

CORRESPONDENCE: Are spiritual needs ubiquitous? Conceptual, statistical, and sampling biases in a recent study on spirituality and health in Denmark

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Concerning doi: 10.1016/j.lanepe.2023.100602.

While we commend the authors' efforts, we raise critical concerns that are not adequately acknowledged in the paper, such that the conclusions (spiritual needs are common among Danes) and clinical implications (clinicians should therefore attend more to patients' spiritual history) do not follow from the methodology.

First, the operationalization of spirituality (p. 2) is so inclusive that it captures general human needs. This leads the authors to conclude that most Danes have "spiritual" needs, even if these needs could equally be categorized as secular (e.g., helping others and seeking inner peace). The authors' statistical approach (mean-scoring and dichotomizing the outcome) likely further bias results toward inferring that most respondents express "spiritual" needs, even if those needs are mostly or entirely secular.

Second, we warn against interpreting the predictors of spiritual needs as *causal* estimates [1], an inference that is at least implied throughout (e.g., p. 11-12).

Third, the survey invitation explicitly stated that questions pertain to "satisfaction with life", "meaning-making" and "faith"; topics that plausibly appeal particularly to spiritual-minded individuals. It's therefore very likely that the study sampled on its outcome, introducing selection bias (e.g., spiritual-minded individuals are more likely to participate in a study on spirituality). This undermines representativeness (see p. 6 and Appendix 1), which is concerning given that the results pertain to the ubiquity of "spiritual" needs in the general population.

While we sympathize with the authors' research goals, these limitations point to critical gaps between the report's methodology, its conclusions, and clinical significance.

References

[1] Westreich, D., & Greenland, S. (2013). The table 2 fallacy: presenting and interpreting confounder and modifier coefficients. *American journal of epidemiology*, 177(4), 292-298.