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Letter to Editor

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Statistical considerations in the pediatric simple triage score

Yalcin Golcuk[1]*, Ömer Faruk Karakoyun[2]

[1]Department of Emergency Medicine, Faculty of Medicine, Muğla Sıtkı Koçman University, [2]Emergency Medicine Service, Muğla Training and Research Hospital, Muğla, Türkiye
**Corresponding author*

To the Editor-in-Chief,

We read with great interest the article titled "Pediatric Simple Triage Score (PSTS): A Simplified Approach for Triaging Pediatric Patients with Fever in the Emergency Department" by Vadakkeveedan *et al.*, which explores a novel triage scoring system for pediatric patients with fever.[1] The authors' attempt to simplify triage through the PSTS offers significant clinical relevance, especially in resource-limited settings.

However, we noted a significant methodological concern regarding the modification of the TOPRS score. The authors incorporated an additional parameter, hydration status (dehydration scoring 1 point), into the scoring system without providing sufficient statistical justification for this alteration. The assignment of 1 point for dehydration requires statistical validation to ensure it reflects an accurate contribution to the overall risk. Ideally, weight assignment should be determined through multivariate regression analysis or clinical outcome correlation to verify its comparable significance to other parameters.[2]

Furthermore, the modified score (PSTS) should be tested for internal consistency and reliability using metrics such as Cronbach's alpha to ensure the added parameter maintains the overall coherence of the scoring model. In addition, interrater reliability testing should be performed to confirm consistency across different clinicians applying the score.[3]

Another critical point is the comparative validation of the new PSTS score against the original TOPRS score. The area under the receiver operating characteristic curve (area under the curve) values for both scoring systems should be compared using appropriate statistical methods, such as the DeLong test, to determine whether the inclusion of hydration status has resulted in a statistically significant improvement in predictive accuracy. Clarifying whether a significant statistical difference exists between these models is essential for establishing the modified score's validity and clinical superiority.[4,5]

We commend the authors for their effort in developing a simplified pediatric triage system but recommend further validation studies to confirm the statistical justification for the inclusion of hydration status. Clarifying these points would strengthen the PSTS and enhance its applicability in clinical practice.

Author contributions

YG: Conceptualization (lead); Writing original draft (lead); Writing review and editing; Supervision; OFK: Investigation (support); Writing original draft (support); Writing review and editing; All authors have read and agreed to the content of the final manuscript. (YG: Yalcin Golcuk, OFK: Omer Faruk Karakoyun).

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ORCID:
YG: 0000-0002-8530-8607
ÖFK: 0000-0002-4476-7989

Address for correspondence:
Dr. Yalcin Golcuk, Department of Emergency Medicine, Faculty of Medicine, Muğla Sıtkı Koçman University, Muğla, Türkiye.
E-mail: dryalcingolcuk@gmail.com, yalcingolcuk@mu.edu.tr

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