

Growth of Nigerian children in relation to International References



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Background

There are currently no specific growth charts for use in Nigerian children over the age of 5 years. Health workers rely on charts developed by the Center for Disease Control for children in USA (2000CDC US) or the UK 1990 growth charts for British children. It is unknown whether Nigerian children grow to the same height or at the same tempo as American or British children.

Objective

To compare the growth of the Nigerian child to the 2000CDC US and UK 1990 growth references.

Methods

- Healthy Nigerian children (4-16years) were recruited between April 2013-June 2014 from both public and private local schools in Gombe (Northern Nigeria), Abakaliki (Eastern Nigeria) and Ile-Ife (Western Nigeria).
- Height was measured using a Leicester Height measure and recorded to the last completed mm. The children were measured bare feet, standing up straight with head in the Frankfurt plane .
- Weight was measured to the nearest 0.1 kg using a SECA electronic scale. The children wore only minimal clothing and no shoes.
- The results were expressed as SD scores relative to the 2000CDC US and the UK 1990 growth reference data. Analysis was done using a commercially available software 'Growth Analyser'. LMS curves were constructed for each sex.
- Ethical Approval and consent was obtained

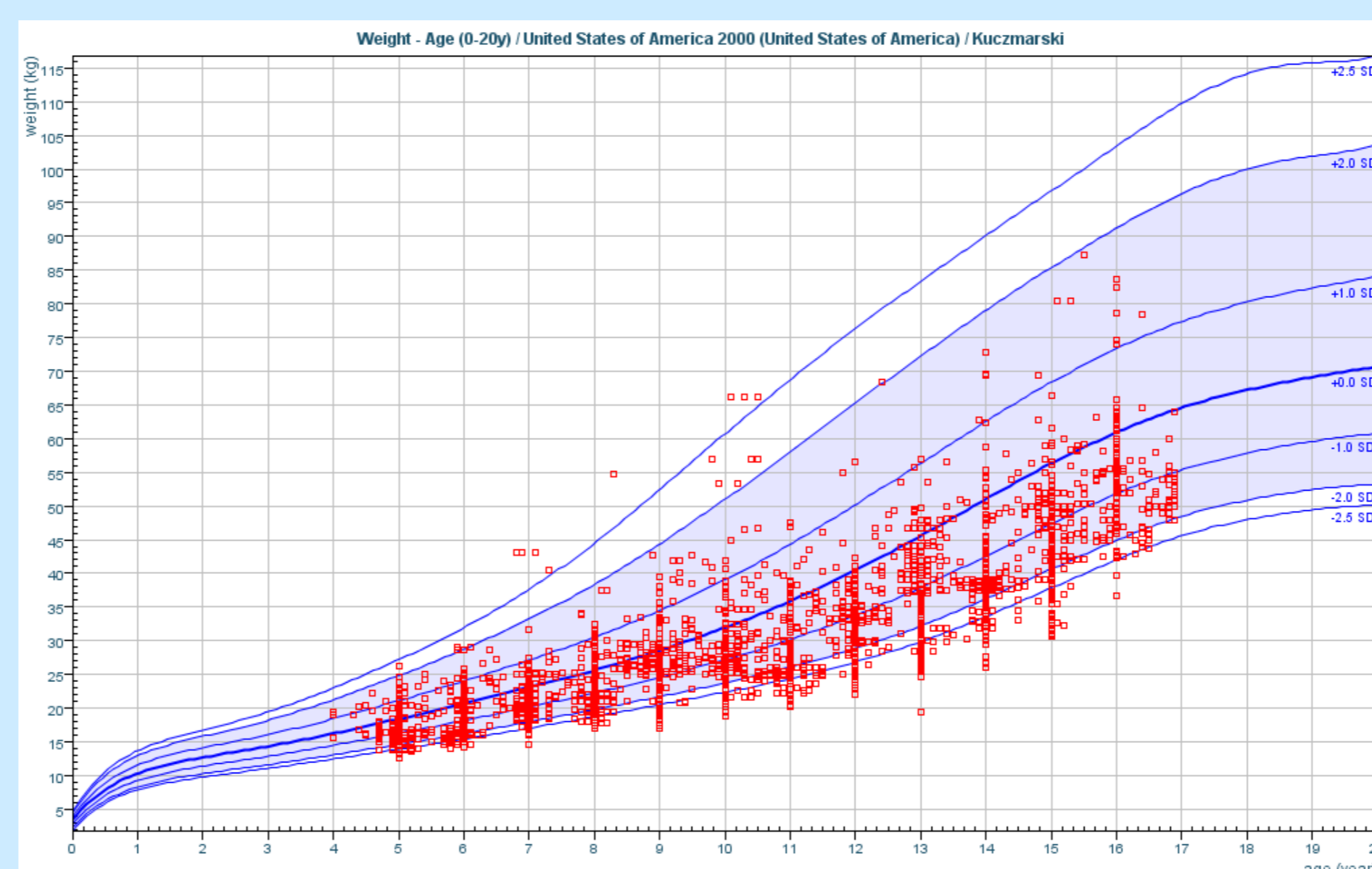


Fig 1. Weight of Nigerian boys compared to USA male

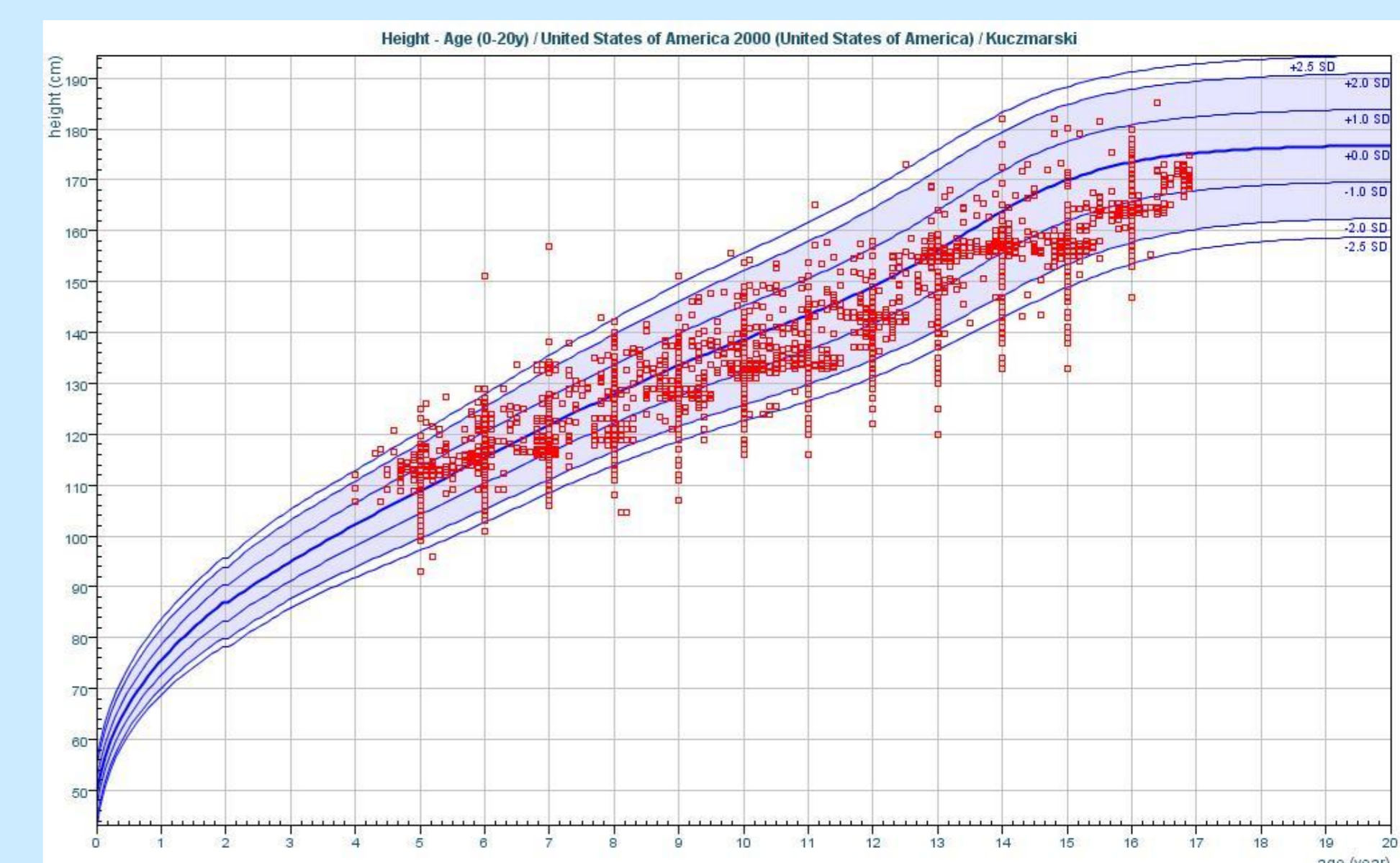


Fig 2. Height of Nigerian boys compared to USA male

Results

- 4433 children (2064 girls and 2369 boys) were measured.
- The height of Nigerian girls were similar to that of UK and American girls with the mean height being only 0.38SD below both the 2000CDC US and the 1990 UK references respectively. They were however lighter with mean weight being 0.7SD and mean BMI being 0.8SD below both UK and USA references.
- The estimated Pubertal Growth spurt (PGS) appeared to occur later in the Nigerian girl (13-14yrs).
- Nigerian boys were shorter with a mean height which was 0.6SD below the UK and US references respectively. The estimated timing of PGS was between age 14- 15 years.
- Nigerian boys were also lighter with mean BMI being 0.8 SD and 1.0 SD less than both the UK and US references respectively

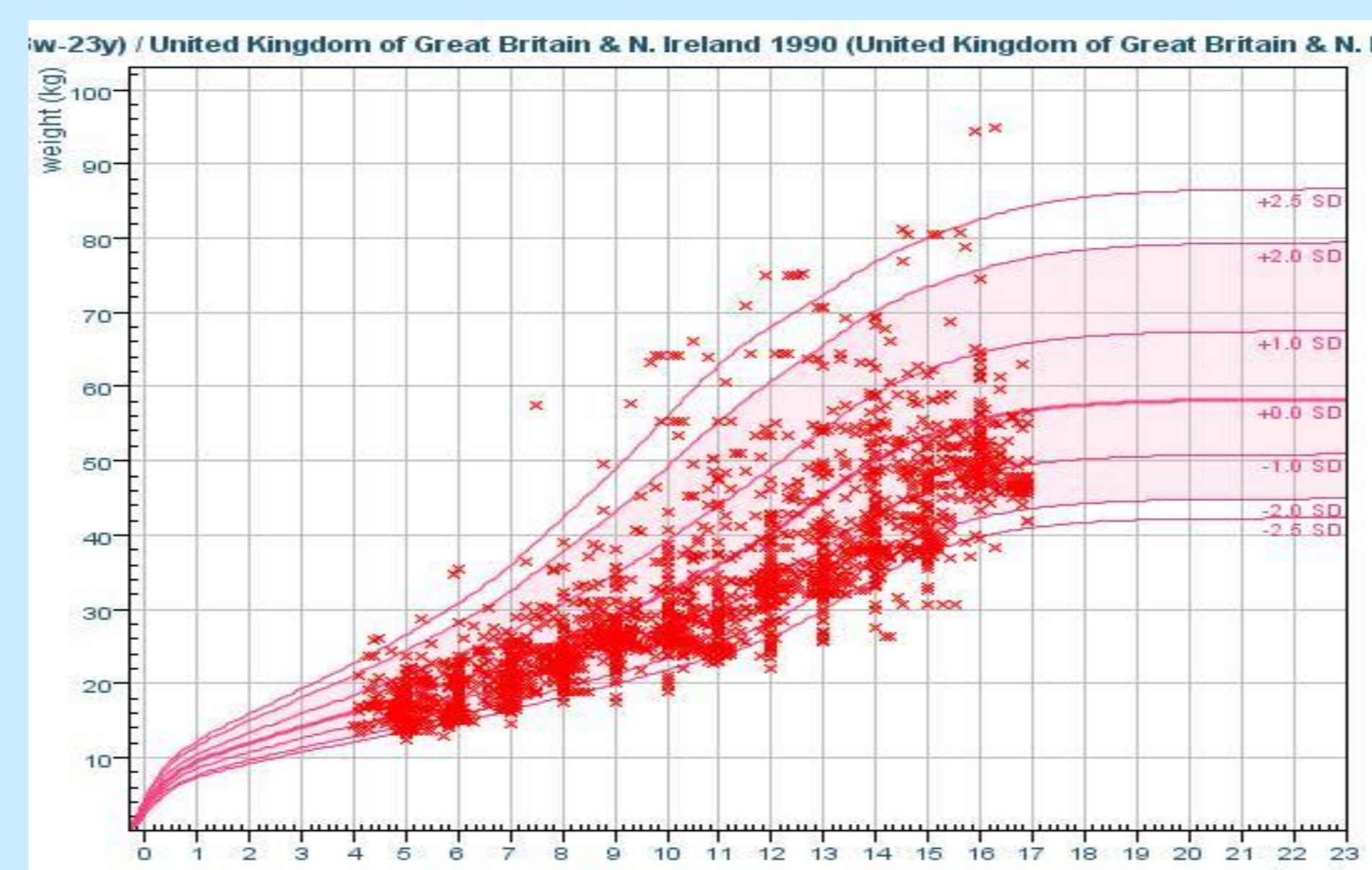


Fig 3 Weight of Nigerian Girls compared to UK reference data

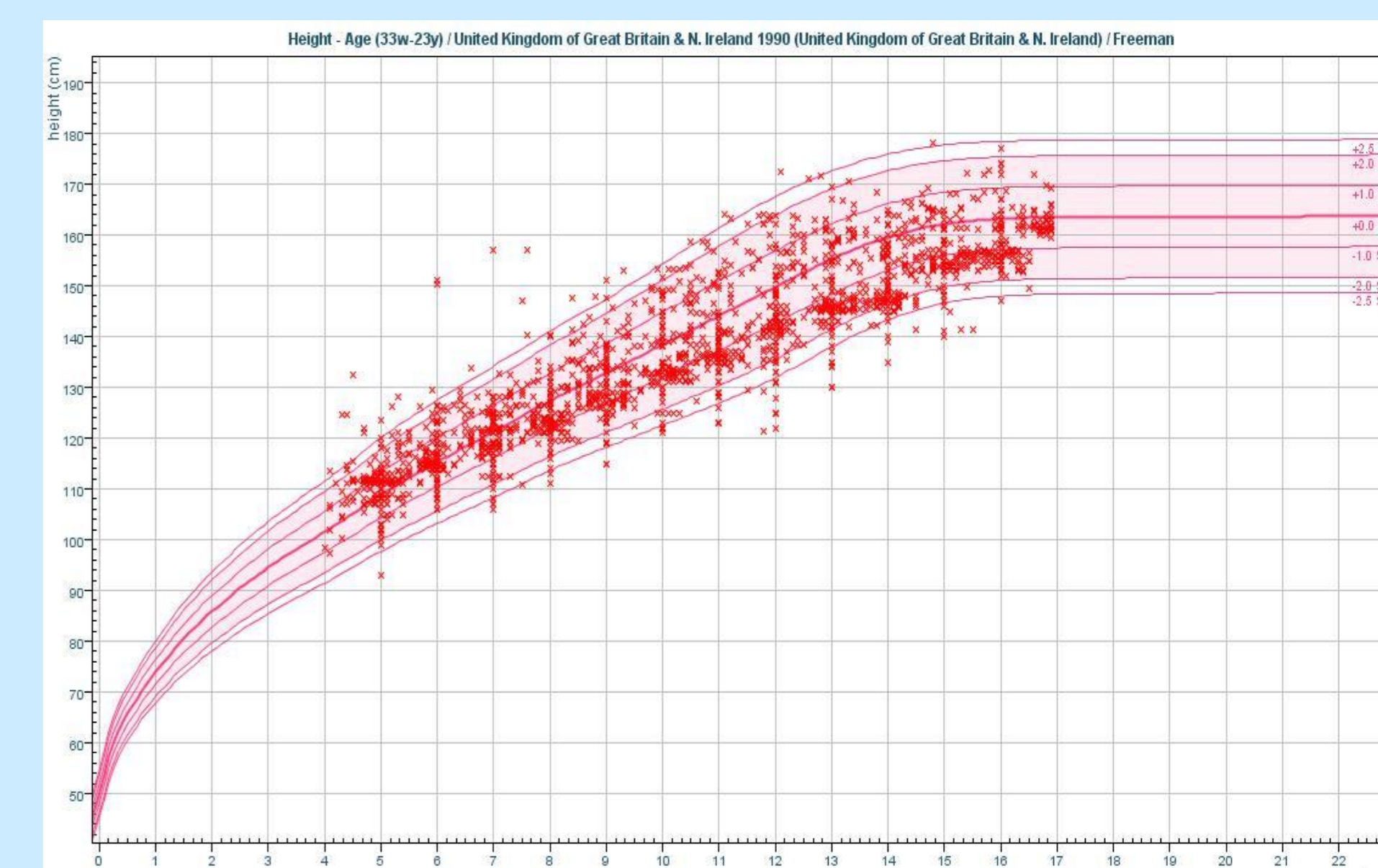


Fig 4. Height of Nigerian girls compared to UK reference data

Conclusion

- There are important differences in the growth pattern of the Nigerian child when compared to US and UK growth reference data.
- Our study highlights the need for growth charts which are based on local indigenous data