

Discrepancies between Caregiver and Clinician Report of Autism Features in Children with Co-Occurring Intellectual Disability

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Background

- A gold standard autism (ASD) diagnostic evaluation integrates information from both caregiver and clinician observation.¹
- Prior research indicates that agreement between clinician- and caregiver-reported autism features is lower for individuals with intellectual disability (ID) than those with average or above average cognitive ability.^{2,3}
- Cognitive ability (measured by intelligence quotient; IQ) may also moderate the degree of clinician–caregiver agreement in ASD trait reporting, suggesting that IQ may influence how autism features are observed and reported.⁴
- While nearly 40% of autistic children have co-occurring ID, insight into this group’s diagnostic process is severely limited and under-researched.⁵

Objective

- Investigate how clinician–caregiver discrepancies in ratings of autism-related behaviors associate with verbal, nonverbal, and full-scale IQ in children with co-occurring ASD+ID.

Methods

Participants

- N=22 (female=5) autistic children ages 3-17 ($M_{age}=8.38\pm 3.57$ years) with co-occurring ID (Table 1).
- ASD diagnoses were confirmed by research reliable clinicians with the Autism Diagnostic Observation Schedule-2nd Edition (ADOS-2), Autism Diagnostic Interview-Revised (ADI-R), and clinician endorsement of DSM-5 criteria.
- ID diagnoses were confirmed through cognitive testing and assessment of adaptive functioning by the Vineland Adaptive Behavior Scales-3rd Edition (Vineland-3).

Cognitive Measures

- IQ was assessed using the Differential Abilities Scales-II Early Years Battery (DAS-II) or Mullen Scales of Early Learning (MSEL).
- Ratio IQ (average of domain age-equivalent scores divided by chronological age $\times 100$) was calculated for participants outside the normative age range for these batteries.

Clinical Measures

- Clinician-observed ASD features were assessed via the Autism Diagnostic Observation Schedule, Second Edition (ADOS-2).
- Caregiver-observed ASD features were assessed via the Social Responsiveness Scale, Second Edition (SRS-2).

Table 1. Participant Demographics

Measure (N=22)	Mean (SD)
FSIQ	30.45 (14.86)
Verbal IQ	24.05 (18.08)
Nonverbal IQ	37.32 (14.91)
Vineland-3 ABC	45.14 (14.31)
ADOS-2 Overall CSS	8.23 (1.48)
ADOS-2 SA CSS	7.77 (1.38)
ADOS-2 RRB CSS	8.50 (1.37)
SRS-2 Overall Raw Score	99.64 (26.64)
SRS-2 SCI Raw Score	82.14 (21.50)
SRS-2 RRB Raw Score	17.77 (7.13)
SRS-2 Overall T-Score	75.73 (10.27)
SRS-2 SCI T-Score	75.45 (10.05)
SRS-2 RRB T-Score	71.14 (16.81)

Note. CSS=Calibrated Severity Score, SA=Social Affect, RRB=Restricted and Repetitive Behavior, SCI=Social Communication Index

Data Analysis

- ADOS-2 calibrated severity scores (CSS) and SRS-2 raw scores were converted to Z-scores.
- **Overall clinician-caregiver discrepancy scores** were calculated by subtracting SRS-2 total Z-score from the ADOS-2 CSS Z-score.
- **Social clinician-caregiver discrepancy scores** were calculated by subtracting the SRS-2 social communication index (SCI) Z-score from the ADOS-2 social affect (SA) CSS Z-score.
- **Restricted and repetitive behavior (RRB) clinician-caregiver discrepancy scores** were calculated by subtracting the SRS-2 RRB Z-score from the ADOS-2 RRB CSS Z-score.
- A Friedman test for repeated measures was used to test for domain differences in discrepancy scores, with Kendall’s W reported as an effect size.
- Spearman correlations were used to examine associations between informant discrepancy scores and IQ scores.

Results

- ADOS-2 overall, SA, and RRB CSS scores were not significantly associated with corresponding SRS-2 raw scores (overall: $r_s(22)=-.01, p=.962$; social: $r_s(22)=-.13, p=.567$; RRB: $r_s(22)=.24, p=.284$).

Results

- Caregivers tended to report more overall ($Mdn=-0.30$, range=-2.34–3.88) and social autism features ($Mdn=-0.17$, range=-2.36–3.01), whereas clinicians reported more RRB features ($Mdn=0.27$, range=-1.44–2.17); differences across domains were not statistically significant and showed a small effect size (Friedman $\chi^2(2)=1.18, p=.554$; Kendall’s $W=.01$; Figure 1).

Figure 1. Distribution of Informant Discrepancy Scores

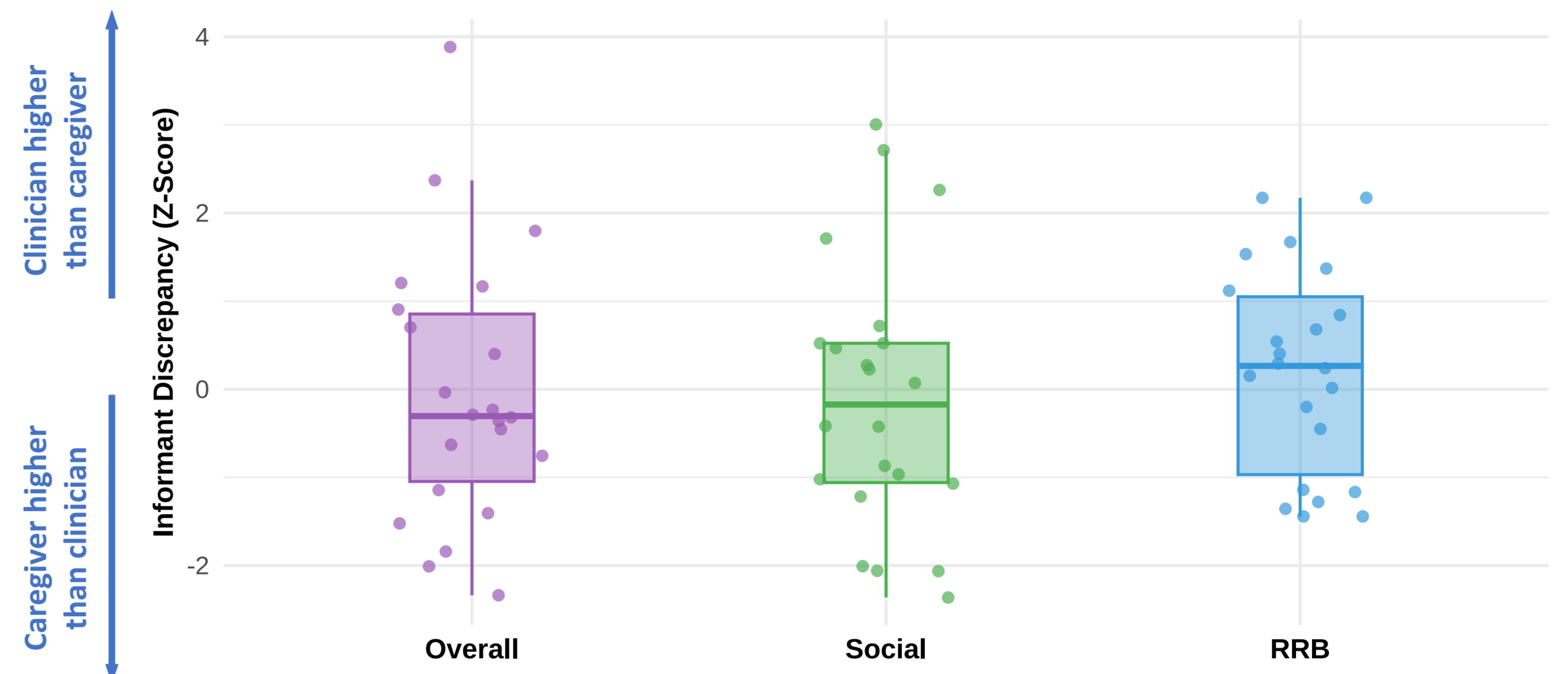


Figure 2. Associations between Informant Discrepancy and Full-Scale IQ

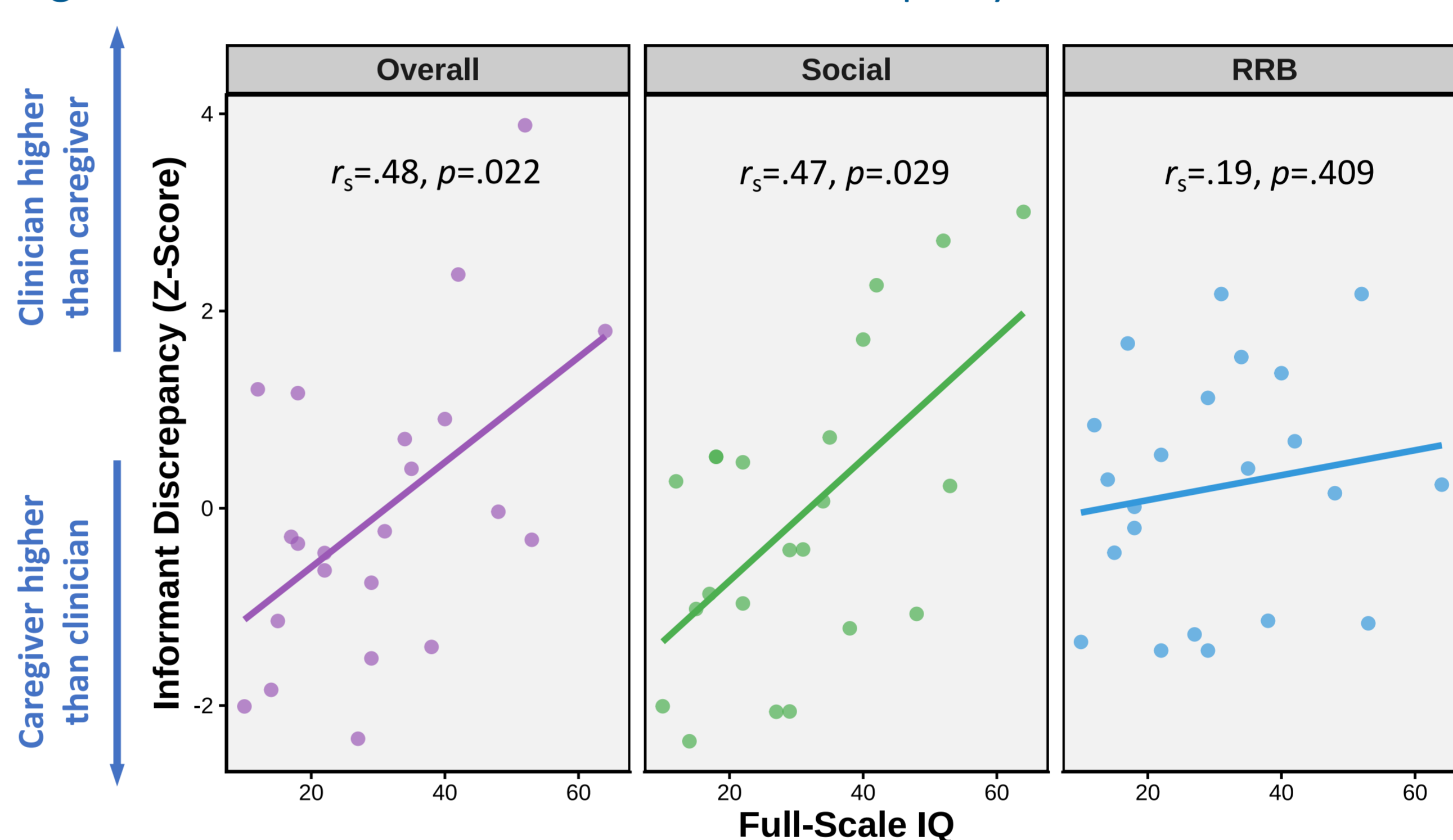
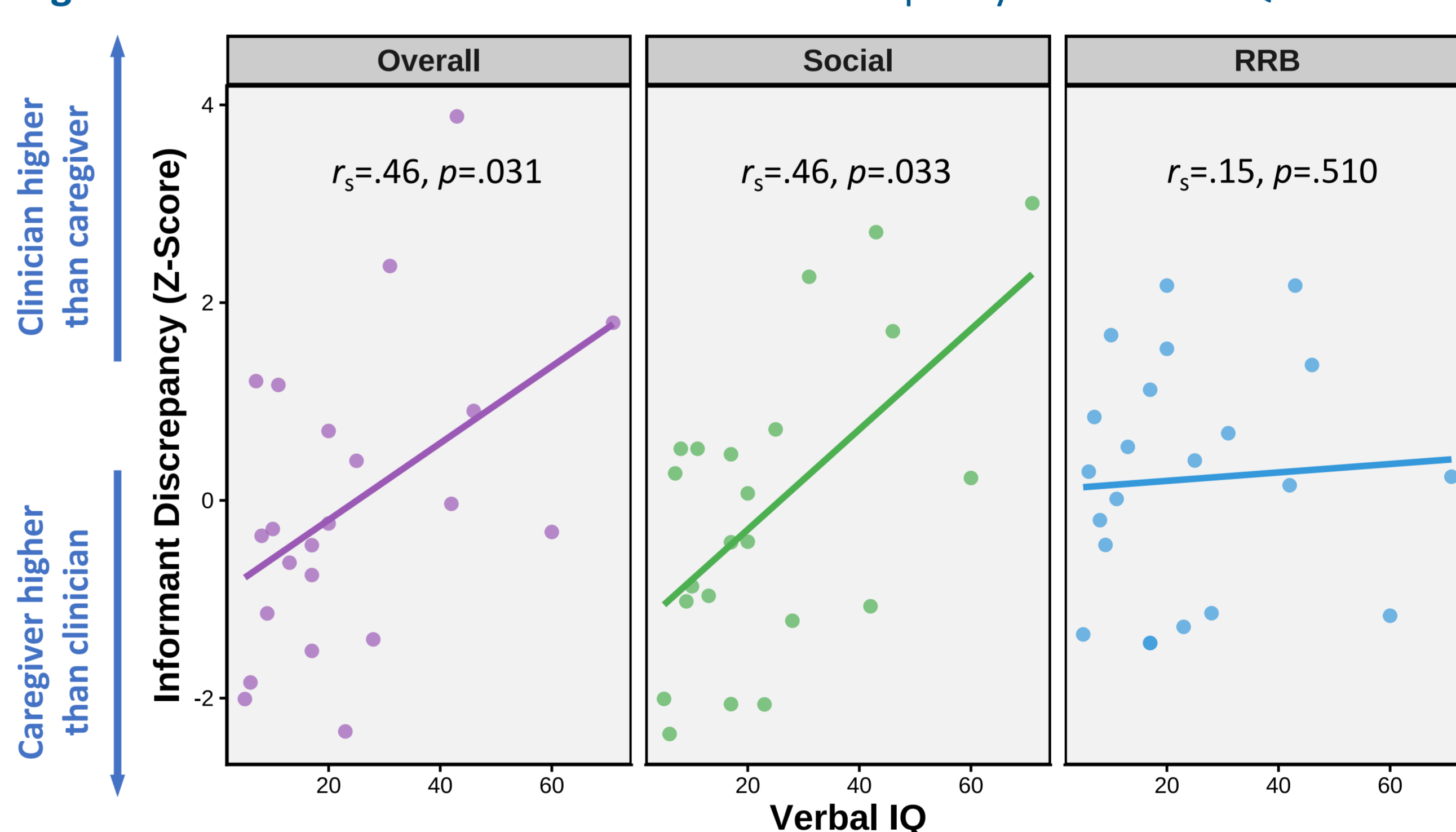


Figure 3. Associations between Informant Discrepancy and Verbal IQ



- Overall informant discrepancy was positively associated with nonverbal IQ ($r_s(22)=.43, p=.045$). Social ($r_s(22)=.37, p=.091$) and RRB ($r_s(22)=.18, p=.419$) discrepancy scores were not significantly associated with nonverbal IQ.

- Overall ($r_s(22)=.48, p=.022$) and social discrepancy scores ($r_s(22)=.47, p=.029$) were positively associated with full-scale IQ; for children with higher full-scale IQ, clinicians rated overall and social features as more pronounced than caregivers (Figure 2).
- RRB discrepancy was not significantly associated with full-scale IQ ($r_s(22)=.19, p=.409$).

- Overall ($r_s(22)=.46, p=.031$) and social discrepancy scores ($r_s(22)=.46, p=.033$) were positively associated with verbal IQ; for children with higher verbal IQ, clinicians rated overall and social features as more pronounced than caregivers (Figure 3).
- RRB discrepancy was not significantly associated with verbal IQ ($r_s(22)=.15, p=.510$).

Conclusions

- Clinicians rated children with higher IQ as exhibiting more pronounced autism features compared to caregiver report.
 - In particular, for children with higher verbal IQ, clinicians rated social features as more pronounced than caregivers.
- Differences may reflect how social and communication challenges manifest across structured assessment settings versus everyday contexts, or differences in how clinicians and caregivers interpret social behaviors in children with ID with greater receptive and expressive language skills.
- These preliminary results extend previous findings that verbal ability may influence how autism-related social behaviors are perceived and reported from children with average or above average cognitive ability⁶ to those with co-occurring ASD and ID diagnoses.

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