

# Review of: "Influencing variables of health: dimensions and their determinants – A systematic review"

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**Potential competing interests:** No potential competing interests to declare.

The work presented represents a substantial undertaking and one that is critical to understanding health disparities and the contribution of factors to different aspects of a person's health. However, there are several limitations to the current study that are discussed below. Perhaps the biggest issue is the lack of clarity of terms included as determinants and problems with the organizing framework as a multilevel model. Improvement can be made in these areas to strengthen the framework and create a model that can be empirically tested.

1. Upon initial review, the problem statement is conceptualized well (see point 11). However, in one of the last lines, the authors state that there is a need to move from multidimensional to unidimensional scoring. However, this does not make sense. Multidimensional scores recognize the need to measure constructs independently rather than measuring them on a singular scale that bifurcates the domains. Multiple dimensional measures are often considered a better way to operational constructs. Can the authors clarify why unidimensional measures are preferred?
2. This is a minor issue. In the first figure, can the author rotate the text on the bottom so that readers are not required to read it upside down? It would improve the readability of the figure and improve its utility. Additionally, the authors need to provide some rationale for how this figure is organized. For example, what is the relevance of each level relative to the others? The authors have used a multilevel framework in other parts of the manuscript. Does the same leveling apply in this instance?
3. The authors need to provide a page number for the direct quote provided for mental health.
4. While the definition of social health might have focused on the standards of society, recent operationalizations of the construct (see WHOQOL-BREF) have focused on healthy social relationships and support and not placed significant emphasis on the other social component emphasized here. The authors need to specify how these elements are tied together to represent social health. Similar to comment two, a clearer leveling approach of the model may help clarify. For example, why are financial and social status considered distinct elements of social health? Social status variables do encompass more; it also includes socioeconomic status. Additionally, the authors have included love and sexuality under the existential and spiritual domain. These have traditionally been included under social relationships by the WHO, an entity heavily relied on by the authors. Can they provide a rationale for this classification?
5. The authors also need to provide a page number for their definition of social health because it is a direct quote.
6. Overall, the authors need to improve the clarity of their conceptual model by creating clearer distinctions between domains. While they are all interrelated, they should be made to be conceptually distinct in ways that will permit stronger operationalization in the future. Additionally, many of the terms within each domain require additional clarity.

For example, it is not clear what distinguishes mental role from cognition and emotion. A lack of clarity will only contribute to the conceptual ambiguity in these domains.

7. Despite citing Kaiser et al., 2021 throughout the manuscript, the publication is not cited in the references. The authors cite a publication in the references for 2023, but it is not clear whether this is the same publication.
8. The multilevel models created by the authors are difficult to interpret. It appears to be a mix of conceptual and operational variables that provide a flow chart to understand measurement rather than a true multilevel conceptual model. For example, the authors indicate that level 2 dimensions are made measurable by level three variables but then indicate that level 3 variables are possibly influenced by level four variables. Generally, in multilevel models, the variables at level 1 are nested in level 2, level 2 is nested in level 3, and level 3 is nested in level 4. For example, students nested in schools, schools nested in counties, and counties nested in states. Generally, factors at each level are presumed to influence factors at a lower level. Organizing information in this way may create a more intuitive model and align with traditional multilevel models that can be tested statistically. Additionally, the directional arrows provided in the model do not correspond with the direction of influence described by the authors. The authors should reconceptualize the models to fit with their integrated components or reorganize them so they make conceptual sense.
9. Can the authors explain why only two databases were used in their searches in English and only one database was used to search for keywords in German? It feels like other databases should be used to provide a more thorough search, particularly for articles written in German. Why were only 23 articles retrieved in the German-based databases? Is there not a focus on social determinants? It seems like the authors should have searched additional databases for articles written in German.
10. The authors cite a number of definitions from the World Health Organization. Why did they not include quality of life as a search term? The WHOQOL-BREF emphasizes the same areas of health described by the authors (physical, psychological, social, and environmental).
11. The introduction requires greater clarity. Initially, the authors seem to imply that the review was focused on identifying and categorizing determinants of health. It's not until we get to the methods section that it becomes clear that it is a review of potential measures. The authors should focus more of the introduction on instrumentation and the psychometric strengths and shortcomings of existing determinant measures.
12. There are no identified dates for the search. Can the authors provide dates for the literature searched (i.e., 1984 to present)?
13. It is not clear why the authors did not review articles related to acculturation and physical and mental health, which is a clear determinant related to culture. Moreover, it is not clear why culture is included in the existential dimension. More discussion is required.