

The Costs of Cardiovascular Disease in Brazil: a Brief Economic Comment

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Dear readers, we believe that the first step to understand a problem is to know its dimensions and costs. Thus, the objective of this editorial is to show the importance and limitations of the economic studies of the cost-of-illness (COI), especially the severe cardiovascular diseases and the recent contributions that can emerge from a health economic assessment.

According to data from the National Household Sample Survey (*Pesquisa Nacional por Amostra de Domicílios – PNAD*) 2003, the proportion of Brazilian individuals that reported having a heart disease was 3.61%, totaling around seven million individuals. The prevalence of heart disease is not homogenous along the age distribution of the population, as expected. For instance, in the age range between 0 and 34 years, the prevalence is 0.87%, whereas for the population older than 64 years, it is 19.2%. Women represent approximately 60% of the all the reported cases of heart disease (see Table 1).

The concern with the costs of cardiovascular diseases has been increasing in several countries and regions of the world. For instance, Leal *et al*² carried out a study to estimate the burden of cardiovascular diseases in 24 countries of the European Union. Considering the number of countries being investigated, the burden of the cardiovascular diseases was €169 billion, with the direct healthcare costs being the main component, at an approximate cost of €104.5 billion (62%), followed by costs related to informal care, €29 billion (17%), indirect costs associated with loss of production due to early death, €24.4 billion (15%) and the loss of productivity due to morbidities, € 10.8 billion (6%). In the case of costs related to healthcare, they represented 2.6% of the total costs in health, for the 24 countries analyzed in the study.

It is important to bear in mind that the economy does not seek essentially to save money; rather, it seeks to use resources as efficiently as possible³. Thus, the health economics seeks to apply the methods of economic analysis to medical care and it is used to help decision-makers to choose what to do. Therefore, when two or more strategies are compared, considering their consequences and costs, one has an economic analysis. That is, economy involves the assessment of alternatives and not only the cost survey.

Key Words

Cardiovascular diseases / epidemiology; health care costs; health economics.

The analyses such as the COI ones, as the one presented in this issue, represent a partial form of economic assessment in the healthcare sector.

The main objective of this type of analysis is to evaluate costs or the economic burden that a disease inflicts on a society, regarding the use of resources in healthcare and loss of productivity. It uses the data related to the use of health resources to translate it in terms of monetary value⁴. The COI analyses are important to create a set of information necessary for decision-making on the health investment priorities, as well as to verify the impact of the implementation of health measures and programs.

However, the approach of COI studies has been criticized due to the fact that it takes into account only the costs of the resources and not the gains of utility in reducing the disease. The studies that use the COI approach do not compare the alternative uses of the resources and, therefore, cannot be adequate to measure the opportunity costs. In view of the fact that such studies do not consider treatment outcomes, they have a limited value for those who decide regarding the best allocation of financial resources in healthcare assistance⁵. However, they are not mentioned together with the economic assessment studies, as they can be used as support for economic analyses. The COI studies must be seen as the first stage to the economic assessment.

After these initial considerations, the article *“Economic Burden of Severe Cardiovascular Disease in Brazil: an estimation based on secondary data”*⁶ is justified and becomes important due to the scarcity of this type of study in Brazil and as a first attempt to measure the costs of this problem with a plausible methodology, taking into account the specificities of the labor market in Brazil and its institutional characteristics.

The importance of the aforementioned article is seen mainly as the population ages and the need for health services increase. Thus, considering the advances in new diagnoses and therapies, there will be an increasing necessity for economic studies in the health area and in the cardiology area, in special; also, considering that many of these advances require considerable resources from society.

Its objective was to obtain estimates, albeit conservative ones, as authors acknowledge, of severe cardiovascular diseases. Hence, such article must not be seen as an economic analysis, as it does not involve the analysis of alternatives. It must, on the other hand, be interpreted as a first step to measure the dimension of the problem and maybe of future cost perspectives, given the evolution of the population profile.

A well-known problem of Brazilian researchers is the scarcity of comprehensive databases in the area of

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Table 1- Estimate of the prevalence of heart diseases in Brazil, per age range, in 2008

| Age | Prevalence of heart diseases (both sexes) | Male | Female | Total |
|----------------------|---|-----------|-----------|-----------|
| From 0 to 34 years | 0.0087772 | 454,046 | 586,760 | 1,040,806 |
| From 35 to 49 years | 0.0373472 | 520,158 | 834,684 | 1,354,842 |
| From 50 to 64 years | 0.1037229 | 822,045 | 1,298,939 | 2,120,984 |
| From 65 years onward | 0.1920183 | 894,965 | 1,350,468 | 2,245,433 |
| Total | 0.0361608 | 2,691,215 | 4,070,851 | 6,762,065 |

Obs: The population estimate, stratified by gender, was based on the proportion of individuals that reported "having a heart disease", according to the PNAD questionnaire, 2003, considering a population of 187 million individuals in Brazil in 2008¹.

economic assessment in health. Insufficient information leads the researchers to draw strong suppositions, increasing the unreliability of the models. In an attempt to curb this problem, it is necessary to carry out an analysis of sensitivity, i.e., to allow the main parameters of the model to vary, with the objective of verifying the potential impact of these variations on the study outcome⁷. In that sense, we emphasize a least two parameters that should be included in an analysis of sensitivity: i) the cost estimate related to the social security benefit given to patients with cardiovascular diseases; and ii) the factor of correction of 1.8 to estimate the hospital costs. Both parameters were based on studies carried out in the city of Porto Alegre, state of Rio Grande do Sul, Brazil, which would not be representative of the Brazilian reality as a whole, considering the regional differences.

Another important factor that must be emphasized in this type of article, for the purpose of comparison with other countries, is to state costs in a currency that is comparable in international terms. That is, to use an exchange rate in order to measure the costs in terms of American dollars or Euros. That can help to compare the costs of the disease in other countries and regions and evaluate the relative importance of the disease between countries.

Finally, it is important to know that the cost of cardiovascular diseases is not negligible for a country such as Brazil, as it probably corresponds to 1.74% of the Gross National Product (GNP), which, let us admit, is not at all insignificant.

We end this Editorial by recommending not only the careful reading of this article, but also urging the publication of other studies in the area of cardiology and especially, those regarding the evaluation of techniques in health and health economics.

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