

ABSTRACT

Background: Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder that is rapidly increasing in prevalence globally. An emerging field of research investigating the association between macrocephaly and ASD is developing. There is an absence of data emanating from the South African context. Currently the journey to an ASD diagnosis is lengthy, complex and costly within the South African context.

Objective: To investigate the head circumference measurement of children living with ASD and to describe their ASD severity and diagnosed comorbidities.

Methods: A retrospective record review of patients aged 0-5 years diagnosed with ASD, was conducted. All patients were attending a Neurodevelopmental Clinic at a South African, tertiary-level, state hospital during April to September 2019. Demographic data including head circumference measurements were collected. The World Health Organisation data set of head circumference norms were used as the comparator reference population. Statistical analysis was conducted using parametric, descriptive and inferential methods.

Results: Data from 135 children diagnosed with ASD were included. The sampled group had a mean age of 40.58 months (13 – 61 months) and consisted of 107 (79%) males. The majority, 49 (36.2%), of the patients were in the 4-5 year old age group. Thirty (22.2%) patients in the cohort had a head circumference which was classified as macrocephalic. Most, 63 (46%), of the patients had an ASD severity of three and 40 (29.6%), had not been diagnosed with any comorbidities. The most commonly diagnosed comorbidities were intellectual disability and attention deficit hyperactivity disorder. No significant associations were found between macrocephaly and ASD severity.

Conclusions: Head circumference measurements in ASD patients is a culturally-sensitive, cost-effective, simple and non-invasive procedure that can assist professionals in raising suspicion of ASD at an early age. Early detection and intervention has the ability to optimise participation and integration for the individual living with this life-long neurodevelopmental disability.

Keywords: autism, head circumference, autism phenotype, autism severity, autism detection, early intervention, macrocephaly.