February 28, 2023  
  
Dr. Craig Morgan,

Editor-in-Chief*, Social Psychiatry and Psychiatric Epidemiology*

Dear Dr. Morgan,

On behalf of my co-authors, we submit an *Original Research Article* titled, “Independent and Joint Associations of Physical Activity and Sleep on Mental Health among 220,324 Adults in 214 Countries” for consideration by *Social Psychiatry and Psychiatric Epidemiology*. Inadequate amounts of sleep and physical activity have each been shown independently to have downstream effects on mental health. However, there is a dearth of literature that has considered the potential interactive influence of sleep and physical activity on mental health during adulthood. Considering mental health problems are a significant concern in society today, it is therefore important that we identify modifiable lifestyle behaviors that can assist in the prevention and management of mental health problems.

To address this knowledge gap, we adopted examined the independent and interactive effects of physical activity and sleep on a new comprehensive measure of mental health – the Mental Health Quotient – among a global sample of 220,324 adults living in 214 countries. This cross-sectional study used data from the Mental Health Million project. Our results showed that greater amounts of physical activity engagement and adequate sleep each predicted better mental health. Furthermore, a synergistic interaction was observed in which mental health was positively associated with physical activity engagement and this relationship was strengthened with greater frequency of adequate sleep. Collectively, these findings highlight the potential potency for public health interventions to adopt approaches rooted in behavioral medicine to improve the overall mental health of the population.

All authors have participated in the work and have reviewed and agreed with the content of the article. The material in this manuscript is original research, and none of the article contents are under consideration for publication elsewhere. All individuals listed as authors meet the appropriate authorship criteria, nobody who qualifies for authorship has been omitted from the authorship list and contributors and their funding sources have been properly acknowledged.

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Denver Brown, PhD