

***A Study on the Applicability of the Modified Apls Weight-for- Age Calculation Formula on a Selected Population of Sri Lankan Children Attending a Tertiary Care Hospital***

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In Paediatric emergencies, actual weight measurement is not always feasible and drug doses are calculated using an estimated weight derived from an accepted formula. In many low- and middle-income countries, it has been proven that some of these formulas overestimate the weight leading to prescription errors. This study aims to determine the applicability of the modified advanced paediatric life support (APLS) weight-for-age formula in Sri Lanka. Such evaluation is important as the nutrition status, hormones, and genetic base of Sri Lankans differs from western populations. Our targeted population was children between 1 month to 12 years, attending paediatric wards/ clinics in Teaching Hospital Peradeniya during the period from 01/07/2023-31/08/2023. Children with prolonged illnesses affecting their weight were excluded. Weights measured with calibrated scales and documented in the BHTs were used for comparison with the estimated weights using the formula. A convenience sampling was done until the sample size of 387 children meeting the inclusion criteria was reached. A mean estimation error of 3.61kg with a mean percentage error (95% CI) of 26.9% (23.2% - 30.7%) was observed for the whole sample. The percentage of estimated weights within 20% of the measured weight (PW20 value) was 44.6% for the 1-11 months category, 20.9% for the 1-5 years category, and 10.1% for the 6-12 years category showing a significant increment in the error of estimation with the advancing age. The Mann-Whitney U test did not reveal a statistically significant difference between the two genders in the PW20 values across all ages. According to this study, the modified APLS formula significantly overestimated the actual weights with the degree of overestimation increasing with age making the formula less accurate for older children. No significant difference in the error of weight estimations was seen among boys and girls.

**Keywords:** Advanced Paediatric Life Support, Weight-For-Age Formula, Estimated Weight, Paediatric Emergencies