

Turner Syndrome: mental health and social skills from childhood to emerging adulthood

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Background



Figure 2. Girls with TS

The psychopathology of children and young people with Turner Syndrome (45,X; TS) has been well-documented, but former studies have focused on emotional and behavioural problems. There has been no systematic evaluation of neurodevelopmental disorders (NDD) such as autism or ADHD.

The last extensive study of mental health in TS assessed a narrow range of psychopathologies and excluded young people under 16 years¹.



SOAR Study was set up in 2016 to examine the mental health, social skills and personal relationships of those affected by TS, and to pilot a novel intervention to ameliorate difficulties.

Our first aim was to examine mental health, NDD and social skills in TS from childhood to emerging adulthood.

Methods

Participants aged 4 to 25 were recruited through the UK Turner Syndrome Support Society and NHS clinics.

Standardised assessments administered online to caregivers:

Strengths and Difficulties Questionnaire (SDQ; n=124)

- Normed behavioural screening questionnaire, designed to capture a wide range of behavioural and emotional difficulties.

Development and Wellbeing Assessment (DAWBA; n=100)

- Structured psychiatric interview, rated by a clinician
- Provides evidence of clinically significant disorder, using DSM-5 diagnostic criteria. It assesses:
 - ✓ Anxiety disorders
 - ✓ Depression
 - ✓ Conduct disorders
 - ✓ Autism spectrum disorders (ASD)
 - ✓ Attention deficit hyperactivity disorders (ADHD)
 - ✓ Tic disorders
 - ✓ Eating, sleeping and feeding difficulties

The SDQ and DAWBA instruments have previously been used in UK national screening studies of emotional and behavioural adjustment in childhood and adolescence.

Social Responsiveness Scale-2 (SRS-2; n=117)

- Normed measure of autistic symptomatology.

Results

Total SDQ scores:

Mean scores were significantly higher than female norms ($t_{(123)}=12.89$, $p<0.0001$), indicating poorer overall behavioural and emotional adjustment.

Subscale SDQ scores:

- Emotional dysregulation became greater in adolescence and early adulthood ($r=0.23$, $p=0.01$; Table 1).
- Problems with attention/hyperactivity ($r=-0.47$, $p<0.0001$) and conduct ($r=-0.2$, $p=0.025$) reduced in late adolescence and early adulthood (Table 1).

Age	Emotional	Conduct	Hyperactivity Attention	Peer relations	Prosocial
4-5	Close to Average	Slightly Raised	High	High	Low
6-12	Slightly Raised	Slightly Raised	Slightly Raised	High	Close to Average
13-17	Slightly Raised	High	Close to Average	High	Close to Average
18-25	Slightly Raised	Close to Average	Close to Average	High	Close to Average

Table 1. Mean SDQ subscale scores severity ratings by age (n=124)

- Peer interaction problems were consistently greater throughout childhood into adulthood, compared with age-adjusted female norms ($t_{(123)}=12.22$, $p<0.0001$; Table 1).
- Prosocial abilities were slightly lower than female national norms ($t_{(123)}=-6.56$, $p<0.0001$; Table 1).

Psychiatric interview data:

- DAWBA analysis showed overall elevated rates of mental health disorder compared to female national norms (Table 2). In TS sample, 33% met criteria for at least one mental health diagnosis. 23% met criteria for ASD, 11% for anxiety disorders and 12% for ADHD.

DAWBA diagnoses	UK National Females ²	TS (n=100)
Anxiety Disorders	3.8%	11%
Depression	1.1%	1%
Conduct Disorders	3.9%	0%
Tic Disorder	0.1%	1%
Eating Disorders	0.1%	1%
ADHD	0.4%	12%
ASD	0.3%	23%
Any Disorder	7.8%	33%

Table 2. Comparison of DAWBA Diagnoses in UK studies and SOAR study

SRS-2 scores:

- Mean total SRS-2 scores were in the ‘moderately impaired’ range ($M=65.5$, $SD=14.9$). Autistic symptomatology was rated as ‘severe’ in 27.4%.
- TS females in this sample had a 46 times greater risk of ‘severe’ autistic symptomatology compared to female norms.

Findings

- ASD, ADHD and social difficulties are substantially more common in TS than among typical UK females of similar age/IQ.
- 18% of TS females met criteria for a **diagnosis** of ASD, and 27.4% had **severe** autistic symptomatology.
- Hyperactivity/inattention and conduct problems resolve in adolescence, but emotional problems increase in severity.
- Implementing social skills training in adolescence and providing additional support at school to help with concentration/over-activity is recommended.

References

1. Cardoso, Graca, et al. "Current and lifetime psychiatric illness in women with Turner syndrome." Gynecological endocrinology 19.6 (2004): 313-319.
2. Green, Hazel, et al. "Mental health of children and young people in Great Britain, 2004." (2005): 24.