REVIEW REPORT

Title: From silos to synergy: Transdisciplinary research as a pathway for population and public health

Authors: Tanvir C Turin, Kamran U Baset, Saidur R Mashreky

Reviewer H: **Syed Atiqul Haq**, ORCID: 0000-0003-4154-7283 | **COI:** None

Thank you for submitting this important and timely manuscript. The paper makes a clear and persuasive case for transdisciplinary approaches to population and public health research and policy, with Bangladesh serving as a relevant and illustrative context. The conceptual framing is strong, and the emphasis on community engagement, co-production of knowledge, and multisectoral collaboration aligns well with current global health scholarship.

Major comments

1. Comment The following comments are offered to strengthen the manuscript's analytical rigor, contextual grounding, and relevance for a high-impact global health audience.

Introduction and Contextual Positioning The opening section provides a useful overview of 21st-century health complexity but remains largely global in scope. Given the manuscript's focus on Bangladesh, the authors may wish to explicitly frame this section as an Introduction and briefly articulate, at an early stage, why Bangladesh represents a particularly salient case for examining transdisciplinary approaches. Early contextual grounding would improve narrative coherence and reader orientation.

Response: Thank you for the excellent suggestion. We have added the following in the revised manuscript to address that (page 4 lines 80-90)

2. Comment Balancing Conceptual Advocacy with Critical Analysis The distinctions between multidisciplinary, interdisciplinary, and transdisciplinary research are clearly presented. To further strengthen the manuscript, the authors may consider engaging more explicitly with the challenges of implementing transdisciplinary approaches, particularly in low- and middle-income country contexts. Attention to issues such as power asymmetries across sectors, institutional incentives, and governance arrangements would add analytical depth and move the discussion beyond conceptual endorsement.

Response: This is an excellent comment, and we extend our sincere thanks to the reviewer. We fully agree that this is an important component that warrants deeper academic discussion. After consulting with the esteemed Editor, we agreed that addressing this in detail would require substantial expansion of the manuscript in terms of conceptual depth, scope, and supporting literature. We are committed to preparing a separate, more comprehensive manuscript — such as a narrative or brief review — that will allow us to fully engage with and elaborate on the reviewer's insightful suggestions. As this manuscript is intended as a perspective article, we have refrained from including these details in its current form.
Based on your comments, the following has been added to the revised manuscript.
Please see Page 5 lines 109-117

3. Comment Institutional and Sociocultural Context in Bangladesh While the manuscript convincingly argues that Bangladesh faces complex, interconnected health challenges, it offers limited discussion of the institutional and sociocultural factors that may shape the adoption of transdisciplinary approaches. Academic and policy environments in Bangladesh, as in many settings, are often characterized by strong disciplinary boundaries and hierarchical structures. Explicit acknowledgment of these dynamics—framed cautiously where empirical evidence is limited—would enhance contextual realism and strengthen the manuscript's contribution.

Response: We greatly appreciate this insightful comment and thank the reviewer for raising it. We fully agree that this aspect deserves more thorough academic discussion. After consulting with the esteemed Editor, we concluded that addressing it in detail would require substantial expansion of the manuscript in terms of conceptual depth, scope, and supporting literature. We plan to develop a separate, more comprehensive manuscript (such as a narrative or brief review) that will allow us to explore the reviewer's suggestions fully. As the current manuscript is intended as a perspective article, we have kept this discussion concise. Based on your comments, the following has been added to the revised manuscript.
Please see the revised version Page 7 lines 155-163 and Page 8 lines 164-178

4. Comment Operationalizing Community Co-Production The manuscript's emphasis on communities as co-creators of knowledge is a notable strength. The authors may wish to briefly reflect on how participatory and co-production approaches can be operationalized in contexts marked by social stratification, gender norms, and political mediation. Consideration of potential limitations or unintended consequences would further enhance methodological rigor.

Response: This is such an excellent comment, our kudos to the reviewer. We totally agree that this is a component that needs to be discussed academically and flashed out in greater depth. We have discussed this with the esteemed Editor of the journal and we agreed upon that this would require substantial expansion of the manuscript in terms of conceptual depth, scope, and supporting literature. We have committed to prepare a separate, more comprehensive manuscript (for example, a narrative or brief review) that would allow us to fully engage with and elaborate on the reviewers' excellent suggestions in a format better suited to that level of detail. As this manuscript is intended as a perspective article in its current form, we refrained from including the issue in details. Based on your comments, the following has been added to the revised manuscript. Please see the revised version – Page 6 lines 135-142

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5. Comment Bangladesh Case and Reflexive Insight The overview of Bangladesh's public and population health challenges is comprehensive and compelling. The manuscript could be strengthened by a modest reflexive analysis of why integrated and multisectoral approaches have historically been difficult to institutionalise, despite longstanding recognition of the social determinants of health. Even brief illustrative examples or acknowledgement of systemic fragmentation would add depth.

Response: We sincerely thank the reviewer for this valuable comment. Based on your comments, the following has been added to the revised manuscript. Please see the revised version – Page 8 lines 181-184 and page 9 lines 185-197

Minor comments

6. Comment

1. Consider concluding with a concise synthesis of key arguments, in addition to the call to action, to reinforce the manuscript's central contributions.
2. Minor editorial revisions may improve transitions between conceptual sections and the Bangladesh-focused discussion.
3. Where appropriate, additional references on institutional governance, research collaboration, or implementation challenges in comparable LMIC settings could strengthen the manuscript.
4. I have suggested some typographic corrections in the review track of Word in your submitted manuscript. It will guide you to lessen such errors in your revised version, which may change quite dramatically.
5. You well understand that the abstract, in its current form, is somewhat inadequate. Please revise the abstract after your thorough revision of the manuscript.

Response: Thank you for your efforts for our manuscript, especially for the typographic corrections. We are really grateful for your gesture. We have incorporated those all. We also have a conclusion section with a concise synthesis of the key arguments. We have included key references, while being mindful of the reference limit provided by the journal for a perspective article. Also, we have updated the abstract based on the revised text. Please see page 3

7. Comment Overall Assessment: This manuscript addresses a critical issue in global health research and offers a strong conceptual foundation for advancing transdisciplinary approaches in Bangladesh and similar contexts. With greater attention to contextual constraints, implementation challenges, and reflexive analysis, it has the potential to make a meaningful contribution to high-impact global health scholarship.

Response: Thank you so much for critical review of our manuscript. We strongly believe that your comments have enabled us to improve the manuscript substantially.

Reviewer I: **M Atiqul Haque**, ORCID: 0000-0002-7598-2550 | **COI:** None

Major corrections

The manuscript states that Bangladesh needs transdisciplinary research, but it does not clearly explain which specific structural features of the country make this approach particularly necessary. The authors should clarify this to strengthen the argument.

Response: As suggested, we have revised the manuscript to enhance the argument. Please see page 1 line 80-90

Minor corrections

8. Comment Some themes are repeated across sections, particularly the statement that 21st-century health challenges are complex, interconnected, and extend beyond clinical or laboratory settings. Similar wording appears in the Abstract (line 54) and again in the section The Complexity of 21st-Century Health Challenges (line 76), and is conceptually echoed in the Bangladesh section. The authors should review the manuscript for such repetitions and minimize redundancy to improve clarity and conciseness.

Response: Thank you very much for taking the time to review our manuscript and for your thoughtful feedback. We have made the change to remove the redundant section.

9. Comment The authors should review grammatical consistency throughout the manuscript. For example: (a) the phrase "Health challenges in the 21st century is increasingly complex…" uses a singular verb with a plural subject (line 54, 76); (b) "Community engagement and involvement is a cornerstone…" similarly applies a singular verb to a compound plural subject (line 109); and (c) the phrase "road traffics injuries" contains an incorrect pluralization (line 121). The goal is not just to borrow insights across disciplines a but to transcend disciplinary boundaries… (Line no 94). These grammatical issues should be corrected for clarity and accuracy.

Response: Thank you very much for pointing out the issues. We have made the necessary corrections in the revised manuscripts.

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Responsible editor: **M Mostafa Zaman**, ORCID: 0000-0002-1736-1342 | **COI:** None

11. Comment Given the reviewers' high rating, the revised version may slightly exceed the word count and reference limits. Please submit the revised version along with a point-by-point response by 17 January.

Response: After carefully reviewing the comments, I believe that many of the suggestions, while excellent and highly valuable, would require substantial expansion of the manuscript in terms of conceptual depth, scope, and supporting literature. Fully incorporating these points would not only result in a version that goes well beyond what could reasonably be considered a slight exceedance of the word count and reference limits for a Perspective article, but would also necessitate a level of additional synthesis that would require a considerable amount of time to develop appropriately.

With this in mind, I would like to respectfully propose an alternative approach for your consideration. For the current submission, we could revise the manuscript to strengthen and clarify the core arguments of the Perspective, addressing the reviewers' comments to an appropriate extent while maintaining the intended scope and format of the article. After that, we would plan to write a separate, more comprehensive manuscript (for example, a narrative or brief review) that would allow us to fully engage with and elaborate on the reviewers' excellent suggestions in a format better suited to that level of detail. I will engage students for this purpose.

I believe this approach would preserve the focus and integrity of the Perspective piece, while also providing an opportunity to more thoroughly address the broader issues raised by the reviewers in a dedicated full-length paper.