Review of: "Cross-national associations of IQ and infectious diseases: Is the prevalence of Corona an exceptional case?"

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Dear Editor

Dear Gabriele Marinello

Peer Review Team, Qeios

The article titled "Cross-national associations of IQ and infectious diseases:Is the prevalence of Corona an exceptional case?" has been evaluated by me, and the detailed evaluation report is attached.

Accordingly, I believe that it would not be appropriate to publish the article as it is.

Kind regards,

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Evaluation report

(Cross-national associations of IQ and infectious diseases:Is the prevalence of Corona an exceptional case?)

I am a Pediatric Infectious Disease Specialist. Therefore, my assessment was mainly made in my area of expertise, and detailed statistical calculations and interpretation were not evaluated. My general recommendations regarding this study are presented below.

General perspective: The title of the study is very interesting. It is a broad perspective study using detailed statistical evaluations and a lot of effort. In this study, evaluations from many countries were made on the basis of multiple dependent-independent general data that may also affect each other. However, evidence-based data on the relationship between IQ and infectious diseases/covid 19 are insufficient, and usually speculation/comment-based assessments seem to have been made.

Title:

1) Corona (or coronavirus infections) is a general definition, and includes many types of coronavirus (such as seasonal coronaviruses, SARS, MERS, SARS-Cov 2/Covid 19). I think that by Corona in this study, Covid 19 (or SARS Cov-2) is meant. Therefore, it is appropriate to use the same terminology as standard throughout the title, abstract and throughout the text (such as Covid 19 or SARS CoV-2).

2) The title of the study does not consistently reflect the article. When the study is evaluated as a whole; A title like "Parainfectious/population-based kinetics in infectious diseases and covid 19 epidemiology; cross national evaluations" might be more appropriate.

Summary:

1) In the Methods section, other variables (climatic conditions, air pollution, wealth, etc.) are written. Also, since the title is about IQ, it would be helpful to briefly describe how the IQ data of 207 countries are measured.

2) In the Results section; It would be appropriate to briefly present the data that may be related to the title (Cross-national relations between IQ and infectious diseases or Covid 19).

3) In the results section, in the 2. nd sentence may be better if "However" is added to the beginning of the 2nd sentence (for example, "However, intelligence has a small effect……").

Introduction:

1) Paragraph 1 (with reference 2); should be interpreted with caution and this ratio should be reconsidered. Among the countries where Covid 19 is most common; There are also countries such as China, Russia, Brazil, India, Argentina and Chile. In addition, since the number of tests performed in the number of case notifications is important, it should be taken into account that the number of cases may probably be higher in developing countries that cannot reach the test (especially in the early stages of the pandemic) (https://covid19.who.int , accessed date 1907.2023).

2) In the introduction section; It may be useful to mention briefly the physiopathological relationships between IQ and

infectious diseases, IQ and covid 19, in terms of transmission and infection severity, if any. As far as is known, there is no relationship between IQ and immunosuppression or susceptibility to infectious diseases. In other words, no correlation is expected with brain health in terms of susceptibility and severity to immunosuppression and infectious diseases. In some special cases (such as Down syndrome, hypoxic ischemic encephalopathy, cerebral palsy) low IQ and susceptibility to infection can be seen together. But this situation cannot be generalized.

3); In the introduction section; Factors such as air pollution, economic activity, climate, wealth, social responsibility, policy, environmental improvement were mentioned, and it was mentioned that these variables could be indirectly related to IQ. In developed countries, generally a well-functioning health system, healthy environmental conditions, early diagnosis and optimal treatment approaches, good education (children and adults), compliance with social rules (including social responsibility and quality self-care), as stated by the authors, can reduce the frequency of infectious diseases. However, these factors seem to be related to the country system rather than to individual IQ. IQ is also due to genetic factors, and for the general population due to education (child and adult), however for population basis the education may be more decisive. In addition, social awareness and compliance with social rules may be related to EQ rather than IQ (this subject is, of course, more of the authors' area of expertise).

3) In children and adolescents; It may be difficult to explain the less (?) and milder covid 19 occurrence than adults with low or high IQ. Likewise, it may be difficult to attribute more viral respiratory infections (including seasonal coronaviruses) to IQ in young children. Or, attributing high infection rate and mortality to IQ in advanced age (eg, >80 years) in developed and developing countries may be a challenge (regardless of being educated; high IQ or age-related dementia; low IQ).

Methods and Results;

1) It would be helpful to specify which countries were included in the study in one sentence (207 countries were mentioned in the summary; also in the text, different countries were evaluated in different parameters).

2) All the variables considered are detailed, thank you to the authors.

Discussion and conclusion;

1) The discussion seems short and inadequate compared to the findings. It seems to have been written based on comments rather than evidence-based data. It would be appropriate to support it with evidence-based literature data. For example; Is there a study examining the difference in covid 19 frequency and severity in a smaller community (e.g. school, village, district); living in the same or similar social and environmental environments, in similar age groups, according to their IQ values?

2) Page 24, paragraph 2; "Lockdowns damage the economy, school closings will reduce in the long run economic growth, ***both leading to higher mortality*** rates." The accuracy of the sentence is debatable; it should be reviewed again.

3) It would be appropriate to give the reference of the first sentence of the conclusion. It would be appropriate to align the conclusion with the title.

In conclusion; This study is a comprehensive study with a creative point of view, in which statistical evaluations multivariate and detailed work are used. However, the discussion, conclusion and summary are not clear and seem to be fuzzy, there may be the risk of giving wrong messages. The title does not fully reflect the summary, conclusion and the content of the article in general. Unfortunately, I think it would not be appropriate to publish it as it is.

Kind regards,