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RESPONSE TO LETTER

Assessment of Hand Hygiene Knowledge, Attitude, and Practice Among Health Sciences Students in Herat, Afghanistan: A Cross-Sectional Study [Response to Letter]

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Dear editor

We are sincerely grateful to Shinde, Islam, and Dakurah for their thoughtful engagement with our article, "Assessment of Hand Hygiene Knowledge, Attitude, and Practice Among Health Sciences Students in Herat, Afghanistan", and for their insightful comments that foster a critical academic debate.[1] The opportunity to clarify our methodological decisions and elaborate on the unique context of our research is one we welcome. Our study's primary objective was to establish a crucial baseline understanding of hand hygiene (HH) knowledge, attitudes, and practices (KAP) among the next generation of healthcare professionals in Afghanistan.[2] In a nation grappling with a fragile health system, such foundational data are indispensable for developing targeted educational curricula and effective, context-specific infection prevention and control policies. While we appreciate the methodological ideals raised, which represent the gold standard in well-resourced environments, we remain confident that our research design was a deliberate and ethically necessary adaptation to the severe realities of conducting research in a conflict-affected setting.[3]

The correspondents rightly note the limitations of our multi-site convenience sampling strategy. However, a rigid insistence on probability sampling in a setting such as Herat would be both impractical and ethically untenable. The prerequisites for such methods, namely a comprehensive and accurate sampling frame, are nonexistent due to decades of conflict and population displacement.[4] Additionally, attempting to create one would have posed unacceptable security risks to both our research team and the participants.[5] Consequently, our approach was not a shortcut but the only feasible and ethical pathway to gather vital preliminary data in a constrained setting. Similarly, while we acknowledge that our reliance on self-reported data likely inflated adherence rates due to social desirability bias (SDB)—a limitation we explicitly noted in our manuscript—we argue the finding is still valuable.[6] The high score indicates that students have successfully internalized professional norms; the critical challenge, therefore, is addressing the systemic barriers that prevent the translation of knowledge into practice, such as inconsistent supply access and overwhelming workloads.[7] The critique regarding our instrument validation is also appreciated. Our multi-step process, involving review by local experts and a pilot study yielding strong reliability, represented the most rigorous approach feasible where large-scale psychometric studies are not possible.

Regarding our analytical choices, the use of a median split to categorize KAP scores was a deliberate decision appropriate for this exploratory study, as no universal benchmarks exist for this population; this method enhances interpretability by identifying predictors of relatively better or worse performance within our specific cohort.[8] We must also respectfully correct

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the assertion that confounders were not addressed; our multivariable logistic regression analysis, detailed in our original paper, adjusted for a wide range of variables including age, profession, and clinical site. However, we accept the valuable suggestion that a history of prior HH training is an important potential confounder we will include in future research. The primary value of our work lies not in its formal generalizability but in its ability to identify specific, actionable targets for immediate intervention within a fragile health system.[9] This scholarly dialogue has reinforced our commitment to methodological rigor, and we have developed a clear roadmap for our ongoing research that incorporates this feedback. This includes implementing prospective tracking for response rates, integrating mixed-methods designs, pursuing advanced psychometric validation as conditions permit, formally reporting on instrument adaptation, and expanding covariate collection. We thank the editor and the correspondents once again for the opportunity to engage in this important exchange.

Disclosure

The authors report no conflicts of interest in this communication.

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