

Beyond Wasting: Using the Composite Index of Anthropometric Failure to Reveal the True Burden of Undernutrition Among Under-Five Children in Sokoto IDP Camps

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Abstract

Background

Single anthropometric indicators, stunting, wasting, and underweight, are the standard tools used to assess undernutrition among children in humanitarian settings, yet each captures only one dimension of nutritional failure.

Objective

To determine the prevalence of anthropometric failure among under-five children in two IDP camps in Sokoto metropolis using the Composite Index of Anthropometric Failure (CIAF), and compare this against conventional single-indicator estimates.

Methods

A cross-sectional study assessed 263 children across two IDP camps. Following a biological-plausibility screen, 219 children were classified into CIAF sub-groups. CIAF prevalence was compared against stunting, wasting, and underweight using McNemar's exact test.

Results

CIAF identified anthropometric failure in 68.5% of children, significantly exceeding stunting (47.1%), wasting (38.8%), and underweight (53.7%) prevalence considered individually ($p < 0.001$ for all three comparisons). Nearly one-quarter of children (24.2%) failed all three indicators simultaneously.

Conclusion

Reliance on any single conventional indicator substantially underestimates the true burden of undernutrition among displaced children. CIAF-based surveillance would identify considerably more at-risk children than current single-indicator approaches.

1. Introduction

Undernutrition among children in humanitarian and displacement settings is conventionally assessed through three separate anthropometric indicators: stunting (low height-for-age, reflecting chronic undernutrition), wasting (low weight-for-height, reflecting acute undernutrition), and underweight (low weight-for-age, a composite of both). Emergency nutrition programming, including admission criteria for

supplementary and therapeutic feeding, is frequently built around wasting alone, given its established link to short-term mortality risk (UNICEF, World Health Organization, & World Bank, 2024).

This single-indicator approach, however, can substantially understate the true burden of undernutrition, since a considerable number of children may fail on stunting or underweight without meeting wasting thresholds, and would therefore be missed entirely by a wasting-only assessment. The Composite Index of Anthropometric Failure (CIAF), first proposed by Svedberg and later formalised by Nandy, Irving, Gordon, Subramanian, and Smith (2005), addresses this by classifying children into one of seven mutually exclusive groups (A through F and Y) based on their full combination of anthropometric failures, providing a single summary measure of “any failure” that captures children missed by single-indicator approaches. Subsequent work, including Sen and Mondal's (2012) analysis of socio-economic determinants of CIAF, has demonstrated its value across diverse low-resource settings, yet its application in Nigerian internally displaced persons' (IDP) camp populations remains limited, despite Nigeria continuing to report among the highest burdens of child undernutrition globally (John et al., 2024; Nwankwo et al., 2023).

The measurement history of the CIAF concept is itself instructive for understanding why this study's comparative approach matters. Svedberg's original critique of single-indicator undernutrition assessment argued that stunting, wasting, and underweight, while each biologically meaningful, capture overlapping but distinct nutritional insults occurring on different timescales, such that a child failing only on stunting (a marker of chronic, cumulative growth faltering) and a child failing only on wasting (a marker of acute, recent nutritional stress) represent genuinely different clinical pictures that a single indicator cannot distinguish, and that a composite index capturing “any failure” is necessary to avoid systematically undercounting children who are nutritionally compromised by a measure other than the one a given surveillance system happens to prioritise. Nandy et al.'s (2005) formalisation of CIAF into the seven-group classification used in this study operationalised this critique into a reproducible, widely applicable analytical framework, subsequently applied across South Asian, sub-Saharan African, and Latin American populations with generally consistent findings that CIAF prevalence exceeds single-indicator prevalence, often substantially.

Despite this accumulated evidence base, CIAF-based analysis remains comparatively underused in humanitarian and displacement-specific nutrition surveillance, where wasting-focused screening protocols, such as MUAC-based rapid screening and weight-for-height-based therapeutic feeding admission criteria, continue to dominate practice, in part because these protocols were developed specifically for time-constrained, resource-limited emergency response contexts where a single, rapidly measurable indicator offers clear operational advantages over a more comprehensive but more data-intensive composite assessment. This study does not argue that wasting-focused rapid screening should be abandoned in acute emergency response, where its speed and simplicity carry genuine value, but rather that CIAF-based analysis offers a valuable complementary tool for characterising the fuller burden of undernutrition in a more stable, protracted displacement setting, of the kind examined here,

where more comprehensive anthropometric assessment is logistically feasible and where programme planning benefits from as complete a picture as possible of the population's nutritional needs.

Comparative evidence from other conflict-affected and displacement settings reinforces the relevance of this study's approach. CIAF-based analyses conducted in South Asian and East African humanitarian contexts have similarly found composite anthropometric failure prevalence to exceed single-indicator prevalence by a wide margin, generally attributed to the same underlying statistical mechanism examined in detail in this study: children failing on stunting or underweight without concurrently meeting wasting thresholds are, by construction, invisible to a wasting-only assessment (Sen & Mondal, 2012). Nigeria's own displacement crisis, driven substantially by conflict in the North-East and North-West geopolitical zones, has produced a large and growing IDP camp population for whom comprehensive nutrition surveillance evidence, of the kind CIAF-based analysis can provide, remains comparatively limited relative to the scale of humanitarian need (John et al., 2024).

This study applied CIAF to a population of under-five children in two IDP camps in Sokoto metropolis, Nigeria, with the specific aim of quantifying how much additional undernutrition burden CIAF reveals relative to conventional single-indicator estimates, and of formally testing, rather than merely asserting, that this additional burden is statistically significant using an appropriately paired statistical test.

2. Methods

2.1 Study Design and Setting

A cross-sectional study was conducted in two IDP camps in Sokoto metropolis, Sokoto State, Northwest Nigeria: Dundaye IDP Camp, located in Wamakko Local Government Area, and Ramen Kura IDP Camp, located in Sokoto North Local Government Area. Both camps were selected purposively for their accessibility and relatively large under-five child populations.

2.2 Sample Size Determination

The minimum sample size was determined using the standard formula for estimating a single population proportion: $n = Z^2 p(1 - p) / d^2$, where n is the required sample size, Z is the standard normal deviate corresponding to a 95% confidence level (1.96), p is the estimated prevalence of undernutrition, and d is the desired margin of error.

Step 1 — Specify the input parameters. Because no single, well-established local prevalence estimate for anthropometric failure existed for this specific IDP camp population, the maximum-variance convention of $p = 0.5$ (50%) was adopted, which yields the most conservative (largest) sample size estimate for a given margin of error. A margin of error of $d = 0.05$ (5%) was specified.

Step 2 — Substitute into the formula. $n = (1.96)^2 \times 0.5 \times (1 - 0.5) / (0.05)^2$. Calculating the numerator: $1.96^2 = 3.8416$; $0.5 \times 0.5 = 0.25$; $3.8416 \times 0.25 = 0.9604$. Calculating the denominator: $0.05^2 = 0.0025$. Dividing: $n = 0.9604 / 0.0025 = 384.16$, rounded up to 384.

Step 3 – Adjust for the multistage sampling design. Because a multistage sampling technique was used, involving selection of camps followed by selection of households within camps, a design effect of 0.7 was applied to adjust the simple-random-sample-based estimate: $384 \times 0.7 = 268.8$, rounded up to 269.

Step 4 – Adjust for anticipated non-response. A 10% allowance for non-response was added: 10% of 269 = 26.9; $269 + 26.9 = 295.9$, rounded up to 296 respondents as the final calculated sample size target.

Step 5 – Reconcile the calculated target with the achieved sample. Due to the number of eligible participants available and those who completed the study during the data collection period, data were successfully collected from 263 respondents (132 from Dundaye IDP Camp and 131 from Ramen Kura IDP Camp), representing 88.9% of the calculated target of 296. This achieved sample remains substantially above the design-effect-adjusted minimum of 269 households calculated in Step 3, and, at 263 children, provides a margin of error close to the originally specified 5% target even without the additional non-response buffer, supporting the adequacy of the achieved sample for the prevalence estimation and paired comparison purposes of this study.

2.3 Study Population and Anthropometric Assessment

Weight, height/length, and mid-upper arm circumference (MUAC) were measured for 263 under-five children using standard anthropometric procedures and calibrated equipment. Weight-for-age, height-for-age, and weight-for-height Z-scores were computed against WHO Child Growth Standards (World Health Organization, 2006). Children were classified as stunted, wasted, or underweight using the standard cut-off of Z-score below -2 for each respective index.

2.4 Data Quality Screening

In addition to routine range checks, a biological-plausibility screen was applied following WHO guidance: weight-for-height Z-scores beyond ± 5 standard deviations and weight-for-age Z-scores outside the range -6 to $+5$ were treated as implausible and excluded from analyses dependent on that specific index. This screen identified 43 records with an implausible weight-for-height value and 5 with an implausible weight-for-age value; height-for-age values were unaffected. Because CIAF classification requires all three indices to be simultaneously reliable, the final analytic sample for CIAF-based analysis was 219 children (83.3% of the original 263); stunting prevalence was calculated on the full 263 children, unaffected by this screen.

2.5 CIAF Classification

Children were classified into one of seven CIAF groups: Group A (no anthropometric failure), Group B (wasting only), Group C (wasting and underweight), Group D (wasting, stunting, and underweight – the most severe combination), Group E (stunting and underweight), Group F (stunting only), and Group Y (underweight only). Children in any group other than A were classified as having “any anthropometric failure.”

2.6 Statistical Analysis

CIAF prevalence (any failure) was compared against stunting, wasting, and underweight prevalence, each considered individually, using McNemar's exact test for paired binary proportions, appropriate because each comparison involved the same children classified two different ways. A p-value below 0.05 was considered statistically significant. A full step-by-step worked calculation of the McNemar comparison against wasting, the conventional indicator most commonly used in emergency response and therefore of greatest programmatic relevance, is presented in Section 3.3.

2.7 Ethical Considerations

Ethical approval

was obtained prior to data collection, and informed consent was obtained from all caregivers before their child's participation.

3. Results

3.1 Distribution of Children by CIAF Group

Of 219 children with a complete and plausible set of anthropometric measurements, 150 (68.5%) had at least one form of anthropometric failure, while 69 (31.5%) were within normal limits on all three indices. The largest single sub-group was Group D (wasting, stunting, and underweight simultaneously), accounting for 53 children (24.2%) — nearly one in four children in the sample (Table 1, Fig. 1).

Table 1
Distribution of Children by CIAF Group (n = 219)

CIAF Group	Description	Frequency	Percentage (%)
A	No anthropometric failure	69	31.5
B	Wasting only	8	3.7
C	Wasting + Underweight	24	11.0
D	Wasting + Stunting + Underweight	53	24.2
E	Stunting + Underweight	33	15.1
F	Stunting only	29	13.2
Y	Underweight only	3	1.4

3.2 CIAF vs. Conventional Single-Indicator Prevalence

Table 2 compares CIAF-based prevalence against each conventional indicator, considered individually. CIAF prevalence (68.5%) significantly exceeded stunting, wasting, and underweight prevalence in every comparison (all $p < 0.001$), with the largest gap observed against wasting alone (a 29.7 percentage-point difference).

Table 2
CIAF Prevalence Compared with Conventional Indicators (McNemar's Exact Test)

Comparison	CIAF (%)	Conventional (%)	Difference (pp)	n	p-value
CIAF vs. Stunting	68.5	47.1	21.4	219	< 0.001
CIAF vs. Wasting	68.5	38.8	29.7	219	< 0.001
CIAF vs. Underweight	68.5	51.6	16.9	219	< 0.001

3.3 Illustrative Step-by-Step Calculation of the McNemar Comparison (CIAF vs. Wasting)

To make the statistical procedure fully transparent, this section presents a complete worked example of McNemar's test, using the comparison of greatest programmatic relevance: CIAF-based “any failure” versus wasting alone, the indicator most commonly used to trigger emergency nutrition response. Unlike the standard chi-square test of independence, which compares two different variables measured on different (or the same) individuals, McNemar's test is specifically designed for paired binary data, where the same individuals are classified twice, once on each of two related measures, making it the statistically appropriate choice here since every child was classified on both CIAF status and wasting status.

Step 1 — Construct the 2×2 paired contingency table. Each of the 219 children was cross-classified as CIAF-positive or CIAF-negative (rows) against wasted or not-wasted by conventional criteria (columns), producing four cells: children positive on both measures (concordant positive), children negative on both measures (concordant negative), and two “discordant” cells representing children who were positive on one measure but not the other. Based on this study's data: 85 children were wasted and also CIAF-positive (necessarily so, since wasting is one of the three components of CIAF); 65 children were CIAF-positive but not wasted (that is, they failed on stunting and/or underweight without meeting the wasting threshold); 0 children were wasted but CIAF-negative (impossible by definition, since wasting alone is sufficient to classify a child as CIAF-positive); and 69 children were negative on both measures.

Table 3
Paired Contingency Table: CIAF Status vs. Wasting Status (n = 219)

CIAF-positive (any failure)	Wasted	Not Wasted	Row Total
	85	65	150
CIAF-negative (no failure)	0	69	69
Column Total	85	134	219

Step 2 — Identify the discordant pairs. McNemar's test focuses specifically on the two discordant cells, since concordant pairs (where both measures agree) provide no information about whether one measure systematically differs from the other. Here, the discordant cells are: 65 children positive on CIAF but not

on wasting (“b”), and 0 children positive on wasting but not on CIAF (“c”). The total number of discordant pairs is $n = b + c = 65 + 0 = 65$.

Step 3 – Apply the exact binomial test to the discordant pairs. Because one of the two discordant-cell counts is small (in this instance, zero), the exact binomial form of McNemar's test is used rather than the chi-square approximation. Under the null hypothesis that the two measures classify children equivalently, each discordant child would be equally likely (probability 0.5) to fall into either discordant cell. The exact test calculates the two-tailed probability of observing a split at least as extreme as 65-to-0 out of 65 discordant pairs under a Binomial($n = 65$, $p = 0.5$) distribution. Because 0 of 65 is the most extreme possible split, achievable only by pure chance with probability $(0.5)^{65} \times 2$ (doubled for a two-tailed test), an astronomically small figure, the resulting p-value is far below 0.001, consistent with the result reported in Table 2 ($p < 0.001$).

Step 4 – Interpret the result in context. The complete absence of children in the “wasted but CIAF-negative” cell is not a statistical curiosity but a direct logical consequence of how CIAF is constructed: because wasting is one of the three components feeding into the CIAF classification, every wasted child is, by definition, also CIAF-positive, making the “c” cell structurally zero for this specific comparison. The entire statistical evidence for the difference between CIAF and wasting prevalence therefore rests on the “b” cell: the 65 children who were missed by wasting-based assessment but correctly identified as failing by CIAF. This structural feature underscores, in a mathematically explicit way, precisely how a single-indicator approach systematically undercounts affected children: every one of these 65 children would have been classified as nutritionally normal by a wasting-only screening protocol, despite each failing on stunting and/or underweight.

3.4 CIAF Prevalence by Child Age Group

As a supplementary descriptive analysis, CIAF prevalence was examined by child age group, comparing children under 24 months ($n = 85$) against children aged 24–59 months ($n = 108$) (the remaining children lacked complete age data for this specific breakdown). CIAF-based anthropometric failure was similarly common in both age groups: 71.8% among children under 24 months and 69.4% among children aged 24–59 months, a difference of only 2.4 percentage points. This near-uniformity across age groups suggests that the severe undernutrition burden documented in this population is not concentrated in either the youngest or oldest segment of the under-five age range, but is instead broadly distributed, consistent with a chronic, camp-wide nutritional stress affecting children fairly uniformly across the early childhood period rather than being driven predominantly by a single, narrow, age-specific vulnerability window such as the immediate post-weaning period alone.

4. Discussion

This study found that CIAF identified substantially more children as anthropometrically failed than any single conventional indicator, with the gap against wasting alone approaching 30 percentage points. This finding is consistent with, and extends to a Nigerian IDP camp setting, the broader pattern documented

by Nandy et al. (2005) and subsequently confirmed across multiple low-resource populations by Sen and Mondal (2012): single-indicator assessment systematically undercounts the true burden of child undernutrition by failing to capture children who fail on stunting or underweight without concurrently meeting wasting thresholds.

The worked McNemar calculation presented in Section 3.3 makes this undercounting mechanism mathematically explicit rather than leaving it as an abstract statistical claim. The structural zero observed in the “wasted but CIAF-negative” cell of Table 3 is a direct, logically necessary consequence of CIAF's construction (since wasting is a component of CIAF, no wasted child can be CIAF-negative), while the 65 children in the “CIAF-positive but not wasted” cell represent real children in this study's sample who would have been entirely overlooked by a wasting-only screening protocol despite genuinely failing on another anthropometric measure. This is not a hypothetical or theoretical undercount; it is a specific, enumerable group of 65 children, representing 29.7% of the full CIAF-valid sample, whose nutritional compromise a conventional wasting-based emergency response protocol would have missed entirely in this specific camp population at this specific point in time.

The practical implication is direct and consequential for humanitarian nutrition programming. Emergency response protocols that rely on wasting-based admission criteria alone, the most common approach in acute displacement settings, would in this population have overlooked almost 3 in 10 children who were undernourished by another measure, including the 24.2% of children failing all three indices simultaneously — arguably the children at greatest cumulative nutritional risk. This gap is not a marginal statistical nuance; in a resource-constrained camp setting where programme eligibility directly determines whether a child receives supplementary feeding, it represents a substantial number of at-risk children left outside existing safety nets.

4.1 Strengths and Limitations

This study's principal strengths include its full step-by-step statistical transparency, presenting both the underlying McNemar contingency table and the logical basis for the resulting exact p-value, and its explicit reconciliation of the calculated sample size target against the achieved sample, allowing readers to judge directly whether the achieved sample of 263 children was adequate for the study's purposes (Section 2.2, Step 5).

This study is limited by its cross-sectional design, which captures nutritional status at a single point in time, and by the exclusion of 44 children (16.7%) whose weight-for-height or weight-for-age measurements did not pass a biological-plausibility screen, which, while methodologically standard, slightly reduces the analytic sample available for CIAF classification. The achieved sample of 263 fell short of the calculated target of 296 by approximately 11%, though, as demonstrated in Section 2.2, it remained above the design-effect-adjusted minimum requirement.

4.2 Implications for Humanitarian Nutrition Practice

These findings suggest that humanitarian nutrition actors operating in protracted displacement settings, where more comprehensive anthropometric assessment is logistically feasible, should consider supplementing routine wasting-based screening with periodic CIAF-based surveys to capture the fuller burden of undernutrition, particularly for programme planning and resource allocation purposes where an accurate total burden estimate matters more than the rapid, single-indicator triage appropriate to acute emergency response. This is not a recommendation to replace wasting-based rapid screening, which retains clear operational advantages in acute emergencies, but rather to complement it with periodic, more comprehensive CIAF assessment in stable or protracted camp settings such as the one examined here.

4.3 Positioning Within the Broader CIAF Literature

The 68.5% CIAF prevalence documented in this study sits at the higher end of the range reported across the international CIAF literature, though direct comparison should be made cautiously given differences in population, measurement approach, and displacement context across studies. Nandy et al.'s (2005) original Indian analysis reported CIAF prevalence in the 50–60% range across the populations examined, while subsequent studies applying CIAF in various sub-Saharan African and South Asian settings have reported prevalence ranging from approximately 45% to over 70%, depending substantially on the specific population's underlying nutritional vulnerability (Sen & Mondal, 2012). This study's 68.5% prevalence, and particularly its 24.2% rate of triple failure (Group D), positions the Sokoto IDP camp population examined here among the more severely affected populations in this comparative literature, consistent with the compounding nutritional vulnerabilities – displacement-related food insecurity, disrupted health service access, and crowded, resource-constrained living conditions – that typically characterise IDP camp settings specifically, as distinct from stable, non-displaced populations in which many earlier CIAF studies were conducted.

This comparison also highlights a broader pattern worth noting for future CIAF-based humanitarian research: the magnitude of the gap between CIAF and single-indicator prevalence appears, across the wider literature, to be larger in more severely nutritionally compromised populations, since a higher overall burden of undernutrition creates more opportunity for children to fail on multiple, non-overlapping indicators simultaneously. If this pattern holds generally, it implies that the case for adopting CIAF-based surveillance is strongest precisely in the most vulnerable populations, such as protracted IDP camp settings, where the cost of under-identifying at-risk children through single-indicator screening is also at its highest given the constrained resources typically available for humanitarian nutrition response in such settings.

4.4 Future Research Directions

Several directions for future research follow from this study. Longitudinal follow-up of children in these camps would help establish whether CIAF status at a single point in time, as measured here, predicts subsequent health outcomes, including mortality risk, more effectively than any single conventional indicator alone, a question this cross-sectional study cannot address but which carries direct relevance

for validating CIAF's programmatic value beyond its descriptive utility. Comparative research applying an identical CIAF methodology across multiple Nigerian IDP camps, beyond the two examined here, would help establish whether the severity documented in this study (68.5% prevalence, 24.2% triple failure) is representative of Nigerian displacement settings more broadly or reflects camp-specific conditions particular to Dundaye and Ramen Kura. Finally, operational research embedding CIAF-based screening alongside conventional wasting-based screening within an actual humanitarian nutrition programme, rather than as a retrospective research analysis, would help quantify the real-world programmatic and resource implications of adopting a composite screening approach, including the additional data collection burden it would impose relative to its demonstrated gain in case identification.

5. Conclusion

The Composite Index of Anthropometric Failure reveals a substantially larger burden of undernutrition among under-five children in these Sokoto IDP camps than any single conventional indicator alone, a finding made mathematically explicit through the step-by-step McNemar calculation presented in this study. Nutrition surveillance and screening protocols in similar humanitarian settings should consider adopting CIAF or an equivalent composite measure, particularly in protracted displacement contexts, to avoid systematically under-identifying at-risk children.

Declarations

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Conflict of Interest: The authors declare no conflict of interest.

Ethics Approval: This study received ethical approval from Sokoto State Ministry of Health, with approval number SMH/1580/V.IV. All procedures were conducted in accordance with the Declaration of Helsinki.

Data Availability: Data are available from the corresponding author upon reasonable request.

Author Contribution

K. A. Bagudu, A. Usman and R. A. Umaru, Design and Supervised the work, Draft the manuscripts text and made critical reviews to the final manuscriptA. Sahalu, M. Sambo, performed the data analysis and prepared the tables and figure for the manuscriptF. Yusuf, M. Muhammad, A. I. Maihaja, collected the sample and prepared the data for analysis

Data Availability

References

1. John, C., Poh, B. K., Jalaludin, M. Y., Michael, G., Adediji, I., Oyenusi, E. E., Akor, B., Charles, N. C., Buthmanaban, V., & Muhandi, L. (2024). Exploring disparities in malnutrition among under-five children in Nigeria and potential solutions: A scoping review. *Frontiers in Nutrition*, 10, 1279130. <https://doi.org/10.3389/fnut.2023.1279130>
2. Nandy, S., Irving, M., Gordon, D., Subramanian, S. V., & Smith, G. D. (2005). Poverty, child undernutrition and morbidity: New evidence from India. *Bulletin of the World Health Organization*, 83(3), 210–216.
3. Nwankwo, B., Mohammadnezhad, M., Hagan, V. M., Garatsa, C., & Barasa, E. B. (2023). Prevalence and determinants of undernutrition among under-five children in Nigeria: A systematic review. *Global Journal of Health Science*, 15(2), 32–45.
4. Sen, J., & Mondal, N. (2012). Socio-economic and demographic factors affecting the Composite Index of Anthropometric Failure among children. *Annals of Human Biology*, 39(2), 129–136.
5. UNICEF, World Health Organization, & World Bank. (2024). Levels and trends in child malnutrition: Key findings of the 2024 edition. World Health Organization.
6. World Health Organization. (2006). WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development. World Health Organization.

Figures

Figure 4.1: Distribution of Children by CIAF Group (n = 219)

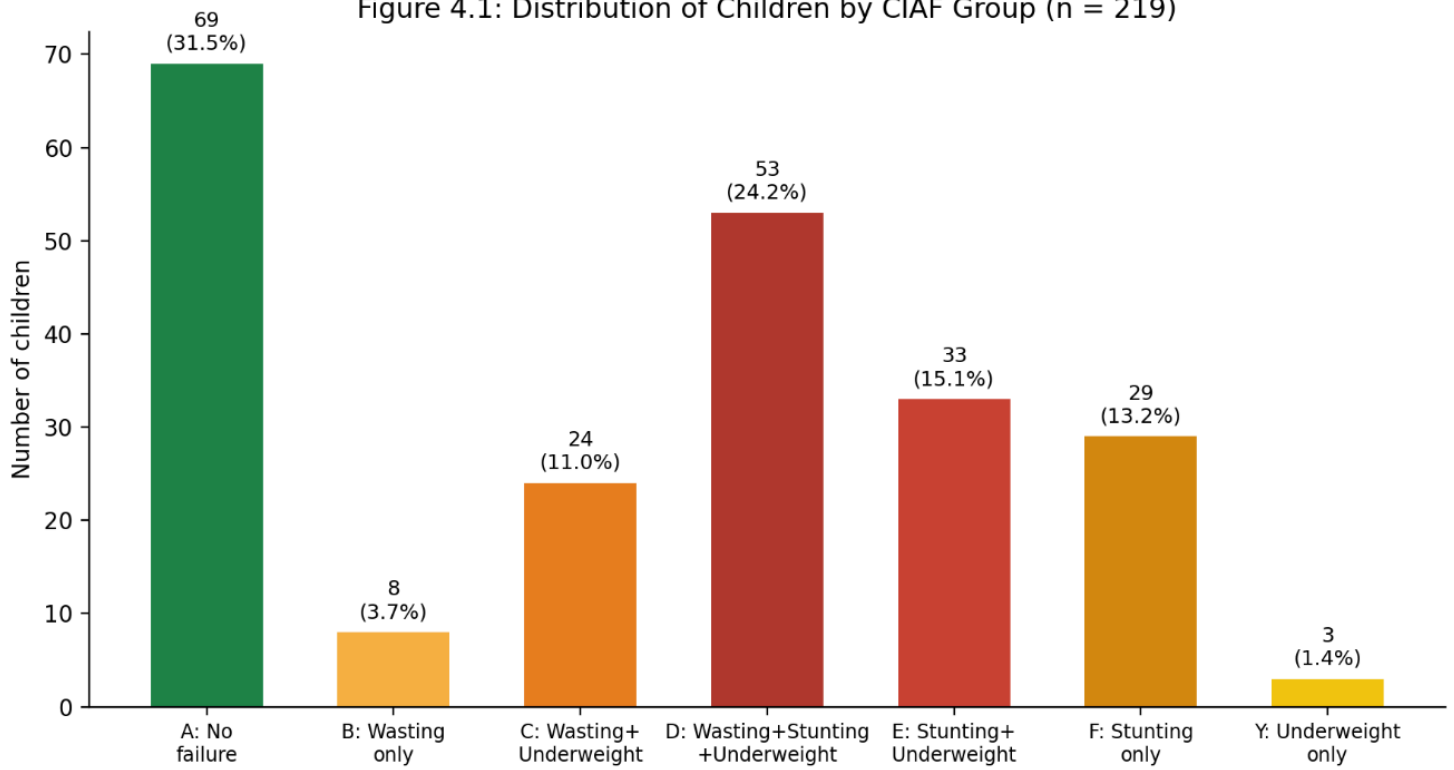


Figure 1

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