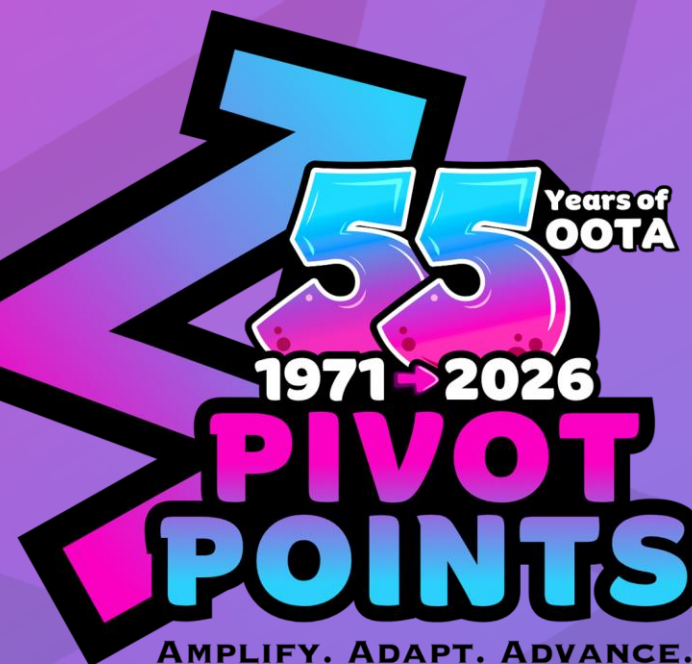


Not the Typical Profile: Sex Specific Differences in Social, Attention, and Sensory Traits in Autistic Children

Katarina Garibian OTR/L, Haley Colegrove, Spencer Mandel MSCR, Natalie Rock, Amisha Kejriwal, Riya Sahu, Cheyanne DeLong, Claire Horan, Alexander Cram M.S., Amy-Watson Grace OTR/L, Jewel Crasta PhD, OTR/L

Friday, October 16, 2026



ABOUT THE PRESENTERS



Amy Watson-Grace OTD,
OTR/L, BCP, PhD candidate



Katarina Garibian
OTD, OTR/L



LEARNING OBJECTIVES



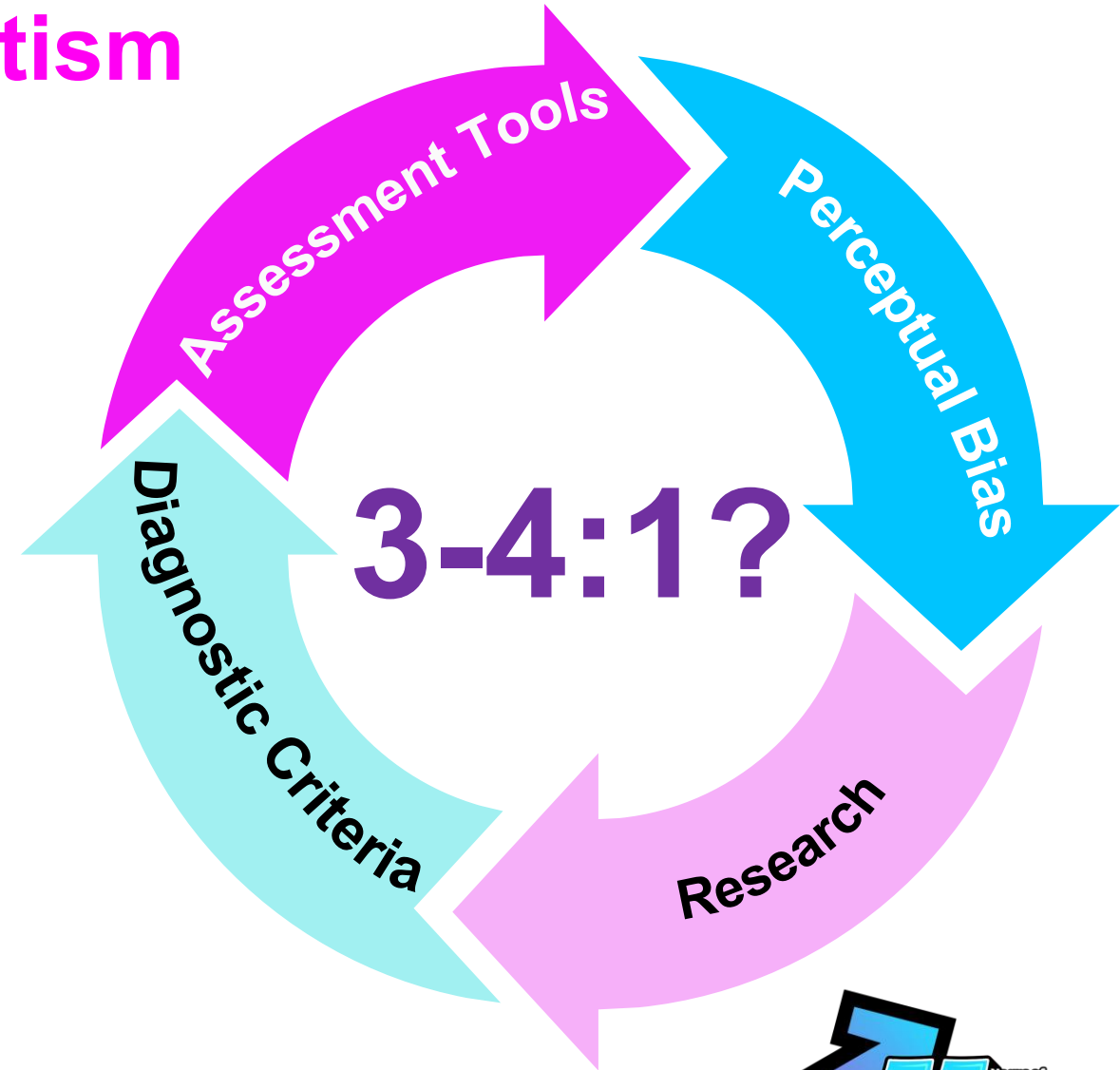
1. **Identify** sex-based differences in social functioning, attention, and sensory processing in children on the autism spectrum.
2. **Understand** the unique impact of camouflaging behaviors on the presentation of sensory, attention, and social profiles in autistic females.
3. **Discuss** how sex-differentiated phenotypes can impact client-based assessment and intervention planning in clinical practice.

Background

Male bias in autism and the under-identification of autistic females

Background: Male Bias in Autism

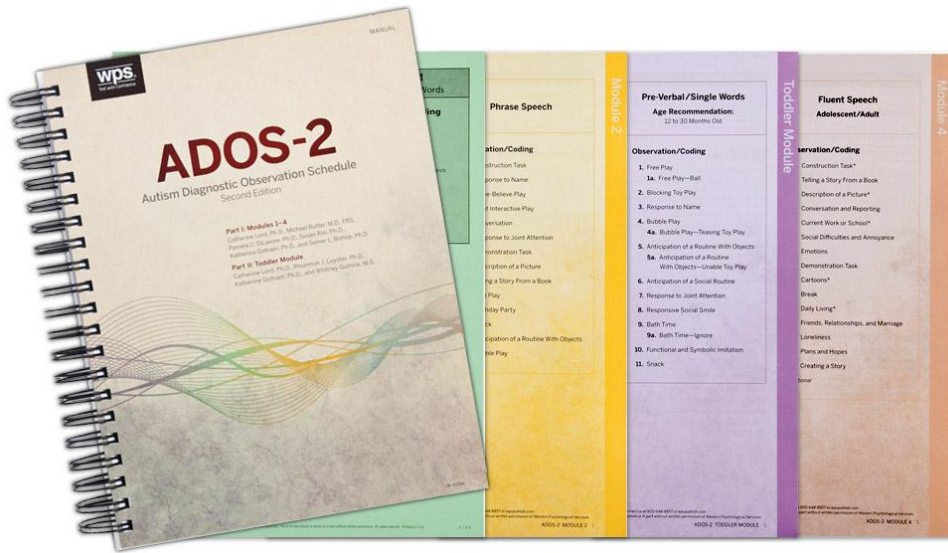
- Females disproportionately excluded from autism research
(D'Mello et al., 2022; Milner et al., 2019; Shefcyk, 2015)
 - 9:1 to 15:1 males:females reported for autism studies involving fMRI (Mo et al., 2021)
 - Confirmatory diagnostic procedures (ADOS-2) exclude clinically diagnosed females 2.5+ more times than males
(D'Mello et al., 2022)



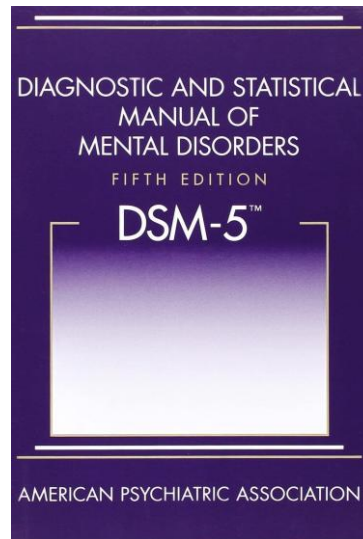
Background: Male Bias in Autism

- Diagnostic tools and criteria disproportionately based on males, less sensitive to females?

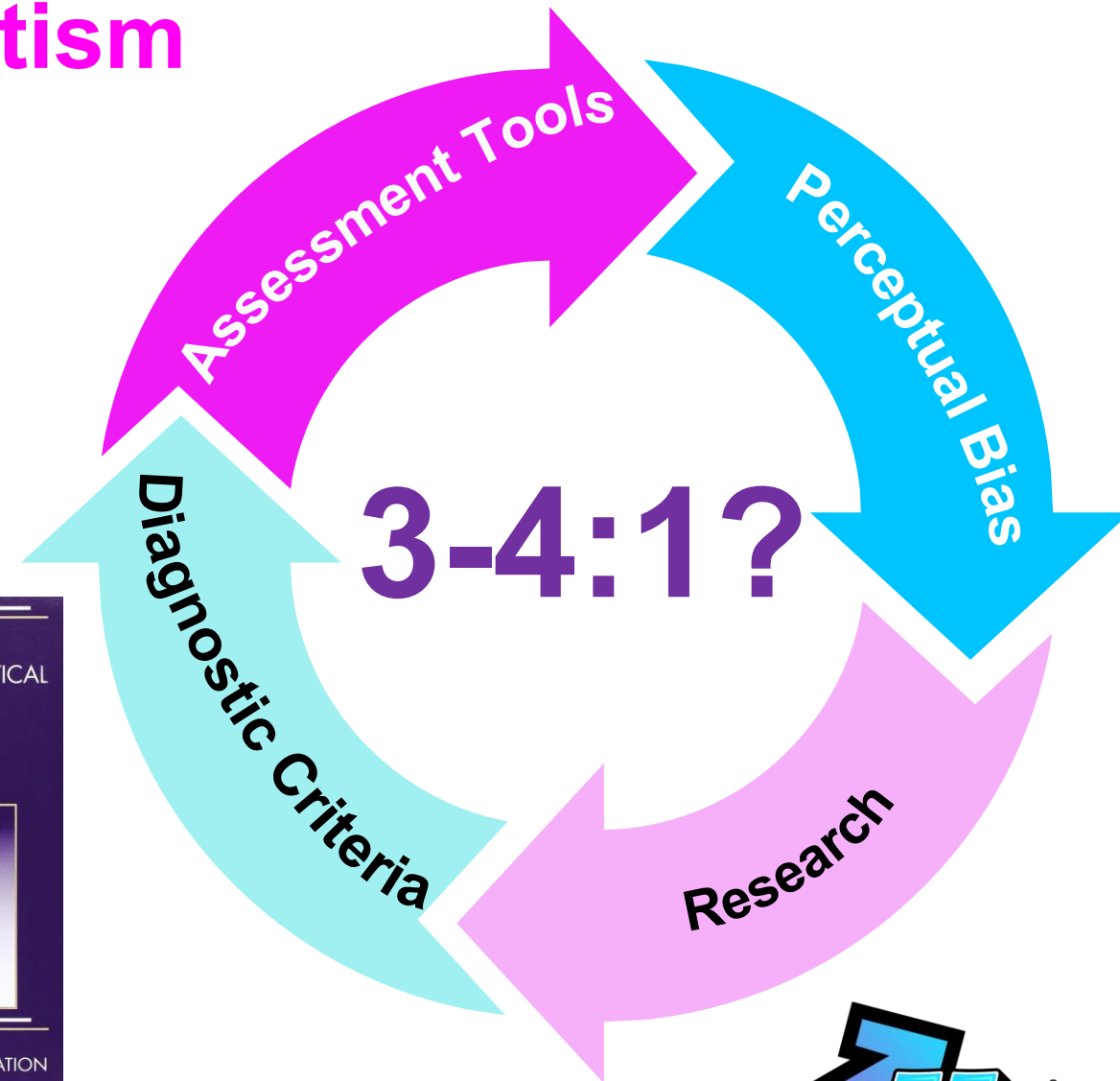
(D'Mello et al., 2022; Lockwood Estrin et al., 2021; Ratto et al., 2018; Rea et al., 2022)



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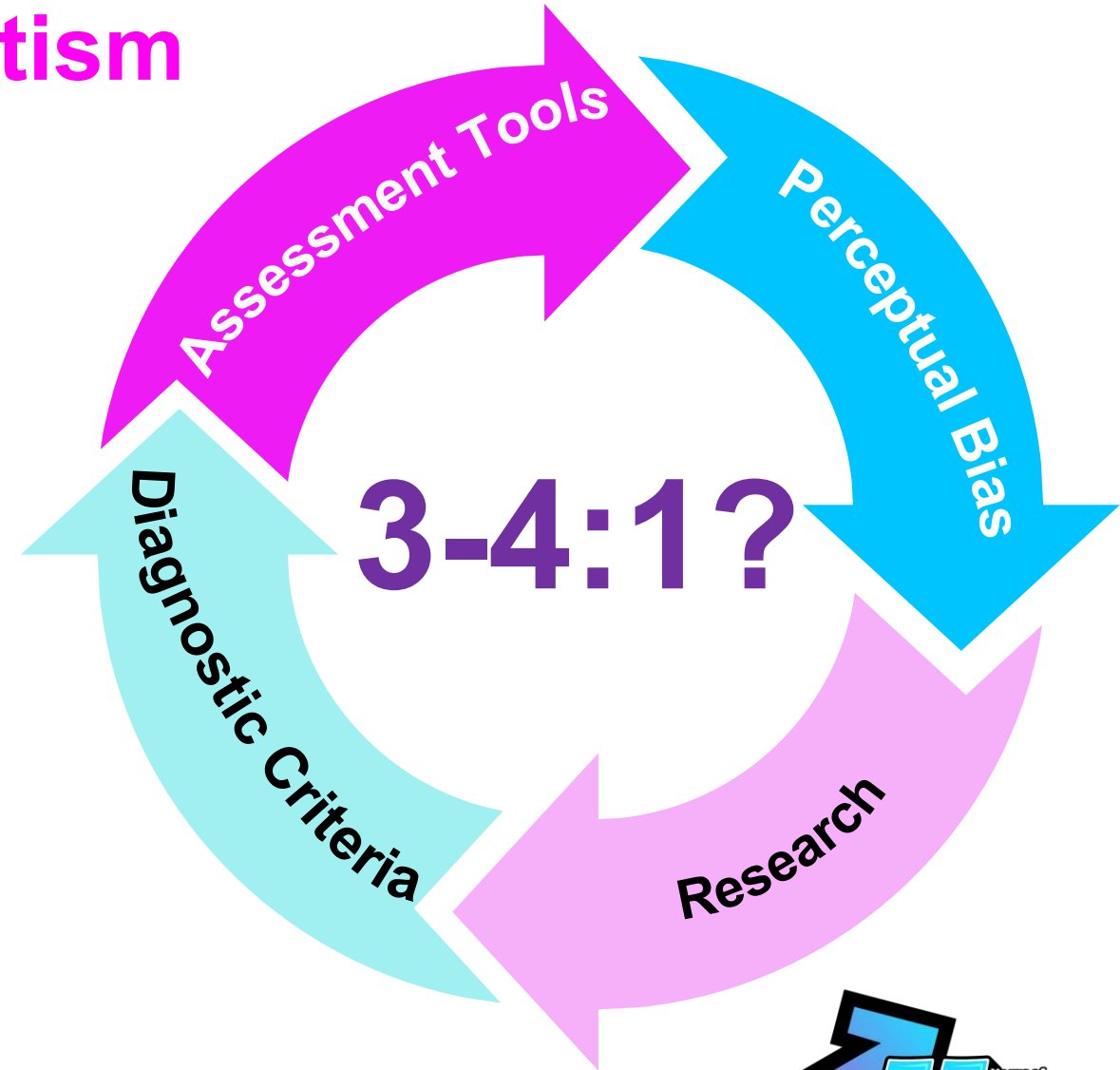


Background: Male Bias in Autism

- 3-4 males: 1 female is questionable

(Bitsika & Sharpley, 2019; Burrows et al., 2022; Duvekot et al., 2017; Hull et al., 2020; Lockwood Estrin et al., 2021; Mo et al., 2021; Tsirgiotis et al., 2022)

- Reported prevalence varies (by sample) 2:1 to 7:1 males:females (Bitsika & Sharpley, 2019)
- 1:1 sex ratio found in prospective sample after accounting for measurement bias (Burrows et al, 2022)



Background: Under-Identification of Autistic Females

- Females less likely to be diagnosed without co-occurring conditions, more likely to have “severe” core traits
(Dworzynski et al., 2012; Lockwood Estrin et al., 2021)
- Even when clinically diagnosed, autistic females less likely to be educationally identified (**educational inequity**)
(Barnard-Brak, 2019; Menezes et al., 2023)
- Parents: Perceptions of autism as a male condition and practitioner bias = barriers to autism diagnosis for daughters
(Cridland et al., 2014; Giarelli et al., 2010; Lockwood Estrin et al., 2021)

Background: Under-Identification of Autistic Females

- Autism stereotypes; no objective biomarkers; “subjective” diagnosis  increased risk for diagnostic bias
(**health inequity**)
(Burrows et al., 2022; D’Mello et al., 2022; Hull et al., 2020; Tsirgiotis et al., 2022; Whitlock et al., 2020; Wojciechowski et al., 2022; Young et al., 2018)
- Implicit bias acknowledged as potential contributor to female autism underidentification/misidentification, but **very few studies directly examine this claim**
(Brickhill et al., 2023; Lockwood Estrin et al., 2021; Tsirgiotis et al., 2022)

Why autism in females may be easier to overlook...

Male/female differences may be qualitative and subtle, rather than about quantity or intensity

Behavior & mental health

- Internalizing behaviors (e.g., anxiety, depression) more common in females
- Externalizing behaviors (e.g., hyperactivity) more common in boys

Restricted/repetitive behaviors

- Females may show fewer RRBs
- Female RRBs may be same quantity/intensity, but more socially oriented or acceptable
- RRBs can be clinically significant even when content seems typical

Social presentation

- OBSERVABLE social behavior may APPEAR typical in females
- Females tend to stay near peers, imitate social behaviors – obscures underlying difficulty

Sensory Processing

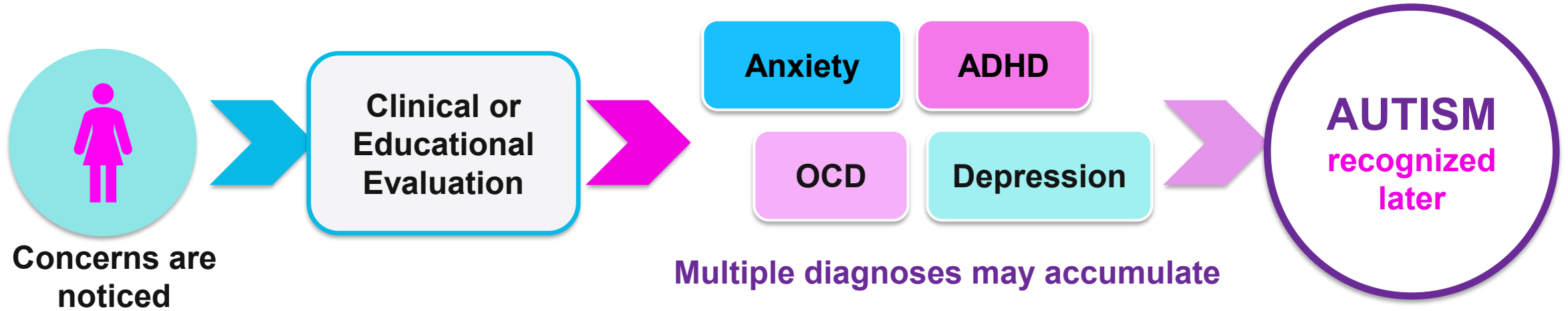
- Sensory processing differences reported in up to 95% of autistic children, but also associated with other conditions
- Some studies report more frequent, intense, lifelong sensory differences in females

Attention & visibility

- Males tend to exhibit more overt, noticeable, disruptive behaviors that draw adult attention and lead to referral
- Female behaviors less disruptive, often explained away as shy or quirky



Diagnostic pathway for autistic females often includes misidentification, delayed Identification



The “laundry list” of diagnoses may describe observed difficulties—but autism may offer a more **parsimonious explanation** for the overall pattern.

Why autism in females may be easier to overlook...

Camouflaging – strategies used to minimize visibility of autism characteristics and navigate social situations; exhausting and confusing

- Masking – suppressing or hiding autistic behaviors (e.g., stimming); forcing eye contact, facial expressions, etc.
- Compensation – learning and practicing explicit social rules; rehearsing conversations; using learned strategies to navigate the social world
- Assimilation – imitating peers' behaviors or interests to fit in; presenting a socially expected version of oneself



The impact of camouflaging in autistic females

Significant personal costs



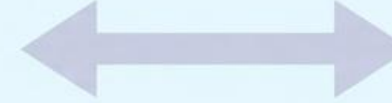
- Physically and mentally exhausting
- Altered sense of self and identity
- Increased anxiety, depression, and other internalizing symptoms

Different presentation across settings



Home

May feel less need to camouflage; more autistic traits may be visible



Social skills and behaviors can look very different depending on the environment.



School/Community

May increase camouflaging to fit in; may appear more neurotypical

More challenging to identify



- Camouflaging can obscure core autistic characteristics.
- Support needs may be underestimated or missed entirely.
- Highlights the importance of gathering information across multiple contexts (e.g., home, school, community).

Long-term risks



- Higher risk for ongoing social, educational, and occupational difficulties
- Increased rates of mental health challenges
- Delayed access to appropriate supports and services



Look beyond the surface and consider behavior across multiple contexts when evaluating autism in females.



Purpose

To examine sex differences in autism characteristics, sensory processing, and attention while comparing autistic and neurotypical children.



Methods

Cross-sectional study design

Participants



Children
between ages
8yrs. - 12yrs.



Autism ($n = 45$)
Neurotypical ($n = 58$)



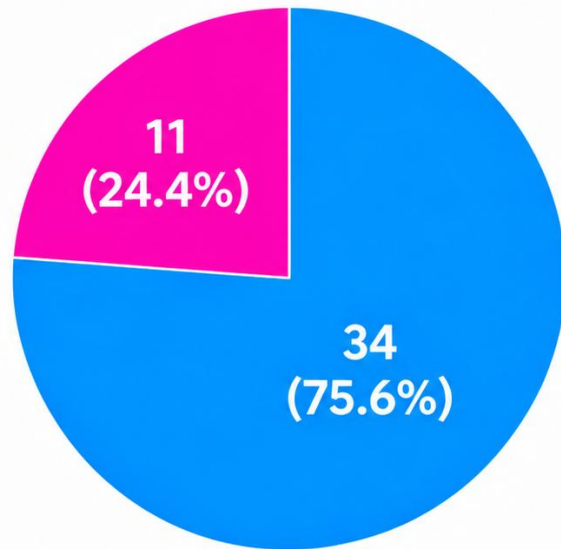
Verbal
Communication
 $IQ > 65$

Total sample ($N = 103$)

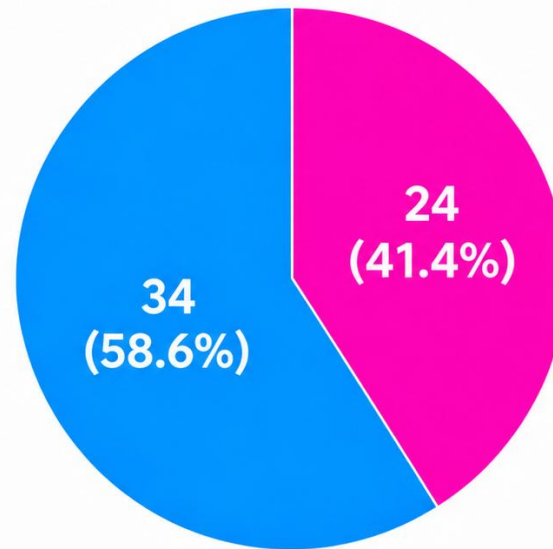
Demographics

Biological Sex

Autism (n = 45)

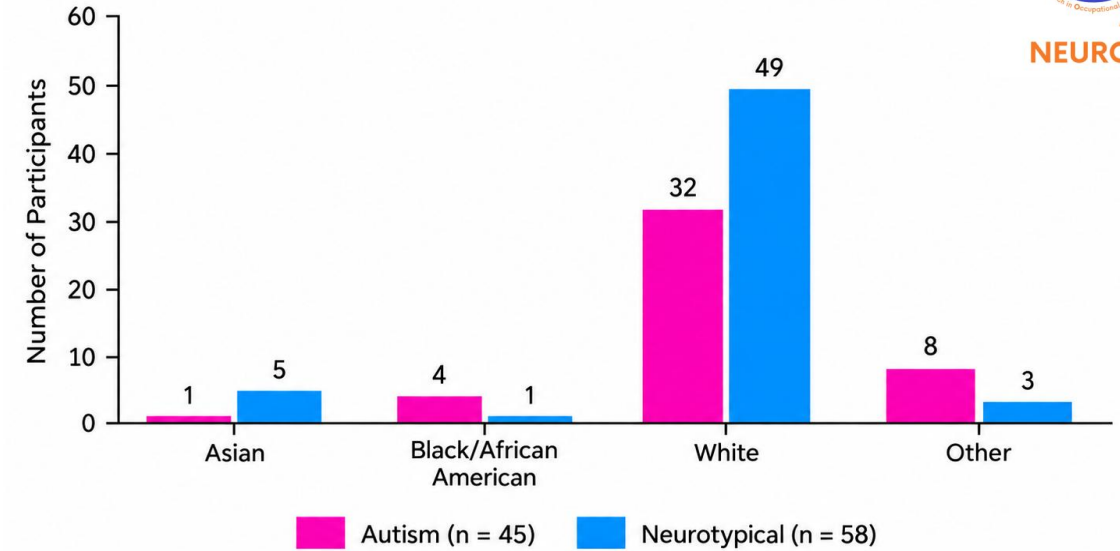


Neurotypical (n = 58)

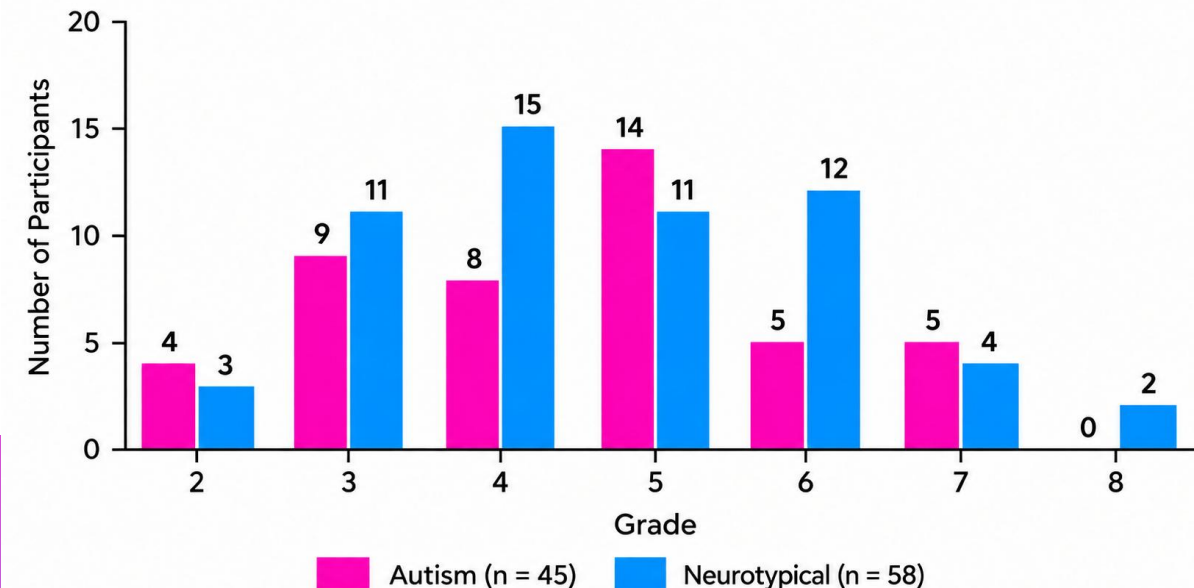


Boys Girls

Race



Education/Grade Level



Outcome Measures



Social Responsiveness
Scale (SRS) – 2nd Edition



Test of Everyday Attention
for Children (TEA-Ch) –
2nd edition



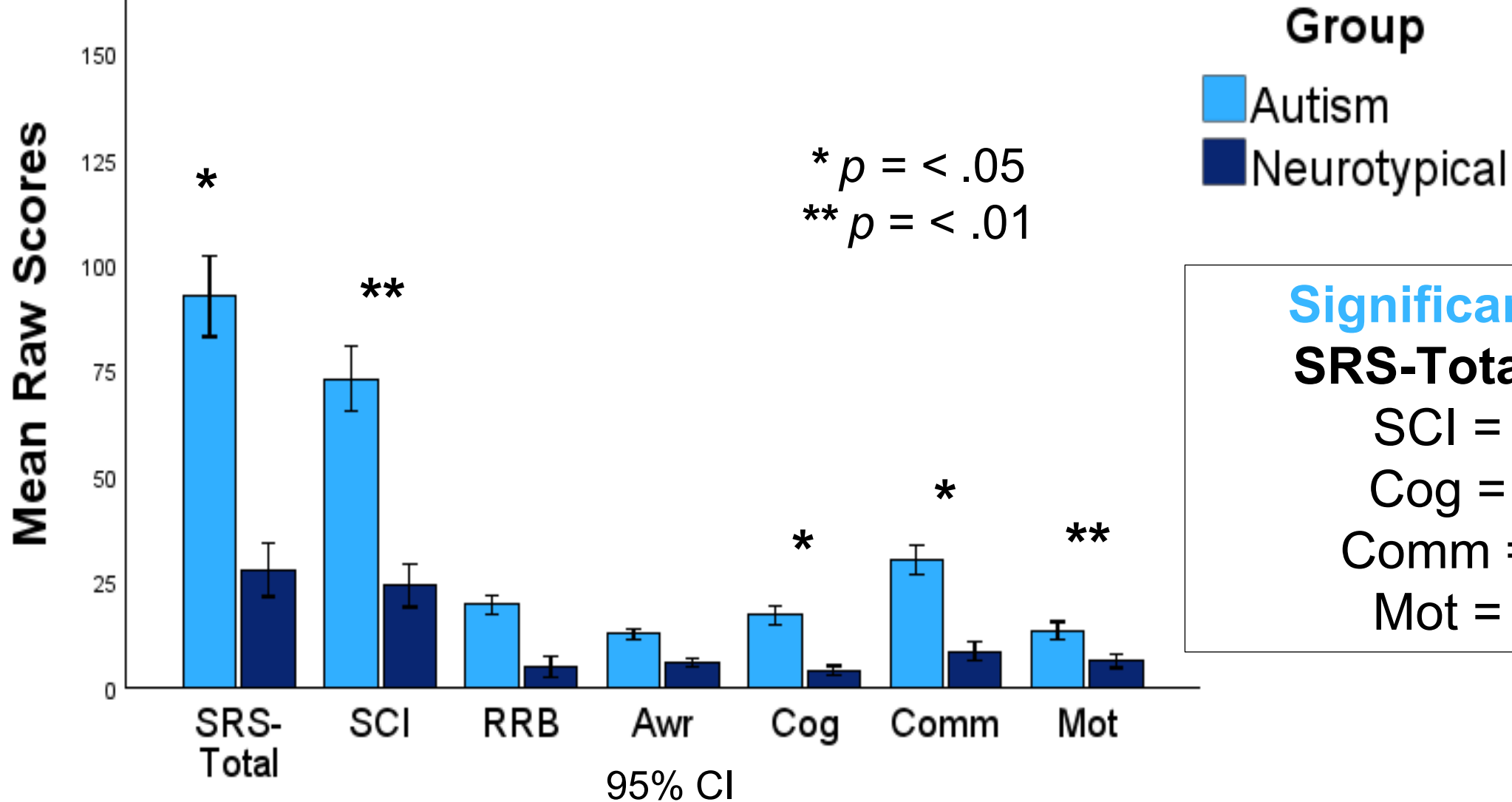
Child Sensory Profile
(SP) – 2nd Edition

Results

Group x Sex Comparisons of...

1. SRS-2 Raw scores
2. TEA-Ch 2 Raw Domain scores
3. SP-2 Raw Quadrant scores

SRS-2 Raw Scores – Boys (n = 68)



Significant Values

SRS-Total = 92.47

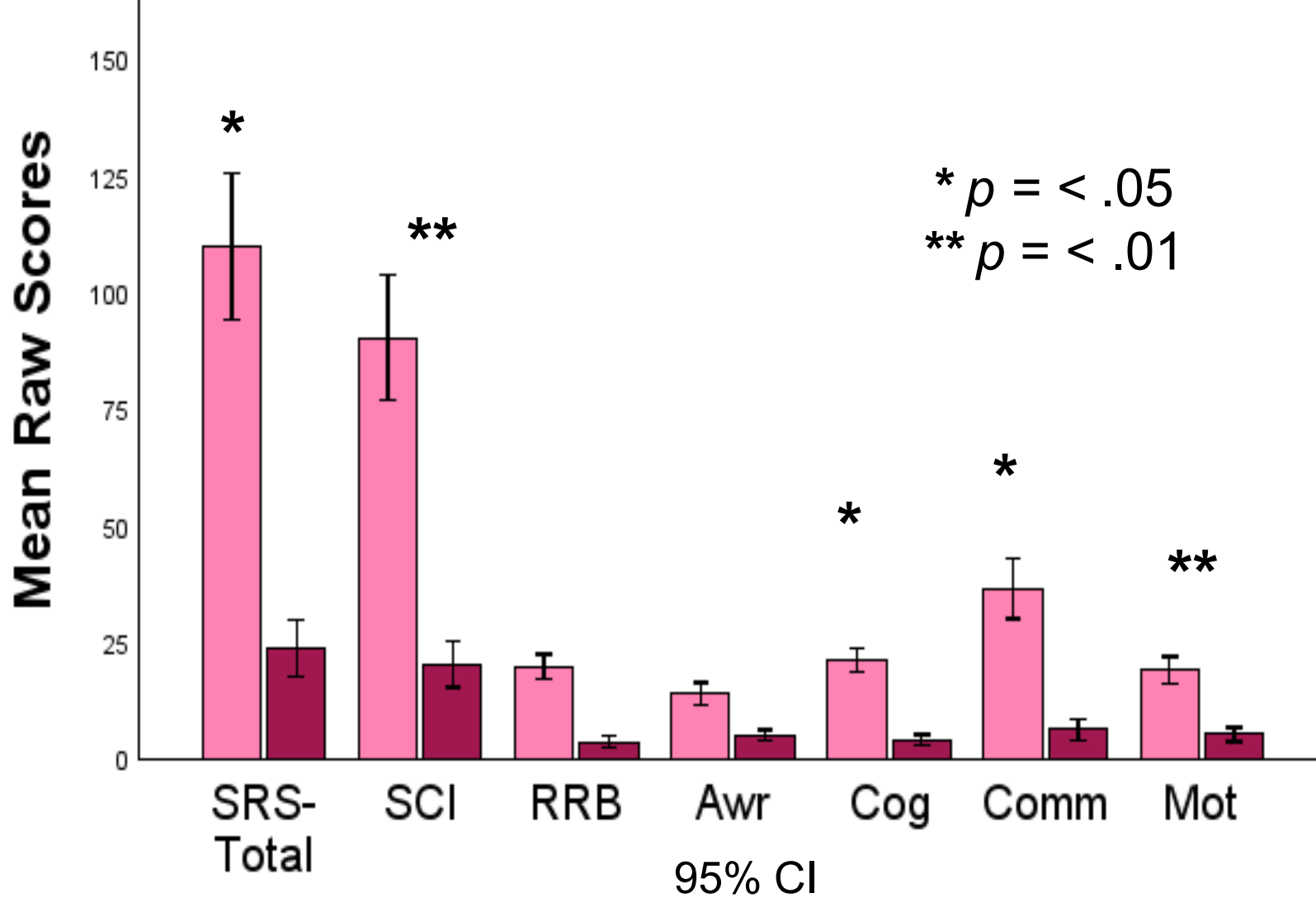
SCI = 72.94

Cog = 17.00

Comm = 30.12

Mot = 13.92

SRS-2 Raw Scores – Girls (n = 35)



INCREASED!

SRS-Total = 109.82

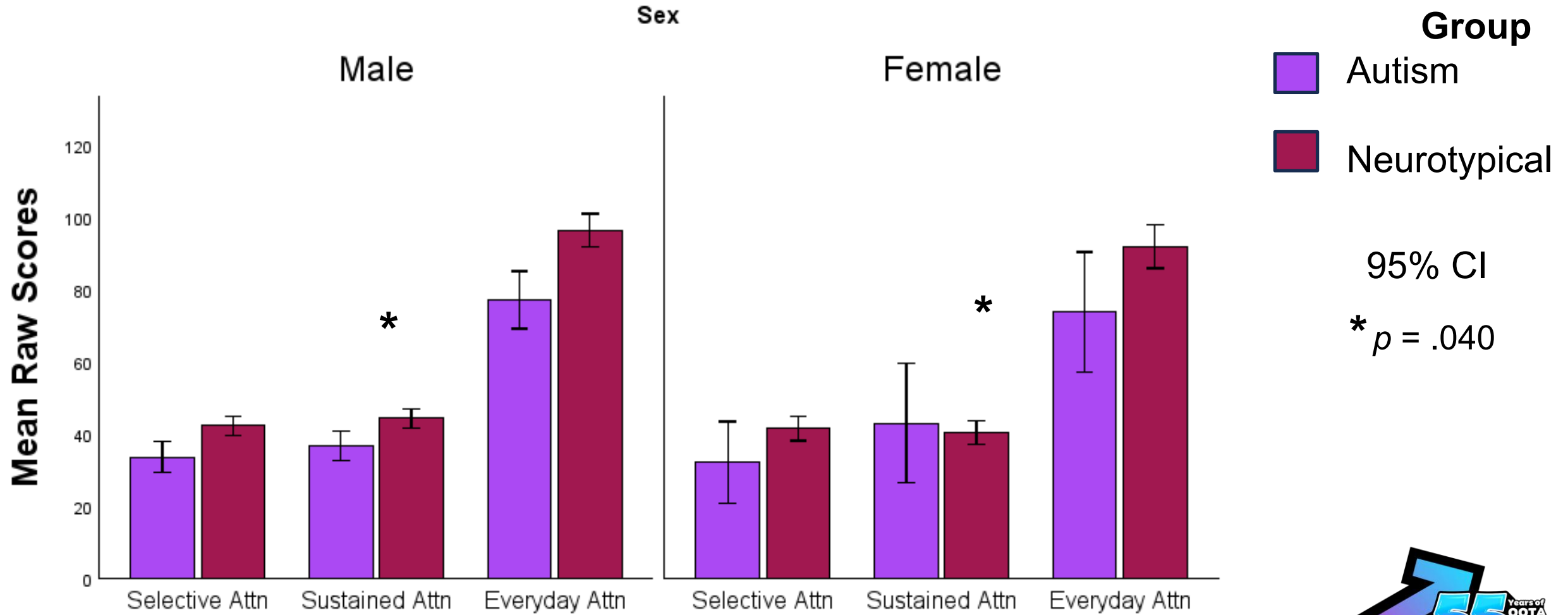
SCI = 90.18

Cog = 21.09

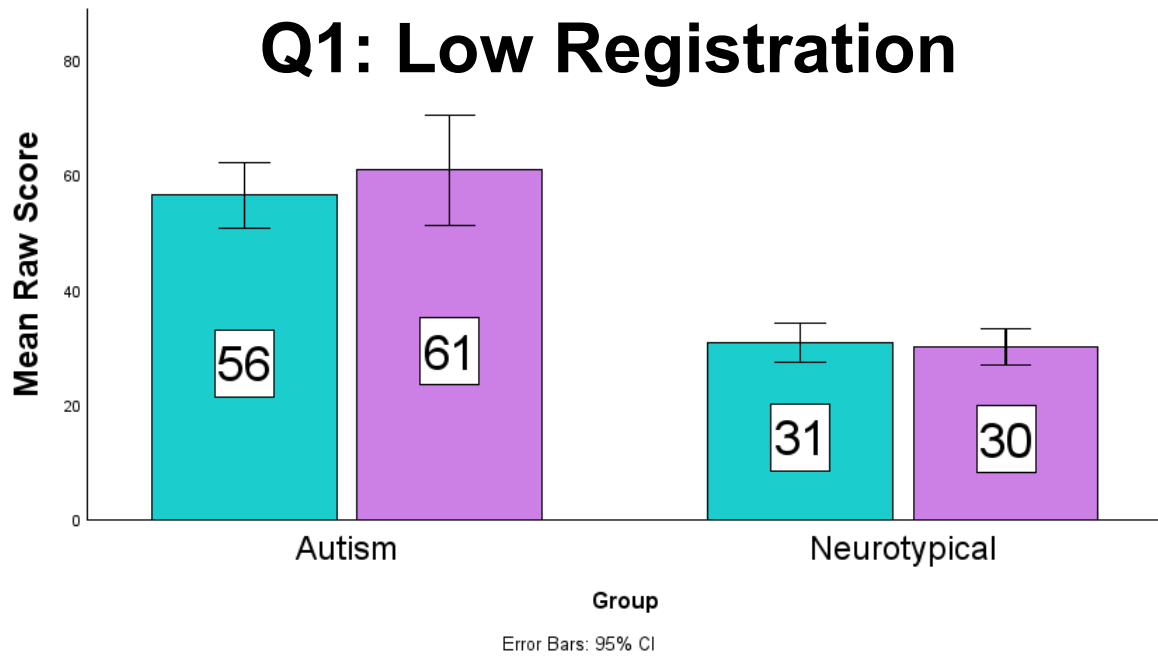
Comm = 36.45

Mot = 18.82

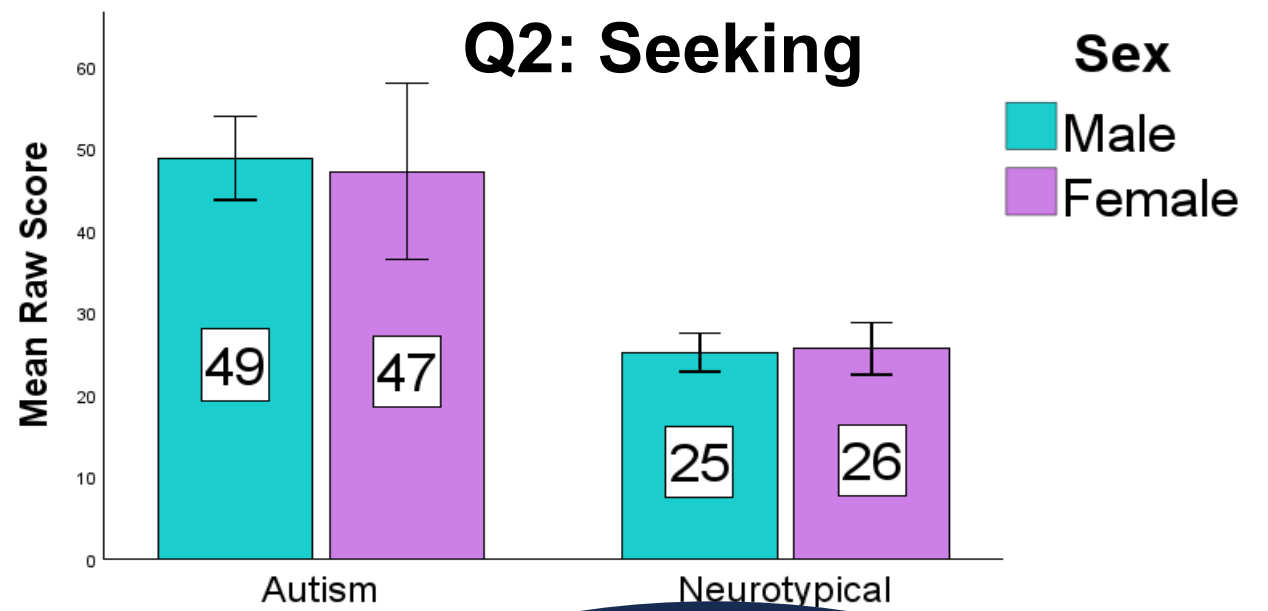
TEA-Ch2: Selective, Sustained, and Everyday Attention



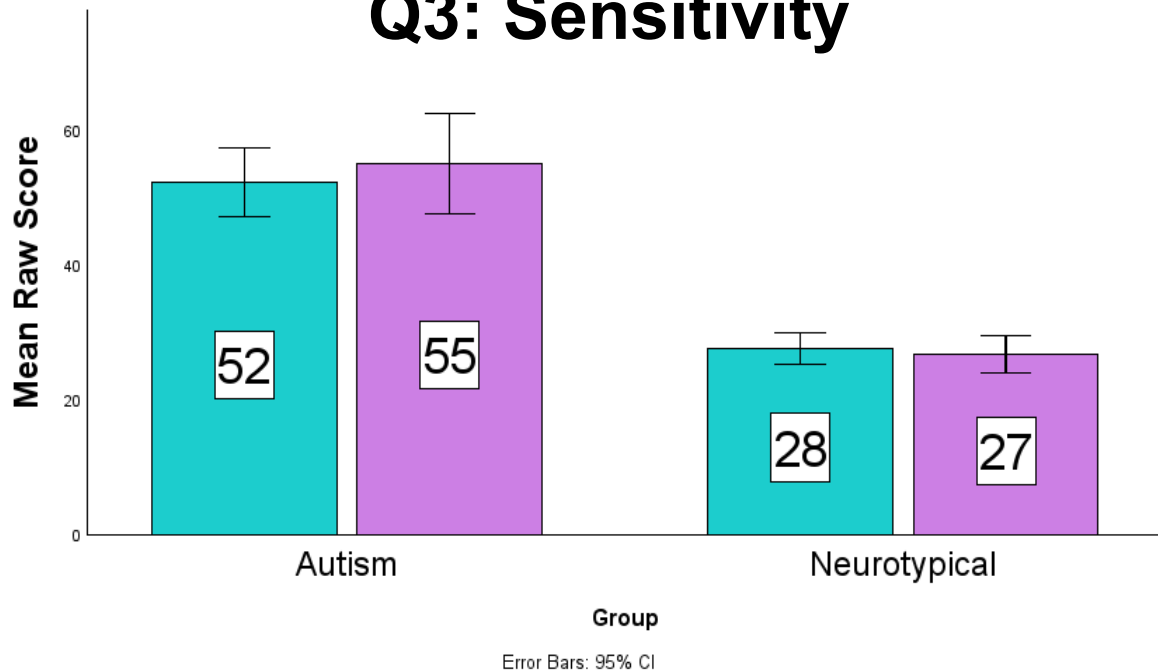
Q1: Low Registration



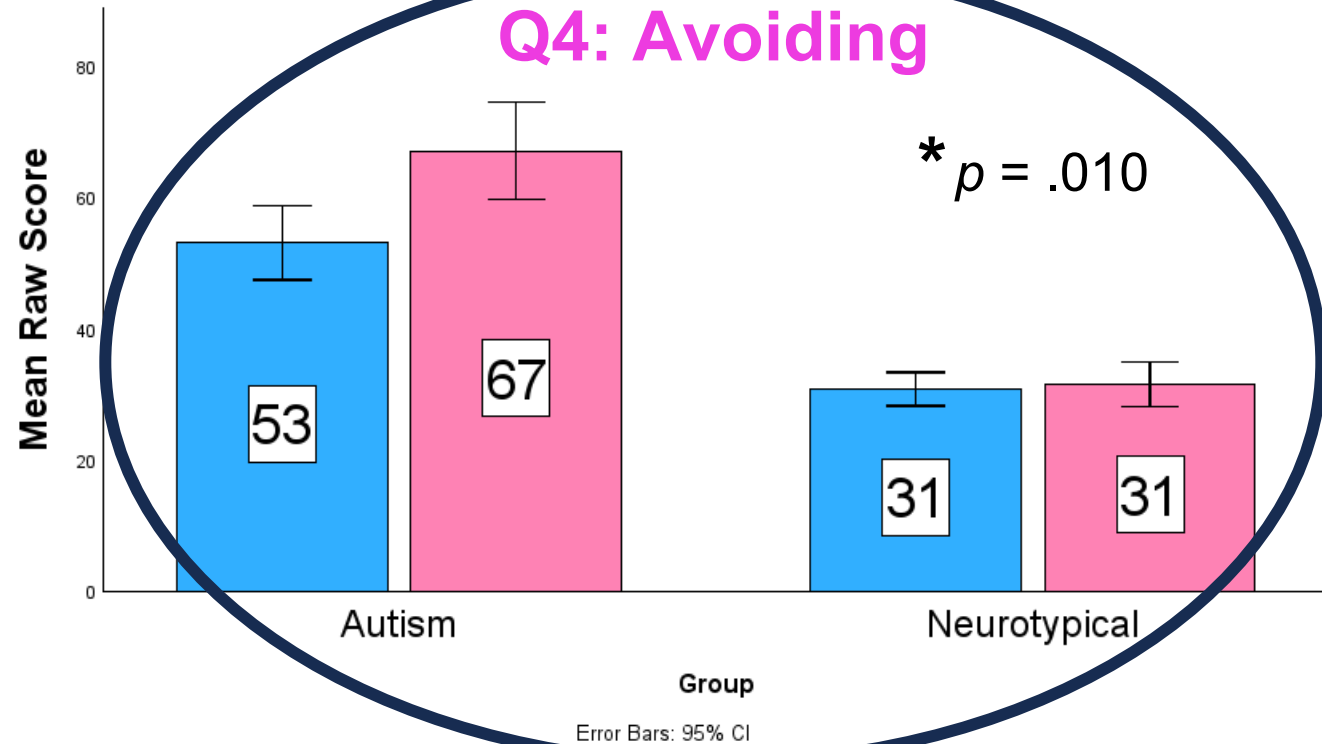
Q2: Seeking



Q3: Sensitivity



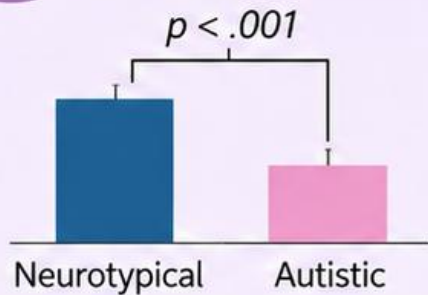
Q4: Avoiding



Research Summary



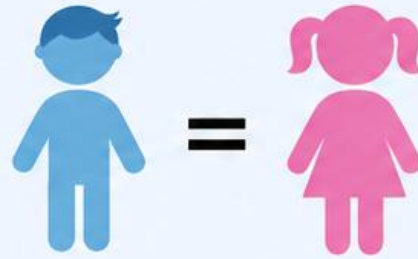
Group Effect



Autistic children showed greater **social responsiveness** and **sensory processing** differences; NT children performed better on **selective and everyday attention**.



Sex Effect



No consistent overall differences based on biological sex alone.



Group × Sex Interaction

Autistic girls demonstrated **greater social difficulties / autism characteristics** and **sensory avoidance** than autistic boys.

Social Responsiveness (SRS-2)

SRS Total

Social Communication / Interaction (SCI)

Social Communication

Social Cognition

Social Motivation

Sensory Processing

Avoiding

$p = .01$



Limitations & Strengths



Limitation

Smaller representation of autistic girls.



Strength

Age and sex matching improved comparability between groups.



Study Design

Cross-sectional design: Cannot determine causes or changes over time.

Clinical Implications for Occupational Therapy

What should OT practitioners do differently?



LOOK BEYOND THE “TYPICAL” AUTISM PROFILE

Greater social difficulty in autistic girls may coexist with subtler, internalized, or camouflaged presentation – gather data across contexts, look beyond the surface.

INTEGRATE THE WHOLE OCCUPATIONAL PROFILE

Attention challenges were similar across autistic boys and girls. Interpret attention, social participation, sensory responses, routines, and functional impact together.

MAKE SENSORY ASSESSMENT ROUTINE WHEN AUTISM IS SUSPECTED

Autistic girls showed greater sensory avoiding than autistic boys. A comprehensive OT evaluation should always examine sensory processing across contexts when autism is suspected.

OT TAKEAWAY: Sensory processing evaluations are needed to support accurate autism identification, especially in females.



Acknowledgements

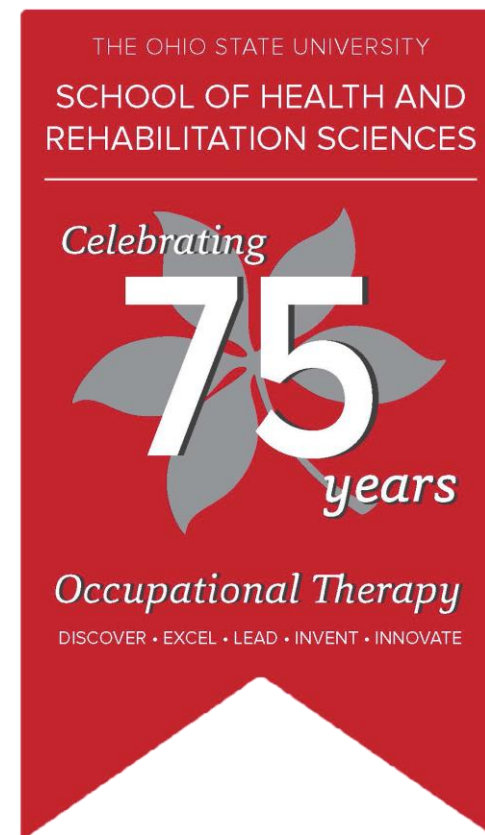


THE OHIO STATE UNIVERSITY

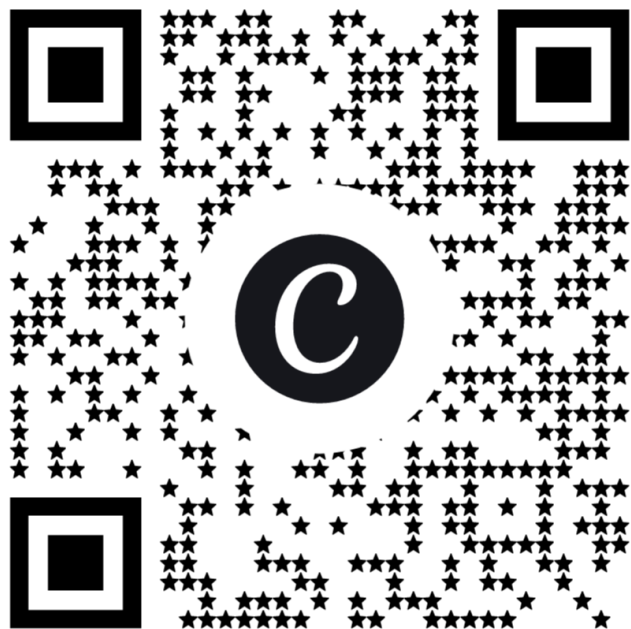
COLLEGE OF MEDICINE



**National Institute
of Mental Health**



THANK YOU!



<https://u.osu.edu/neurolab/>



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