Reviewer's report

Title: Self-care Behaviors Related to Air Pollution Protection Questionnaire: A Psychometric Analysis

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Reviewer: Georgia Ntani

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Introduction needs refining as several bits are unnecessarily repeated. For example the fact the mortality and morbidity increases due to air pollution is repeated twice in the introduction. Also, in the introduction (and later in the discussion) it should be made clearer why authors use the HBM scale over other scales. What are the elements of this scale that are preferable over other existing scales?

The authors report that for the construct validity evaluation, they used 301 university students, and they describe that a three-step sampling technique. The first step was to consider each school as a cluster and then sample from each cluster. So how many clusters/schools did they approach and how many agreed to take part? Also, it is reported that the students in the school were selected randomly. Were they selected randomly due to high numbers of students?

Also, in the participants section they report that 12 experts were used. What kind of experts? In what fields? How were they used? Please provide more details.

Authors do not present any simple explanation of some important sections. For example, what is "Construct Validity Evaluation" in simple words?

Authors should give more explanation about CITC. They should also give more information about VARIMAX rotation. They report cut-points used for the above, but it is unclear to the reader what these methods are.
In their discussion authors report that their findings are similar to those of other studies, reporting results by Higginbotham et al, Berberoglu and Tosunoglu, Deguen et al. However, these studies assess reliability of other scales, namely the environmental distress scale, EAS, and air quality perception scale respectively. Do authors mean that those studies have followed a similar methodological approach to assessing reliability in different scales? If so, that should be discussed more accurately as the text at the moment feels like the actual results between the current study and the ones referenced are similar, while it should be the methods that are similar?

Authors report the low alpha coefficient for perceived benefit sub-scale as a limitation of the study. That is actually a finding from their analysis which should be discussed/explained if authors felt it should receive attention. It is not a limitation of their study as such. Authors also report self-reporting of the questions as potentially being subject to recall bias. I am unclear how that is possible given the questions. I feel that this is not a limitation of the study. Generally authors should re-consider the potential strengths and limitations described for this study.

Overall I feel that the whole manuscript should be very thoroughly proofread as several sentences do not make clear sense, making it challenging for the reader to understand the processes described.

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