Inclusive Research Dissemination

A Toolkit for Reaching the Families Who Need It

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Introduction

Research findings can improve outcomes for children with disabilities and their families, but most research findings are communicated primarily to academic and clinical audiences through peer-reviewed publications and conference presentations. These traditional dissemination strategies are generally expensive and/or difficult to access and written in highly scientific, jargon heavy language that make them challenging to interpret even if families are able to access them (Brownson et al., 2018).

Together, this results in many families never receiving research in ways that are understandable, timely, or useful to them. This gap between research production and real-world dissemination to families limits the impact of scientific findings and perpetuates inequities in access to information and services (Neta et al., 2015).

Over the last several years, families and individuals have increasingly utilized digital and social media platforms as primary sources of health information, highlighting the critical need to disseminate accurate and timely health information directly to individuals rather than exclusively through academic channels (Chen & Wang, 2021). At the same time, the rapid growth of social media platforms has resulted in the widespread proliferation of health misinformation, which can negatively influence understanding, decision making, and trust in evidence based scientific research (Suarez-Lledo & Alvarez-Galvez, 2021; Wang et al., 2019).

This toolkit, Inclusive Research Dissemination: A Toolkit for Reaching the Families Who Need It, is designed to help researchers address these challenges by bridging the gap between evidence generation and real-world impact. It provides practical strategies to translate research into accessible, family-centered formats and to share findings through the digital and community-based platforms where families are already seeking information. It also emphasizes the importance of communicating accurate, evidence-based information to help counter the growing spread of misinformation in online spaces.

Core Principles

1. Context Matters – tailor information to culture, literacy, language, and setting.

2. Engagement Is Essential – involve families and community partners early and often.

3. Evaluation Is Critical – measure whether materials were understood and used.

Know Your Audience

Effective dissemination begins with understanding your audience. First consider who you are trying to reach and how that audience will best access, understand, and apply that information.

Consider:

- Language and literacy level
- Education
- Disability identity
- Cultural background
- Relationship (parent, caregiver, youth, clinician)
- Technology access
- Age
- Prior knowledge

Example Audience Types:

- Parents
- Adolescents and self-advocates
- Educators and school teams
- Healthcare providers
- Community Organizations
- Policy makers

Key Questions:

- Who needs this information?
- How do they access information?
- What barriers might limit access or understanding?

Dissemination Strategies

No single dissemination strategy will reach all audiences. Using multiple dissemination strategies increases the likelihood that information will reach diverse audiences, reinforce key messages across platforms, and improve the uptake of research findings in real-world settings (Brownson et al., 2018; Glasgow et al., 2012).

Scientific Dissemination Strategies:

- Peer-reviewed publications
- Research conferences
- Academic presentations

Community Based Dissemination Strategies:

- Newsletters
- Flyers
- Email listservs

- Social media
- Short videos
- Webinars
- School-based presentations

Key Questions:

- Where is my audience already accessing information?
- What formats (written, video, in-person) are most effective for this audience?
- How can I employ multiple strategies to reinforce key messages?
- What barriers might limit access to these strategies?

Plain Language

Plain language is the foundation of accessible research dissemination. Online health information is generally written at a level that exceeds the reading ability of the general public, limiting comprehension and usability (Daraz et al., 2018). Plain language improves understanding, supports decision making, and increases accessibility for non-scientific audiences (Muscat et al., 2021). Even when the audience is clearly defined and appropriate strategies are selected, dissemination is only effective when the information is delivered in clear, accessible plain language.

Do:

- Aim for a 6th grade reading level
- Use short sentences and everyday words
- Use active voice
- Break information into bullet points or sections
- Use clear, descriptive headings
- Highlight key takeaways and action steps
- Include examples to explain complex ideas

Don't:

- Assume your audience understands clinical terminology
- Rely on long, complex sentences
- Present information without clear takeaways

Key Questions:

- Would someone without a medical background understand this?
- Is the message clear within the first few sentences?
- What action would the reader be able to take after reading this?
- What barriers might prevent my audience from understanding this information?

Plain Language Resources

Readability Calculators

https://library-cuanschutz.libguides.com/PlainLanguage

Readability calculators estimate reading level of written materials and can be utilized to target an approximately 6th-8th grade reading level. These tools are best utilized iteratively on subsequent drafts of dissemination materials to increase readability and accessibility.

CDC Clear Communication Index

https://www.cdc.gov/ccindex/index.html

This research-based tool helps to evaluate materials for clarity and understanding. The CDC clear communication index focuses on a main, clear message, language, and relevance to the audience.

Plain Language Action and Information Network

https://digital.gov/guides/plain-language

The Plain Language Action and Information Network (PLAIN) has created a series of guides with practical strategies for disseminating health information to a broad audience. It emphasizes understanding for diverse audiences as well as structure and formatting.

NIH Plain Language Training Materials

https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison/clear-communication/plain-language-nih/plain-language-getting-started-or-brushing-up

The NIH Plain Language training materials consist of five training modules to improve readability and understanding in communications to non-scientific audiences. The modules contain guidance on planning, writing, visualizations, and revisions of written dissemination.

AI-Assisted Tools

AI platforms such as ChatGPT, Claude, and Copilot can be effective tools for the initial translation of technical content into plain language. Outputs should always be carefully reviewed and edited for accuracy, clarity, and appropriateness for the intended audience. When using AI tools, care must be taken to ensure no PHI or other protected data is compromised. Best practice is to disclose the use of AI in preparation of dissemination materials, including how it was used and steps taken to verify accuracy.

Data Visualization

Visualization of data improves comprehension and engagement with material in both scientific and non-scientific audiences but must be specifically designed for the target audience. Simplifying data visualizations such as charts, graphs, and figures can improve understanding, retention, and accessibility, particularly for individuals with mixed levels of health literacy (Caisip et al., 2025;

Galmarini et al., 2024). However, complicated and/or data-heavy visuals without clear explanation can lead to frustration, misunderstanding, and misinterpretation. Effective visualizations should simplify information, emphasize key messages, and be understandable to the target audience.

Do:

- Simplify graphs to highlight key message
- Use clear labels that minimize technical jargon
- Replace charts with icons where possible
- Use color intentionally (including for colorblindness)
- Include captions or explanations
- Include alternate text for accessibility for Screen Readers https://accessibility.huit.harvard.edu/describe-content-images

Don't:

- Include multiple messages in one visual
- Use statistics-heavy graphs (i.e. Odds Ratios, Risk Ratios)
- Assume visuals are self-explanatory

Key Questions:

- What is the main message of this visual?
- Can this be understood without prior knowledge?
- Is this accessible to all audiences, including those with different abilities or needs?

Actionable Takeaways

While dissemination to scientific audiences often emphasizes caution to avoid overinterpretation of findings, communicating directly to individuals and families requires clearly connecting findings to meaningful, actionable takeaways. Individuals are more likely to understand, trust, and implement health information when it is paired with clear, actionable guidance (Muscat et al., 2021; Rowlands et al., 2017). This may mean collaborating with clinicians, community organizations, and families to better understand needs and resources available.

Do:

- Clearly state 1-3 key takeaways
- Pair each key finding with practical next step/resources
- Provide specific, realistic action steps (i.e. "ask your doctor", "request an evaluation")
- Use "if… then…" statements to clarify decision branches
- Include links or references to trusted resources

Don't

- Present information without clear, actionable takeaways
- Provide vague or generalized recommendations

- Include resources that have not been verified as credible
- Present findings as medical advice if you are not qualified to do so

Key Questions

- How can families or individuals use this information?
- Are the next steps clear, specific, and realistic?
- Are the resources I am sharing trustworthy, current, and relevant?
- What barriers might prevent someone from acting on this information?

Evaluation

Effective and inclusive dissemination is an ongoing process that requires careful review, feedback, and refinement. Health communication and implementation science work emphasizes that testing materials among the intended audience before broad distribution improves understanding and usability (Glasgow et al., 2012; Muscat et al., 2021). Incorporating input and feedback from families and community members early and often helps to ensure that materials are readable, understandable, and accessible.

Do:

- Share early drafts with a small group of trusted interested parties
- Revise based on feedback before dissemination
- Update outdated materials regularly
- Solicit feedback from individuals with diverse backgrounds and experiences

Don't:

- Rely solely on feedback from other researchers
- Treat dissemination as a one-time event
- Assume materials are clear without human feedback

Key Questions

- Has this been reviewed by the intended audience?
- Has provided feedback been considered and incorporated?
- Are there barriers that limit understanding or use?

Grants and Proposals

Increasingly, a dissemination plan beyond traditional peer-reviewed manuscripts and academic conference presentations is expected by funders at the federal, state, and philanthropic levels. In addition to ensuring findings reach and benefit the intended audience, a strong dissemination plan can improve grant scores and demonstrate commitment to real-world impact and stakeholder engagement (Brownson et al., 2018; Neta et al., 2015). Incorporating dissemination strategies in proposals and grants allows researchers to align with funder priorities and increases

accountability, increasing the likelihood that findings will accessible, timely, and usable to the intended audience.

Example:

The project team will develop plain language summaries to accompany each manuscript generated from the proposed study. These summaries will be designed to translate key findings into accessible, family-centered language for non-scientific audiences. To ensure clarity and usability, all materials will be developed using the National Institutes of Health plain language guidelines and will target a reading level appropriate for a general audience. Summaries will be further evaluated and refined using the Centers for Disease Control and Prevention Clear Communication Index to assess clarity, main message, and audience relevance. Final materials will be disseminated through project websites and in partnership with autism advocacy and community organizations, including JFK Partners and The Arc of Colorado, to maximize accessibility, reach, and real-world impact.

Do:

- Clearly define target audience
- Include multiple dissemination strategies
- Incorporate plain language and accessibility
- Identify partners to support dissemination (i.e. schools, clinics, advocacy groups)
- Allocate funding to support dissemination, including compensation for partners
- Align dissemination strategies with priorities of the funding organization

Don't:

- Limit dissemination to manuscripts and conferences
- Wait until the project is complete to plan
- Describe dissemination in vague or general terms
- Propose dissemination activities that are unrealistic or overly ambitious

Key Questions:

- Who will benefit from this research and how will they access it?
- What strategies will be used to reach different audiences?
- What partnerships will be used to support dissemination?

Conclusion

Inclusive dissemination is a critical component of ethical and impactful research. Generating evidence alone is not sufficient—research must be intentionally translated and shared in ways that are accessible, understandable, and relevant to the individuals and families it is intended to serve.

This toolkit outlines practical strategies for improving dissemination, including understanding the audience, selecting appropriate strategies, using plain language, designing accessible visuals, and

incorporating actionable takeaways. It also emphasizes the importance of feedback, iteration, and early planning to ensure dissemination efforts are effective.

By prioritizing dissemination to a broader audience and real-world impacts, investigators can begin to bridge the information gap between academic audiences and the communities and families who stand to benefit from research. When implemented appropriately, inclusive dissemination empowers families and individuals to make scientifically-supported decisions and combats misinformation. Investigators must move beyond academic and clinical audiences and actively ensure that research findings are accessible, meaningful, and usable to the individuals, families, and communities who need it most.

Disclaimer

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Appendix

Implementation Checklist

□ Identify target audience

□ Select 1–3 dissemination channels

□ Rewrite in plain language

□ Add visuals and accessibility features

□ Incorporate actionable takeaways and resources

□ Pilot test with intended audience

□ Revise based on feedback

□ Launch and share

Written Dissemination Example

Original Abstract—Reading Level 17.3

Objective: Early treatment of autism spectrum disorder (ASD) can improve developmental outcomes. Children with ASD from minority families often receive services later. We explored factors related to child's age at time of mother's first concerns about child's development and subsequent time to service initiation among children with ASD. Methods: Analysis included 759 preschool-age children classified with ASD based on comprehensive evaluations. Factors associated with retrospectively reported child age at time of first maternal concern and subsequent time to service initiation were investigated using multiple linear regression and Cox proportional hazards. Results: Earlier maternal concern was associated with multiparity, ‡1 child chronic condition, externalizing behaviors, and younger gestational age, but not race/ethnicity. Time to service initiation was longer for children of non-Latino Black or other than Black or White race and higher developmental level and shorter for children with ‡1 chronic condition and older child age at first maternal concern. Conclusion: Parity, gestational age, and child health and behavior were associated with child age at first maternal concern. Knowledge of child development in multiparous mothers may allow them to recognize potential concerns earlier, suggesting that first time parents may benefit from enhanced education about normal development. Race/ethnicity was not associated with child's age when mothers recognized potential developmental problems; hence, it is unlikely that awareness of ASD symptoms causes racial/ethnic disparities in initiation of services. Delays in time to service initiation among children from racial/ethnic minority groups highlight the need to improve their access to services as soon as developmental concerns are recognized.

Original Abstract—Bolded words flagged by ChatGPT as potentially challenging for readers

Objective: Early treatment of autism spectrum disorder (ASD) can improve **developmental outcomes**. Children with ASD from **minority families** often receive services later. We explored factors related to child's age at time of mother's first concerns about child's development and subsequent time to **service initiation** among children with ASD. Methods: Analysis included 759 preschool-age children classified with ASD based on **comprehensive evaluations**. Factors associated with **retrospectively reported** child age at time of first maternal concern and **subsequent time to service initiation** were investigated using **multiple linear regression and Cox proportional hazards**. Results: Earlier maternal concern was associated with **multiparity, ‡1 child chronic condition**, **externalizing behaviors**, and younger **gestational age**, but not race/ethnicity. Time to service initiation was longer for children of **non-Latino Black or other than Black or White race** and higher **developmental level** and shorter for children with **‡1 chronic condition** and older child age at first maternal concern. Conclusion: **Parity, gestational age**, and child health and behavior were associated with child age at first maternal concern. Knowledge of child development in **multiparous** mothers may allow them to recognize potential concerns earlier, suggesting that first time parents may benefit from **enhanced education about normal development**. Race/ethnicity was not associated with child's age when mothers recognized potential developmental problems; hence, it is unlikely that awareness of **ASD symptoms causes**

racial/ethnic disparities in initiation of services. Delays in time to service initiation among children from racial/ethnic minority groups highlight the need to improve their **access to services** as soon as developmental concerns are recognized.

AI-assisted Rewrite— Reading Level 12.7

Getting help early for children with autism can improve how they learn and develop. However, children from minority families often start services later. This study looked at what affects how old children are when mothers first notice concerns and how long it takes to begin services. Methods: The study included 759 preschool children diagnosed with autism after detailed evaluations. Researchers examined which factors were linked to the age when mothers first had concerns and how long it took for children to start services. Results: Mothers noticed concerns earlier if they had more than one child, if the child had a long-term health condition, showed behavior challenges, or was born earlier in pregnancy. Race and ethnicity were not linked to when mothers first noticed concerns. Children who were Black, non-Latino, or from other racial groups started services later. Services also started later for children with stronger developmental skills and sooner for children with health conditions or whose mothers noticed concerns at older ages. Conclusion: Family experience, birth timing, and children's health and behavior were related to when mothers first noticed concerns. Mothers who already had children may recognize developmental issues sooner, suggesting first-time parents could benefit from more education about typical child development. Because race and ethnicity were not linked to when concerns were first noticed, differences in awareness are unlikely to explain why some groups start services later. The longer wait times for minority children show the need to improve access to services as soon as concerns arise.

Key Differences

- Early treatment of autism spectrum disorder (ASD) → getting help early for children with autism
- Developmental outcomes → how children learn and develop
- Service initiation → starting services
- Multiparity / multiparous → mothers who have more than one child
- Chronic condition → long-term health condition
- Externalizing behaviors → behavior challenges
- Gestational age → how early or late a child was born
- Retrospectively reported → reported after the fact / looking back
- Racial/ethnic disparities → differences between racial and ethnic groups
- Awareness of ASD symptoms → recognizing signs of autism

Final Dissemination Product—Reading Level 8.5

What is the goal of the study?

When children with autism get help early, it can really change how they grow and learn. It's best for children to get support as soon as possible. But not all children get help at the same time, this can depend on their race or ethnicity.

Our team studied 759 autistic children with between ages 2 and 5. We looked at when their moms first started to worry about their behavior, and when the children first got help. We wanted to see if race or ethnicity affected when moms became concerned and when children got support.

What did we find?

We found that moms were more likely to worry earlier if:

- They had another, older child
- Their child was born early (premature)
- Their child had behavior problems
- Their child had other health issues
- But race or ethnicity didn't make a difference in when moms first got concerned.

Then we looked at when children first got help. Children got help sooner if:

- They had more than one health condition
- They were older when their mom first got concerned

Children got help later if:

- They had stronger skills for their age
- They were Black (non-Latino) or a race other than Black or white

Why is this important?

This study shows that moms with older children might notice problems earlier because they have another child to compare to. Parents having their first child might need more help learning what is typical behavior and what's not. Even though parents of all races noticed concerns at about the same time, children of minority races took longer to get help. This could mean that not all families have the same access to care. We need to make sure all families can get the services they need—no matter their race or background.

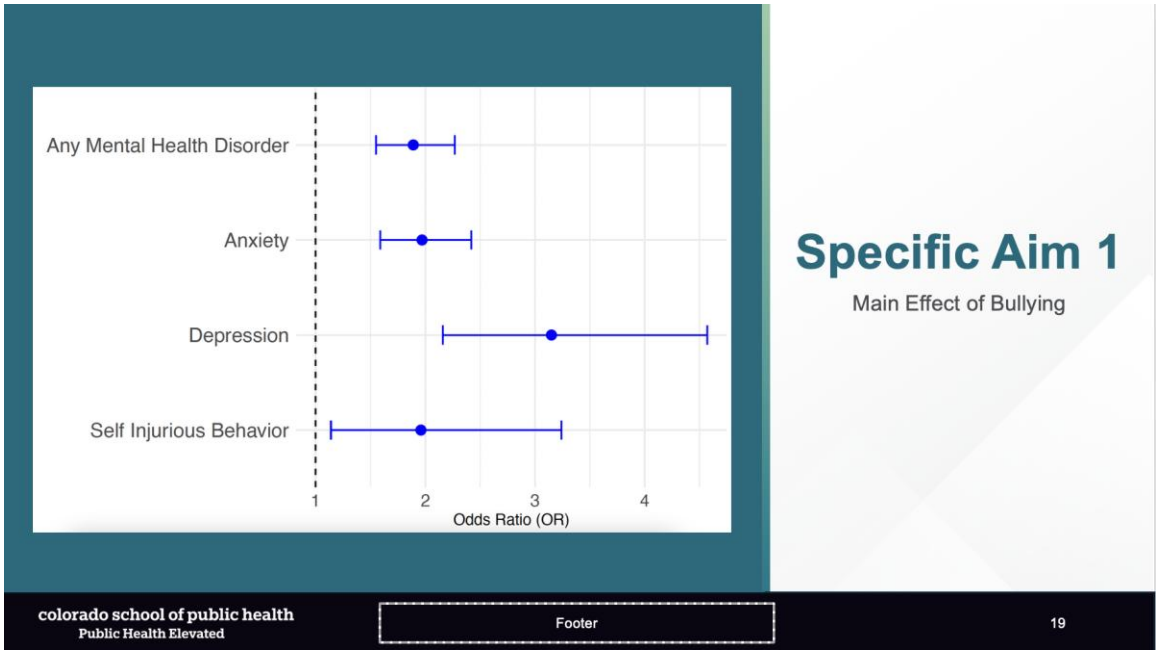
Key Differences

- Abstract structure → Q&A format with clear section headers
- Formal academic tone → conversational, reader-centered voice
- Neutral description of findings → more explanatory storytelling
- Paragraph-heavy results → bullet-point lists for clarity
- "Service initiation" language → everyday phrasing like "got help"
- Implicit implications → explicit explanation of why findings matter
- General population description → more concrete age framing (2–5 years)
- Passive reporting of associations → active explanations (e.g., comparing to older siblings)
- Research-focused framing → audience-focused framing (what parents should know)
- Descriptive conclusion → stronger takeaway and call to action

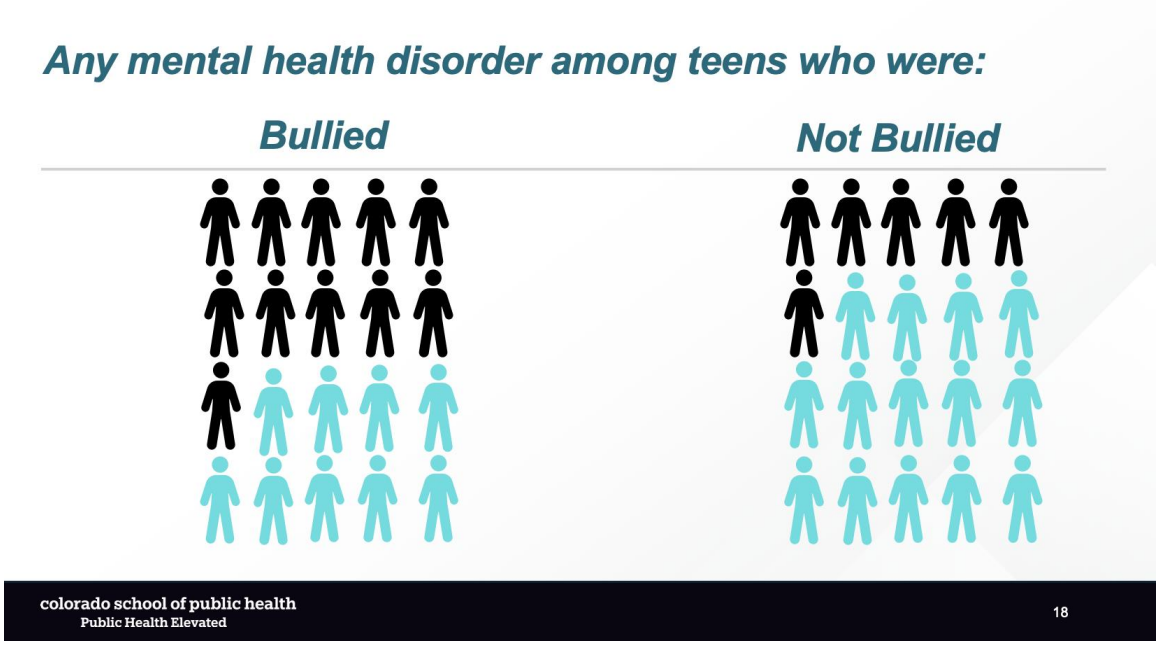
Oral Dissemination Example:

Tables and Figures

Academic Audience



Broad Audience



Academic Audience

	Any Mental Health Disorder			Depression			Self Injurious Behavior		
	OR	2.5%	97.5%	OR	2.5%	97.5%	OR	2.5%	97.5%
Intercept	0.37	0.30	0.47	0.06	0.04	0.08	0.06	0.04	0.09
Bullied	**3.20**	**2.04**	**5.06**	**3.96**	**2.28**	**6.92**	**2.15**	**1.09**	**4.06**
Female	1.30	0.91	1.85	**2.23**	**1.32**	**3.85**	1.21	0.65	2.22
Bullied*Female	0.86	0.40	1.87	0.70	0.33	1.47	0.79	0.25	2.28

Specific Aim 2a: Effect Modification by Sex

colorado school of public health
Public Health Elevated

Footer

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Broad Audience

Is the risk of mental health disorders different for girls who are bullied than boys?

Mental Health Outcome	Difference?
Any	No
Anxiety	No
Depression	No
Self-injurious behavior	No

colorado school of public health
Public Health Elevated

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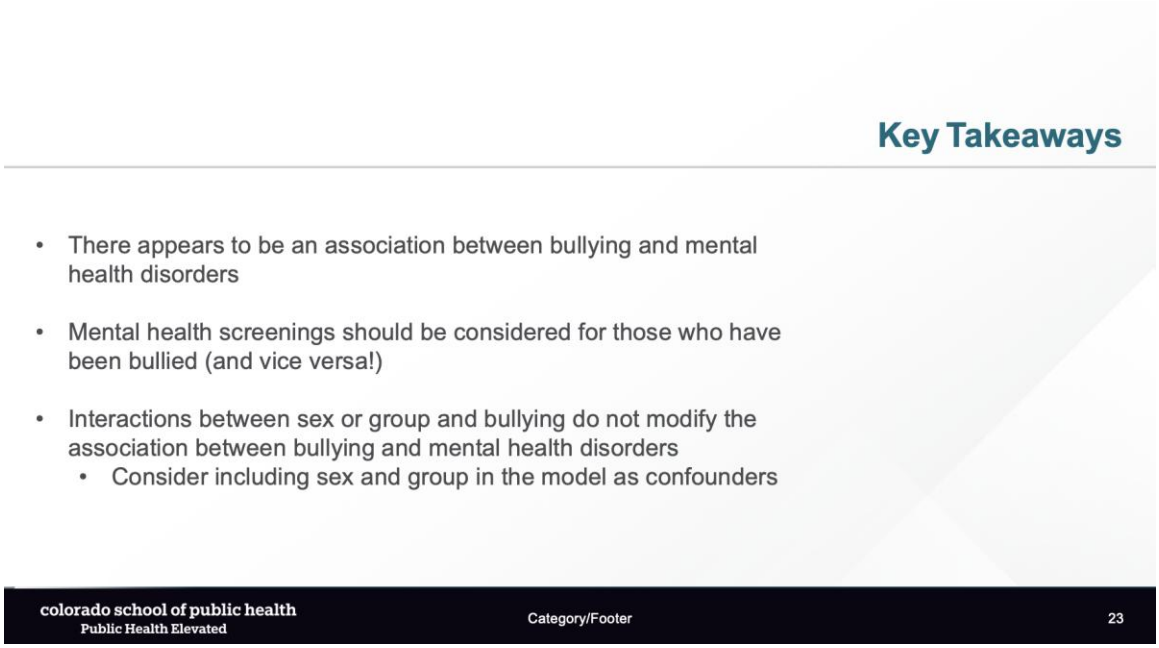
Key Changes

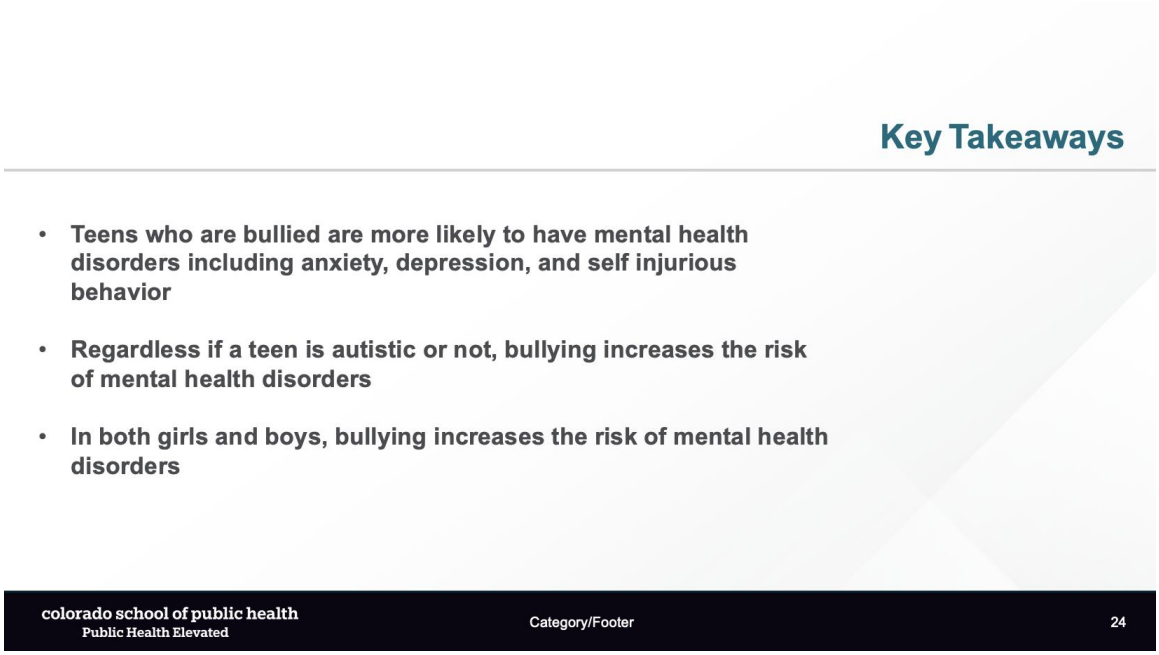
- Dense analytic slides → Simplified results slides with guiding questions
- Odds ratio and statistical graphs → Visual infographics with icons

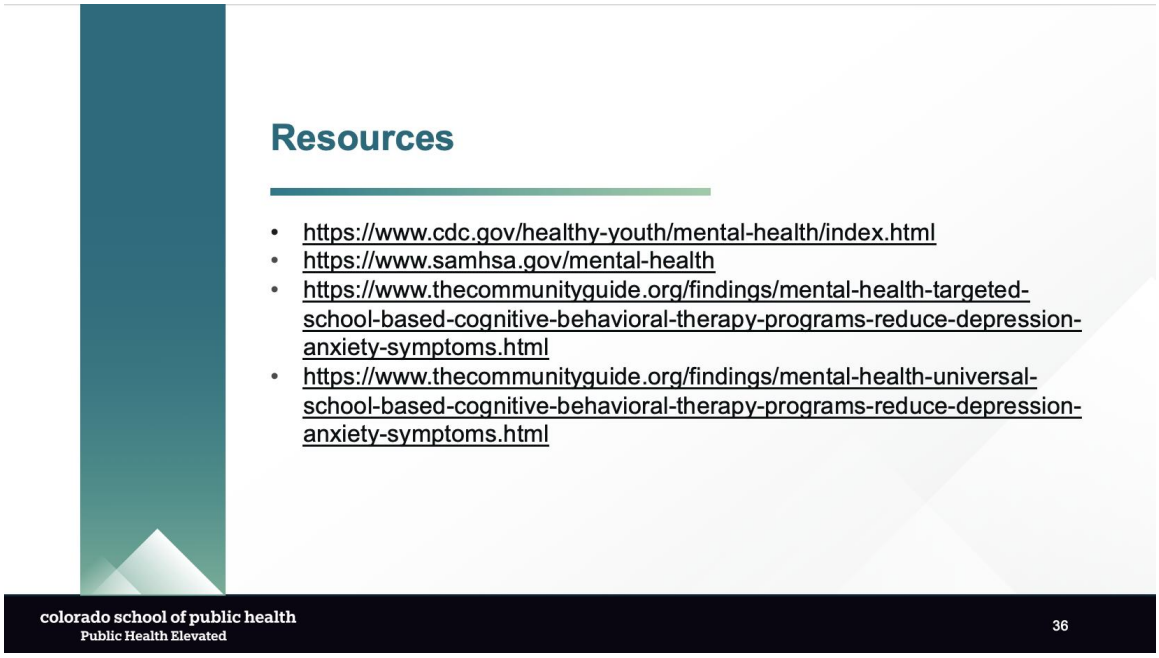
Conclusions

Academic Audience



Broad Audience





Key Changes

- Focus on associations → Focus on risk and real-world impact
- Study implications → Concrete school-based strategies and resources
- Research next steps → Action steps for teens, parents, and schools