Reviewer #1: Overall, and interesting read. This manuscript presents a secondary analysis of the 2022 Nepal Demographic and Health Survey (NDHS) to investigate the prevalence and determinants of undernutrition, anemia, and their coexistence in children aged 6-59 months. The application of multinomial logistic regression is a key strength. The manuscript is generally well-written and follows a logical structure.  
Some specific comments follow:  
Major Comments  
**1. In the methods, authors state "we will analyze the data of 2,395 children from the NDHS 2022 dataset". However, the Abstract and the Results show 2,335. This discrepancy must be clarified. The authors should state the initial sample size and provide a clear explanation for any exclusions.**

>> Both numbers are corrected 2335 is weighted frequency and 2395 is unweighted frequency. We have corrected and specified in the current version of manuscript.

2. In Table 4, in the factors associated with anemia, the authors include "Nutritional status of child" as an independent variable. Given the cross-sectional nature of the data and the study's aim to assess coexistence, this approach may be problematic as it implies a causal direction that cannot be established and introduces potential endogeneity… The association between undernutrition and anemia is more appropriately explored through the multinomial logistic regression model (Table 5). In my opinion, this variable should be removed from the binary logistic regression model for anemia to avoid confusion and circular reasoning.

**3. The manuscript uses the term "adjusted odds-like ratio (aOLR)". To the best of my knowledge, the output of a multinomial logistic regression model is typically referred to as a relative risk ratio (RRR) or, if presented as odds, as an odds ratio (OR). Please consider using a standard term and define it clearly. For example, "adjusted odds ratios (aOR) from the multinomial logistic regression model, with 'Normal' as the reference outcome category."**

Ans: Now aOR term is used for the multinomial logistic regression model

4. The abstract states that children with malnourished mothers had a "90% (95% CI:1.24 to 2.90) higher likelihood" of coexistence. The CI corresponds to an OR of 1.90 (as shown in Table 5, which represents a 90% increase in odds, not likelihood. This distinction is important, and the language should be precise throughout the manuscript. The abstract should be revised to state: "...children with malnourished mothers had 90% higher odds (aOR: 1.90; 95% CI: 1.24 to 2.90) of..."  
5. Please correct table numbers, as they should be sequential (there are two tables numbered 1); perhaps using a section numbering?  
  
Minor Comments  
**5. In the abstract, I suggest breaking down the results section into two or three separate sentences, for improved readability.**

Response: Sentence is splitted into 2 sentences.

6. In the introduction, the rationale for the study is clear. However, the statement that "there are limited studies exploring factors associated with the co-existence of undernutrition and anemia among U-5 children in Nepal" could be strengthened by briefly mentioning what the few existing studies (if any) have found or what specific gaps remain.

7. In the methods, the definition of "undernutrition" is based on the Composite Index of Anthropometric Failure (CIAF) concept. It would be beneficial to explicitly name this index, as it is a well-established term and is supported by the cited reference.

8. The authors state they removed the 'province' variable from regression models due to a variance inflation factor (VIF) > 2. A threshold of 2 is quite conservative; VIF thresholds of 5 or 10 are more commonly used. Please provide a justification for this choice.  
9. The manuscript should explicitly state how missing data were handled in the statistical analysis. Several variables in Table 1 (e.g., father's education, mother's age, parity) have a substantial number of missing values. Were these cases excluded via listwise deletion for each model? This should be clarified in Statistical Analysis subsection.

10. The manuscript would benefit from a thorough proofread to correct minor grammatical errors and typos. For example: "presence anemia in children" (pg. 18, at the bottom) should be "presence of anemia"; "...those whose mothers who attained at least secondary level education, and those whose mothers participated..." is repetitive.

Reviewer #2: The topic presented in the manuscript is highly relevant for public health in developing countries.  
Please consider making the title more specific to the scope and methods of your research.  
The definition of undernutrition is vague: “Stunting, wasting, underweight or any combination” — does this mean a child is considered undernourished if they have any one of the three? Or only if they have multiple?

Odds-like ratio" (aOLR) is uncommon and may confuse readers. Standardize with “adjusted odds ratio (aOR)” unless you are referring to a specific statistical nuance that requires clarification.

Response: Corrected

Review grammatical issues and ambiguity of same phrases. Some sentences are wordy or unclear.  
Contradictory finding needs explanation: You report that anemia and undernutrition were not associated with each other, yet some children had both. This warrants further discussion. If they co-exist in 16%, why is the statistical association not significant?

In conclusions “Targeted interventions” is vague. What kind of interventions? Nutrition-specific? Maternal education? Social protection? Consider suggesting specific policies or areas for programmatic focus.

Reviewer #3: This is an interesting and well-written paper on a relevant topic. Please find below some issues which should be addressed to further improve the manuscript.

General remarks:  
- The authors might re-check their article according to the STROBE checklist. For example, the study’s design should be indicated with a commonly used term in the title or the abstract.

- In the spirit of Open and Reproducible Science, the analysis code should be made available in an online repository together with a data dictionary, and the respective URL should be mentioned in the Methods section.

>> The data analysis code is accessible in the github link ()

Detailed points:  
- The title says this was a secondary analysis of the NDHS data. However, this term is not mentioned in the main text. It would therefore be helpful to give some context of the NDHS study, e.g. what was its original aim, how many participants were included etc.  
- Abstract: "were ... lower likelihood" is grammatically not correct. Please revise.  
- Is "NDHS" the correct abbreviation for "Nepal Health Demographic Survey"? "NHDS"

would seem more appropriate and is also mentioned like this once in the Methods section.  
- The description of Nepal as a country might fit better into the Introduction. It would be helpful to the Reader to put the HDI values into context, e.g. compare them with those of the highest and least developed countries.  
- "In this study, we will analyze the data of 2,395 children from the NDHS 2022 dataset." It should be mentioned for clarity that all these children were U-5. Were these children all U-

5 children included in the DHS 2022 data? If not, by which criteria were the children selected for analysis?  
- Please add a paragraph explaining how the data were collected, e.g. how were height, weight and blood levels in children and mothers measured, by whom (e.g. trained physicians) and in which setting (at school, in the children's homes...)? How were the remaining variables from table 1 and the potential confounders measured?  
- I think "mother's nutritional status" is not a suitable word for describing their BMI category.  
- Which population was used as reference to calculated z-scores of height and weight?  
- "province variable" is not a common statistical term. Please revise.  
- "10.5% were 6-12 months old": Table 1 says 10.4%.  
- Please note that there are to tables labelled as table 1.  
- The VENN diagram in Figure 1 is quite nice, but I think the information in Figure 2 might better be presented in a table, together with exact numbers (not only %). In Figure 2, it is not clear what the percentages in the upper right of each of the four panels indicate.  
- Also in table 2, exact numbers should be mentioned in addition to %.  
- Figure 3: There should be no interpretation in the figure legend, so the last sentence in the legend should be omitted. Instead, the meaning of the vertical bars (95% CIs?) should be explained.  
- Were the analyses presented in tables 3 and 4 mutually adjusted for each other variable shown in the table? If not, why not?  
- "The child whose mother was thin" is awkward English wording and should be revised.  
- The second p-value column is incorrectly assigned to "Coexistence vs Normal".  
- In general, I would suggest to remove all p-values from the tables, as the 95% CIs already contain the information whether an association was statistically significant or not.  
- Discussion, first sentence: The prevalence of undernutrition should also be explicitly mentioned in the results section. The anemia prevalence of 43.5% is reported as 43.4% on other places in the manuscript.

Response: it was a typho which is now corrected

- "...which aligns with the rates observed in other LMICs. For instance, a study in Ethiopia reported a higher prevalence..." These two sentences do not fit together in this way.  
- "The decline in anemia prevalence in Nepal...": Does this mean this prevalence was higher previously? If so, a reference should be given which supports this statement.  
- "...our findings from Nepal, a low-middle-income country," This does not need to be repeated again.  
- "The higher prevalence of co-existence of undernutrition and anemia in our study...": Higher compared to what?  
- "Our study suggests that interventions that address the determinants of undernutrition should not be assumed to address undernutrition." I do not understand this sentence. Should the second "undernutrition" rather say "anemia"?  
- "The children from the richest wealth quintile have lower odds..." Throughout the manuscript, when relating to results from this study, past tense should be used.  
- How were non-response rates addressed, and how hight were these rates (overall and for U-5 children)?  
- As a further limitation, the authors should discuss that the CIs between children's nutritional status and anemia were quite large, indicating that the statistical power / sample size was limited with respect to these associations.