

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Does doctors' personality differ from those of patients, the highly educated and other caring professions? An observational study using two nationally representative Australian surveys
AUTHORS	Ammi, Mehdi; Fookien, Jonas; Klein, Jill; Scott, Anthony

VERSION 1 – REVIEW

REVIEWER	Grundnig, Julia Medical University of Vienna, Teaching Center
REVIEW RETURNED	15-Nov-2022

GENERAL COMMENTS	<ul style="list-style-type: none"> • The manuscript is devoted to an interesting question. The research question aims to examine the extent to which the personalities of physicians and the general population, or specific physicians and specific populations, differ. • The introduction leads to the research question; all key aspects are well-defined and elaborated. • Abstract: It is not clear how the sample sizes are composed. At this point, the different numbers are more confusing than they provide information. Only with appendix 1 and 2 these numbers become understandable. Furthermore, there is no clear demarcation between patients and the population. The description is challenging. I had to read the sample description several times to understand how exactly the sample is composed. • The introduction does not contain any information about the theory of "locus of control". There is no mention of why this concept is relevant to the paper. • On page 5, in the section "Construction of comparison groups" the respective groups are given numbers. However, these numbers do not correspond to the numbers in the appendix. Page 5, line 56 "Group 5 are GP's" – in Appendix 1 it says Group 6: GP. • Overall, the paper is well-written and has a lot of literature integrated. • The studies cited are from the last 5 to 10 years and are therefore well suited. • In the last section, highlight the potential for change or a future reference for future physicians. • References: Some references have journal names written out and others have abbreviations. Please use a consistent system. • Appendix 3: The abbreviation ANSIC should be explained.
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REVIEWER	Scheepers, Renee Erasmus University Rotterdam, Erasmus School of Health Policy and Management
REVIEW RETURNED	24-Nov-2022

<p>GENERAL COMMENTS</p>	<p>The authors have written a clear paper on the interesting difference between personality traits of doctors and those of the general population. They specifically study personality traits as these have shown an impact on patient care quality. This point can be more substantially reflected on based on additional reviews studying the impact of personality traits, eg. The impact of clinicians' personality and their interpersonal behaviors on the quality of patient care: a systematic review of Boerebach et al. Also it would be interesting to reflect more extensively on how personality traits of patients affect their care outcomes and how/why. What also should be more extensively clarified, is the clinical/practical relevance of investigating differences in personality traits between doctors and patients. The authors provide this argument: "Given the demonstrated association of personality with a variety of important outcomes, it is important to consider the extent to which practicing doctors have personality traits that differ substantially from members of the general population and patients." First, the outcomes of personality could be more extensively specified, and second, what is the rationale for the relevance of insight in the differences of personality traits? How does insight in differences between groups helps to provide care to individual patients (to whom general differences may not be applicable to)?</p> <p>In the method section, I understand why the authors were not able to include patients. Was it possible to include doctors in the design or dissemination of their study? Why did the authors also include locus of control as this is not a Big Five personality trait itself? If the authors choose to include locus of control, it may be valuable to have a theoretical/empirical reflection on the role of locus of control in clinical practice in the introduction section. Furthermore, I was wondering why the authors choose a general population up to 85 years and not up to 67 years or the age eligible for retirement in Australia? Because then the general population would be more comparable to the working doctor population, and some old age ('dolce vita') effects have been shown regarding the development of personality traits.</p> <p>The results section is clear. The discussion could be improved by more explicitly clarifying how doctors' insight into differences between their own and patients' personality traits help them in clinical practice. Of course, there are some differences, but in patient care, it is also about clear communication that helps to tailor care to patient preferences and adjusting the communication style to individual patients. While generic differences in personality traits between physicians and patients are found, how does this guide physicians in communication to individual patients since these generic differences may not be applicable to the individual patient in the medical encounter.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. Julia Grundnig, Medical University of Vienna Comments to the Author:

- *The manuscript is devoted to an interesting question. The research question aims to examine the extent to which the personalities of physicians and the general population, or specific physicians and specific populations, differ.*

- *The introduction leads to the research question; all key aspects are well-defined and elaborated.*

We thank you for your comments, and we are delighted to read that you think our manuscript is devoted to a question of interest. We have addressed all your comments, as explained in our point-by-point responses below.

- *Abstract: It is not clear how the sample sizes are composed. At this point, the different numbers are more confusing than they provide information. Only with appendix 1 and 2 these numbers become understandable. Furthermore, there is no clear demarcation between patients and the population. The description is challenging. I had to read the sample description several times to understand how exactly the sample is composed.*

We now include more details in the abstract, outlining where the overall number of survey respondents comes from, before explaining the breakdown in subgroups from each survey. It was not possible to explain the demarcation between the patients and the population in the abstract due to word limits, but we explain that the patients are the subset of the population who have used healthcare services in the year in the methods section. The description in the abstract is now more consistent with what is described in Appendices 1 and 2, which the reviewer found clearer.

- *The introduction does not contain any information about the theory of “locus of control”. There is no mention of why this concept is relevant to the paper.*

We agree we did not explain this construct sufficiently and now provide more detail on locus of control in the introduction. We explain that locus of control matters for subjective well-being, (un)healthy behaviours and for health outcomes generally. Furthermore, it may differ between doctors and their patients because it is an important determinant of educational success, which is (usually) a prerequisite for becoming a medical doctor. We include references for these arguments, including several papers that use Australian data as we do in our study, making them very applicable to our comparison between Australian doctors and our comparison groups.

- *On page 5, in the section “Construction of comparison groups” the respective groups are given numbers. However, these numbers do not correspond to the numbers in the appendix. Page 5, line 56 “Group 5 are GP’s” – in Appendix 1 it says Group 6: GP.*

We thank the reviewer for flagging this error in Appendix 1, that we have now corrected. The group numbering in the appendices now correspond with the numbering in the main manuscript.

- *Overall, the paper is well-written and has a lot of literature integrated.*
- *The studies cited are from the last 5 to 10 years and are therefore well suited.*

We thank the reviewer for these positive comments. The literature we added in our revision fits within the same period.

- *In the last section, highlight the potential for change or a future reference for future physicians.*

We have substantially expanded the section “Implications for clinicians and policymakers.” We are mindful that the nature of our study limits our ability to state specific conclusions about how doctors might want to adjust their behavior based on our findings. But we do discuss the potential for change in doctors’ awareness about differences in personality between them and their patients, and the implications these may have on treatment success. Previous evidence based on small, local or convenience samples may have been discarded by doctors due to a lack of convincing evidence. While our findings apply to only one high income country, we demonstrate personality differences using nationally representative data. In addition to raising awareness of the differences in personality, we also think that our study provides an additional argument for team-based care. Interdisciplinary team-based care is now recognized as central in providing high-quality care, and our findings indicate that having teams with non-medical health care providers helps obtain more diversity in terms of personality, and diversity of this nature has been found to improve team performance.

- *References: Some references have journal names written out and others have abbreviations. Please use a consistent system.*

We have adjusted the references for consistency.

- *Appendix 3: The abbreviation ANSIC should be explained.*

The abbreviations for ANSIC and ANZCO in Appendix 3 are now spelled out before using the acronym.

Thank you very much for your very helpful review of our manuscript, which has helped us make substantial improvements.

Reviewer: 2

Dr. Renee Scheepers, Erasmus University Rotterdam Comments to the Author:

The authors have written a clear paper on the interesting difference between personality traits of doctors and those of the general population.

We thank the reviewer for their comments. We are delighted that you think our manuscript is clear and interesting. We have addressed all of your comments, as explained in our point-by-point responses below.

They specifically study personality traits as these have shown an impact on patient care quality. This point can be more substantially reflected on based on additional reviews studying the impact of personality traits, e.g. The impact of clinicians' personality and their interpersonal behaviors on the quality of patient care: a systematic review of Boerebach et al. Also it would be interesting to reflect more extensively on how personality traits of patients affect their care outcomes and how/why. What also should be more extensively clarified, is the clinical/practical relevance of investigating differences in personality traits between doctors and patients. The authors provide this argument: "Given the demonstrated association of personality with a variety of important outcomes, it is important to consider the extent to which practicing doctors have personality traits that differ substantially from members of the general population and patients." First, the outcomes of personality could be more extensively specified, and second, what is the rationale for the relevance of insight in the differences

of personality traits? How does insight in differences between groups helps to provide care to individual patients (to whom general differences may not be applicable to)?

In response to your comments, we have substantially revised the introduction and discussion sections of the paper. We have included Boerebach et al., as well as other recent articles. We now address how doctor personality can affect medical treatment and quality of care, how patient personality can affect compliance and perceptions of treatment, and how personality differences can affect doctor-patient interactions and outcomes. We do this within the constraints of the journal word count limit, so our treatment of each of these issues is not exhaustive. But we do much more in this version of the paper to address these keys issues. To better explain the relevance of our findings of differences between groups, we now provide more detail in the “Implications for clinicians and policymakers” section of the discussion about how these differences may impact care.

We thank you for suggesting that we clarify and emphasize these issues, as we believe that this enhances the relevance and contribution of our paper.

In the method section, I understand why the authors were not able to include patients. Was it possible to include doctors in the design or dissemination of their study?

The design of the MABEL survey, including the introduction of the personality questions, has involved doctors and senior medical representatives in the MABEL Advisory Group, which was established before the first wave of MABEL. This group provided advice on the broad policy issues that should be addressed with MABEL and provided feedback on preliminary results of the research. All MABEL results from a range of different studies have been disseminated widely through medical colleges, medical media, and events, as well as to our survey respondents through an annual MABEL newsletter. Further, our team includes researchers who have long experience working with medical doctors, have a broader view of the role of doctors in society and can bring different and useful perspectives. We will use our strong network and existing relationships to disseminate findings to medical doctors.

Why did the authors also include locus of control as this is not a Big Five personality trait itself? If the authors choose to include locus of control, it may be valuable to have a theoretical/empirical reflection on the role of locus of control in clinical practice in the introduction section.

We thank the reviewer for this comment, and as suggested, we have provided more details on why we included locus of control and what it entails in the introduction. Locus of control, while not part of the Big Five, is a personality measure that matters for subjective well-being, (un)healthy behaviours and for health outcomes. In addition to expanding our presentation of locus of control, we now include references related to the construct, including several papers that use Australian data as we do in our study, making them very applicable to our comparison between Australian doctors and our comparison groups. Locus of control was measured in both surveys, and we saw this as an opportunity to expand our knowledge beyond what we would learn from using only the Big Five scale.

Furthermore, I was wondering why the authors choose a general population up to 85 years and not up to 67 years or the age eligible for retirement in Australia? Because then the general population would be more comparable to the working doctor population, and some old age ('dolce vita') effects have been shown regarding the development of personality traits.

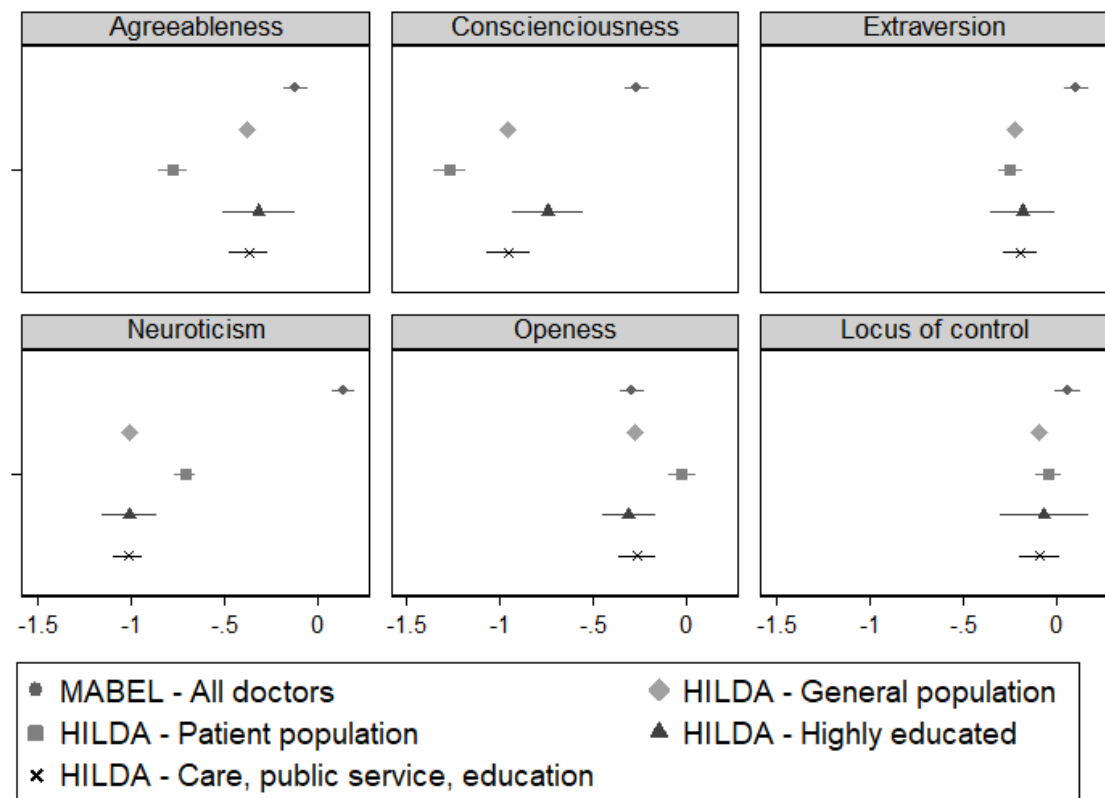
We chose the age range from 20 to 85 primarily to have reliable estimates of personality traits. That is, personality is understood to be subject to changes during adolescence and may again change very late in life. It is understood to be stable in between. While there are no universally accepted age cut-offs identified in the literature, we assume here that adolescence (and possible personality changes) has ended by age 20. With life expectancy of about 85 years and increasingly small samples of older adults in HILDA, which also reduces reliability of our estimates, we set the upper end of the range to 85.

Regarding a cut-off of age 67, it is important to note that there is no official retirement age in Australia. The official age from which individuals can retire (without being considered an early retiree) and collect on their retirement fund is 65. However, retirement is an entirely voluntary decision. Employment contracts are not terminated at any age, and longer working lives are common – particularly for doctors. 1% of our sample of doctors in MABEL is 75 or older, showing that retirement can be quite late. We also note that about 4% of doctors are 66 and older, while these ratios are 16% for the general population, 10% of patients, 3% of the highly educated, and 16% of those in caring professions.

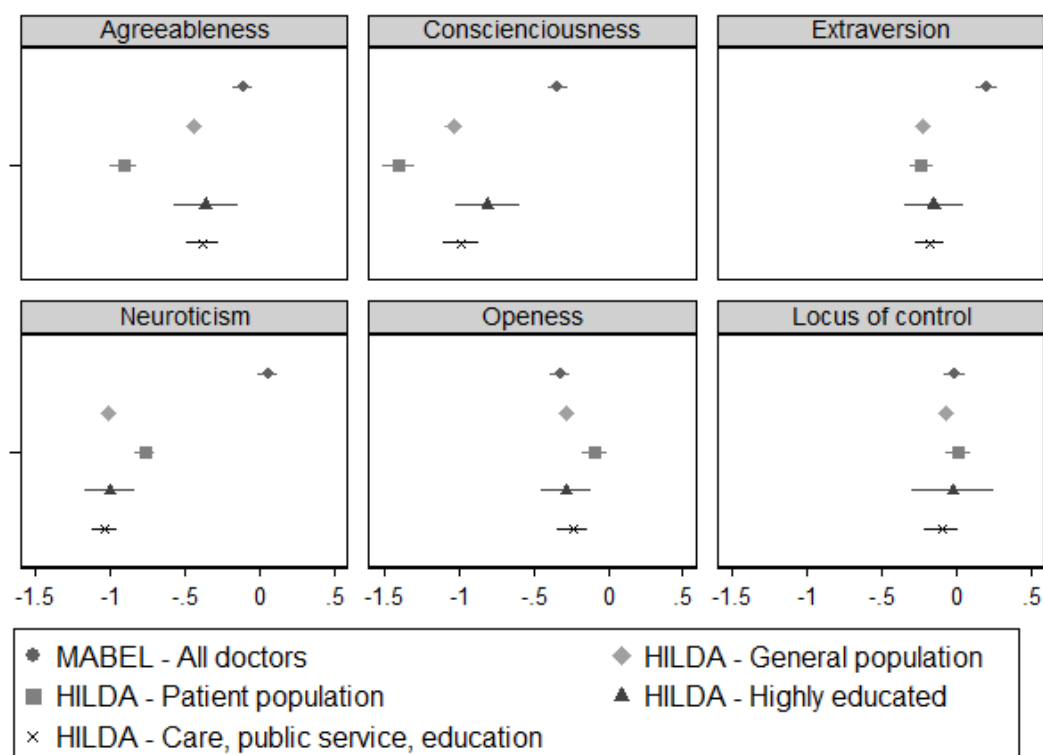
Given our data and the Australian context, a lower age cut-off for our population, patient, and highly educated groups in HILDA therefore appears somewhat arbitrary. Older adults still need to be and are increasingly serviced by doctors, so excluding many of them would limit our ability to speak to average differences between groups. The same would apply to caring professions, where a high share of the sample is above 66. In other words, lowering the age cut-off would lead to questions concerning the representativeness of our data, which is one key strength of our empirical study. It is also worth noting that our empirical analysis already controls for age, which limits the influence of age on our findings, assuming that the age effect on personality is the same across the different groups compared.

Your comment about our inclusion of older adults did lead us to check to see if our findings are consistent across other age cut-offs. We re-ran our analysis using 65 years as the upper age threshold as shown in the second graph below, and with a 70-year cut-off in the third graph below. The first graph includes our original results. As you can see below, our results are not affected by these different age cut-offs. Thanks very much for raising this issue because it allowed us to identify this robustness in our data. We now address the age cut-off issue in the “Construction of comparison groups section”.

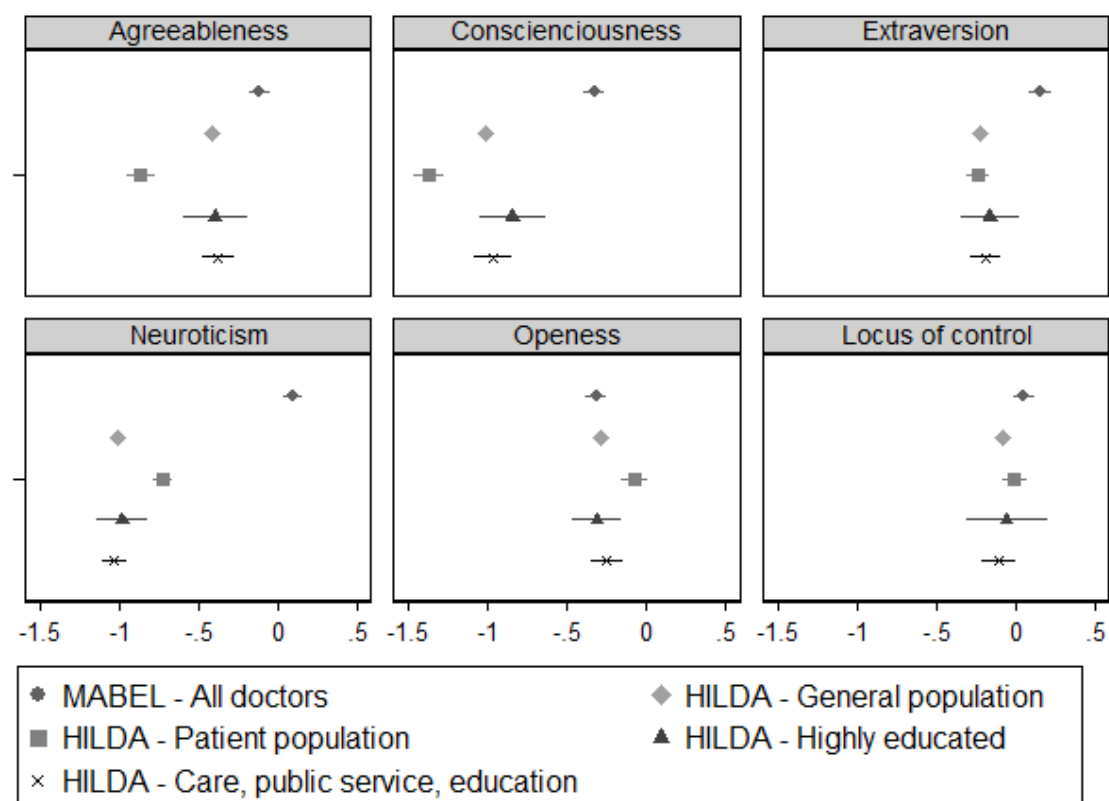
Original study samples:



Samples with a 65-year-old cut-off:



Samples with a 70-year-old cut-off:



The results section is clear. The discussion could be improved by more explicitly clarifying how doctors' insight into differences between their own and patients' personality traits help them in clinical practice. Of course, there are some differences, but in patient care, it is also about clear communication that helps to tailor care to patient preferences and adjusting the communication style to individual patients. While generic differences in personality traits between physicians and patients are found, how does this guide physicians in communication to individual patients since these generic differences may not be applicable to the individual patient in the medical encounter.

As discussed above, we have revised both the introduction and discussion sections by addressing potential implications for personality differences between patients and doctors and how doctor awareness of these differences could be helpful in communicating and interacting with patients.

Thank you very much for your thorough review and feedback. This has helped us to substantially improve the manuscript.

VERSION 2 – REVIEW

REVIEWER	Grundnig, Julia Medical University of Vienna, Teaching Center
REVIEW RETURNED	15-Feb-2023

GENERAL COMMENTS	<p>Thank you for your revised manuscript and responses to previous comments.</p> <p>Only a few minor changes are still necessary: In the appendix, I could not find Figure 1 or a figure titled “Figure 1: Comparison of personalities of doctors with the general population, patients, highly educated and caring professions”. The same applies to Figure 2. In the appendix, there are only tables, no figures.</p> <p>Regarding the sample description: I do not know if the sample might consist of repeated respondents (multiple survey waves). If so, I would recommend including this in the Limitations.</p>
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VERSION 2 – AUTHOR RESPONSE

Reviewer: 1

Dr. Julia Grundnig, Medical University of Vienna

Comments to the Author: Thank you for your revised manuscript and responses to previous comments.

Only a few minor changes are still necessary:

1. *In the appendix, I could not find Figure 1 or a figure titled “Figure 1: Comparison of personalities of doctors with the general population, patients, highly educated and caring professions”. The same applies to Figure 2. In the appendix, there are only tables, no figures.*

We thank the reviewer for their comments. We appreciate that the system the reviewer sees may be different from the one we see as authors. We had uploaded figures 1 and 2 as .jpg files on Manuscript Central, but not as part of the manuscript, as per instructions to the authors. Hence, the reviewer will not find Figures 1 and 2 in the appendices, but as .jpg attachment on Manuscript Central. Alternatively, we see Figures 1 and 2 between the manuscript with changes accepted and the manuscript with tracked changes in the PDF document we download from Manuscript Central, which is likely what the reviewer will see. We hope the reviewer will now be able to locate those two figures.

2. *Regarding the sample description: I do not know if the sample might consist of repeated respondents (multiple survey waves). If so, I would recommend including this in the Limitations.*

We thank the reviewer for highlighting this need for clarification. We now clarify, in the second paragraph of limitations in the “Strengths and weaknesses of the study” section, that only HILDA data uses repeated respondents, but not MABEL. We also reiterate that proper inference for these repeated observations is addressed with the use individual-level cluster-robust standard errors, with the advantage of increasing the precision of the estimates coming from HILDA.