Research is for Everyone: Addressing Accessibility Barriers in Academic Presentations

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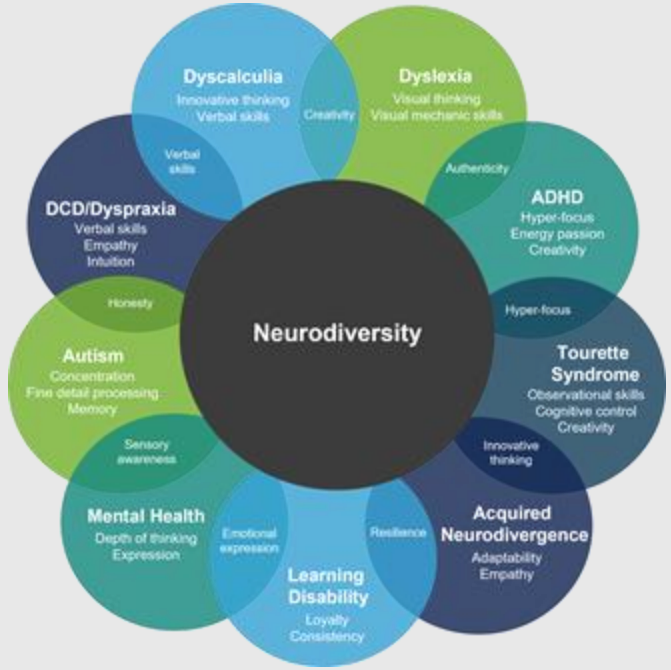
Resources on Google Drive

Terminology

- Screenreader: a computer program that reads text on a computer out loud.
  - Some individuals who use screenreaders are blind.
  - Some individuals who use screenreaders are not blind.

- Neurodivergent person: an umbrella term to describe people with a range of neuropsychological and psychological disabilities.



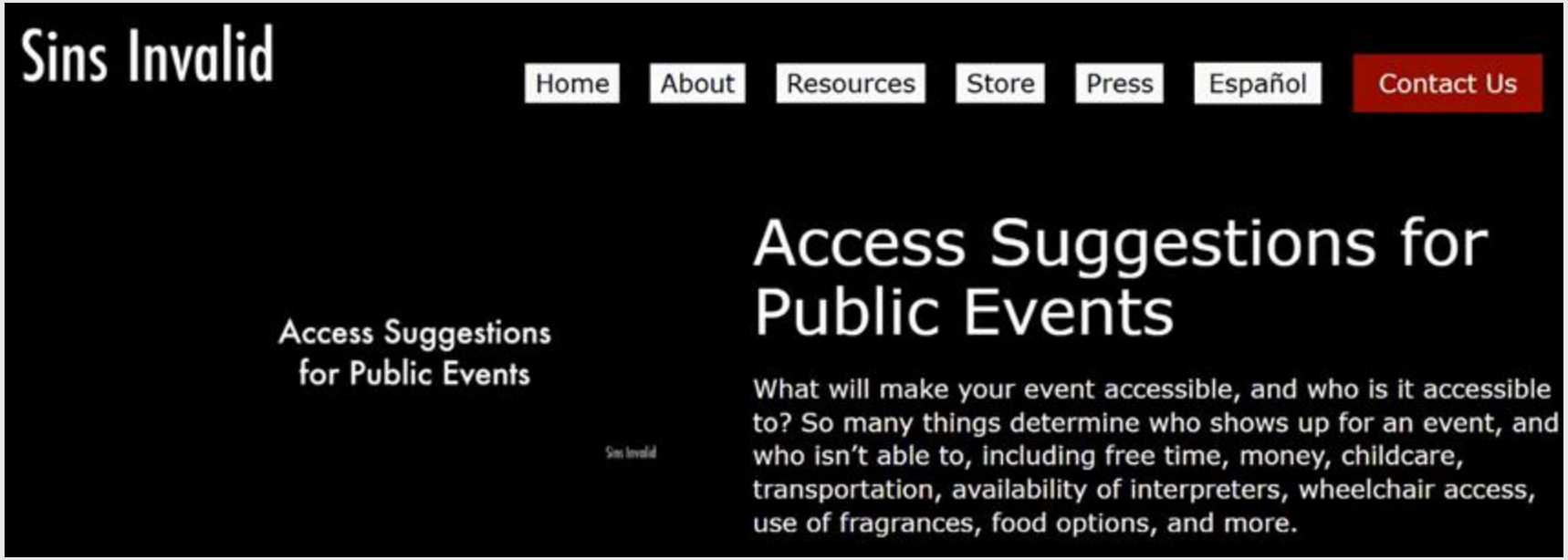
Manifesto for Inclusive Research

1. Aim to make our lives better
2. Be about our issues and make sense to us
3. Reflect our experience
4. Support our campaigns
5. Have advocates and researchers standing together
6. **Make the research processes and findings accessible**

International Association for the Scientific Study of Intellectual and Developmental Disabilities (IASSIDD) Inclusive Research SIG

What is your role in inclusive dissemination of research?

1. Conference organizers



Sins Invalid

What is your role in inclusive dissemination of research?

1. Conference organizers
2. Research teams

What is your role in inclusive dissemination of research?

1. Conference organizers
2. Research teams
3. Individual researchers

Creating an inclusive space

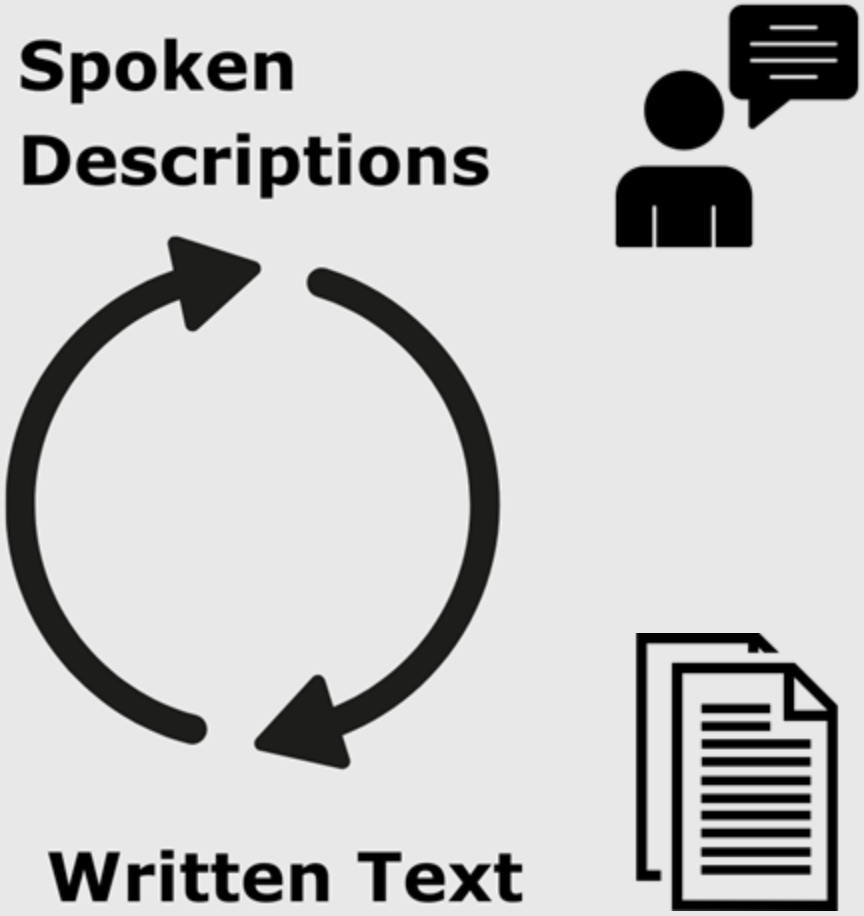
- Set the tone from the beginning
  - Introduce yourself with pronouns and a visual self-description
  - Invite audience members to get up, move, stim, etc.
  - For virtual events where audience camera can be on: don’t require participants to turn their cameras on.

What is the goal of conference presentation slides?

- Provide a visual support to your main talking points
- Show your results

The goal of conference presentation slides is to support your **entire** audience’s understanding of your presentation topic!

Multiple modalities of processing information



- Include spoken descriptions of relevant text or graphics that appear on your slide as part of your presentation.
- Include visuals of important text on your slides.

Multiple modalities of processing information

- Link and QR code to a downloadable public version of slides so someone can listen along or pull up in a way more accessible to them or have more processing time to think about your presentation.
  - Allows one to revisit the presentation at their own pace, make any adjustments to format to make the presentation accessible to them, and listen to the slides with their screenreader* if they use one.

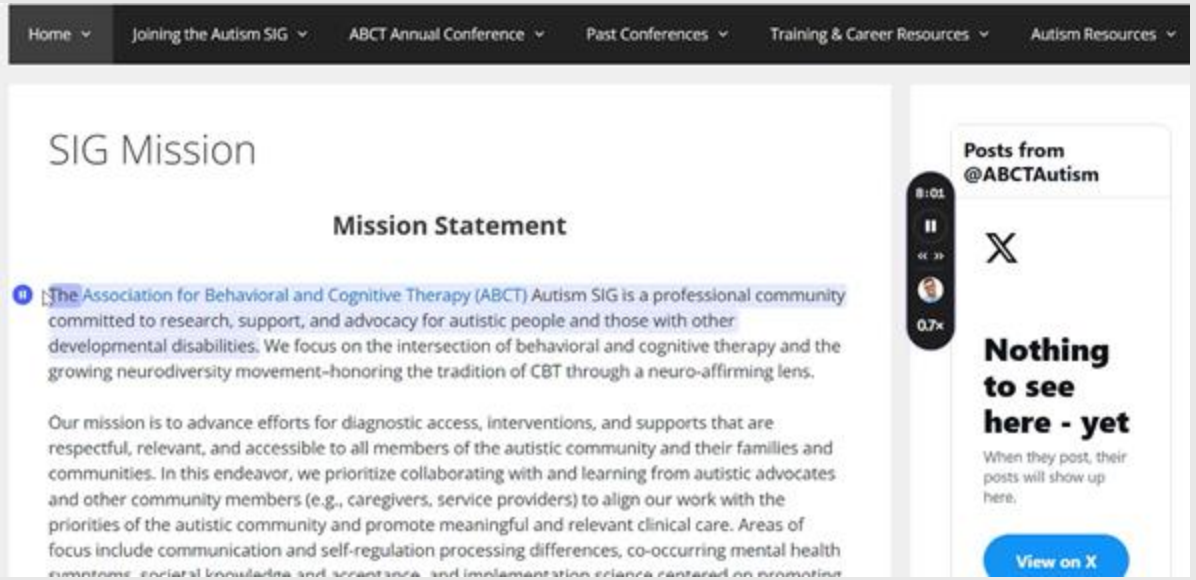
*Note: screenreader usage amongst neurodivergent individuals is way more common that most people realize.

Captions

- Level 1: Live captioner
- Level 2: PowerPoint/ Google Slides captions
  - consider a common-errors guide

Tips for successful auto-captioning

- Speak clearly and at a moderate pace
  - 120-150 words per minute



Read by Speechify browser extension at 140 words per minute

Tips for successful auto-captioning

- Speak clearly and at a moderate pace
- Avoid overlapping speech
- Use simple, direct language (avoid jargon when you can)
- Identify speakers
- Use a high quality microphone

Slide content

- Keep slides relatively simple and avoid too much visual clutter.

- Graphics are engaging and can be used to help convey key information
  - Keep your graphics basic, but not childish

Making graphics accessible

- How to create alt text:
  - Alt text in PPT: right click to pull up options for any individual text box -> view alt text -> write alt text that is the same as the table content, or, if appropriate, mark your image as decorative.
  - Alt text is particularly important if you are taking the highly recommended step of sharing a downloadable version of your PowerPoint.
- The background color of your graphic should match to the background color of your slide.

AutoSave Off | Accessible Presentations.... • Saved to this PC | Search

File Home Insert Draw Design Transitions Animations Slide Show Record Review View Help Acrobat Picture Format Accessibility

Record Share

Check Accessibility (Review)

Font Color | Text Highlight Color | Shape Fill | Shape Outline | Inspect without Color (Color & Contrast)

Spelling | Slide Title | Reading Order Pane | Alt Text | Mark as Decorative | Group | Insert Header Row | Link Text (Screen Reader)

Always Use Subtitles | Subtitle Settings | Insert Captions (Captions & Subtitles)

Accessibility Help (Resources)

13 Tips for successful auto-captioning

14 Slide content

15 Making graphics accessible

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17 Make graphics inclusive

18 Be aware of AI biases!

19 Stats tables

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Alt Text

How would you describe this object and its context to someone who is blind or low vision?
- The subject(s) in detail
- The setting
- The actions or interactions
- Other relevant information

(1-2 detailed sentences recommended)

Content marked as decorative will not expose a description to screen readers.

Mark as decorative

Powered by Office Services

Make graphics inclusive

- Use graphics/images that reflect the population
- Disrupt stereotypes about who can be autistic
- Use graphics created by the disability community

Disability:In

Disability is Beautiful

Be aware of AI biases!

“Clip art of a person presenting at a conference”

“Replace the speaker with a black woman”

“Replace with a black woman in a wheelchair”

Stats tables

- Say what you mean in plain English without adding numbers or technical terms up front. Then dive in and get technical.

- Tables should have meaningful headers so they can be read by screen readers.

Table 1. Dynamicity predicts microaggressions, anxiety symptoms and depressive symptoms.

Predictors	Microaggressions	Discrimination	Anxiety symptoms	Depressive symptoms
	Beta	Beta	Beta	Beta
Dynamicity	0.28***	0.16	0.30***	0.20*
Visibility	0.32***	0.29**	0.21*	0.22*
Race/ethnicity (BIPOC=1)	0.03	0.30	0.03	-0.04
Gender (Woman=1)	0.06	-0.17*	-0.05	0.003
Sexual orientation (LGBQ+=1)	0.27***	0.27**	0.17	0.26**
Dynamicity x Visibility	-0.09	-0.13	-0.07	-0.02

Contrast

- While maintaining a 4.5:1 color contrast ratio, avoid stark contrast (e.g. black text on a white background; bright color text/graphic on almost any background).
  - This is because strong contrast can create eyestrain.
  - Maintaining a 4.5:1 color contrast ratio is important because neurodivergent or not, a lot of people experience some level of visual impairment.
  - Check your work using WebAim

Contrast: example

Which of these do you prefer to read?

Which of these do you prefer to read?

Which of these do you prefer to read?

Contrast Checker

Foreground

Hex Value
0000FF

Color Picker

Alpha
1

Lightness

Background

Hex Value
FFFFFF

Color Picker

Lightness

Contrast Ratio
8.59:1

permalink

Normal Text

WCAG AA: Pass
WCAG AAA: Pass

The five boxing wizards jump quickly.

Large Text

WCAG AA: Pass
WCAG AAA: Pass

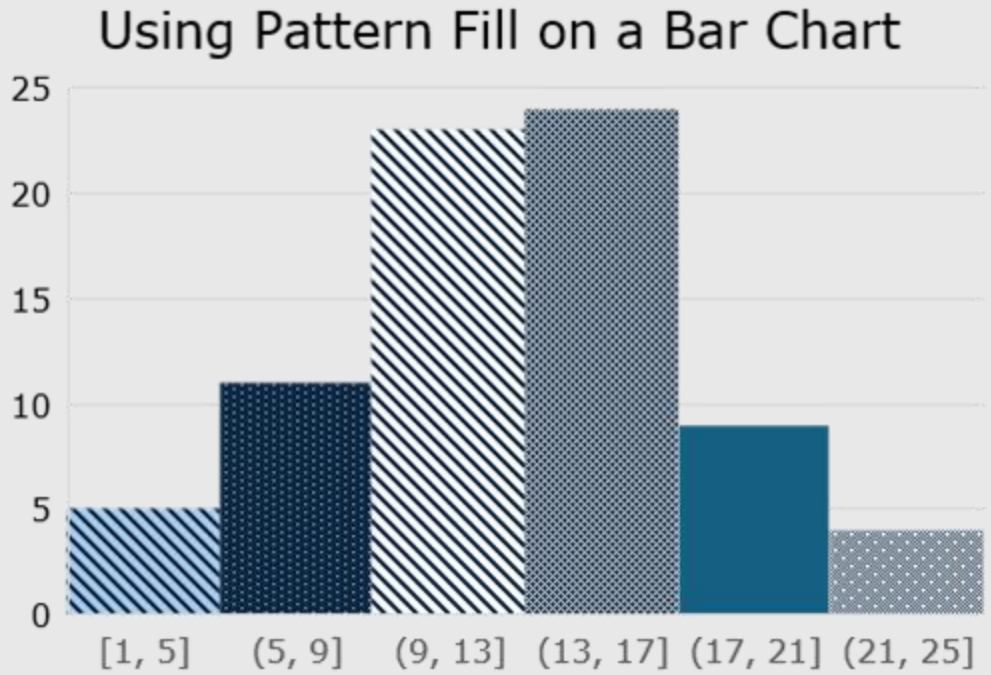
The five boxing wizards jump quickly.

Related Resources

- Contrast and Color Accessibility
- Quick Reference: Testing Web Content for Accessibility
- WebAIM Auditing & Evaluation Services
- Web Accessibility for Designers
- Link Contrast Checker
- Contrast Checker Bookmarklet

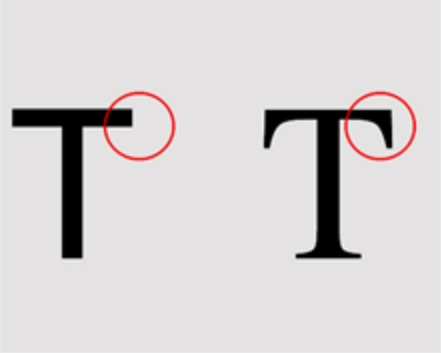
Color to convey meaning

- Use an additional modality other than color to convey meaning.
  - E.g., different patterns or labels on your graph.
  - This is because a lot of people are color blind.
  - This is especially important for red and green as a significant proportion of the population is red-green colorblind.
    - 8% of people assigned male at birth!



Font & text size

Sans serif vs. serif

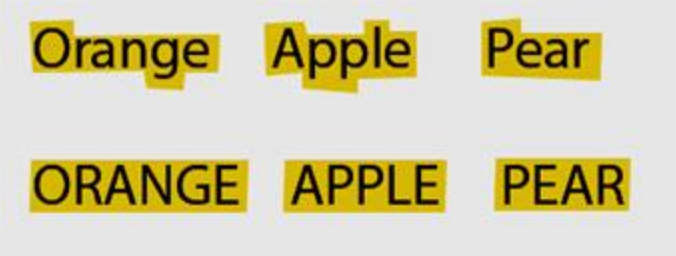


- Must have: a sans-serif font.
  - Sans serif font: a typeface that doesn't have decorative lines or tapers at the ends of letters.
  - Best practice: verdana or calibri.
    - In addition to being sans serif, these fonts have good letter and word spacing for people with dyslexia.
- Font size should be at least 18 point.
  - Bigger, as long as it does not impair readability (e.g., 100 point font) is better.
- Use left-aligned text when possible.
  - Left-aligned text is easier for many people with dyslexia and other neurodivergences to read than center or right-aligned text.

Readability: Case usage

- Avoid blocks of all caps.
  - The equal height of all letters makes them more difficult to differentiate from each other.
- Title case vs. sentence case
  - Many people find sentence case easier to read than title case.

All caps vs. lowercase example



Readability: Spacing

- Use 1.5 spacing.
  - Increases readability. 1.15 is also better than the default 1.0 spacing, but it will create barriers for more people than 1.5 will.
  - 2.0 is technically best practice, but many neurodivergent people find the lines to be too far apart.

Plain language

- There is an increasing focus on community-engagement with research-especially in the autism field
- Researchers need to explain their work in a way everyone can understand.
- General rule of thumb is 6th to 8th grade reading level.

Some guidelines for writing in plain language

- Use simple and familiar words
- Keep sentences short and direct
- Use active voice
- Avoid jargon and technical language
- Use clear formatting
- Be concise
- Use examples when needed

Check readability

- Hemingway Editor
  - Highlights complex sentences and suggests simpler alternatives.
  - Provides a readability grade level.
- Microsoft Word
  - Click File > Options > Proofing.
  - Run Spelling & Grammar Check.

Offer options for audience Q&A

- Provide options for your audience to ask questions
- Zoom has built in chat and Q&A features
  - Anonymous Q&A option
- Live presentations
  - Fancy tech: Live polling/Q&A apps like Slido, Mentimeter
  - Simple tech: Google forms, Padlet
  - No tech: Sticky notes, notecards

Let’s try it out

What is your suggestion for alt text for this image?

Join at

slido.com

#3517 249

slido

Please download and install the Slido app on all computers you use

What is good alt text for this image?

ⓘ Start presenting to display the poll results on this slide.

Conference Posters

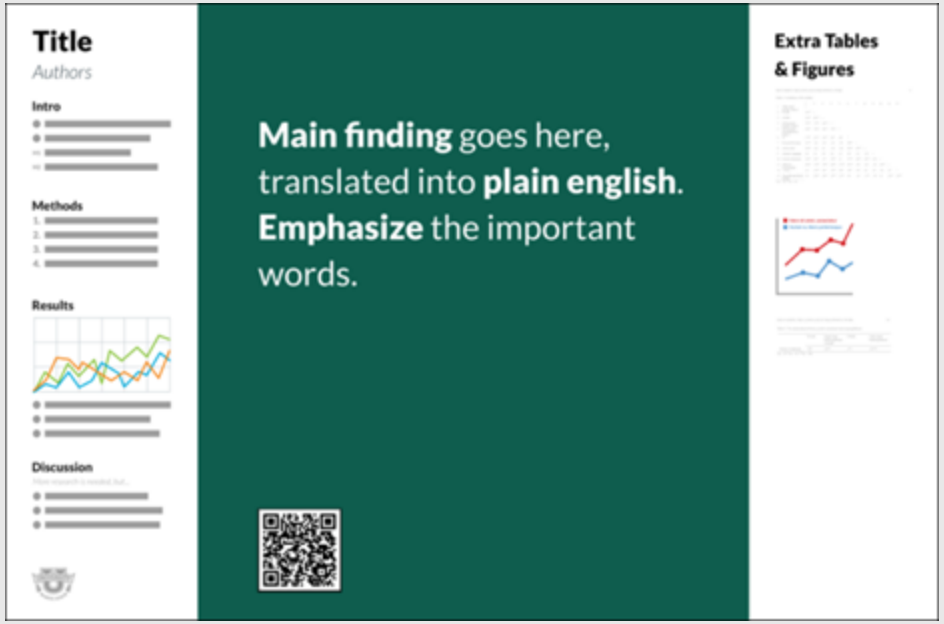
Formatting posters

- General guidelines are similar to oral presentations
  - ✓ Multiple modalities of processing information
  - ✓ Content should be informative but not busy
  - ✓ Tables should be clear
  - ✓ Contrast should be adequate but not jarring
  - ✓ Use a modality other than color to convey meaning
  - ✓ Sans serif fonts using left-aligned text
  - ✓ Alt text for images/graphics

Formatting posters

- Be ready to describe your poster in plain language
- Spacing may be trickier (when in doubt, space it out!)
- #Betterposter format is helpful for imparting a main takeaway
  - And makes more people stop to at least read your poster title!

#betterposters



How to create a better research poster in less time

Templates

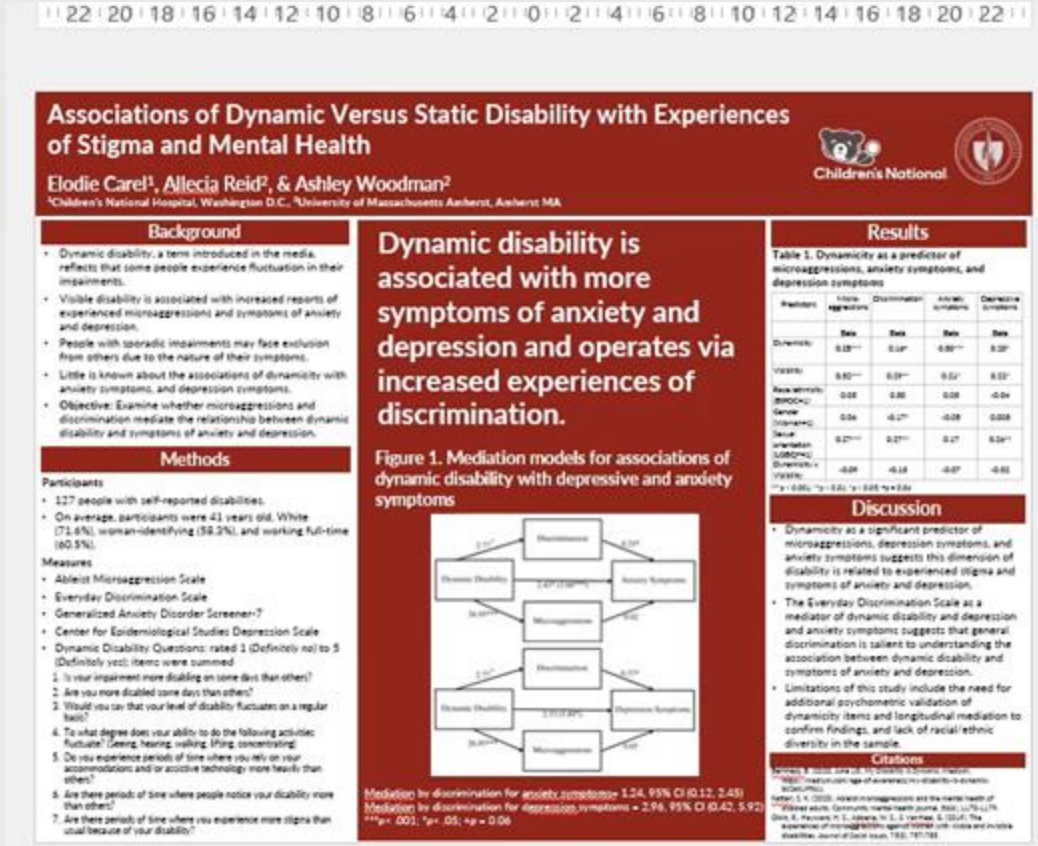
Font size

- Should be designed to be read up to 10 feet away
- Main title: 72 point (minimum) - 158 point (ideal)
- Section headings: 42 point (minimum) - 56 point (ideal)
- Body text: 24 point (minimum) - 36 point (ideal)
- Captions: 18 point (minimum) - 24 point (ideal)

Creating readable versions of posters

- Include a QR code on the poster, so people can download it
- Offer your poster in alternative formats online
  - PPT vs. PDF

Why object order matters



Associations of Dynamic Versus Static Disability with Experiences of Stigma and Mental Health

Elodie Carel[1], Allecia Reid[2], & Ashley Woodman[2]

[1]Children's National Hospital, Washington D.C., [2]University of Massachusetts Amherst, Amherst MA

Children's National

Background

- Dynamic disability, a term introduced in the media, reflects that some people experience fluctuation in their impairments.
- Visible disability is associated with increased reports of experienced microaggressions and symptoms of anxiety and depression.
- People with sporadic impairments may face exclusion from others due to the nature of their symptoms.
- Little is known about the associations of dynamicity with anxiety symptoms, and depression symptoms.
- Objective: Examine whether microaggressions and discrimination mediate the relationship between dynamic disability and symptoms of anxiety and depression.

Methods

Participants

- 127 people with self-reported disabilities.
- On average, participants were 41 years old. White (71.6%), woman-identifying (59.3%), and working full-time (60.5%).

Measures

- Ableist Microaggression Scale
- Everyday Discrimination Scale
- Generalized Anxiety Disorder Screener-7
- Center for Epidemiological Studies Depression Scale
- Dynamic Disability Questions: rated 1 (Definitely no) to 5 (Definitely yes); items were summed
  1. Is your impairment more disabling on some days than others?
  2. Are you more disabled some days than others?
  3. Would you say that your level of disability fluctuates on a regular basis?
  4. To what degree does your ability to do the following activities fluctuate? (seeing, hearing, walking, lifting, concentrating)
  5. Do you experience periods of time where you rely on your accommodations and/or assistive technology more heavily than others?
  6. Are there periods of time where people notice your disability more than others?
  7. Are there periods of time where you experience more stigma than usual because of your disability?

Dynamic disability is associated with more symptoms of anxiety and depression and operates via increased experiences of discrimination.

Figure 1. Mediation models for associations of dynamic disability with depressive and anxiety symptoms

Mediation by discrimination for anxiety symptoms= 1.24, 95% CI (0.12, 2.48)

Mediation by discrimination for depression symptoms = 2.96, 95% CI (0.42, 5.92)

***p< .001; *p< .05; +p = 0.06

Results

Table 1. Dynamicity as a predictor of microaggressions, anxiety symptoms, and depression symptoms

Predictors	Ableist microaggressions		Discrimination		Anxiety symptoms		Depressive symptoms	
	Beta		Beta		Beta		Beta	
Dynamicity	0.28***	0.14*	0.39***	0.19*	0.39***	0.20*	0.33***	0.13*
Visibility	0.02***	0.01	0.07***	0.03	0.11*	0.11*	0.11*	0.11*
Race (ethnicity: BIPOC=1)	0.03	0.03	0.00	0.00	0.03	0.03	-0.04	-0.04
Gender (Women=1)	0.04	0.04	-0.27**	-0.27**	-0.09	-0.09	0.03	0.03
Sexual orientation (LGBQ+=1)	0.27***	0.27***	0.27**	0.27**	0.27	0.27	0.21**	0.21**
Dynamicity x Visibility	-0.04		-0.18		-0.07		-0.03	

**p < 0.01; **p < .01; *p < 0.05; +p = 0.06

Discussion

- Dynamicity as a significant predictor of microaggressions, depression symptoms, and anxiety symptoms suggests this dimension of disability is related to experienced stigma and symptoms of anxiety and depression.
- The Everyday Discrimination Scale as a mediator of dynamic disability and depression and anxiety symptoms suggests that general discrimination is salient to understanding the association between dynamic disability and symptoms of anxiety and depression.
- Limitations of this study include the need for additional psychometric validation of dynamicity items and longitudinal mediation to confirm findings, and lack of racial/ethnic diversity in the sample.

Citations

How this poster would be read by a screen reader

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Citations

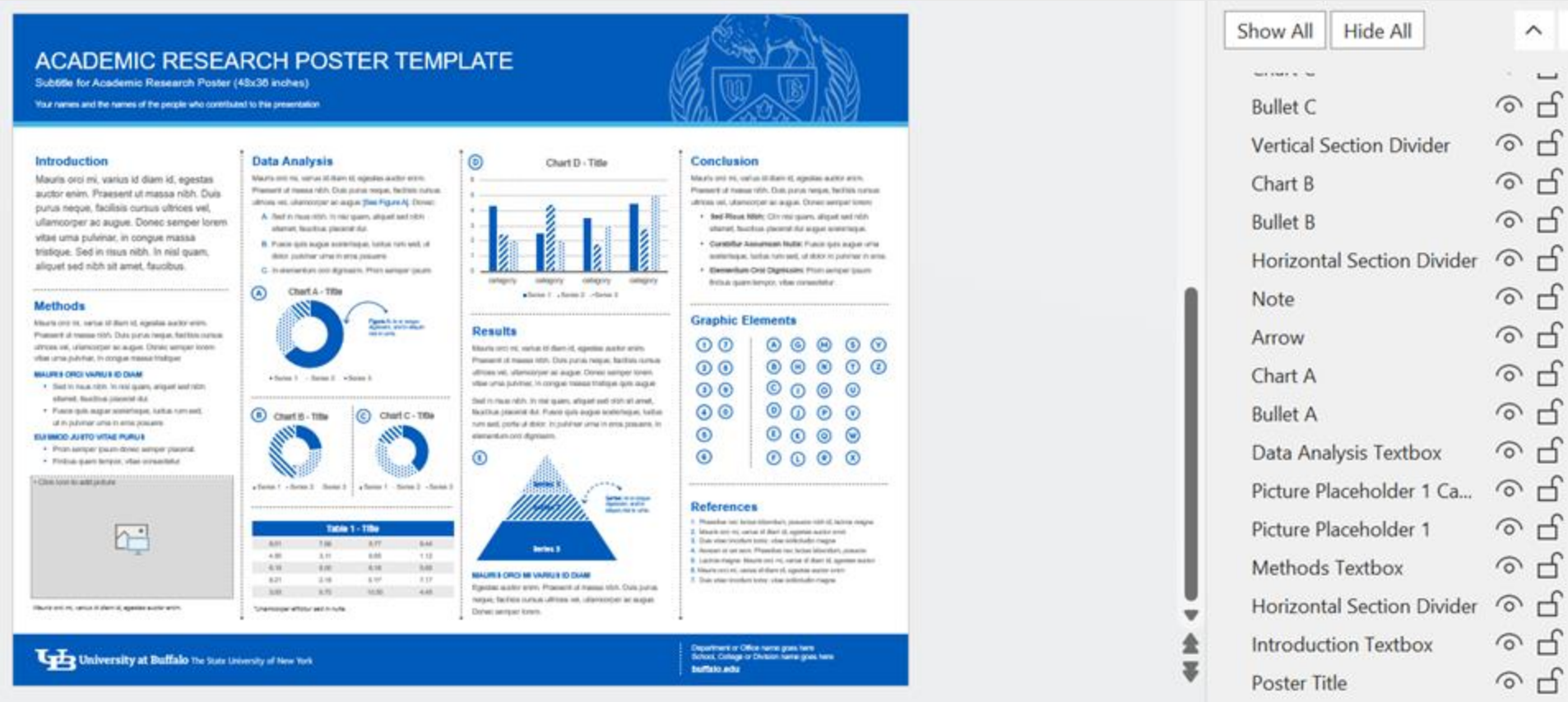
Bernheis, B. (2020, June 13). My Disability Is Dynamic. Medium. https://medium.com/age-of-awareness/my-disability-is-dynamic-bc2a619f4c1.
Kattari, S. K. (2020). Ableist microaggressions and the mental health of disabled adults. Community mental health journal, 56(6), 1170-1179.
Olkin, R., Hayward, H. S., Abbene, M. S., & Vanhael, G. (2019). The experiences of microaggressions against women with visible and invisible disabilities. Journal of Social Issues, 75(3), 757-785.

Test your own documents by downloading NVDA for free

NV Access

Silence decorative objects!

Templates save time



University of Buffalo Poster Templates

Creating readable versions of posters

- Include a QR code on the poster, so people can download it
- Offer your poster in alternative formats online
  - PPT vs. PDF
  - HTML

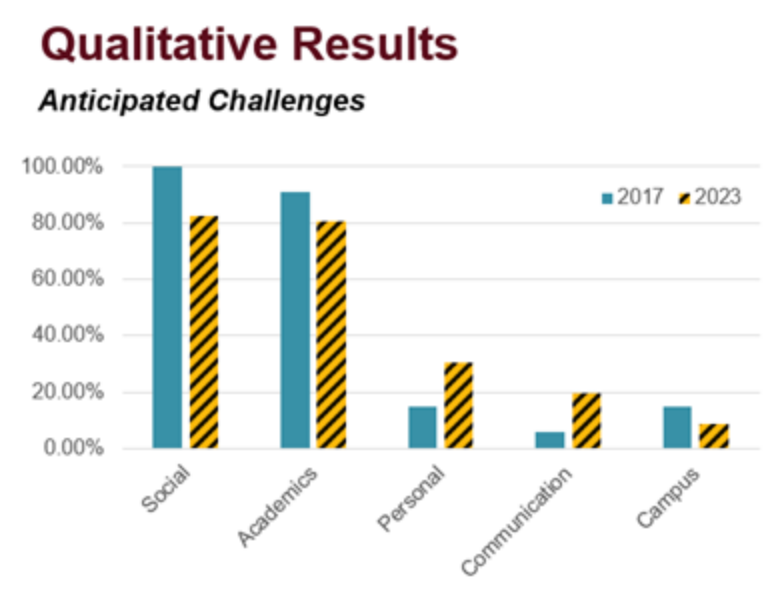
HTML version of poster

- Google doc template
- HTML website
- Use title, subtitle, headings, etc. for easy screen reader navigation
- Explain graphics in a way that makes sense when read aloud without the visual

Access the template

Reformat content

Printed poster



HTML poster

Theme	Percentage of participants 2017	Percentage of participants 2023
Social	100.00%	82.61%
Academics	90.85%	80.43%
Personal	14.79%	30.43%
Communication	5.63%	19.57%
Campus	14.79%	8.70%
Parents	1.41%	0.00%

So, this seems like a lot…

Audience Q&A

What are tangible/realistic ways neurodivergent researchers can advocate for being first-person author while not being taken advantage of?

- Find good mentors.
- Ask explicit questions about authorship at the start of a project.
- Lean on explicit guidelines around authorship (e.g., APA, your institution).