



## A letter to the editor referencing “Objective and subjective financial burden and its associations with health-related quality of life among lung cancer patients”

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To the editor:

A number of previous studies suggests that the financial burden of cancer care has several adverse effects on patients, including the financial problems, such as medical debts or bankruptcy, as well as poor adherence to cancer treatment, such as forgoing or delaying necessary medical care or avoiding filling prescriptions [1]. Also, the high financial burden of cancer care has been linked to lower health-related quality of life (HRQOL) of cancer patients [2–5]. In the April 2018 issue of the *Supportive Care in Cancer*, Chen et al. also presented negative associations of the financial burden of cancer care with HRQOL among lung cancer patients [6]. The authors investigated both objective and subjective measures of financial burden at the same time within a study and they found that both financial burdens are significantly associated with lower HRQOL of patients with lung cancer. Meanwhile, previous studies measured the financial burden by using either a subjective or objective way. In this letter, I would like to address some points that the authors should have included to better understand the findings, and suggest some areas for future study.

First of all, the authors should have emphasized distinctive characteristics of study population more in discussing the association of financial burden with HRQOL of patients. The study participants were recruited from the hospital inpatients, which implies that the participants’ disease state was relatively more severe than others, when compared to cancer patients who do not need inpatient services. The study participants may have had to stay longer in the hospital, which could limit

their normal daily life, leisure, and social activities. Therefore, the participants might already have relatively low HRQOL, particularly in physical and functional well-being, due to a long stay in the hospital, not because of the financial burden. Additionally, the study participants were relatively newly diagnosed with cancer (i.e., the average time since diagnosis was approximately 12 months). This also might affect the lower HRQOL of patients, which might be mainly caused by the lower emotional well-being. This can be supported by the finding that more than four in five patients with cancer have been found to suffer from anxiety and depression within 1 year of cancer diagnosis [7]. To the extent that this is the case, the association of financial with HRQOL would be overestimated in this study.

Additionally, the authors should have discussed the fact that lung cancer is normally regarded as the most costly cancer among common cancers [8]. As the mean annual expenditures for patients with lung cancer is the highest among patients with other cancer types [8], the majority of the study population (approximately 72%) reported that they spend more than 40% of their household income on health care spending. This proportion is more than ten times that of patients with any types of cancer who have experienced financial burden exceeding 20% of family income [5]. This discrepancy may be due to the difference in study population; therefore, for better understanding and avoiding misleading of the study results, the authors should have addressed the relatively higher prevalence of financial burden in their study population, compared to the patients with any types of cancer.

I would also like to raise an issue about the HRQOL measurement. That is whether the Functional Assessment of Cancer Therapy-Lung (FACT-L) was suitable for use in this study population. Although FACT-L is widely used and well-established instrument for measuring HRQOL of lung cancer patients, it has been developed for the patients with non-small cell lung cancer [9]. According to the Table 1 in Chen et al.

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[6], only 70% of study participants were explicitly diagnosed with non-small cell lung cancer, while the rest of the participants either had small cell lung cancer or difficulties differentiating the cancer type. In this case, the 30% of participants should have been excluded from the study population for a better estimation of the HRQOL. Or, the authors should have conducted a sensitivity analysis to show the evidence that study results were the same regardless of including the 30% of the participants. If they already have the sensitivity analysis result, it should have been discussed in the article.

Lastly, the interesting finding of this study is that the proportion of patients with financial burden was different when measured by using objective or subjective means (Table 2) [6]. I think these findings could be a proxy of the association between objective and subjective measures of financial burden. For example, 7% of cancer patients reported that their health care costs were more than 40% of their income, but reported no perceived financial difficulties at all. Whereas, 3% of cancer patients reported that they had severe perceived financial difficulties even though their health care costs were less than 40% of their income. The results of these two groups imply that neither objective nor subjective measures can fully capture the actual financial burden of health care in cancer patients. If the authors conducted additional in-depth interviews to identify the reasons why the patients in the two groups reported the opposite results, they would have figured out the actual contributing factors to the financial burden other than just simply health care costs or perceived difficulties. This additional study would be helpful to estimate the financial burden of cancer care for patients, which would be the first step to develop comprehensive strategies to reduce the financial burden of cancer patients.

There have been several previous studies showing the negative relationship between financial burden and HRQOL of cancer patients. Although Chen et al. study can be distinguished from these previous studies in terms of using both objective and subjective measures, they should have put additional efforts to address all relevant information related to the financial burden

of cancer patients. I hope the comments above would help readers as well as authors to better understand the study findings, with providing additional information about financial burden issue.

### Compliance with ethical standards

**Conflict of interest** The author declares that there are no conflicts of interest.

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