

# **Nutritional status of critically ill preschool children at the time of hospitalization and 6 months post hospitalization: a mixed longitudinal study**

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**Back ground:** Impact of critical illness on nutritional status of children during hospitalization and in post hospitalization phase is not well studied. The complete absence of data on nutritional state of critical ill Indian children admitted and discharged from ICU has prompted this study.

**Objective:** To assess nutritional status of critically ill preschool children (1month – 5 years) at admission to PICU, discharge from hospital and 3 as well as 6 months post discharge.

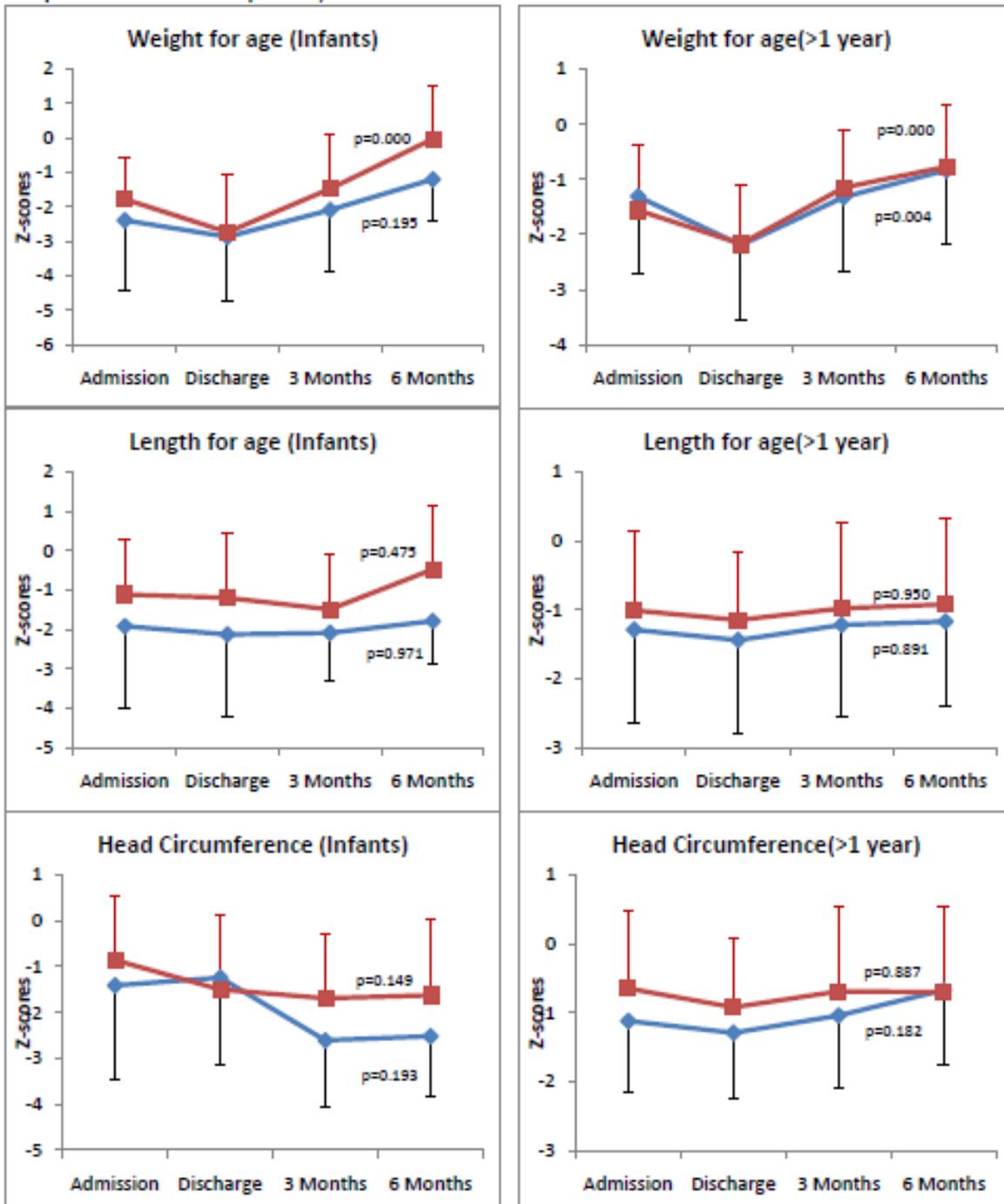
**Subjects:** A total of 115 children, (67 boys and 48 girls) aged 1 month to 5 years admitted to Pediatric Intensive Care Unit were measured for Weight, length/height, head circumference, mid upper arm circumference, triceps and subscapular skinfold thicknesses. Mean SD scores (Z score) were computed for all parameters. Acute undernutrition was defined as weight and mid upper arm circumference < -2SD scores and skinfold thicknesses and length/height below -2SD scores were classified as chronic undernutrition.

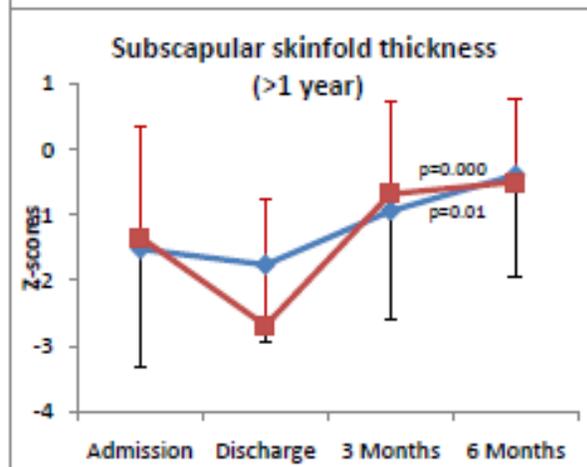
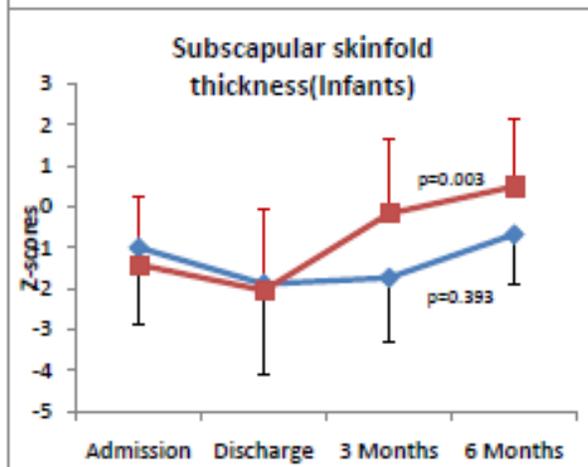
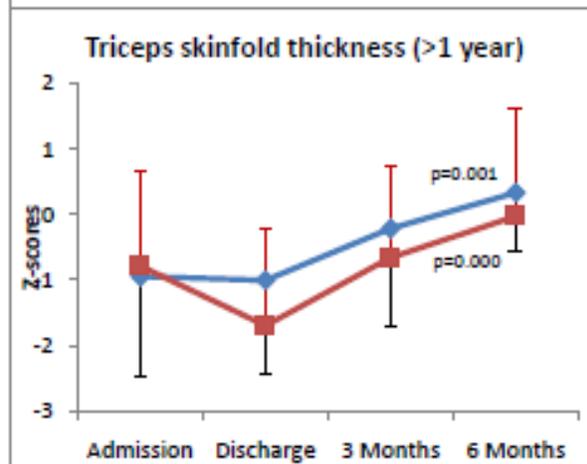
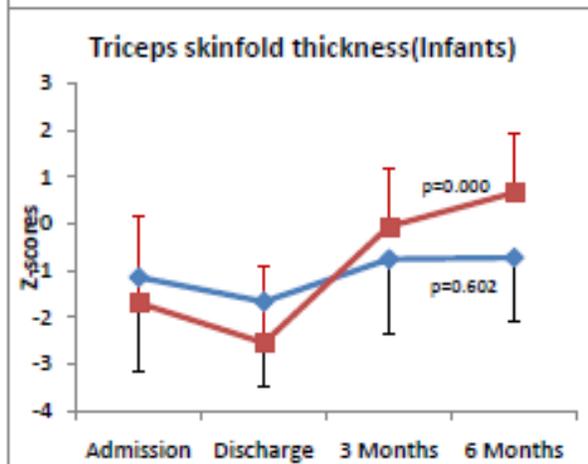
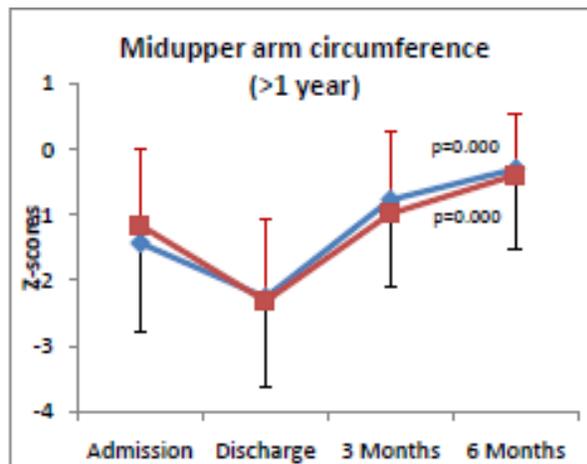
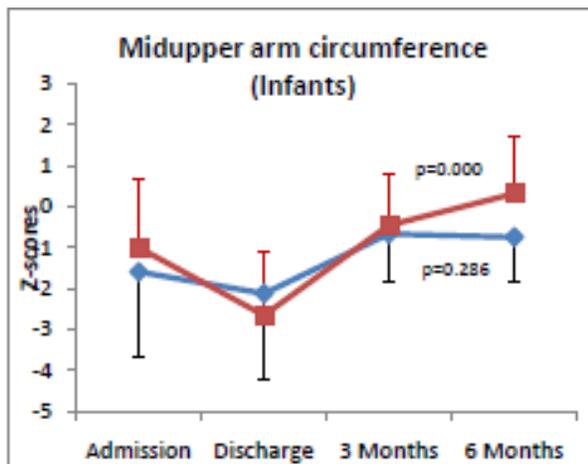
**Results:** Z scores for all the measurements were below the reference population ( $p < 0.05$ ) and it substantially deteriorated during hospital stay (Figure 1). At admission 34.3% of boys and 43.8% of girls were acutely undernourished ( $WFA < -2SDS$ ), which rose upto 69% ( $p < 0.05$ ) and 51.2% at discharge. This significantly ( $p < 0.05$ ) improved with only 15.6% of boys and 20.5% of girls undernourished at 6months post discharge. Mid upper arm circumference and skinfolds followed almost similar trends. Over all 22.4% of boys and 35.4% girls were stunted ( $HFA < -2SDS$ ) at

admission, which marginally deteriorated at discharge without significant improvement in post discharge phase. Head circumference did not show significant variation between admission and 6 months post discharge. Infants showed a steeper decline in their nutritional status as compared to older children

**Conclusion:** Nutritional status of critically ill worsened during hospital stay. This study calls for institution of suitable intervention to improve health of critically ill children both during hospital stay and afterwards.

Figure 1: Graphs depicting mean and SD of various anthropometric parameters at admission, discharge, 3 months and 6 months amongst infants and older (>1 year) critically ill boys and girls. P values indicate the level of significance in the change in mean SD scores between different time point of assessment computed for each sex separately.





■ Girls ■ Boys