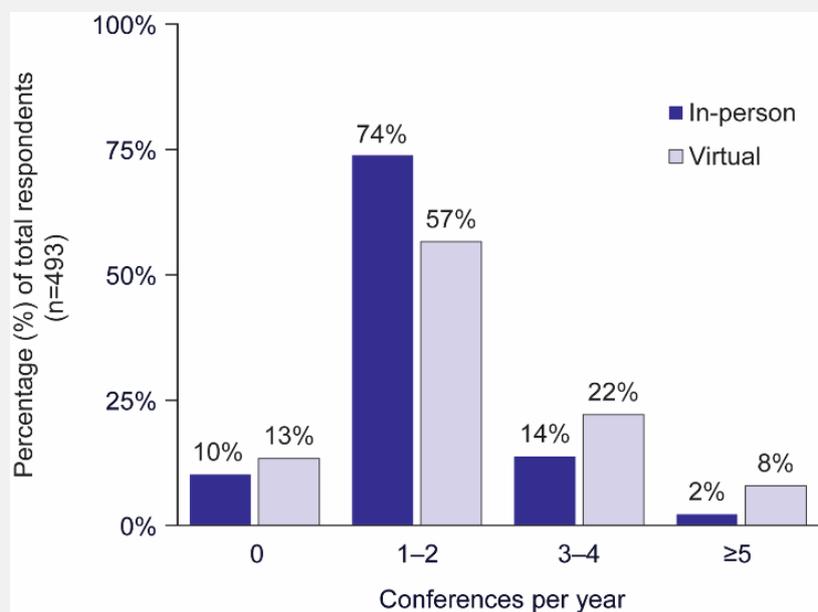
Checkmarks represent a Phi correlation of 0.30 or greater.

**Supplemental table 2.** Requested accommodations for conferences / congresses

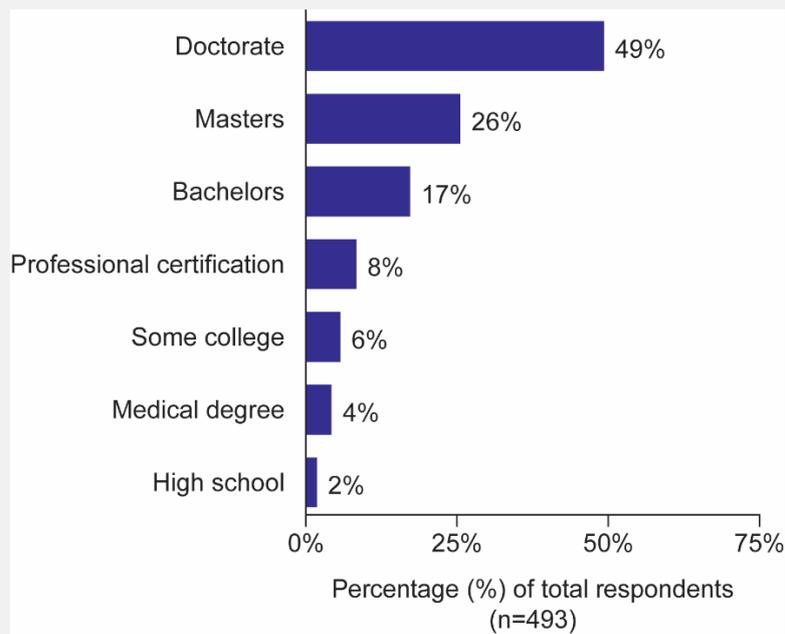
Requested accommodation	Respondents (%) n=163
<b>Auditory</b> Captions, link sound to hearing aid, use microphones, better acoustics	28%
<b>Sensory</b> Reduce extraneous stimuli in poster halls (lighting not too bright / too dim, background noise); provide quiet spaces	24%
<b>Visual</b> Larger font printouts, braille options, larger signage and screens, colour-blindness checkers, high-contrast colours, space for service animals	23%
<b>Mobility</b> Reduce space between events, stairs/levels; provide more seating	18%
<b>Health safety</b> Mask and vaccination regulations, large well-ventilated rooms, virtual access	7%

## 5. Supplemental figures

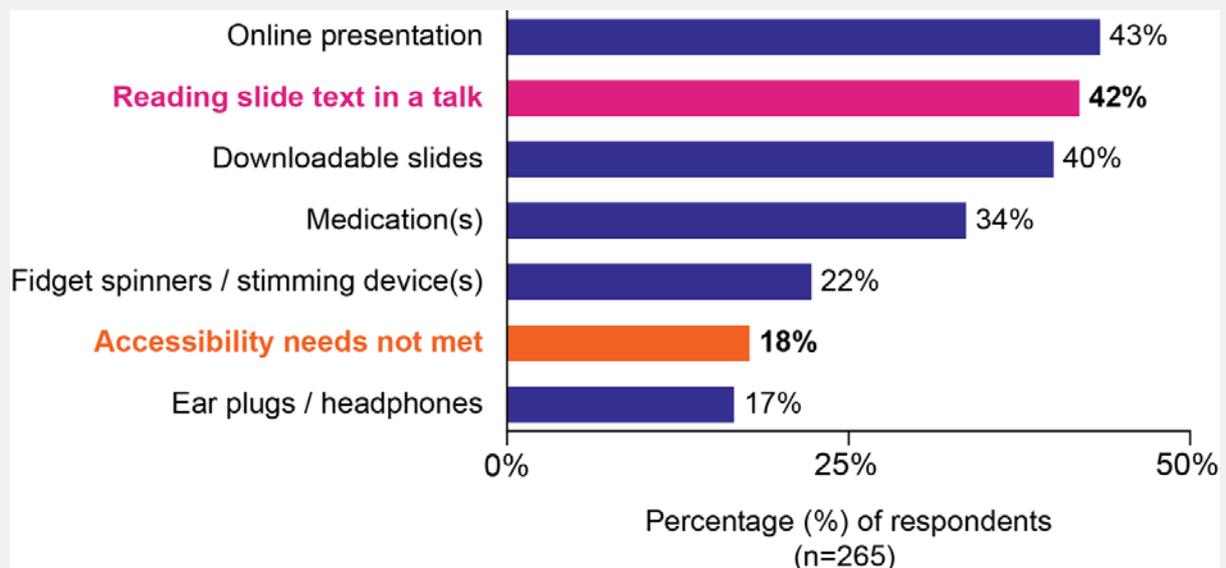
**Supplemental Figure 1.** Reported conference attendance



**Supplemental Figure 2. Current level of training**

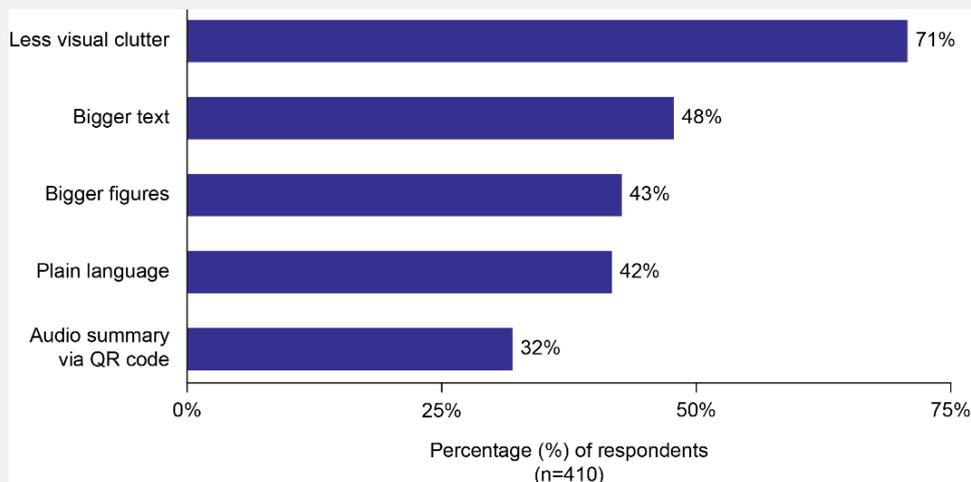


**Supplemental Figure 3. Reported management strategies / tools**



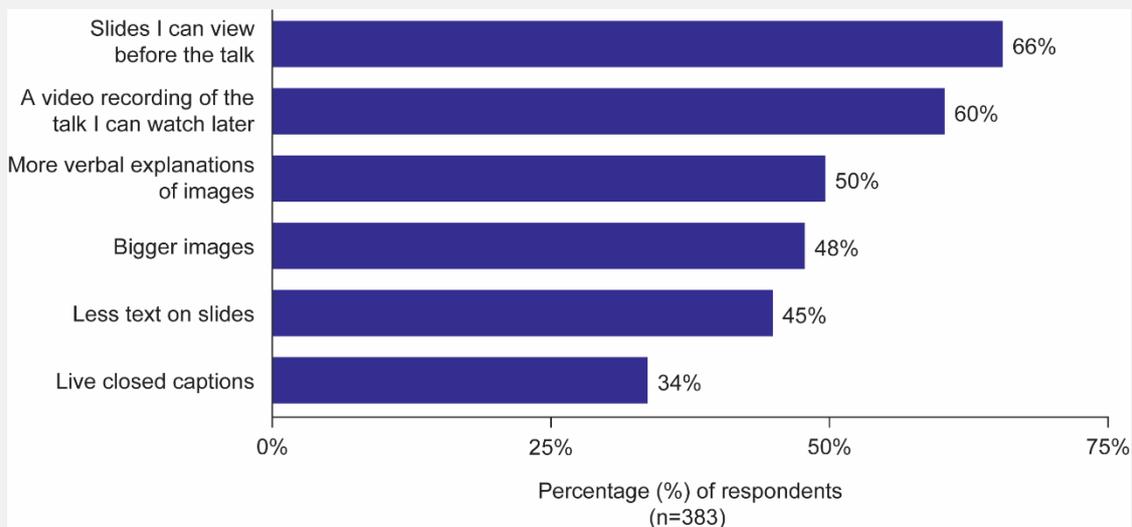
\*Other management strategies / tools included the use of mobility aids (12%), recording devices, reading lips, sunglasses (11% each), text-to-speech readers, translation software, hearing aids (5% each), service animals and captions (2% each), interpreters, speaking assistive technology (1%)

**Supplemental Figure 4. Recommendations for improving posters**



Other recommendations included less text (40%), more white space (31%), narrated video via QR code (30%), higher colour contrast and sans-serif fonts (25% each), less reliance on colour to communicate meaning (19%), larger posters (15%), off-white backgrounds behind text (14%), better text-to-speech reader experience (13%), serif fonts (6%), and more text (5%).

**Supplemental Figure 5. Recommendations for improving talks**



Other recommendations included more text on slides (6%)

## 6. Survey questions

Q1. What is your current occupation? Please select all that apply.

- a. Health care professional
- b. Academic researcher
- c. Pharmaceutical employee
- d. Medical communications professional
- e. Undergraduate student
- f. Graduate student
- g. Post-doctoral scientist
- h. Other (please list below)
- i. If other, please list in the text box below (Please note you must also check the 'Other' check box above to proceed)

Q2. What is your current level of training?

- a. High school
- b. Some college
- c. Bachelors
- d. Masters
- e. Doctorate
- f. Medical degree
- g. Professional certification

Q3. What is your age?

- a. 19 or younger
- b. 20–35
- c. 36–50
- d. 51–75
- e. 76 or older

Q4. How often do you attend or plan to attend conferences / congresses in person?

- a. 0
- b. 1–2 per year
- c. 3–4 per year
- d. 5 or more

Q5. How often do you attend/plan to attend conferences / congresses virtually?

- a. 0
- b. 1–2 per year
- c. 3–4 per year
- d. 5 or more

Q6. Do you have (now or in the past) any accessibility needs or impairments that impact how you receive information from oral presentations or posters (formal diagnosis is not necessary)? Please select all that apply.

- a. None
- b. Presentation is not in your native language
- c. Visual
- d. Hearing
- e. Processing
- f. Mobility
- g. Verbal
- h. Sensory
- i. Other (please list in the text box below)
- j. Other accessibility needs or impairments not included above, please list in the text box below. (Please note you must also check the "Other" checkbox above to proceed)

Q7. If you do have an accessibility need(s) or impairment(s), how do you manage the impact it has on how you receive information in poster or oral presentations? Please select all that apply.

- a. Hearing aid
- b. Interpreter
- c. Reading lips
- d. Translation software
- e. Text-to-speech reader
- f. Paper or downloaded versions of slides
- g. Reading slide text in an oral presentation
- h. Recording device
- i. Virtual access (electronic versions of posters or recorded talks posted online)
- j. Mobility aids
- k. Ear plugs or headphones
- l. Sunglasses
- m. Fidget spinners or other stimming device(s)
- n. Service animal
- o. Medication(s)
- p. My accessibility needs do not require significant management
- q. My accessibility needs are not currently met
- r. Other (Please list below)
- s. If other, please list in the text box below. (Please note you must also check the "Other" checkbox above to proceed)

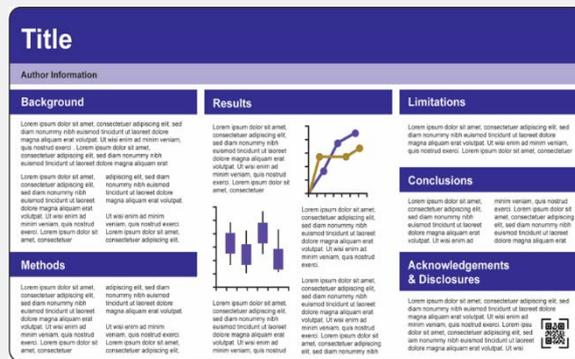
Q8. Are you familiar with the industry trends towards posters with less text, more white space, and a select few prominent figures or tables (i.e., #BetterPoster or Poster 2.0)?

- a. Yes
- b. No

Q9. When attending a poster session, what is your goal in receiving information? Please rate your priority in learning about each of the of the following aspects of the study on a scale of 1 to 5.

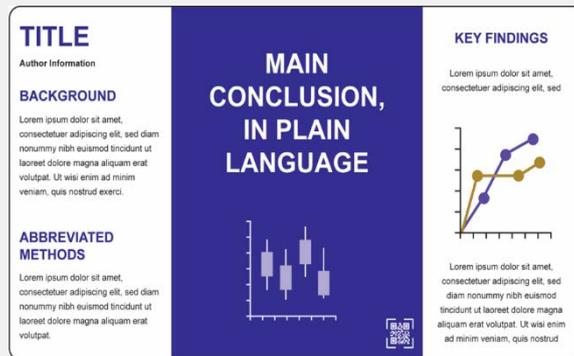
- Rationale or background
- Overview of hypothesis and study design
- Detailed methodology
- Detailed analysis of data
- Key findings
- Conclusions
- Practical implications
- Other (please list)

Q10. Traditional layout: Common design elements of this poster layout may include a large headline banner, most content is text based (600 – 1,000 words), generally organized into columns, grouped by subheadings, text is generally not embedded in figures, and they may or may not include QR codes. There is usually high contrast between the text and the background. Please rate how this poster design impacts your ability to gain information on a scale from 1 to 5.



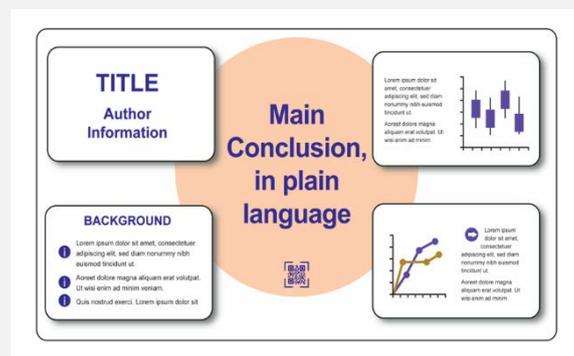
- 1 - I cannot easily gain information from this layout
- 2
- 3
- 4
- 5 – I can easily gain information from this layout
- Optional – Please explain your response

Q11. #BetterPoster layout: Common design elements of this poster layout may include a large central space for conclusions and main findings written in plain language, and sidebars for the title, background, methods, and additional tables / figures. Content is less text based (<500 words), and typically includes larger font and more white space. Additional details are often provided with a QR code. Emphasis may be added using bold or colour for important concepts. There is usually high contrast between the text and the background. Text may or may not be embedded in figures. Please rate how this poster design impacts your ability to gain information on a scale from 1 to 5.



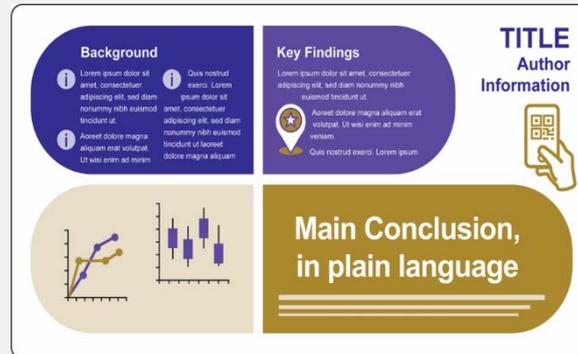
- 1 - I cannot easily gain information from this layout
- 2
- 3
- 4
- 5 – I can easily gain information from this layout
- Optional – Please explain your response

Q12. Infographic layout example 1: Common design elements of this poster layout may include prominently featuring the conclusions and main findings in plain language and combined illustrative figures with embedded text. Large graphic icons and more colours may be used for emphasis. The flow is often highlighted with icons or visual elements. Content is less text based (<500 words), and typically includes larger font and more white space. Additional details are often provided with a QR code. There is typically decent contrast between text and background. Please rate how this poster design impacts your ability to gain information on a scale from 1 to 5.



- 1 - I cannot easily gain information from this layout
- 2
- 3
- 4
- 5 – I can easily gain information from this layout
- Optional – Please explain your response

Q13. Infographic layout example 2: Common design elements of this poster layout may include prominently featuring the conclusions and main findings in plain language and combined illustrative figures with embedded text. Large graphic icons and more visual elements may be used for emphasis. Visual elements and icons are often colourful. The flow is often less linear and more visual. Content is less text based (<500 words), and typically includes more white space. Additional details are often provided with a QR code. Please rate how this poster design impacts your ability to gain information on a scale from 1 to 5.



- 1 - I cannot easily gain information from this layout
- 2
- 3
- 4
- 5 – I can easily gain information from this layout
- Optional – Please explain your response

Q14. What improvements, if any, would you like to see implemented or standardized for posters to improve accessibility of information?

- I do not have suggested improvements
- I would suggest the following improvements

Q15. Which of the following features would make a poster a better, more accessible learning experience for you? Please select all that apply.

- I do not have a preference
- Bigger text
- Less visual clutter
- Better text-to-speech reader experience
- More text
- Less text
- Bigger figures
- More white space between lines of text in paragraphs
- An audio summary by the author that I can access with a QR code
- A narrated video presentation version of the poster by the presenter I can watch later
- Higher colour contrast
- Off-white backgrounds behind text
- Plain language writing
- Sans-serif fonts (Calibri, Arial, Helvetica, etc)
- Serif fonts (Times Roman, Courier, New Century Schoolbook, etc)
- Less reliance on colour to communicate meaning
- Larger posters

Q16. Are you familiar with the industry trend to change the format of oral presentations to have fewer slides and use slides that are more visual, with little to no text?

- a. Yes
- b. No

Q17. When attending an oral presentation, what is your goal in receiving information? Please rate your priority in learning about each of the of the following aspects of the study on a scale of 1 to 5.

- a. Rationale or background
- b. Overview of hypothesis and study design
- c. Detailed methodology
- d. Detailed analysis of data
- e. Key findings
- f. Conclusions
- g. Practical implications
- h. Other (please list)

Q19. An oral presentation may take the style of a TED talk, containing few to no slides, or slides with little to no text. Please rate how this presentation format impacts your ability to gain information on a scale from 1 to 5.

- a. 1 - I cannot easily gain information from this layout
- b. 2
- c. 3
- d. 4
- e. 5 – I can easily gain information from this layout
- f. Optional – Please explain your response

Q20. An oral presentation may take the style of an interview or discussion between a small number of people, containing no slides. Please rate how this presentation format impacts your ability to gain information on a scale from 1 to 5.

- a. 1 - I cannot easily gain information from this layout
- b. 2
- c. 3
- d. 4
- e. 5 – I can easily gain information from this layout
- f. Optional – Please explain your response

Q21. What improvements, if any, would you like to see implemented or standardized for oral presentations to improve accessibility of information?

- a. I do not have suggested improvements
- b. I would suggest the following improvements

Q22. Which of the following features would make oral presentations a better, more accessible learning experience for you? Please select all that apply.

- a. I do not have a preference
- b. A video recording of the talk I can watch later (with optional closed captions)
- c. Live 'auto-generated' closed captions at the bottom of every slide or on a separate screen
- d. More verbal explanations of images and figures by speakers
- e. Bigger images and figures
- f. More text on slides
- g. Less text on slides
- h. Slides I can view or download before the talk

Q23. What improvements, if any, would you like to see implemented or standardized for conference / congress meeting spaces to improve accessibility of information?

- a. I do not have suggested improvements
- b. I would suggest the following improvements

## **7. Poster references**

1. NIH. 2022. <https://dceg.cancer.gov/about/diversity-inclusion/inclusivity-minute/2022/neurodiversity>
2. Sarju PJ. 2021. *Chem. Eur. J.* 27, 10489–10494
3. Sousa BJ & Clark AM. 2019. *Int J Qual Methods.* 18: 1609406919862370

## **8. Acknowledgements**

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## **9. Conflict of interest statement**

ZF has written a book on conference poster presentations and receives royalties from its sales. JLW, NH, ELM, AP, HR, and LCS are employees of IPG Health Medical Communications. MM has no disclosures to report.