Nutritional Assessment in children with Cerebral palsy attending the Paediatric Neurology Clinic, University College Hospital, Ibadan, Nigeria

Ibeh JN[1], Bayo A[1], Adeyekun M[1], Lagunju IA[1,2]

1. Department of Paediatrics, University College Hospital, Ibadan, 2. College of Medicine, University of Ibadan, Nigeria

Nutritional assessment is critical to the healthcare of all children. Children with neurodisability are at an increased risk of feeding difficulties, growth failure and malnutrition. Limitations with measurement of anthropometric measures make nutritional assessment in this population difficult.

OBJECTIVES

This study aimed to evaluate the feeding profile and nutritional status of children with cerebral palsy (CP) attending the paediatric neurology clinic of UCH Ibadan over a 3 year period.

METHODS

This was a cross-sectional study carried out between October 2019 to September 2022.

Children and adolescents with CP attending the paediatric neurology clinic of the University College Hospital were enrolled using the CNSN National CP registry data form.

METHODS (continued)

Nutritional history explored the presence of feeding difficulties and included key questions

Anthropometry (weight and height) were measured in accordance with standard procedure. Measurements were carried out by trained personnel.

Weight was measured using a digital weighing scale. The measured weight was recorded to the nearest one decimal place (0.1 kg).

Height was measured using a stadiometer. Recumbent length was measured in children who were unable to stand using the length board.

Height/length measurements were recorded to nearest 0.1 cm.

Anthropometric measurements obtained were converted into indices using the WHO Growth Standard Charts for Z-scores based on subjects' age and sex using the WHO Anthroplus tool.

Nutritional status was determined using Z-scores for weight-for-age (WAZ) and height-for-age (HAZ)

WAZ-scores of <−2 to −3 were moderately underweight, scores <−3 severely underweight and >2 overweight

HAZ-scores of <−2 to −3 were moderately stunted and <−3 severely stunted

RESULTS

Two hundred and fifteen (215) children were enrolled following diagnosis of CP by a paediatric neurologist. 135 (62.8%) were male and 80 (37.2%) female, ranging from age 3 to 240 months.

Eighty seven (40.5%) caregivers reported that their wards were unable to eat and drink efficiently and seventy seven (35.8%) children were unable to feed without choking.

Mean and median weight was 13.88kg and 10.00kg respectively with a standard deviation of 1.08kg while the mean and median height was 86.75cm and 81.50cm with a SD of 26.96cm.

Seventy (32.6%) children had normal weight, 32 (14.9%) were moderately underweight, 105 (48.8%) were severely underweight and 8 (3.7%) were overweight using WAZ scores.

One hundred and fifteen children had height measured. Fifty two (45.2%) were of normal height, twenty three (20%) were moderately stunted and forty (34.8%) were severely stunted

There was a significant relationship between the severity of motor disability and the severity of undernutrition (p = 0.002).

IMAGES
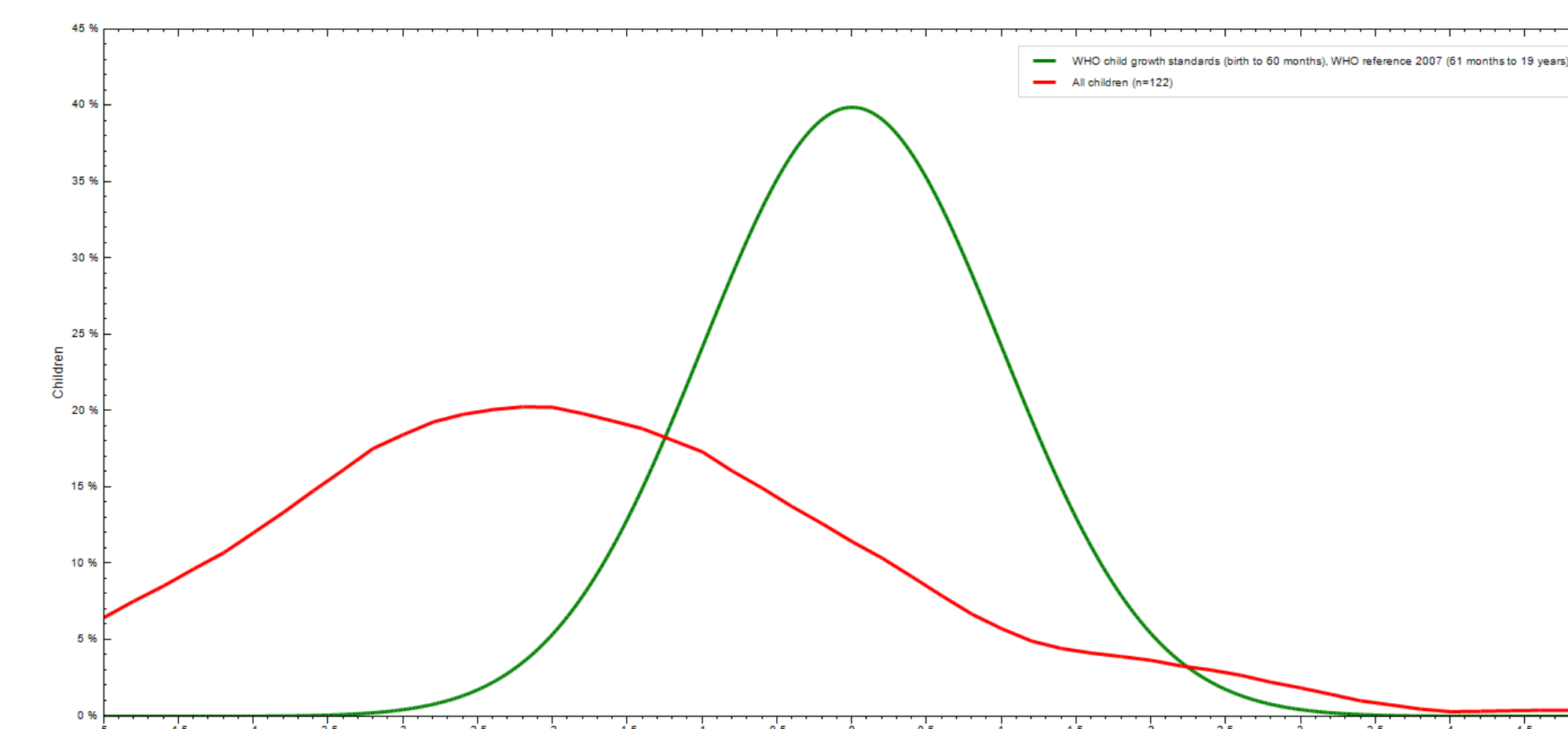
Graph showing weight for age Zscore distribution of cohort compared to the WHO growth standards

CONCLUSIONS

Overall malnutrition was 67.4% of which 63.7% were undernourished. This was higher than findings in Uganda (52%), Greece (38.1%) and Bosnia (47.5%). It was however lower than a similar study in Kano that found 79.3% were undernourished.

This study found a significant relationship between the severity of motor disability and the severity of undernutrition and this was similar to a study in Argentina where there were higher odds of having moderate and severe malnutrition in children with GMFCS IV and V.

Two thirds of children with CP seen at the UCH are undernourished.

The presence of severe motor disability is a major risk factor for malnutrition in children with CP.

REFERENCES

- WHO: Training Course on Child Growth Assessment: Measuring a Child's Growth Available from: http://www.who.int/childgrowth/training/en.
- Karagiozoglou-Lampoudi T, Daskalou E, Vargiami E, Zafeiriou D. Identification of feeding risk factors for impaired nutrition status in paediatric patients with cerebral palsy. Acta Paediatr 2012;101:649-54.
- Ruiz Brunner MLM, Cieri ME, Rodriguez Marco MP, Schroeder AS, Cuestas E. Nutritional status of children with cerebral palsy attending rehabilitation centers. Dev Med Child Neurol. 2020 Dec;62(12):1383-1388. doi: 10.1111/dmcn.14667. Epub 2020 Sep 6. PMID: 32893359.