Using multiple criteria decision analysis (MCDA) to create a priority list of chronic non-communicable diseases (NCDs) to guide health research spending

Saeideh Babashahi S[1], Paul Hansen[1], Ronald Peeters[1], Trudy Sullivan[2]

[1] Department of Economics, University of Otago, New Zealand

[2] Department of Preventive and Social Medicine, University of Otago, New Zealand

OBJECTIVES

A priority-setting exercise was performed integrating the values of key stakeholders with scientific evidence to guide health research spending and policy-making on chronic non-communicable diseases (NCDs) in New Zealand.

METHODS

The priority-setting framework was developed through an online multiple criteria decision analysis (MCDA) survey administered using the 1000minds software to elicit key stakeholders' preferences relating to NCDs in terms of their priority for health research funding in New Zealand. To support the robustness of the results, a sub-sample of 40 completed the survey twice, two weeks apart, to assess the survey's test-retest reliability. In addition, cluster analysis and chi-squared test were used to identify participants with similar patterns of preferences, as well as the possible correlations between participants' preferences and their background characteristics.

RESULTS

The results revealed that mental, neurological and musculoskeletal diseases are listed in the first tiers of the priority list, indicating that New Zealand, like many other countries, is undergoing a disability transition. This epidemiologic transition suggests that the proportion of the world's population that are experiencing nonfatal health loss is growing substantially. In addition, the top-ranked NCDs are mainly associated with high health care costs, showing a correlation between high health care costs and morbidity that has also been found by other recent studies. These findings, therefore, suggest that it is essential to consider multi-dimensional nature – e.g. fatal, nonfatal and health care costs – of NCDs when creating a priority list of them. The results of test-retest reliability showed that the priority-setting framework could produce reliable results over time. Moreover, the results of cluster analysis and the chi-squared test revealed that participants' preferences are associated more with their idiosyncratic personal preferences than their demographic characteristics.

CONCLUSION

Ideally, the proposed priority-setting exercise will help policy-makers and researchers implement systematic health research prioritisation frameworks and more effectively allocate health research spending across NCDs. The methodology and the priority-setting framework used in this study could be implemented elsewhere too.