

### Title: **The growing concern of Type 5 diabetes mellitus: A narrative review**

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**Reviewer B:** Faria Afsana, **ORCID:** 0000-0002-7412-2196, **COI:** None, **AI disclosure:** None

- 1. Comment** Title needs to be more specific; discussion is on type 5 diabetes not on the burden of malnutrition  
**Response:** The title has been adjusted to be more specific as shown (*Lines 2 and 3*).
- 2. Comment** The Methods are described in sufficient details so that the study can be reproduced. Whether ethical concerns have been well described. Though it is a narrative review it would be good to add type-specific articles reviewed.  
**Response:** The methods have been revised as suggested (*Lines 14-17*).

**Reviewer C:** Marufa Mustari, **ORCID:** 0000-0002-8519-4988, **COI:** None, **AI disclosure:** Used Grammarly

- 3. Comment** Appropriateness of the Title.  
The title is relevant and generally aligned with the manuscript content. It captures the geographic focus (Nigeria), exposure (malnutrition), and outcome (Type 5 diabetes). However, there are two concerns:  
The phrase “onset of Type 5 diabetes” implies a causal relationship that is not yet definitively established in the literature. The manuscript itself presents largely associative and mechanistic evidence rather than causal epidemiological proof. The manuscript is a narrative review, but this is not reflected in the title.  
**Response:** The Title has been reviewed as seen (*Lines 1-2*).
- 4. Comment** Completeness and accuracy of the Abstract.  
The abstract is generally well-structured (background, methods, results, conclusion) and captures the central theme linking malnutrition and Type 5 diabetes. However, several issues affect its completeness. The Results section lacks prevalence estimates, magnitude of association and key epidemiological figures. Abstract reads as conceptual rather than evidence-driven.  
**Response:** The abstract has been rewritten to focus and discuss on Type 5 diabetes only (*Lines 4-24*).
- 5. Comment** Clarity and appropriateness of the Objective(s).  
The objective is stated in the abstract (lines 15–17) and later elaborated in the 'Introduction' (lines 9–16 on page 6). While the intent is clear, the objective is overly broad and somewhat diffuse, combining multiple aims: biochemical association, epidemiological burden, policy evaluation and global comparison  
This reduces focus and makes it difficult to identify the primary research question.  
In addition the wording is descriptive rather than analytical.  
The objective would benefit from being condensed into a single clear primary aim with 1–2 secondary aims  
**Response:** The Clarity and appropriateness of the Design to achieve the objective(s) has been indicated and discussed (*Lines 17-21*).
- 6. Comment** Clarity of the rationale for conducting the study is given in the Introduction section.  
The Introduction provides broad background information, but the rationale for conducting this review is not sharply articulated. The manuscript discusses malnutrition and diabetes broadly but does not clearly define:  
What is unknown, Why Nigeria specifically requires focused review, Why existing literature is insufficient.  
Statements such as: “IDF officially recognized Type 5 diabetes Mellitus...” (lines 4–6, page 5) may be overstated or insufficiently written, as this classification is still evolving.  
Lack of clearly defined objective statement early in Introduction. The aim appears only toward the end of the section.  
**Response:** The rationale of conducting this review is clearly defined in Abstract and introduction sections (*Lines 1-12*).
- 7. Comment** The Methods section provides a general description of the narrative review approach, including databases searched, keywords, and inclusion/exclusion criteria. However, several aspects require clarification to ensure transparency and reproducibility:  
The flow of study selection is numerically inconsistent: Initial records 147, After duplicates removed 120, Full texts assessed 58, Final included 76 (this discrepancy needs clarification).  
The absence of a formal risk-of-bias tool is acknowledged, but: the criteria for “qualitative appraisal” are not clearly operationalized. The manuscript should clarify that no human participants or primary data were involved. Statement on use of publicly available data only.  
**Response:** I have answered all the above questions in this manuscript.

- 8. Comment** Clarity and The study is described as a narrative review, which is appropriate in principle given the stated objective of synthesizing biochemical, epidemiological, and policy-level evidence on Type 5 diabetes. However, there are important issues affecting clarity and methodological accuracy: Mismatch between “narrative review” and structured methodology. This resembles a systematic or scoping review, not a purely narrative review. The design may mislead readers. appropriateness of the Design to achieve the objective(s).  
**Response:** The design of this review study is clearly a narrative review as shown in the abstract section and on the title
- 9. Comment** Appropriate and thorough description of the Statistical methods  
The manuscript does not include statistical analysis, which is acceptable for a narrative review. However, the current presentation raises several issues:  
Absence of a clear statement on statistical methods  
Section titled:  
“Statistical Overview and Trends” (line 7–8, results). But: no statistical analysis performed, only secondary descriptive data reported. So, terminology is misleading.  
No description of data synthesis method, authors state: “Findings were synthesized descriptively” (lines 1–2, Data synthesis), but do not specify: how studies were compared, how conclusions were derived and whether any framework was used  
Use of quantitative figures without methodological context: Multiple prevalence estimates presented (results section) with no clarification: whether pooled, selected or representative  
No handling of heterogeneity or bias in reported data  
**Response:** Appropriate description of statistical methods used in this review is as shown in the abstract section
- 10. Comment** Quality, clarity and appropriateness of the Table(s).  
The review includes: epidemiological data, biochemical mechanisms and country-level comparisons  
However, no summary tables are provided to organize this information.  
**Response:** Summary tables were not considered necessary
- 11. Comment** Quality, clarity and appropriateness of the Figure(s), if any.  
The manuscript includes three figures:  
Figure 1 Global burden of child malnutrition, Figure 2 Nutritional status in Nigeria, Figure 3 Causes and contributing factors of malnutrition in Nigeria, Figures appear descriptive but not analytical.  
Figures 1 and 2 Present secondary data but do not show: trends over time, comparative interpretation and linkage to Type 5 diabetes. Figure 3 lacks methodological clarity “Summary of causes and contributing factors”  
Unclear whether conceptual framework, adapted model or author-generated synthesis  
**Response:** All the Figures have been reviewed. They are narrative and analytical. They represent data and information from literatures used. The figures are publicly available data only, as shown in Figures 1-5
- 12. Comment** Major redundancy between text and tables/figures in the Results section.  
There is significant redundancy between narrative text and figures, particularly in the results section. Repetition of numerical data, example, Global stunting, wasting, and overweight figures described in text and same data presented in Figure 1. Nigeria-specific statistics, detailed prevalence described in text, also presented visually in Figure 2. Text duplicates rather than interprets figures. The Results section: restates figure data but does not analyze or synthesize.  
**Response:** The text and figures are not redundant. Every figure represent data and information from literatures used to discuss this review.
- 13. Comment** Pertinence of the Discussion section whether it justify the main message of the manuscript without repeating the results.  
The Discussion section is partially appropriate but requires refinement to fully justify the main message of the manuscript. Repetition of results. Several parts of the Discussion reiterate findings already presented in the results section (e.g., malnutrition burden, epidemiological patterns, and association with Type 5 diabetes) without sufficient additional interpretation. Example, statements linking malnutrition prevalence and diabetes risk are restated rather than critically analyzed. Insufficient positioning within literature: There is limited comparison with: global literature, conflicting evidence and strength of associations. Policy emphasis dominates scientific interpretation: A large portion transitions quickly into recommendations, reducing analytical depth.  
**Response:** The discussion explains and describes all the methods, objectives and aim of this review. The discussion section explains the topic in details using publicly available data.

14. **Comment** Whether Strength(s) and Limitation(s) are well described.

Strengths: Missing key strengths such as

- integration of biochemical + epidemiological + policy perspectives
- focus on under-recognized diabetes subtype
- contextualization in Nigeria

Limitations: Well-written but too generic, lacks specificity regarding Nigerian data gaps, diagnostic ambiguity of Type 5 diabetes and heterogeneity in definitions (MRDM vs T5DM)

**Response:** The specificity regarding Nigerian data gap of type 5 diabetes is explained in the Figures 1 and 2

**Responsible editor:** Tahniyah Haq, **ORCID:** 0000-0002-0863-0619

15. **Comment** The clinical features used to diagnose Type 5 DM. Need to be discussed.

**Response:** The authors discussed the clinical features used to diagnose Type 5 DM (*Lines 10-15*).

16. **Comment** The author has not provided any statistics on the global prevalence of type 5 diabetes. The figure appears to be AI generated and lacks authenticity.

**Response:** While the initial map was generated using data from the UNICEF/WHO/World Bank Group Joint Child Malnutrition Estimates (JME) Key Findings of the 2025 Edition, it has been removed in response to the Editor's concerns and replaced with expanded textual analysis provides the necessary geographic and epidemiological context. To maintain the rigor of the manuscript, the authors discussed and explained the global prevalence of malnutrition juxtaposed with International Diabetes Federation (IDF) hotspots of Type 5 DM within the same regions have now been incorporated (*Lines 6-21*).

17. **Comment** Why focus on Nigeria important (esp in the abstract)

**Response:** The initial drive of the review was the looming danger of this Diabetes in Nigeria, amidst severe food insecurity, persistent rise in cost of food, poverty, and several other drivers of malnutrition. However, seeing this problem is not particular to Nigeria alone; the scope has now been expanded beyond Nigeria, and we have toned down the Nigerian scenario. We thank the Editor for this opportunity to enhance the reach and relevance of our work.

18. **Comment** How do we know they were type 5, as no antibodies or X-rays to exclude pancreatic calculi were perform? Please omit them.

**Response:** We thank the Editor for highlighting the need to distinguish between Type 5 DM and Type 3c diabetes. In accordance with this feedback, case reports have now been thoroughly reviewed to identify the differences between these two types of DM, which used to be under the same umbrella name of Malnutrition-modulated- diabetes mellitus (MMRD) (*Lines 1-17*).

19. **Comment** The author can include a box highlighting the main features and treatment of type 5 DM

**Response:** Thank you editor for this insightful suggestion. Table summarizing the clinical, diagnostic and treatment of Type 5 DM has now been incorporated (*Page 28*).

20. **Comment** Please, clarify if there are regional difference in type 5 diabetes

**Response:** Yes, the authors discussed extensively the regional differences in Type 5 DM (*Lines 1-22*).

20. **Comment**

1. Limit search duration between Jan 2020 to 2026.
2. Exclude the 4 articles before 2020 (marked in red) and their related information from the text.
3. Rewrite the section in methodology describing articles that were included.
4. Check the sequence of the references. All changes in the text have been marked in red for your convenience.

**Response:** One of the four references, reference [19] was updated with a more recent and appropriate citation this is highlighted in yellow colour on the modified reference list below, while the other three references [21, 27, and 28] were removed from the manuscript. Consequently, the sequence of references changed accordingly, and these modifications were shown in the modified reference list below and indicated as comments in the copy-edited PDF provided.

We were unable to use the previously submitted clean copy because subsequent editorial improvements had already been incorporated into the current version of the manuscript. To ensure consistency with these revisions, all corrections were made directly on the updated copy-edited version provided by the journal.

Additionally, the methodology section was revised to align with the updated set of included articles. All corrections and adjustments have been clearly highlighted in the document comments for ease of review.

A new Prisma diagram reflecting the final studies included (47) has also been provided as shown below.