Undernutrition is common in children with cerebral palsy (CP) and is associated with decreased dietary intake, based largely on studies in high-resource countries. There has been no direct analysis of how children’s patterns of dietary intake and body composition differ between high- and low-resource countries.

**Aim:** To determine the energy intake and prevalence of undernutrition in preschool children with CP in Australia and Bangladesh.

### METHODS

#### Study Design: Comparison of two cross-sectional studies

**Participants:** Children with Cerebral Palsy aged 18-36 months (corrected age); diagnosis confirmed by an Australian Paediatrician for both samples

**Recruitment: Australia**
Population-based sample: recruited through state-wide surveillance, tertiary and community centres referred to Brisbane.

**Measures:**
Dietary intake: three day weighed food record. Completed by parents at home (two week days and a weekend. Analyzed using Foodworks (Xyris)

**Anthropometry:**
- Height (or length) with portable stadiometer
- Weight: digital scales
- Body mass index (BMI) → Converted to Z scores using WHO Reference Data

**Gross motor function:** Gross Motor Function Classification System (GMFCS): I-V

**Sample characteristics:** n=99 (mean age= 27.1 months, 65 males, GMFCS I-II= 56.2%, III= 17.7%, IV-V= 26.2%)

#### Recruitment: Bangladesh
Children attending the Centre for the Rehabilitation of the Paralysed, Bangladesh; a national tertiary rehabilitation centre in Dhaka district.

**Measures:**
Dietary Intake: one day weighed food record. Completed by researcher at the centre (in-patient stay). Analyzed using Foodworks (Xyris)

**Anthropometry:**
- Height (or length) with portable stadiometer
- Weight: digital scales
- Body mass index (BMI) → Converted to Z scores using WHO Reference Data

**Gross motor function:** Gross Motor Function Classification System (GMFCS): I-V

**Sample characteristics:** n=81 (mean age= 27.6 months, 50 males, GMFCS I-II= 23.5%, III= 30.9%, IV-V= 45.7%)

### RESULTS

#### Average daily energy intake was greater for children in Australia compared to Bangladesh even when stratified for GMFCS.

Greater proportion of underweight children in the Bangladeshi children compared to Australia. Underweight status (weight for height z score WHZ ≤ -2SD) was related to energy intake (OR= 0.9, p<0.01) and GMFCS (OR= 2.4, p<0.01).

### LIMITATIONS

- The sample in Bangladesh were clinic attendees, whereas in Australia was representative of a population-based sample.
- Low literacy rates in Bangladesh meant that weighed records had to be completed by the researcher, as such only a single day while staying as in-patient was possible. A diet history of typical habitual intake at home was also conducted for comparison (but not reported in this poster).

### CONCLUSIONS

- GMFCS was significantly related to dietary intake in Australia, but not in Bangladesh; this suggests factors other than gross motor function are influencing dietary intake in Bangladesh.
- Children in Bangladesh had lower energy intake compared to children in Australia, even when adjusted for body weight.
- Given the significantly higher proportion of children in Bangladesh with undernutrition, we can postulate their energy intake is insufficient to meet basic nutritional needs for healthy growth.
- Further analysis needed to understand the impact of various social/economic factors on patterns, and interventions to promote improved nutritional status in low-resource settings.

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