

Psychosocial Functioning in School-Aged Boys with and without Klinefelter Syndrome



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Background

- Klinefelter syndrome (KS) is a genetic disorder caused by an extra X chromosome in males.
- KS is marked by distinct physical, cognitive, and social-emotional symptoms, including testicular failure, delayed pubertal maturation, and average to low average intellectual functioning with relative strength in nonverbal reasoning and weaknesses in language-based learning, verbal memory, and attention (Geschwind & Dykens, n.d.; Ross et al., 2012).
- Current data shows that adults with KS exhibit higher rates of anxiety, low self-esteem, and social withdrawal. However, few studies have examined whether disrupted social-emotional functioning is present among children and adolescents with KS
- This study examines social-emotional functioning in boys with KS throughout puberty.

Methods

- Data were collected as a part of a longitudinal study examining cognition, behavior, and neurodevelopment in school-aged boys with KS and age- and nonverbal IQ-matched boys.
- A total of 76 participants (KS N = 34, mean age = 11.48, range = 8.47-14.55; Control N = 42, mean age = 11.23, range = 8.39-14.97) completed parent- and child-report measures.
- Participants in both groups were matched with respect to WISC-V nonverbal IQ measures.
- Independent-samples t-tests were conducted to assess group differences in anxiety (Multidimensional Anxiety Scale for Children 2nd edition, MASC-2), mood (Children's Depression Inventory 2nd edition, CDI-2), and social functioning (Social Responsiveness Scale, SRS).

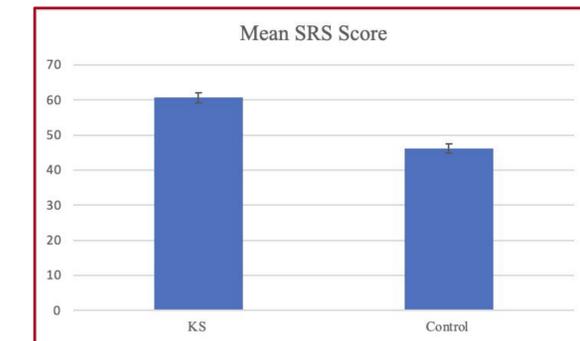
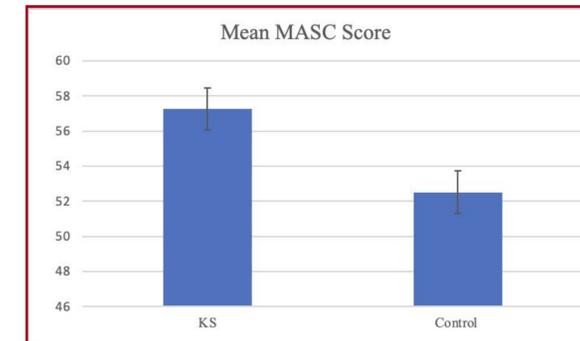
Demographics

Ethnicity	Frequency (%)
Hispanic or Latino	11 (14.5%)
Not Hispanic or Latino	62 (81.6%)
Unknown	3 (3.95%)
Race	Frequency (%)
Asian	1 (1.3%)
Black or African American	0 (0%)
White	67 (88.16%)
Multi-racial	3 (3.95%)
Unknown	5 (6.58%)
Sex	Frequency (%)
Male	76 (100%)
Age	Frequency (%)
8	9 (11.8%)
9	8 (10.5%)
10	12 (15.8%)
11	19 (25%)
12	17 (22.4%)
13	7 (9.2%)
14	4 (5.3%)

Results

- Results indicate significant group differences for overall anxiety (MASC-2 Total score, $p=.046$) and overall social functioning (SRS Total score, $p<.001$), such that the KS group reported more anxiety symptoms and social difficulties than the control group.
- Exploratory analyses revealed significant group differences for MASC-2 Generalized Anxiety, Social Anxiety, Humiliation/Rejection, Physical Symptoms, and Tense/Restless, CDI-2 Negative Mood/Physical Symptoms and Emotional Problems, and all SRS domains.

Results



Discussion

- Findings provide insight into the social-emotional profile of school-aged boys with KS.
- Specifically, elevated levels of self-reported anxiety may be related to underlying social difficulties.
- Whether these symptoms resolve with testosterone replacement therapy is unknown and is a focus of ongoing longitudinal investigation by our group.
- This analysis is limited by the homogeneity of the sample; namely, most participants were White.