

# Methodological Considerations Regarding the Development of the Tactical Medicine Knowledge and Awareness Scale: Implications for Future Validation Studies

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**Cite this article as:** Sutaşır MN. Methodological considerations regarding the development of the tactical medicine knowledge and awareness scale: implications for future validation studies. J Acad Res Med. [Epub Ahead of Print]

**Keywords:** Methodological considerations, tactical medicine, awareness scale, emergency medicine, validation studies

## Dear Editor,

I'd like to thank Sarbay and his associates for rapidly addressing a significant gap in emergency medical education. The tactical medicine knowledge and awareness scale (TAMKA) is essential, particularly as tactical emergency medical support (TEMS) evolves in contemporary emergency care. Although I acknowledge the study's contribution, I assert that certain methodological aspects require scrutiny before the widespread implementation of this strategy. The internal consistency (Cronbach's  $\alpha=0.808$ ) is satisfactory; however, this number is derived from a single-center study with a limited sample size ( $n=131$ ). The authors correctly assert that this strategy constrains generalizability across various geographic regions and emergency medicine training environments. The measure lacks significant evidence of discriminant or convergent validity, which the authors acknowledge are critical issues. Modern psychometric standards necessitate validation of the five qualities as distinct constructs prior to endorsing the instrument for evaluating various aspects of knowledge in tactical medicine (1). Additionally, no information is available regarding criterion validity. It is uncertain whether TAMKA ratings may predict a person's effectiveness in tactical operations, field decision-making, or, ultimately, patient outcomes. Such a demonstration is particularly useful for determining whether the scale accurately measures the aspects most relevant to tactical scenarios (2). It's also vital to discuss about issues with technology. Certain factor loadings are very low (item 20:  $\lambda=0.435$  in factor 2), although certain content validity indices are close to important values (item 9: content validity

ratio=0.54). A content validity coefficient of 0.632 is acceptable; however, it suggests that the scale may not cover all aspects of tactical medicine. There is no strong methodological rationale for the reduction from 55 initial items to 28 final items. Without a test-retest reliability assessment, it's difficult to determine whether the scale remains stable over time. This is crucial for a tool that teachers may use to test students individually to assess how well they perform. Despite these concerns, this research represents a significant initial step towards formalizing competency assessment in tactical medicine. The authors have identified a specific educational prerequisite and devised a technique grounded in expert consensus. I recommend that the authors regard this publication as a foundation for future improvement rather than a finished product. TAMKA's psychometric properties and clinical significance would be greatly improved by multicenter validation studies, thorough assessments of criterion-related and discriminant validity, evaluations of test-retest reliability, and analyses of correlations with external performance metrics. Not only would these efforts improve Turkish emergency medical systems, but they would also serve as a model for other nations if TEMS becomes recognized as a critical skill for emergency care (3,4).

Sincerely,

## Footnotes

**Financial Disclosure:** The author report that no financial support was received for this study.

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**Received Date:** 23.11.2025 **Accepted Date:** 05.12.2025

**Epub:** 22.01.2026



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