Correspondence on 'Incidence trend of five common musculoskeletal disorders from 1990 to 2017 at the global, regional and national level: results from the global burden of disease study 2017'

With great interest, we have read the recent article 'Incidence trend of five common musculoskeletal disorders from 1990 to 2017 at the global, regional and national level: results from the global burden of disease study 2017' by professor Jin *et al*¹ which aimed to further estimate the cause-specific prevalence of musculoskeletal (MSK) disorders and their trend from a global, regional and national perspective. The authors concluded that the age-standardised incidence rate (ASR) of MSK disorders has been decreasing in mainly the high-middle sociodemographic index regions, however, for rheumatoid arthritis, osteoarthritis and gout specifically, these have remained increasing, which is identical with previous research.²⁻⁴ This study indeed built a solid foundation of future government policies and further follow-up studies for the specific MSK disorders, an important cause of disability.⁵ Nevertheless, some methodological issues of this study must be reconsidered.

First and foremost, we are curious about what exact occupations did the authors modify during the study, and how were those selected occupations classified? In order to compare the differences between occupations during the analysis, is it possible to divide the worldwide patients into groups according to their occupations in the first place, instead of separating them based on their high or low human development index. Furthermore, the article mentioned that only the patients from high HDI countries have been paired with major risk factors such as social factors and occupational risks. However, we would like to know why did the authors chose to omit these risk factors when it comes to low HDI countries, since we consider occupations still play a significant role in those countries with low HDI.

In terms of population and age, through demographic and sociological analysis, we can estimate the future population changes and the proportion of each age. Furthermore, this research has analysed the development trends of the five major causes of MSK disease for each age, and the ageing population do increase the burden of MSK disorder.⁶ If we can use these two conditions to estimate the global fashion trends of the five MSK causes in the future, which can draw more attention and prevention of high-risk causes. Figure 4B,C points out the correlation between estimated annual percentage change and baseline ASR plus the correlation between EAPCs and HDI. However, some points are far away from the regression line in the chart. For example, in figure 4B, some high ASR places' EAPCs are still very high. Plus, there are especially low EAPCs places in figure 4C. Which countries are presented in this chart? Are there any special features in their demographic composition (age, gender, occupation etc)? Moreover, it would be better if we can find out causes of the gap.

Finally, there are a few minor issues to discuss. First, the article mentioned the unavailable HDI data of Taiwan. However, we found that Taiwan's HDI in 2019 was 0.911 according to National Statistics. We hope that this data can help your analysis. Furthermore, figure 1B indicates the difference in the global change of MSK cases. The most significant growth areas in recent years are mainly in Africa and South America, but the medical care in the region is relatively behind other countries,

the increase of cases in these areas may be a result of the popularisation of medical care which lead to an increase in the detection rate. Though, it may lead to errors. Finally, in figure 4A, the blue icon is marked as MSK. Nevertheless, according to the description in the chart of the subject and text content, this icon is more appropriate to be marked as low back pain.

In summary, if more attention and details of (1) exact occupations; (2) population and age; (3) a few minor issues be taken into consideration, this may make this study more comprehensive based on this invaluable database.

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