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OPEN PEER REVIEW

First Steps in Constructing the KVAD Score to Estimate the Risk of Dehydration in Children with Acute Diarrhea: A Case-Control Study

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

4 comments · 7 Mar 2024 – 25 Mar 2024

Referee 1 Reviewer

MINOR REVISION 7 Mar 2024

Thanks for the review process.
There are a few vague points in this article:
1. Why did they choose these items for predicting dehydration? (references?)
2. What is the superiority of this score in comparison to the WHO estimation system for dehydration?

Referee 2 Reviewer

MAJOR REVISION 22 Mar 2024

Thank you. It is necessary to pay attention to the following items.
1- Despite the explanation, isn't a sample of 34 patients with dehydration too small to create a dehydration scoring system? Please explain further.
2- Your scoring system depends on parents accurately recording the number of stools and episodes of vomiting in 24 hours, and the possibility of error in the report is high. How do you explain this confounding factor?
3- The conclusion section should be corrected because it is not possible to reach this conclusion based only on this study.

Associate Editor

MAJOR REVISION 25 Mar 2024

Dear EIC,
This study aims to identify risk factors and create a scoring system with an appropriate cutoff to estimate the likelihood that children suffering from acute diarrhea may become dehydrated.
It is a useful study but needs some revision. All comments should be answered by the authors, and changes should be made based on the reviewers' comments.

Editor-in-Chief

MAJOR REVISION 25 Mar 2024

Dear Author,
Thank you for submitting the article. It needs some revision. Please revise it based on the reviewers' and AE's comments.

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear Editorial Board of Archives of Comprehensive Pediatrics and Reviewers,

The authors are grateful for the comments of reviewers. We have responded point-by-point to all comments in ***below***.

Response to Reviewer 1 Comments

Point 1: Why did they choose these items for predicting dehydration? (references?)

Respone 1: We have consulted numerous previous studies that have established a correlation between dehydration and the frequency of loose stools and vomiting per day. Through our study analysis, we validated this association and determined that dehydration correlated with both the frequency of loose stools and vomiting. Furthermore, we observed an association between dehydration and hyperthermia and weight-for-age >+2SD in children with diarrhea . As a result, we employed these four item to predict dehydration in children with acute diarrhea.

We have presented them in the discussion section and highlighted them in yellow.

Point 2: What is the superiority of this score in comparison to WHO estimation system for dehydration?

Respone 2: The KVAD Score and the WHO dehydration assessment scale approach the evaluation of dehydration from different perspectives. While the WHO scale relies on general indicators like general appearrance, eyes, thirst, and skin turgor, the KVAD Score delves into specific physiological parameters such as body temperature variations, vomiting frequency, weight for age >+2SD, and loose stool frequency.

In comparing the two methods, the KVAD Score's emphasis on quantitative analysis sets it apart. By assigning numerical values to each parameter and establishing a threshold for dehydration based on the total score, the KVAD Score provides a standardized and objective assessment framework. This quantitative precision enables healthcare providers to gauge dehydration severity more accurately, leading to more targeted interventions.

Moreover, the KVAD Score offers a comprehensive evaluation by considering multiple facets of dehydration. By encompassing various parameters, including body temperature, vomiting frequency, weight for age >+2SD and loose stool frequency. This multifaceted approach ensures that no aspect of dehydration goes unnoticed, allowing for a more thorough assessment.

The standardized scoring system of the KVAD Score further enhances its utility. By promoting consistency in assessment practices across different healthcare settings, it facilitates comparability of results and ensures uniformity in patient care. This standardization streamlines the assessment process, making it easier for healthcare providers to interpret results and make informed decisions regarding patient management.

Overall, the KVAD Score offers several advantages over the WHO dehydration assessment scale, including quantitative precision, comprehensive evaluation, and standardization. These

features contribute to its effectiveness as a dehydration assessment tool and highlight its potential to improve patient care outcomes.

We have added them in the discussion section and highlighted them in yellow.

Response to Reviewer 2 Comments

Point 1: Despite the explanation, isn't the number of 34 patients with dehydration too small to create a dehydration scoring system? please explain more.

Respone 1: Actually, this is also one of the limitations of our research, so we consider this a first step result like the title of the article. We will continue to conduct further research involving larger and more diverse groups of people across various locations to ensure the KVAD score's accuracy and applicability. This gradual approach to research will allow us to refine the KVAD score, enabling healthcare providers to utilize it more effectively. Although our initial study had its constraints, it lays the groundwork for creating a reliable dehydration assessment tool in the future.

We have added them in the discussion section and highlighted them in green.

Point 2: Because your scoring system depends on the exact chart of the number of stools and vomiting in 24 hours by the parents. And the possibility of error in the report is high. How do you explain this confounding factor?

Respone 2: In our study, we specifically selected cases in which caregivers could accurately recall the frequency of stools and vomiting within a 24-hour period in children for analysis. Cases in which caregivers couldn't recall these details were excluded from the study. This approach ensures that the data collected for analysis are reliable and consistent, thereby minimizing the potential impact of inaccurate reporting on the study outcomes.

Point 3: The conclusion section should be corrected. Because it is not possible to reach this conclusion only with this study.

Response 3: We have corrected and highlighted them in green.

All authors thank you for reviewers's comments!

2 Revision 1

4 comments · 26 Apr 2024 – 3 May 2024

Referee 1 Reviewer

ACCEPT 26 Apr 2024

The authors' responses to reviewers' comments are satisfactory. However, this study, with its small number of participants, should be described as a preliminary study in the title.

Referee 2 Reviewer

ACCEPT 1 May 2024

Thank you. Corrections are appropriate.

Associate Editor

ACCEPT 3 May 2024

Dear EIC,
I reviewed the manuscript again. The great effort in improving the manuscript is highly appreciated.
The authors have addressed all comments.
Thank you

Editor-in-Chief

ACCEPT 3 May 2024

Dear Author.
Your revisions have significantly improved the article, and it is now deemed acceptable for publication.
Congratulations on your hard work and dedication to enhancing the quality of your work.