

# Sex differences in autistic traits

Rachel Grove<sup>1</sup>, Rosa Hoekstra<sup>2</sup>, Marlies Wierda<sup>3</sup>, Sander Begeer<sup>3</sup>

1. University of New South Wales, Sydney; 2. King's College, London; 3. VU University, Amsterdam

## Background

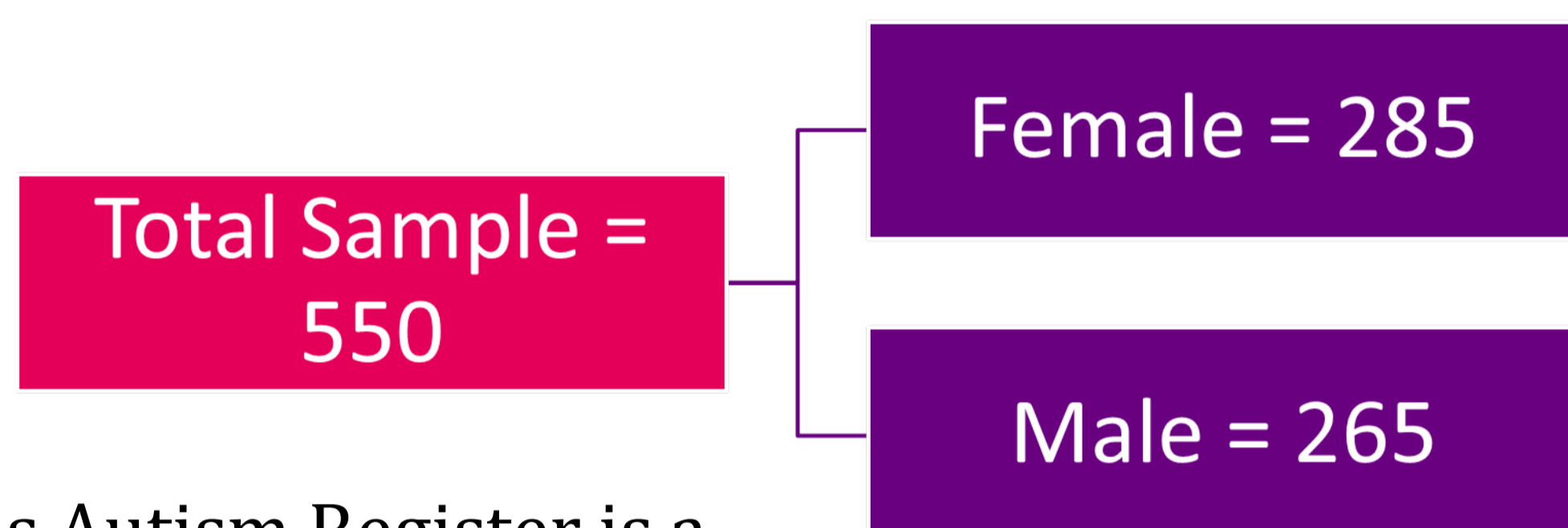
- ❖ There is emerging research indicating that there are differences between males and females with autism
- ❖ It is important to determine whether the tools used to evaluate autistic traits measure autism consistently in autistic men and women
- ❖ The Autism Spectrum Quotient (AQ) is a well validated assessment tool that measures quantitative traits of autism
- ❖ The short form of the AQ<sup>1</sup> showed sex differences across both general population and clinical samples, with men scoring higher than women in the general population and autistic females reporting more autistic traits than males

## Aims

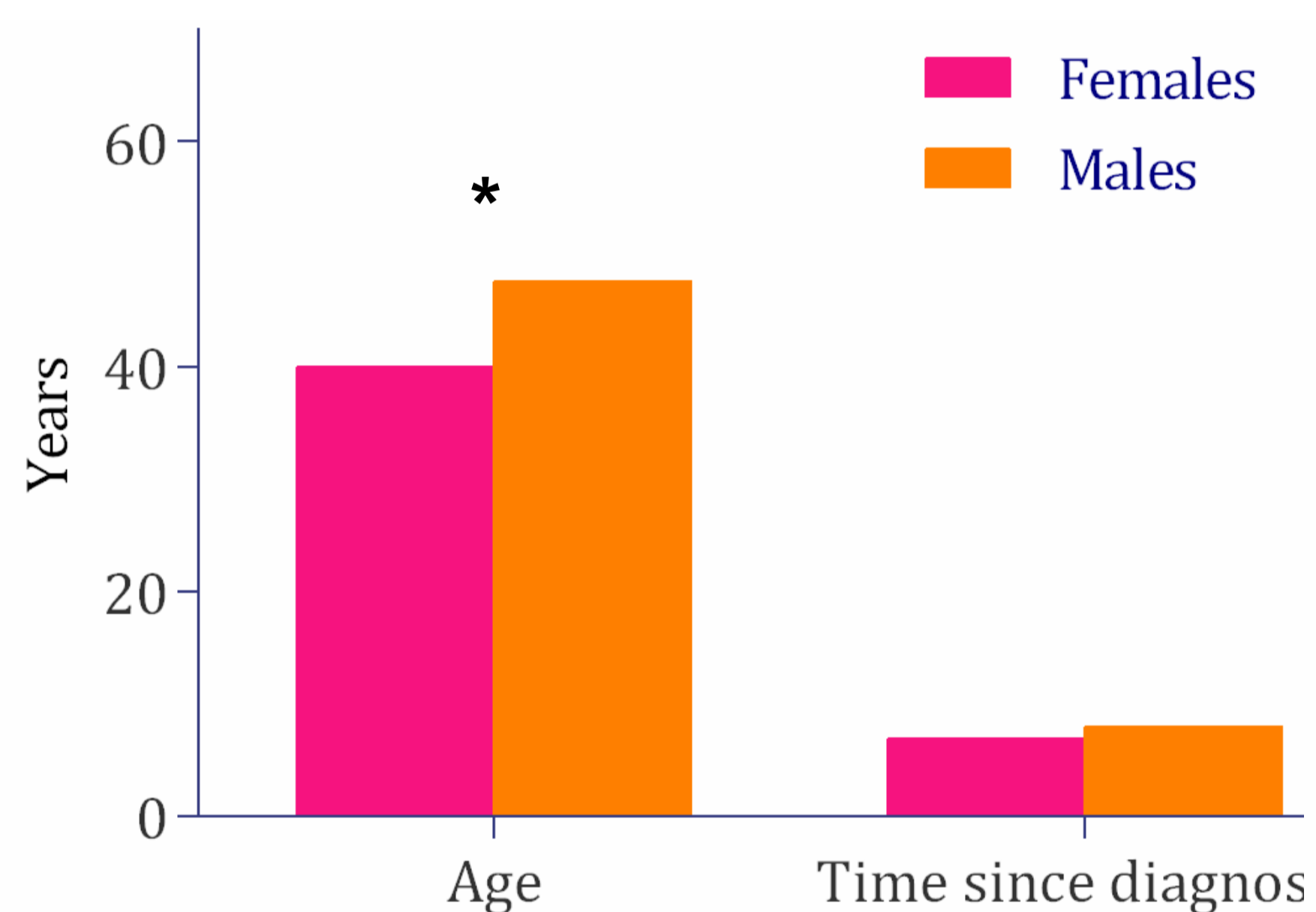
- ❖ Evaluate the AQ short form in a large sample of autistic adults
- ❖ Systematically explore sex differences in the items of the AQ, to determine whether the scale assesses autism equivalently across gender

## Methods

### Sample



- ❖ The Netherlands Autism Register is a large online database that collects information from autistic individuals and their families

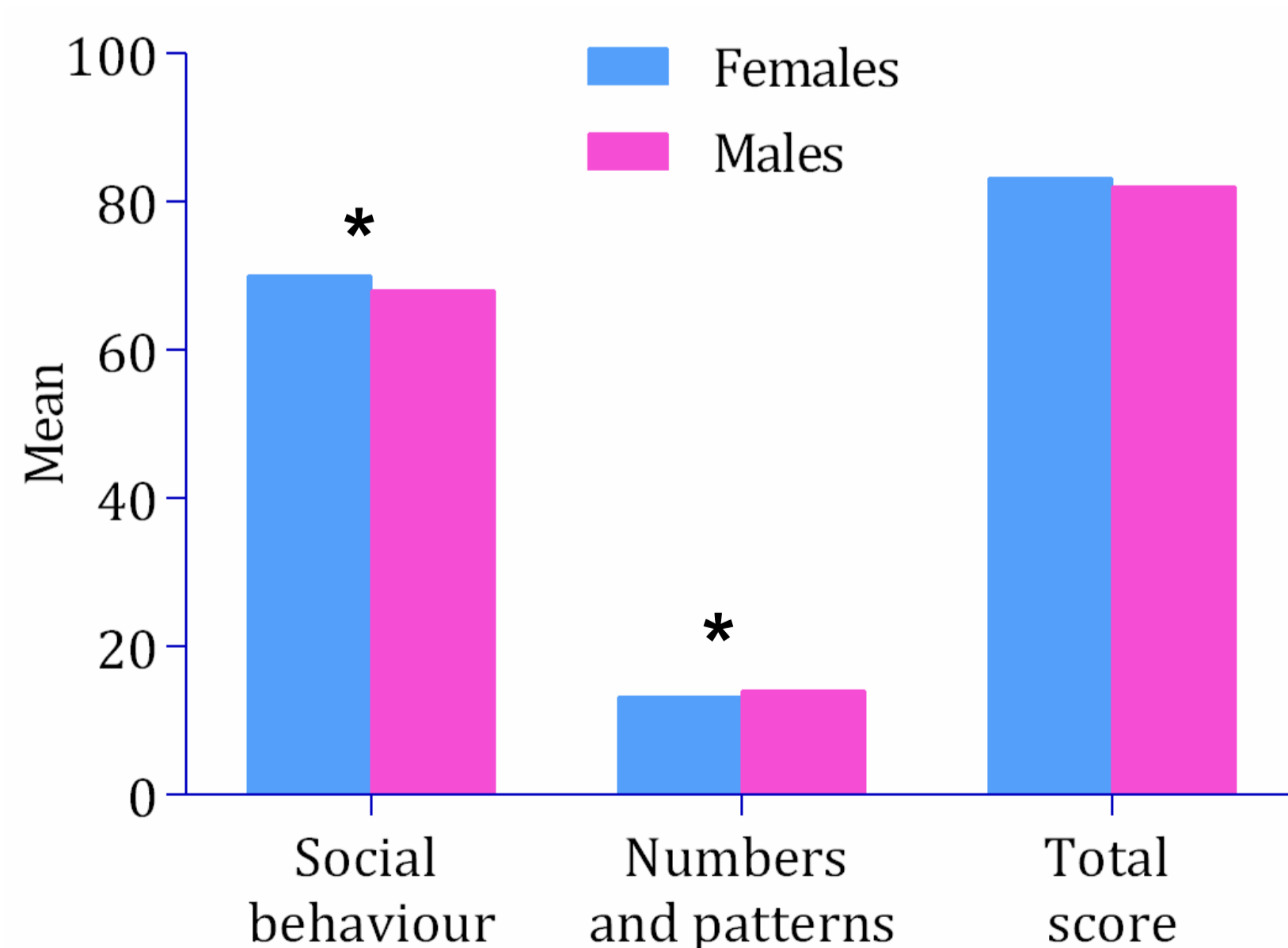


### Procedure

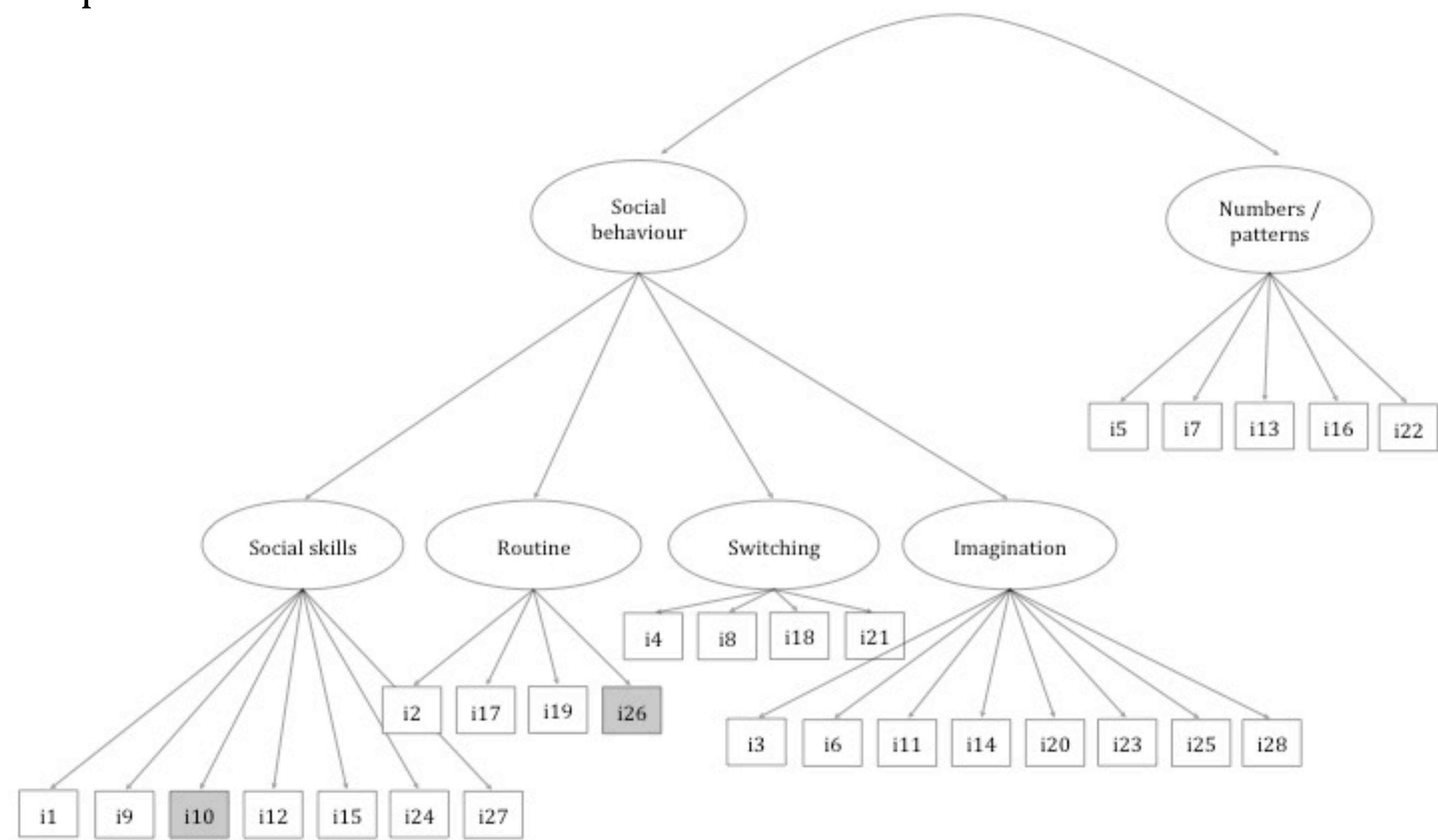
- ❖ Participants completed the AQ short form (28 items)
  - Social behaviour factor (23 items)
  - Numbers and patterns factor (5 items)
- ❖ Confirmatory factory analysis (CFA) was conducted controlling for age and time since diagnosis
- ❖ Measurement invariance analyses were conducted to evaluate specific gender differences in the items of the AQ short form

## Results

- ❖ Mean scores on the AQ short form indicated that women scored higher on the social behaviour factor and lower on the numbers and patterns factor than males

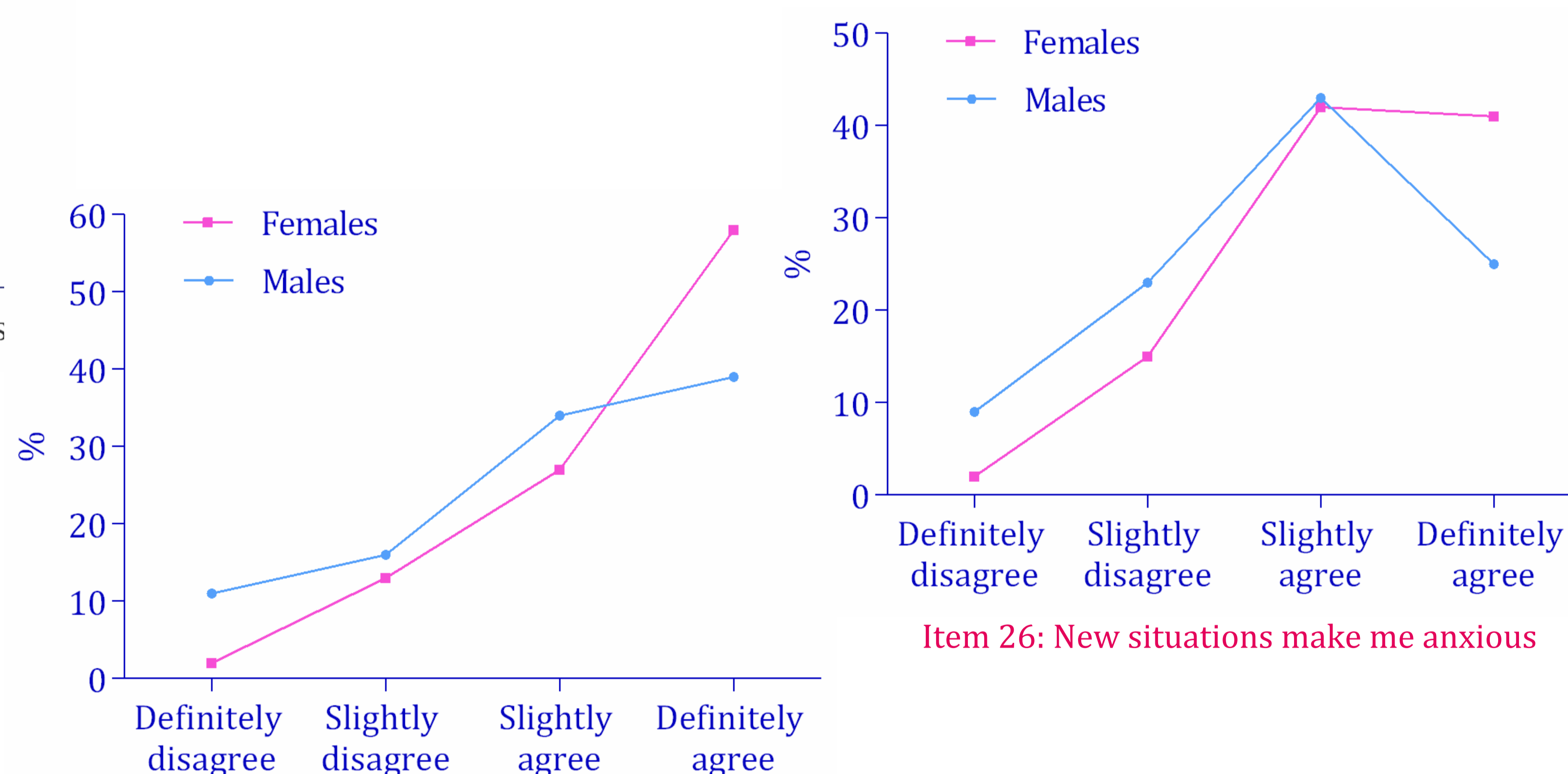


- ❖ A two-factor structure consisting of a social behaviour and numbers and patterns factor was consistent for both males and females



	RMSEA	CFI	TLI	ΔRMSEA	ΔCFI
Free model	0.055	0.915	0.907	-0.003	0.008
Social behaviour factor loadings invariant	0.052	0.923	0.918	-0.001	0.002
Numbers and patterns factor loadings invariant	0.054	0.917	0.910	-0.004	0.010
All factor loadings invariant	0.051	0.925	0.920	-0.005	0.007
Factor loadings and item intercepts invariant	0.050	0.922	0.925	-0.003	0.008

- ❖ Subtle differences were observed on two social behaviour item thresholds of the AQ short form, with women reporting scores more in line with the scores expected in autism than men



Item 10: I would rather go to a library than to a party

- ❖ There was no evidence for a gender bias on the numbers and patterns factor once age was accounted for

## Implications

- ❖ A subtle increased sensitivity towards autism in women was identified. This may be representative of an increased self-awareness in autistic females
- ❖ The relationship between the individual items and autistic traits did not differ for males and females on the spectrum
- ❖ This study showed that the AQ short form detects autistic traits equivalently in males and females, and is not biased towards the males. This has implications for future research evaluating gender differences in the autism phenotype

References  
1. Hoekstra, R.A., et al., *The construction and validation of an abridged version of the autism-spectrum quotient (AQ-short)*. Journal of Autism and Developmental Disorders, 2011, 41: 589-596  
See published article: Grove, R., et al., *Exploring sex differences in autistic traits: A factor analytic study of adults with autism*. Autism, 2016