Factors associated with parent-teacher hyperactivity screening discrepancy: findings from a UK national sample

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Background

- Informant rating scales commonly used for screening ADHD & parents and teachers are the most key informants

- Cross-setting symptom observations required for ADHD Diagnosis

- BUT low to moderate levels of correlations in all forms of paediatric psychopathology

Background

- No exception for hyperactivity/inattention problems regardless of tools that applied
  - Hyperactivity subscale, Strengths and Difficulties Questionnaire (SDQ): 0.34 - 0.64
  - DSM-attentional problems from the Child Behavior Checklist: 0.17 - 0.60
- Previous research explored the relationship of child, parent, and family factors and parent-teacher agreement in rating ADHD with limited available evidence for a solid conclusion

Aim

- To explore
  1. the parent-teacher agreement in reporting hyperactivity/inattention
  2. the relationship between parent-teacher discrepancy with child's, parent's and family's characteristics

Methodology

- Sample:
  - from 2004 United Kingdom Mental Health of Children and Young People survey
  - 5781 children, aged 4-17
- Measures:
  - SDQ Hyperactivity subscale

Methodology

- Measures (con't):
  - Child's characteristics:
    - age, gender
  - parent's characteristics:
    - age, gender, parents' educational level & mental health (GHQ-12)
  - family's characteristics:
    - structure (parents' marital status, number of children in household) , SES (household income, parents' employment status) & ethnicity

Methodology

- Statistical Analysis
  - Cross-informant correlation: weighted kappa.
  - Multinomial logistic regression was conducted to explore predictors of parent-teacher agreement/disagreement patterns.

Parent \ Teacher	Not at-risk	At-risk
Not at-risk	Both agreed not at risk	Teacher only
At-risk	Parent only	Both agreed at risk

Results (1)

Parent	Teacher Not at-risk N=4931	At-risk N=997
Not at-risk N=6265	n=4201 (72.67%)	n=508 (8.79%)
At-risk N=1494	n=607 (10.50%)	n=465 (8.04%)

Parent-teacher agreement in the SDQ hyperactivity subscale
• was low (weighted kappa = .34, CI = .31, .37)

Results (2)

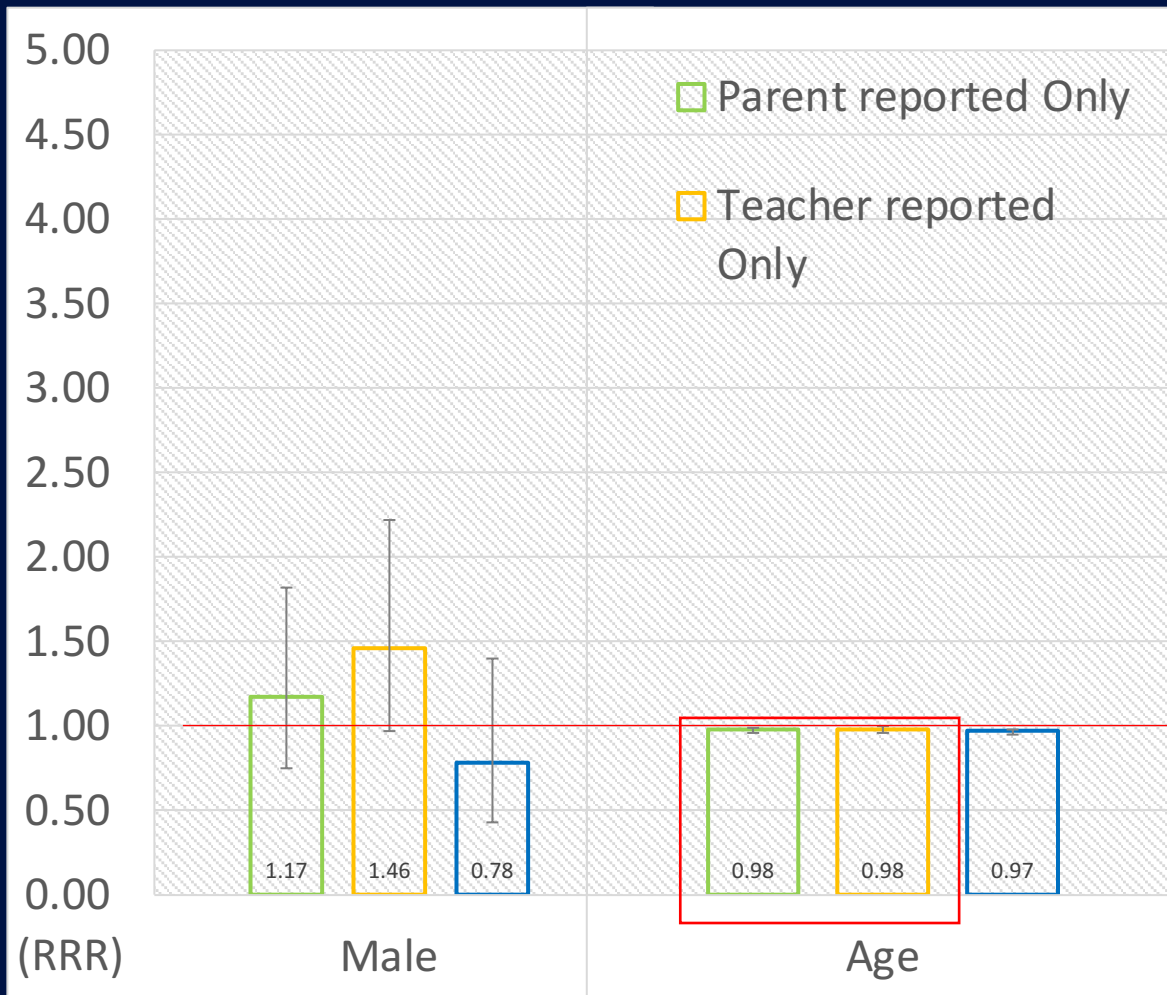## Child's characteristics & parent-teacher discrepancy
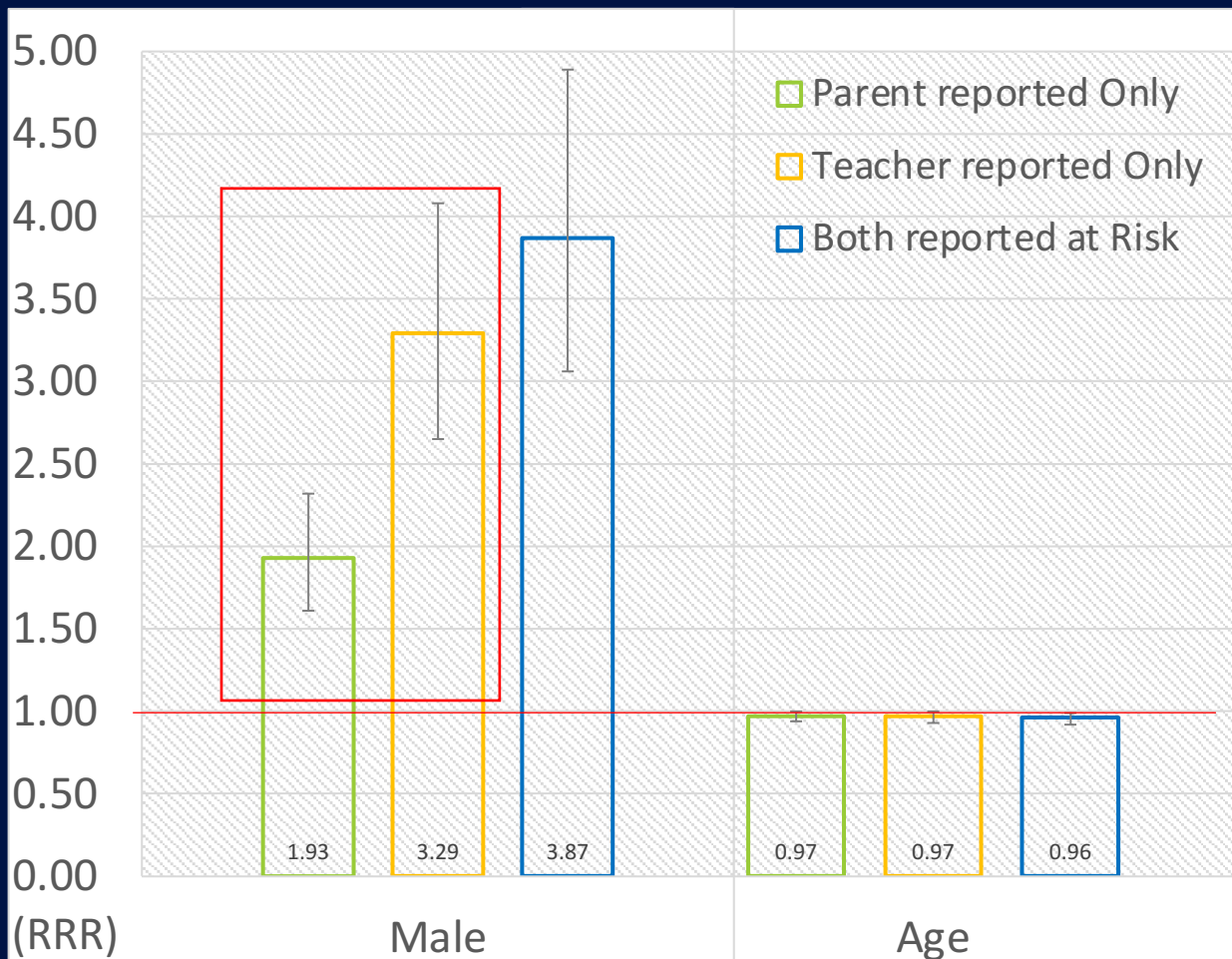
Wald test between RRR of informant pairs.

Pairs Factors	Parent vs Teacher	Parent vs Both	Teacher vs Both
Male	15.22***	23.58***	1.12
Age	0.06	0.11	0.30

Results (2)

Parent's characteristics & parent-teacher discrepancy

Wald test between RRR of informant pairs.

Pairs Factors	Parent vs Teacher	Parent vs Both	Teacher vs Both
Male	0.64	1.32	3.39
Age	0.01	0.86	0.95

Results (2)

Parent's characteristics & parent-teacher discrepancy (con't)
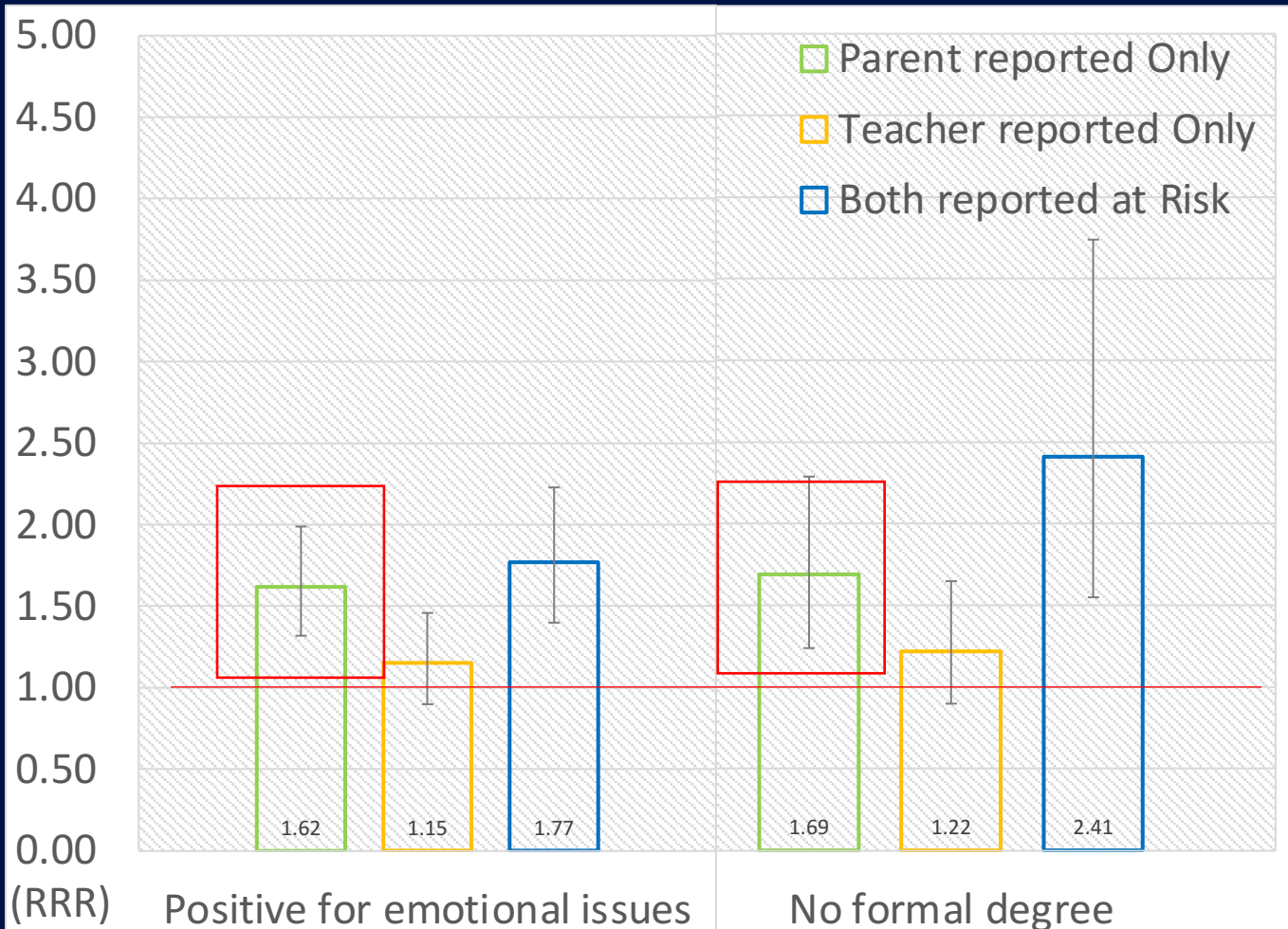
Wald test between RRR of informant pairs.

Pairs Factors	Parent vs Teacher	Parent vs Both	Teacher vs Both
Positive for emotional issues	5.52*	0.35	7.70**
No formal degree	2.43	1.82	6.73**

Results (2)

Family's characteristics & parent-teacher discrepancy
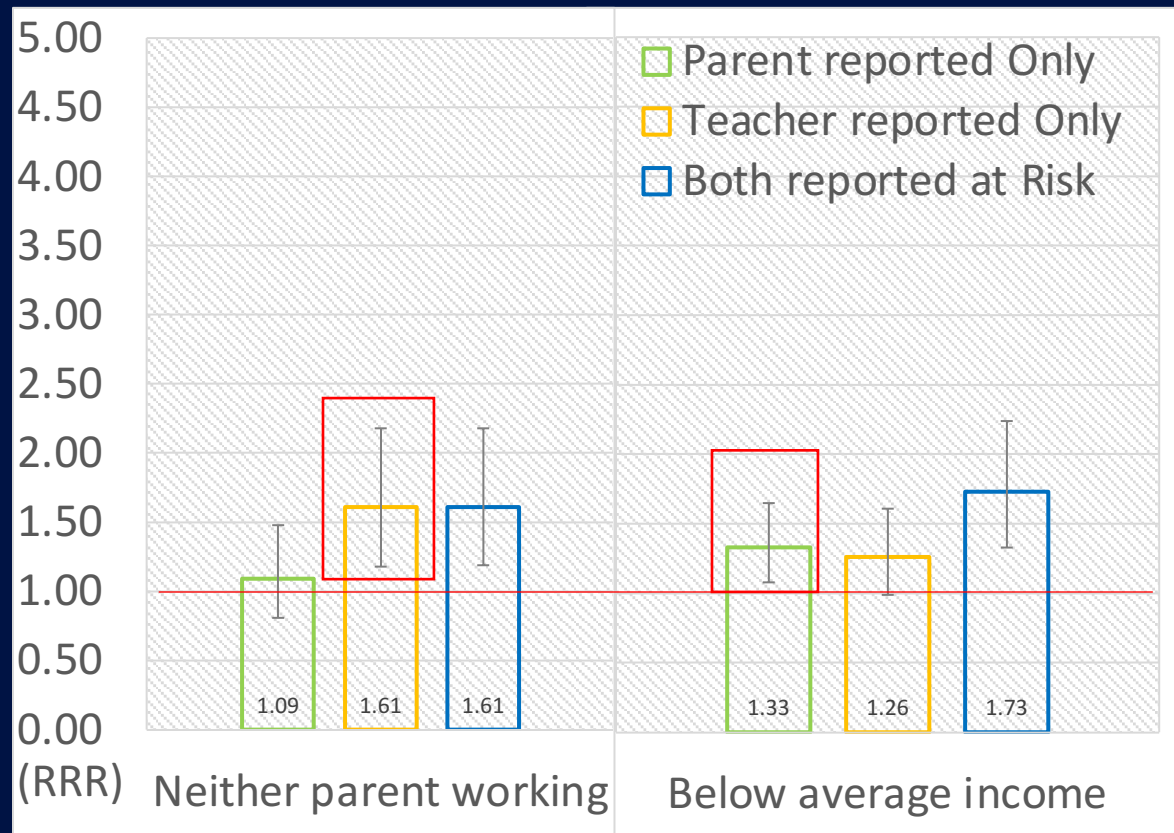
Wald test between RRR of informant pairs.

Pairs Factors	Parent vs Teacher	Parent vs Both	Teacher vs Both
Neither parent working	3.69	3.92*	0.00
Below average income	0.12	2.55	3.30

Results (2)

Family's characteristics & parent-teacher discrepancy (con't)
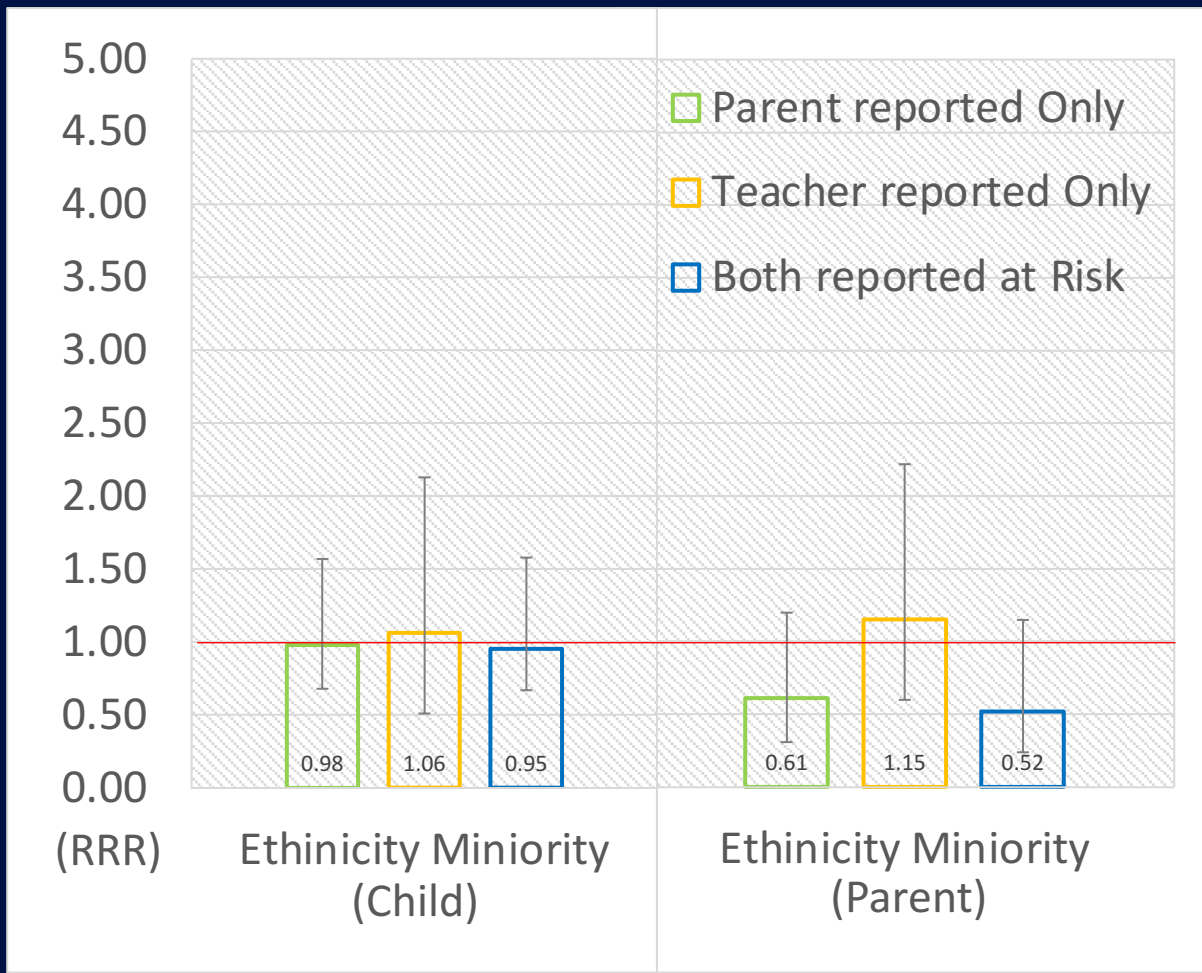
Wald test between RRR of informant pairs.

Pairs Factors	Parent vs Teacher	Parent vs Both	Teacher vs Both
Ethnicity minority (Child)	0.04	0.00	0.07
Ethnicity minority (Parent)	2.03	0.09	2.62

Results (2)

Family's characteristics & parent-teacher discrepancy (con't)
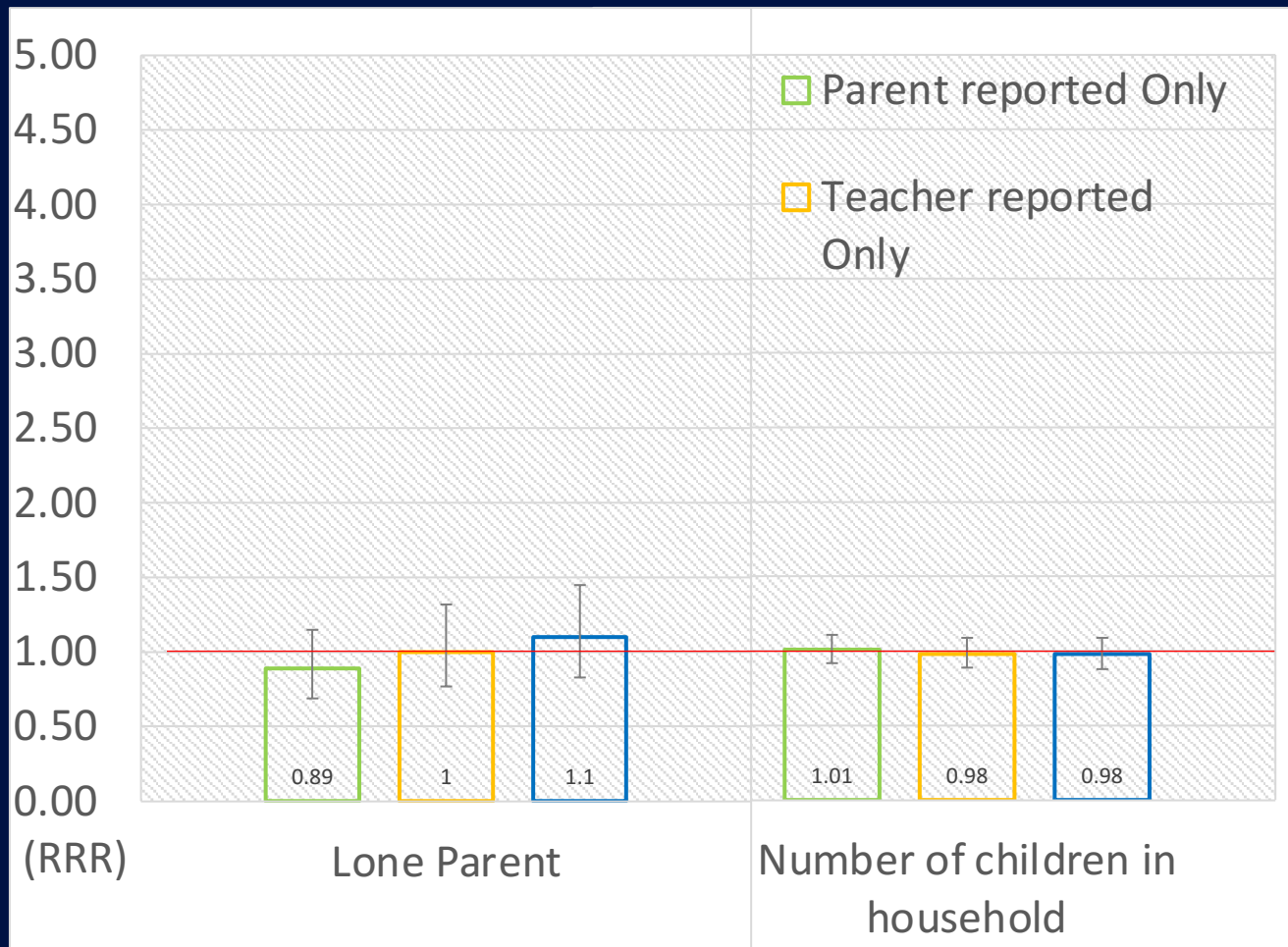
Wald test between RRR of informant pairs.

Pairs Factors	Parent vs Teacher	Parent vs Both	Teacher vs Both
Lone parent	0.48	1.41	0.23
Number of children in household	0.17	0.16	0.00

Discussion & Implications

- We found low informant agreement in the SDQ hyperactive subscale, and the factors associated with different discrepancy patterns.

- Clinicians might need to consider possible effects on interrater discrepancy when disagreement in rating occurs.

- Future research exploring the impact of agreement/disagreement on screening accuracy is important to enhance further understanding of relationships with ADHD diagnosis, where further exploration of mechanism or theoretical framework is being looked forward to.

Strengths & Limitations

Strengths

- large, nationally representative sample
- variety of variables available in the dataset based on previous research

Limitations

- the sample lacked diversities in gender of interviewed parents
- without demographic information of teacher
- limited sample size of children with diagnosis

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Appendix: Descriptive statistic

Risk factors		Rate/ Mean(S. D.)^a			
		Both agreed not at risk (n^b=4201)	Parent-only (n^b=607)	Teacher-only (n^b=508)	Both agreed at risk (n^b=465)
Child	Male	44.80%	59.97%	73.23%	75.05%
	Age	10.43 (3.35)	9.92 (3.32)	9.91 (3.43)	9.68 (3.26)
parent	Male	4.48%	4.94%	7.09%	3.44%
	Age	39.31 (6.24)	37.81 (6.31)	38.13 (7.08)	36.88 (6.51)
	Positive for emotional issue	19.99%	29.57%	22.85%	33.19%
	No formal degree	14.84%	18.67%	22.66%	28.51%
Family	Lone parent	20.73%	25.04%	28.35%	34.84%
	Number of children in household	2.12 (1.02)	2.19 (1.07)	2.20 (1.08)	2.22 (1.01)
	Neither parent working	11.32%	16.45%	20.28%	27.65%
	Below average income	44.54%	55.26%	56.28%	67.70%
	Ethnicity minority (Child)	10.93%	9.72%	14.2%	7.96%
	Ethnicity minority (Parent)	9.55%	8.07%	12.62%	5.81%

^{a}All numbers correspond to percentages, except for age and numbers of children in household given in mean and SD.

^{b}Ns vary slightly for each risk factor due to occasional missing data.

Appendix: Risk factors distributed among parent-teacher agreement/disagreement patterns predicted by risk factors

Risk factors	RRRs (base: Both agreed not at risk)		
	Parent-only	Teacher-only	Both agreed at risk
Child characteristics			
Male	**1.93***** **(1.61, 2.32)**	**3.29***** **(2.65, 4.08)**	**3.87***** **(3.06, 4.89)**
Age	0.97 (0.94, 1.00)	0.97 (0.94, 1.01)	**0.96*** **(0.93, 1.00)**

RRR, relative risk ratio; C.I., confidence interval.
Bold figures indicate statistically significant findings: *p < .05; **p < .01; ***p < .001.

Risk factors	RRRs (base: Both agreed not at risk)		
	Parent-only	Teacher-only	Both agreed at risk
Parent characteristics			
Male	1.17 (0.75, 1.82)	1.46 (0.97, 2.22)	0.78 (0.43, 1.40)
Age	**0.98** (0.96, 0.99)	**0.98*** (0.96, 1.00)	**0.97*** (0.95, 0.98)
Positive for emotional issue	**1.62*** (1.32, 1.99)	1.15 (0.90, 1.46)	**1.77*** (1.40, 2.23)
No formal degree	**1.69** (1.24, 2.29)	1.22 (0.90, 1.65)	**2.41*** (1.55, 3.74)

RRR, relative risk ratio; C.I., confidence interval.

Bold figures indicate statistically significant findings: *p < .05; **p < .01; ***p < .001.

Risk factors	RRRs (base: Both agreed not at risk)		
	Parent-only	Teacher-only	Both agreed at risk
Family characteristics			
Lone parent	0.89 (0.69, 1.15)	1.00 (0.76, 1.32)	1.10 (0.83, 1.45)
Neither parent working	1.09 (0.81, 1.48)	**1.61** (1.18, 2.18)	**1.61** (1.19, 2.18)
Below average income	**1.33** (1.08, 1.65)	1.26 (0.99, 1.61)	**1.73*** (1.33, 2.24)
Number of children in household	1.01 (0.92, 1.11)	0.98 (0.89, 1.09)	0.98 (0.88, 1.09)
Ethnicity minority (Child)	0.98 (0.53, 1.80)	1.06 (0.57, 1.98)	0.95 (0.48, 1.89)
Ethnicity minority	0.61 (0.31, 1.20)	1.15 (0.60, 2.22)	0.52 (0.24, 1.15)

RRR, relative risk ratio; C.I., confidence interval.
Bold figures indicate statistically significant findings: *$p < .05$; **$p < .01$; ***$p < .001$.