

# The association of gender inequality with healthy life expectancy indicator among iranian women compared with that of other countries

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## Journal of Research & Health

Social Development & Health Promotion Research Center Vol. 5, No.4, Jan & Feb 2016 Pages: 3-12 Original Article

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Received: 4 Des 2012 Accepted: 14 Jun 2014

How to cite this article: Moradi N, Armanmehr V, Bagheri P. The association of gender inequality with healthy life expectancy indicator among iranian women compared with that of other countries. *J Research & Health2016*; 5(4): 3-12.

# **Abstract**

Gender inequality is a preventable inequality which exists between two genders in economic, social, political and cultural areas. In the meantime, healthy life expectancy is the most beneficial index that presents the average level of population health. This study aimed to investigate the relationship between the indexes of gender inequality and healthy life expectancy to compare these indicators with global data. In this ecological study, the index of healthy life expectancy was applied based on the World Health Organization report in 2008 as a criterion. Then the gender inequality indexes of Iranian women, as the research population, were determined. Next, it descriptively was compared with some countries across the world to assess its relationship with gender inequality indexes of women using correlation analysis. The results showed that Iranian women do not have the opportunity to participate in economic, social and political areas widely compared to women in other countries under study. In this regard, the worst situation belongs to political participation of women. Also a significant correlation was observed between the index of healthy life expectancy and female literacy rate, as well as the combined enrollment ratio of women in all three levels of education (grades), and the income earned by women. According to the observed gender inequality of the women in this study, the opportunity for further and more tangible contributions for women in economic, social and especially political affairs must be provided via developmental programs. Besides, the causes and factors affecting this participation should periodically be investigated.

**Keywords**: Gender Inequality, Healthy Life Expectancy, Social Participation

## Introduction

If healthy human be regarded as the axis of sustainable development, the human health will undoubtedly be extraordinary important; because the development road passes through a healthy society. The protection and improvement of human health may be considered as a prerequisite in achieving sustainable development. Without a

doubt, the women, who compose half of the whole society, play a delicate and critical role. Therefore, it is important to pay attention to women's health seriously [1].

The index of healthy life expectancy is the number of expected years for a person to live completely healthy, it means that not only mortality, but also diseases and disabilities are included in this index. In other words, healthy life expectancy or health-adjusted life expectancy (HALE), is a measure for population health which summarizes the fatal and nonfatal consequences of diseases and injuries in a numerical format. It is the most useful single-indicator which shows the average level of population health. Gender equality means that women and men have equal rights and duties, as well as equal opportunities in the society. Gender equality is also about justice and sharing responsibilities, both in the society and family. This goal is achieved when all parts of the community and various groups of both genders be included. If gender inhibits from observing the strengths and weaknesses of individuals, this will lead to discrimination and limited opportunities for them. As women make up almost half of the population, ignoring them would result in the failure of programs, and developments from being sustainable and perfect [2].

In the early stages of the development, participation in the labor force is negligible. This share will be increased with the progress of the development. In other words, a U-shaped relationship exists between the economic development and the participation of women in the economic production. In western countries, despite all the opportunities provided for the women, the equality rules do not have the full functionality of discrimination obviation against women. Since gender inequalities which are originally included in the definition of the positions and posts are ignored. In Western countries with gender equality rules, men and women are competing to reach the positions defined by men or for men. However this is not the equality when men based on their own needs could make up the social institutions and then ignore the gender in decision to select the right person for the positions in those institutions. Those positions are such defined to put men in the priority compared with women, even in the competition under the gender-neutral rules [3]. Nowadays, agenda the for international development presented through (Millennium Development Goals) has provided this basic opportunity. It suggests the elimination of social roots of discrimination and inequality

as well as the obviation of preventable pain and suffering of human in order to promote health and hygiene policies [4].

Despite the equal access to facilities and employment, as well as the economic, social and political opportunities in the country, men have access to high levels of occupational, prestige, social and economic status more than women, however, in fact most women task do not differ from men. The majority of women social classes are evaluated based on men social position. Some of these are related to cultural, religious and ideological beliefs, as well as men and women biological organisms. Studies generally refer to some variables such as education, income, wealth and status, or other factors that affect inequality [3].

Bamdad etal. in a comprehensive study in the field of investigating the factors affecting employment rates of women in 252 cities of the country showed that the improvement of socioeconomic situation of the society is associated with the increase in the rates of female employment. Also, cultural discrimination and especially social differences between men and women are the serious obstacles to increase the women's economic participation. The development factor does necessarily involve the elimination of social and cultural discrimination and barriers [5].

In today's society, women have shown to have great potential and capabilities, and under the right circumstances can effectively participate in the socioeconomic and cultural development. According to World Bank reports, the organizations which work on the improvement of women's economic-social status, especially in rural areas suggest that women's participation in economic fields is the prerequisites for their empowerment and full participation in the development programs [6,7].

Based on the 2013 European Commission report about the improvement of equality between women and men in Europe, although there is still a large right gap between women and men in the society, it has been declining in recent years. For example, while western countries have been facing financial crisis in

recent years, the European employment rate in this particular year has been 63% for women and 75% for men and women have provided a great share in the household costs. Meanwhile, this report suggests that the unpaid working hours a week is 26 for women but only 9 hours for men. This inequality is also reflected in other socioeconomic levels [8].

Foreign studies have shown broad relations between gender inequality and different aspects of health. Rahman noticed that, independent Bangladeshi women who had higher freedom and received income were less under violation [9]. Tobacco consumption control was reported as an agent to reduce inequalities between men and women according to Greave's study in Vancouver [10]. Zhao studied the health inequalities in Australia. He proposed an inverse relationship between socioeconomic status and the risk of developing diseases and mortality, especially among women than men [11]. Lesia reported a sharp inequality in AIDS care between women and men. In Lesia's study men received care with higher quality compared to women which resulted in higher quality of life for men [12]. Unfortunately, most of these studies did not describe the details of the indexes which affect gender inequality. Besides, the relationship between healthy life expectancy and women socio-economic performance was less investigated.

Hence, in this study we attempted to specify the women's status Iran. We aimed to present a more specific view about some effects of the most important economic, political, and social components on gender inequalities by comparing the indicators of gender inequality between Iranian women and the global data. We investigated this category by determining the relationship between gender inequalities and healthy life expectancy.

# Method

This was an ecological study that compared the indicators of gender inequality of Iran with other countries based on 2008 World Health Organization report for all countries. It also investigated the relationship between gender inequality and healthy life expectancy. The statistical population of this study included all the countries across the world. The independent and dependent variables were gender inequality and healthy life expectancy, respectively. In the field of gender inequality, the economic, social and political components are used to determine this index and compare it between groups. Each of these components consists of several standard sub-groups [13-15] which are considered as the indicators of each component.

The definitions of the gender inequality indicators in the World Health Organization report were as follows [16]:

Adult literacy rate: The percentage of women at the age of 15 years and more who can understand read and write a short and simple sentence about their lives.

Combined gross enrollment ratio of women in three degrees: The number of women enrolled in an educational level, whether belonging to that group or not, which is expressed as a percentage of the population in that group.

The economic activity rate of women: It is calculated for the people older than 15 years as the percentage of the working population of women.

Women in state positions at ministerial level: It is calculated based on the definition of each state for the executive management at the national level. It might include the percentage of women who are minister or deputy minister or have other ministerial posts.

Position achieved by women in the National Assembly: A percentage of whole or the percentage of parliamentary seats allocated to women. First, the population of both genders is calculated, and then, the percentage of the women attendance is measured.

Women's estimated earned income: The income is estimated according to the purchasing power parity of women in different countries based on the US dollar. This amount is published on human development reports and is calculated in two ways: One in the form of the "percentage of women's earnings to men" and another as the "earned income of women"

which estimates the purchasing power parity of women in different countries based on the US \$. To achieve the study purposes, we referred to the World Health Organization and United Nations sites to review their annual report (2008) and prepare the required statistical data. In this step, countries with higher comparability for healthy life expectancy of women were selected. In other words, countries with very high or very low levels (outlier) of the indicators were excluded from the study. In fact, the selected countries had about half a standard deviation distance from mean. It means that they were half a standard deviation higher or lower than the average of women's healthy life expectancy. Next, we included the countries with the available statistics required for our desired indexes. The data of some outlier countries such as Iraq and Afghanistan were excluded. Then, the related data like female adult literacy rate, gross enrollment rate of women in three degrees (elementary, intermediate, and high school), women's estimated earned income, positions achieved by women in parliament, women's economic activity rate and women's attendance in state positions along with healthy life expectancy was extracted for each country, as well as for Iran.

The mentioned markers of Iran were then descriptively analyzed and compared with the selected countries. In the final stage, the correlation of female adult literacy, gross enrollment rate of women in three degrees, and income earned by women with healthy life expectancy was investigated in a simple analysis format. After assessing the normality and verifying data by Kolmogorov-Smirnov test, Pearson correlation coefficient was used to depict the correlation between these two variables. It is noteworthy to state that the SPSS statistical software version 16 was used to perform all the statistical operations.

## Results

1. Literacy: The comparison of women's literacy indicator in selected countries showed that this index has the highest level (100%) in the leading industrialized countries, including Sweden, the

- UK, Japan, South Korea and other countries in this category. While according to the United Nations Human Development Report this amount was 76.8% for our country in 2008 (Table 1). The situation of Iran compared to the selected countries of the region was only better than Pakistan and Saudi Arabia. However its situation was worse than Lebanon, the UAE, Bahrain and Turkey. Lebanon, for example, has surpassed us for about 20%. With this interpretation, approximately 25% of Iranian women older than 15 are illiterate.
- 2. Combined gross enrollment ratio of women in three degrees: Next marker was the combined gross enrollment ratio of women in three degrees. The rate of this indicator for Iran was 73% which stands after the countries like Bahrain, Lebanon and Saudi Arabia. The lowest rate among regional countries belongs to Pakistan with 34%. Also among the all countries around the world, Norway and Sweden have achieved the highest level (Table 2).
- 3. Position achieved by women in the parliament: In this ratio the highest share belonged to Sweden, Norway and Argentina. Interestingly, this index for communist country of Cuba was much better than some leading countries such as the UK, US and France. This rate was 36% for Cuba, which is almost twice as those of the mentioned countries. Among regional countries with general poor condition, this rate for the United Arab Emirates and Pakistan were 22.5% and 20.4%, respectively, which are even higher than the United States, Britain and France. In Iran this amount was equal to 4.1% which is located in the same row as Turkey and Egypt (Table 1).
- 4. Economic activity rate: The highest level of this indicator is still belongs to the Scandinavian countries such as Sweden and Norway, Britain and America are in the second place. In this regard Iran (52%) is on the highest position in the region. However, the lowest level of the region belonged to Saudi Arabia (22%) (Table 2).
- 5. Income earned by women: The ratio of income percentage of Iranian women compared to men was 39% which is the highest in the region. Turkey and Syria were in the next

position. In this regard, Malaysia (36%) was lower than Iran. The Scandinavian countries had the highest rate in the whole world. In terms of monthly income, Bahrain (\$US 10.063) was in first place compared to the countries in the region. The UAE and Iran with (\$US 4.475) were ranked second and third, respectively. Besides, The highest rate in the whole world belonged to Sweden (\$US 30) (Table 1).

6. Women in state positions at ministerial level: Like previous indexes, the highest rate of this indicator was belonged to Sweden and Norway. This rate for Sweden (52.2%) was the highest among the selected countries. For all countries

in the region this rate was less than 10%. In this regard, Iran (6.7%) held the average position (Table 2).

The normality test of Kolmogorov-Smirnov showed that all the markers had a normal distribution (p>0.05). According to Table 3 the correlation between three markers of female adult literacy, combined enrollment ratio of women in three degrees, and the income earned by women with women's healthy life expectancy was significant (p<0.05). The correlation between two markers of female adult literacy and income earned by women with healthy life expectancy were 0.671 and

**Table 1** The status of three gender inequality markers (from the UN Human Development Report, 2008)

|              | Position achieved by    |                        | Famala adult litaraas           |  |  |
|--------------|-------------------------|------------------------|---------------------------------|--|--|
| Country      | women in the parliament | Income earned by women | Female adult literacy<br>rate % |  |  |
|              | 0/0                     |                        |                                 |  |  |
| Sweden       | 47.3                    | 0.81                   | 100                             |  |  |
| Norway       | 37.9                    | 0.71                   | 100                             |  |  |
| The UK       | 19.3                    | 0.66                   | 100                             |  |  |
| The US       | 16.3                    | 0.63                   | 100                             |  |  |
| France       | 13.9                    | 0.64                   | 100                             |  |  |
| Japan        | 11.1                    | 0.45                   | 100                             |  |  |
| Argentina    | 36.8                    | 0.54                   | 97.2                            |  |  |
| South Korea  | 13.6                    | 0.40                   | 100                             |  |  |
| Cuba         | 36.0                    | 0.45                   | 99.8                            |  |  |
| Russia       | 8.0                     | 0.62                   | 99.2                            |  |  |
| Malaysia     | 13.1                    | 0.36                   | 85.4                            |  |  |
| Bahrain      | 13.8                    | 0.35                   | 83.6                            |  |  |
| The UAE      | 22.5                    | 0.25                   | 87.8                            |  |  |
| Iran         | 4.1                     | 0.39                   | 76.8                            |  |  |
| India        | 9.0                     | 0.31                   | 47.8                            |  |  |
| Pakistan     | 20.4                    | 0.29                   | 35.4                            |  |  |
| Egypt        | 3.8                     | 0.23                   | 59.4                            |  |  |
| Turkey       | 4.4                     | 0.35                   | 79.6                            |  |  |
| Indonesia    | 11.3                    | 0.46                   | 86.8                            |  |  |
| Lebanon      | 4.7                     | 0.31                   | 93.6                            |  |  |
| Saudi Arabia | 0.0                     | 0.16                   | 76.3                            |  |  |
| Syria        | 12.0                    | 0.34                   | 73.6                            |  |  |
| Brazil       | 9.3                     | 0.58                   | 88.8                            |  |  |

0.600, respectively, which were significant in the probability level of p<0.001.

# **Discussion**

The study of gender inequality indexes showed that Iranian women, as well as other countries in the region had less participation in the economic, political and social fields compared to the women in the developed countries. In this regard, the worst situations belonged to the political participation of women. Besides, a significant correlation was observed among the

indexes of healthy life expectancy and female literacy, combined enrollment ratio of women in three degrees, as well as the income earned by women.

Studies on both developing and developed countries showed that when mothers had more control over household resources, they would naturally devote a greater stake towards the nutrition, health and education of their children [17]. This highlights the importance of the literacy element as a factor for effective control and greater participation of women

**Table 2** Gender inequality status in three respected indicators (from the UN Human Development Report, 2008)

| Country      | Combined gross enrolment ratio of women in three degrees % | Economic activity rate of women % | Women in state positions at ministerial level % |  |  |
|--------------|--|-----------------------------------|---|--|--|
| Sweden       | 100  | 87                                |   |  |  |
| Norway       | 103  | 87                                | 44.4  |  |  |
| The UK       | 96   | 80                                | 28.6  |  |  |
| The US       | 98   | 82                                | 14.3  |  |  |
| France       | 99   | 79                                | 17.6  |  |  |
| Japan        | 85   | 66                                | 12.5  |  |  |
| Argentina    | 94   | 70                                | 8.3   |  |  |
| South Korea  | 89   | 68                                | 5.6   |  |  |
| Cuba         | 92   | 59                                | 16.2  |  |  |
| Russia       | 93   | 80                                | 0.0   |  |  |
| Malaysia     | 67   | 57                                | 9.1   |  |  |
| Bahrain      | 90   | 33                                | 8.7   |  |  |
| The UAE      | 68   | 42                                | 5.6   |  |  |
| Iran         | 73   | 52                                | 6.7   |  |  |
| India        | 60   | 42                                | 3.4   |  |  |
| Pakistan     | 34   | 39                                | 5.6   |  |  |
| Egypt        | -  | 27                                | 5.9   |  |  |
| Turkey       | 64   | 36                                | 4.3   |  |  |
| Indonesia    | 67   | 60                                | 10.8  |  |  |
| Lebanon      | 86   | 41                                | 6.9   |  |  |
| Saudi Arabia | 76   | 22                                | 0.0   |  |  |
| Syria        | 63   | 44                                | 6.3   |  |  |
| Brazil       | 89   | 71                                | 11.4  |  |  |

**Table 3** Correlation between dependent and independent variables

|   | C.C*            | p-<br>value | C.C*      | p-<br>value | C.C*          | p-<br>value | C.C*                   | p-<br>value | C.C*                             | p-<br>value | C.C*                   | p-<br>value |
|---|-----------------|-------------|-----------|-------------|---------------|-------------|------------------------|-------------|----------------------------------|-------------|------------------------|-------------|
| Healthy life<br>expectancy<br>(Dependent<br>variable) | 0.671           | 0.001       | 0.475     | 0.006       | 0.600         | 0.001       | 0.131                  | 0.176       | 0.340                            | 0.122       | 0.153                  | 0.103       |
| Independent<br>variable                               | Female<br>liter |             | enrolment |             | Earned income |             | Presence in parliament |             | Presence in ministerial position |             | Economic activity rate |             |

<sup>\*</sup>Correlation coefficient

in household resources for better health which leads to higher expectancy of healthy life.

In other words the greater participation of women in providing household resources and better perception on nutrition and health for children could partly improve the index of healthy life expectancy. Besides, a relationship was observed between the literacy and healthy life expectancy in the present study. Since it was specified that the participation of women in our country was poor, neglecting the women's participation in the community would indirectly affect other people's healthy life expectancy. In this regard, based on the findings of this study about the relationship between literacy and healthy life expectancy, women with higher

education would have more effective presence and durable effect on the process of healthy life expectancy index. The opportunity of literacy in modern women, a major part of the educated population in today's society, helps potentially provide more highlighted presence for women in the social positions. It consequently leads to a healthier life expectancy for other people and draws the planners' attention towards the literacy as a stimulus.

Hashemi studied on the rates of low participation and high unemployment, as well as the literacy and high education level of women to investigate the reasons behind this issues and the strategies for increasing the rate of women's employment and participation.

According to his study, "economic participation rate of women in Iran was similar to undeveloped countries. While the level of education and literacy was comparable with the developed ones." Also, the reason for this inconsistency has been cited as the employment inefficiency of informal sector for educated women. The results of Hamshemi's research were consistent with our general findings about the low rate of women participation. Perhaps much of the differences between the education variable of Iranian women and women in other countries are due to the type of the cultural orientation toward the women's responsibilities in political and economic participation in society [18].

"The Global Gender Gap Report 2012" states that the gender gap presents in the two form of inter and intra regions in the world. According to this report, most countries have been able to have very slow and slight progress in reducing the gender gaps. Although the majority of developed countries have been able to promote the economic improvement and progress score of women, but in fact, very little progress has actually achieved in promoting women's political capabilities [19]. These are entirely consistent with the results of the current study, since among the elements of gender inequality index, the worst situation for both Iranian women and women in some countries in the region, belonged to the political participation. The evaluation of gender gap indexes in this study showed that there was a significant positive relationship between nation's gender equality and national racing.

According to Nassiri et al [3] in a citation to the declaration of Fourth World Conference on Women (Beijing, 1995), the advancement and participation of women is the major issue of sustainable development. This issue has been expressed in the Cairo Conference on Population and Development as the slogan of "providing greater opportunities for the empowerment of women through access to education, power, economy, technique learning, and employment", as well as the key to reach this strategy. In Copenhagen Declaration of the UN board summit in 1995 on World

Development, full employment, equality between men and women and their role in economic, political, educational and health care issues are proposed as the strategies for this sustainable development, goal perception of the women presence in public positions, and the preparation of their greater participation in the society.

Therefore, the empowerment of women in the areas of education, employment and income would be equal to the effective use of human capacities and blessings [19].

According to "The Global Gender Gap Report 2012", American the political participation and empowerment of women has been very poor in 2012. This was mainly due to the reduction of women presence in ministerial positions. In terms of political participation among all countries, Sweden had the highest utilization (44.7%) for women in its political arena [19]. However this report noted that political participation of women in Asian countries has been relatively high, but the rate of their health and survival has been lower. It seems, however, this unfavorable percent has been the result of biased sex ratio at birth. Unfortunately, the report does not provide contain information on the Asian countries, but, based on the results of the current study and to complete this report it should be said that probably the political participation of women in our country has been really lower than other countries in the region. Furthermore, the overall political, economic, and social participation of women in our country and some countries in the region is lower than developed countries.

Another report by Gompertz in 2012 showed that the birth rate of boys in some countries is much higher than girls which leads to change in sex ratio at birth in favor of boys. However, as time passes, the number of men decreases while that of women increases. It seems that the nature selection for handling more males at birth, in order to compensate higher number of deaths in older men due to their greater risk than women, may partly explain this paradox. Perhaps, higher rate of older men at death in our country and other countries of the region

might disturb the gender balance and lead to a kind of adulthood gender inequality which presents a false inequality [20].

Medalia and Chang in a study entitled "Gender equality, development and gender gap in life expectancy" showed that the effect of gender equality on social and economic development was conditional. It seems that in developing countries compared to developed countries, life expectancy for men and women proceeds divergently; since gender equality in these countries has more stronger positive effects on women's life expectancy than men's. Meanwhile, the convergence between two genders in terms of life expectancy in developed countries is due to higher net profit of gender equality for men's death in proportion to women's life expectancy [21-23].

The percentage of women presence in parliament and ministerial positions was low in the regional countries and Iran. This rate was 20.4% for Pakistan that has surpassed democratic countries like France, Britain and the United States. Iran did not have a good position in female literacy among other countries.

Iran's position in terms of women economic activity was better than other countries of the region. This superiority might be due to the fact that other countries in the region were in the lower position. However, there is generally a long distance between our country and developed countries. The position of Iran and other countries of the region were not favorable in terms of the income earned by women and even there was a significant difference in compare with more developed Muslim countries such as Indonesia and Malaysia. The reason for precedence of Malaysia and Indonesia may be the simultaneous start of the development process and well exploitation of women's participation. In a quotation from Anderson, Azerbaijani proposes that the reason of low labor force participation would be women's missing wage which is due to the discrimination which forces women to stay at home [24].

Klawsen assessed the extent of the reductionappeared in growth and economic development by gender inequality in education and employment. He concluded that gender

inequality reduction through changing the characteristics and controlling the endogenous and potential variables would be effective in the economic growth [25]. The results of this study are consistent with our general findings.

Dehnavi and Moayedfar investigated the sense of gender inequality in female students through a survey. In their survey, the sense of economic inequality was defined as the belief that women do not enjoy the same level of income as men and their work conditions outside the home is not favorable for them. According to the findings of that study, only 5% of respondents had low feelings of economic inequality and 93.6% had experienced a high feeling of inequality [26].

Fasaei and Kalhor studied on the size of gender gap and its realization decrease rate in the Third Development Plan. They suggested that over the time (from the first to forth plan) planners have paid more attention on the issues of gender and women [27]. The results of this study could be useful to make greater sensitivity in this area.

The correlation between other hypothesis and healthy life expectancy was not confirmed in this study. To explain this problem, we may point out that since the dependent variable was healthy life expectancy, we could not generally report a significant direct relationship between political participation and healthy life expectancy. However it is obvious that women's political participation has a crucial role in reducing gender inequality in various economic and social fields. Of course study results or simply rejection of recent hypothesis (to undermine the important role of women's political participation in the promotion of social development) was not proportional. Differences between cultural, social, economic, and political essence of Iran and some countries would reduce the comparability of their cultural, social, political and economic data. That seems to be regarded as the main limitation of this study. It should be accordingly noted that the study findings should be carefully extended and generalized. The findings of this study might be used in health macro planning to apply their neglected potential in development and realize gender equality and the pathology of women's development status by comparing their data with other countries in the world.

#### Conclusion

The participation of both Iranian women and those of women's in other regional countries in economic, political, and social fields was generally less than developed countries. International experiences indicate that the promotion and development of gender equality have been crucial to the developmental achievements: SO they should living standards and human rights for all individuals. To achieve this, it is necessary to make structural reforms in order to increase women's participation in political and social life. Undoubtedly, supporting and strengthening the role of women in society will lead to health improvement, increase in the level of education and literacy, general improvement of economic growth and of course equitable distribution of resources [6]. Therefore it is suitable to mark the position of women in developmental planning more specifically for highlighting their presence in economic, social, and especially political fields. In this context, the effective causes and factors and their consequences should be continuously investigated pathologically.

## Acknowlendgment

This research is part of a MSc thesis of Noorallah moradi, which was supported by university of social welfare and rehabilitation sciences. We hereby thank Research Deputy of this university.

## **Contributions**

Study design: NM, PB,VA

Data collection and analysis: NM, PB Manuscript preparation: NM, PB

## **Conflict of interest**

"The authors declare that they have no competing interests."

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