

Author's response to reviews

Title: Correlation between Patients' Reasons for Encounters/Health Problems and Population Density in Japan: A Systematic Review of Observational Studies Coded by the International Classification of Health Problems in Primary Care (ICHPPC)" and the International Classification of Primary Care (ICPC)

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Author's response to reviews:

Thank you very much for your constructive feedback.

Editor's comment #1

To my view, the manuscript could benefit a lot from a more clear and distinct statement of the aim and objectives in the background section, as well as a short, general description of the Japanese Health Care System, especially regarding the function of Primary Health Care.

Response #1

Thank you very much for pointing it out. We changed last paragraph in the Background section to clarify our aims as below. (page 7, lines 70-79)

(page 7, lines 70-79)

In addition, Miyazaki presumed that the less accessibility patients have to a specialist clinic and/or a secondary care hospital, the more diverse their RFEs and health problems in the primary care setting⁴.

This study aimed to describe the diversity of RFEs and health problems in Japanese settings of primary care provided by physicians who received an internal medicine based training program and especially to clarify the proportion of non-internal medicine related RFEs and health problems. We also examined a correlation between those proportions and population density as index of accessibility.

Also, we added short description of Japanese primary care in the Background section. (page 6, lines 50-53)

(page 6, line 50-53)

in Japan, a boundary between primary care and secondary care is ambiguous due to free-access system² and there are many specialist clinics (e.g., ophthalmological clinic) which deal with health problems of each discipline³.

Editor's comment #2

In addition, I am not sure that the extra sentence provided in lines 143-145 of page 12 answers the second comment of reviewer 2. The authors are invited to revise this comment and respond about the rationale according to which they defined "internal" and "non-internal" medicine related RFEs and health problems.

Response #2

Thank you for your important advice. Because the distinction between internal medicine related disease and non-internal-medicine related is not clear and they are somewhat overlapped, we had to define it to accomplish our aim. Therefore, two of authors (MM and MK), a Fellow of the Japanese Society of Internal Medicine and a Japan Primary Care Association certified family physician discussed, and defined this distinction for the study by their discussion.

We deleted “In Japan, physicians who were trained in an internal medicine-based residency program continue to play a principal role in the primary care setting².” To explain our method, we added the sentence in the Method section as below. (page 14, lines 169-174)

(page 14, lines 169-174)

We were not able to find the definition on the distinction between "internal medicine-related" and "non-internal medicine-related" in the previous reports. Therefore, two of authors (MM and MK), a Fellow of the Japanese Society of Internal Medicine and a Japan Primary Care Association certified family physician discussed and defined this distinction for the study.

Editor’s comment #3

Also, there are linguistic and syntax errors in the sentences of lines 148-150 in page 12. Please revise so that the sentence makes sense.

Response #3

Thank you for your comment. We changed the sentence as below. (page 12, lines 146-150)

(page 12, lines 146-150)

To clarify the comprehensiveness of RFEs in Japanese primary care settings, we calculated the proportions of “non-internal medicine-related RFEs” and “non-internal medicine-related health problems” among the top 20 RFE and health problems in each study, because most of included studies did not report the rank of RFEs and health problems more than the top 20

Editor’s comment #4

Comment #4 of reviewer 1 does not seem efficiently handled either. The paragraph of lines 241-252 of page 20 still remains strong and needs to be tempered, since the study results do not necessarily point out that the searched studies are insufficient or of low quality.

Response #4

Thank you for a constructive comment. We changed the expression and the order of sentences as below in the Discussion section. (pages 20-21, line 254-258)

(pages 20-21, lines 254-258)

In addition, only 2 studies described the evaluator's experience of attending ICPC-coding training program, though the quality of data collection is said to be important when using data from patient records such as ICPC33. Japanese primary care physicians might obtain more-precise picture by considering surveys in diverse areas and quality of methodology.

Editor's comment #5

In line 178 of page 15, it seems as the authors need to separate the two sentences with comma instead of full stop so that the text makes sense.

Response #5

Thank you for your feedback. We corrected the sentence and changed the order of sentences in the Discussion section as below. (page 15, lines 183-188)

(page 15, lines 183-188)

Usual indicators of accessibility such as "Provider-to-population ratios", "Travel impedance to nearest provider" and "Average travel impedance to provider"¹¹ could not be evaluated from the studies conducted in the past and past census data. That was the reason why we employed population density as an index of accessibility, because population density can be used as an indicator of rurality¹².

Editor's comment #6

The results of lines 216-218 on page 18 are written in a very simplistic way and the authors are advised to reform them.

Response #6

Thank you for your advice. We changed the sentence as below and changed the order of paragraphs in the Result section as below. (pages 18-19, lines 220-227)

(pages 18-19, lines 220-227)

In Figure 2-1, there seems to be negative correlation between proportion of non-internal medicine related RFEs and population density. However, no statistically significant correlations were found ($p=0.20$): Spearman's rank correlation coefficient was -0.80 (95% Confidence Interval: -0.998 to 0.507). Also, the correlation between health problems and population density was not statistically significant ($p=0.74$): Spearman's rank correlation coefficient was -0.14 (95% Confidence Interval: -0.678 to 0.729)

Editor's comment #7

Finally and most importantly, the study remains of regional interest. The authors are invited delete their final sentence in line 285 of page 22 and, instead, further develop the meaning of their study for other international settings in the discussion section.

Response #7

Thank you very much for pointing it out. We delete the final sentence in the Discussion section and added the sentence as below. (page 22-23, lines 291-294)

(pages 22-23, lines 291-294)

Although the study was regionally limited, its result may suggest that a training system for primary care physicians to deal with a variety of RFEs and health problems is important even in countries not having gatekeeping function by primary care physician such as Japan.

Editor's comment #8

Please, provide detailed titles and legends for all the Figures. For Figures 2-1 and 2-2, please, also provide names for both of their axes.

Response #8

We added the detailed titles, legends and names for axes of the Figure.

Editor's comment #9

Please perform an overall linguistic editing as there are still minor grammatical errors throughout the manuscript.

Response #9

We checked the grammatical errors and correlated them in the manuscript. We also modified reference numbers.

Editor's comment #10

In Table 5 in the cell "Study design" the numbers of reported studies sum up to 16 (13+1+1+1) instead of 17. Please correct.

Response #10

Thank you for your correction. We corrected Table 4. Retrospective is 2 (15.4%)

Also, we changed the expression about Japanese training system from "physicians who trained in internal medicine based residency program" to "physicians who received an internal medicine based training program".

We believe that incorporating your advice into the previous version has made the manuscript better. Thank you once again.