**Reviewer's report**

**Title:** The relationship between government research funding and the cancer burden in South Korea: Implications for prioritizing health research

**Version:** 0  **Date:** 10 Jul 2019

**Reviewer:** Watinee Kunpuek

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**General comments**

This is a novel study that aimed to explore relationship between national funding and cancer burden in South Korea. Although burdens of other diseases were not chosen for the analysis, the authors picked up cancer as it was the most significant cause of death in South Korea. Therefore, it was recognized as the priority to investigate clarity of budget allocation.

**Major revisions**

1. **Methodology**

1.1 This study applied univariate regression analysis to investigate relationship between cancer burden: incidence; mortality; years of life lost (YLLs); and disability-adjusted life-year (DALYs)) as an independent variable, while national health budget for 25 types of cancer was selected as a dependent variable. However, exclusion of other social and political variables influencing the budget allocation is problematic. For example, the study by Gillum et al. [1] found that public interest and charity revenue could be powerful to the level of national disease funding in the US. Moreover, as cancer treatment involves huge investment in pharmaceutical and medical industry, underlying factors from industrial interest are more likely to navigate the national funding. Thus, the additional univariate analysis and a multivariable model with adjustment of these variables will help minimize bias in this study.

1.2 There is a need for more adjustment of inflation in each year of analysis. This will reflect the real funding with removal of the effect of general inflation.

1.3 Time lag between cancer burden and national funding should be taken into account. The authors mentioned that funding in the years 2005 and 2015 was included with other years for aggregated variables. However, this approach will under- or overestimate findings as these years were the same period that the cancer burden was chosen in the analysis. Therefore, it was unlikely that the funding might be affected by such cancer burden. In this case, the years of funding after 2005 and 2015 may be preferable.

1.4 For the line 16-26 of page 9, methodology of converting DALYs needs more clarification. Also, this should be described in the analysis part.
2. English corrections

2.1 This paper shows several grammar errors and then academic English proofreading is required before re-submission.

3. Implications of this study

3.1 Since the topic mentioned about implications for prioritizing health research, more explanation is needed in the discussion about the mechanism of priority setting in the context of South Korea. Additional information on implications of these findings in the process of priority setting is also needed.

Reference


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