



Review article

Unpaid work in health economic evaluations

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ABSTRACT

Given its societal importance, unpaid work should be included in economic evaluations of health care technology aiming to take a societal perspective. However, in practice this does not often appear to be the case. This paper provides an overview of the current place of unpaid work in economic evaluations in theory and in practice. It does so first by summarizing recommendations regarding the inclusion of unpaid labor reported in health economic textbooks and national guidelines for economic evaluations. In total, three prominent health economic text-books were studied and 28 national health economic guidelines. The paper, moreover, provides an overview of the instruments available to measure lost unpaid labor and reports on a review of the place of unpaid labor in applied economic evaluations in the area of rheumatoid arthritis. The review was conducted by examining methodology of evaluations published between 1 March 2008 and 1 March 2013.

The results of this study show that little guidance is offered regarding the inclusion of unpaid labor in economic evaluations in textbooks and guidelines. The review identified five productivity costs instruments including questions about unpaid work and 33 economic evaluations of treatments for rheumatoid arthritis of which only one included unpaid work. The results indicate that unpaid work is rarely included in applied economic evaluations of treatments for rheumatoid arthritis, despite this disease expecting to be associated with lost unpaid work. Given the strong effects of certain diseases and treatments on the ability to perform unpaid work, unpaid work currently receives less attention in economic evaluations than it deserves.

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1. Introduction

Economic evaluations are increasingly used to inform decision makers about the relative efficiency of new health care technologies. Within an economic evaluation the costs and effects of new health care technologies are compared to the costs and effects of one or more alternatives, commonly the best available alternative or the current standard practice (Drummond et al., 2005). The results of such evaluations can aid decision makers in making better informed choices regarding the reimbursement or implementation of new technologies.

The answer to the question which costs and effects to include in an evaluation to a large extent depends on the adopted perspective. The two most commonly adopted perspectives are the health care perspective, focusing especially on costs falling on the health care budget and on health effects, and the societal perspective. Evaluations taking a societal perspective aim to include all relevant costs

and effects regardless of who bears the costs and who receives the benefits (Drummond et al., 2005). In theory, evaluations from the societal perspective inform decision makers about the full societal consequences of potential decisions. When adopting a societal perspective all relevant cost categories should be included. When adopting a health care perspective, the costs falling outside the health care sector, including those related to lost paid and unpaid labor, are excluded from analysis. Although there is no theoretical consensus on which perspective should be adopted (W. B. F. Brouwer et al., 2006; Claxton et al., 2010; Johannesson et al., 2009; Jonsson, 2009) and the practical dissensus is also large (M. Krol et al., 2011; Stone et al., 2000), influential health economic textbooks mostly advise to take a societal perspective (Drummond et al., 2005; Gold et al., 1996). Here, we consider the societal perspective to be the appropriate perspective to adopt in economic evaluations, enabling welfare maximizing decisions. In that context it is important to note, however, that while quite some economic evaluations claim to take the societal perspective, in practice they often ignore relevant cost categories. For instance, many 'societal' economic evaluations do not include the costs and effects of informal care (Hoefman et al., 2011) and the costs of unrelated

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future medical costs (Rappange et al., 2008). Moreover, the majority of evaluations seem to ignore the “costs associated with production loss and replacement costs due to illness, disability and death of productive persons, both paid and unpaid.” (W. B. Brouwer et al., 1997a, p254) These costs are commonly labeled as indirect costs or productivity costs. Depending on the type of intervention evaluated, between 69 and 92% of the evaluations seem to exclude productivity costs related to paid work (Gerard, 1992; M. Krol et al., 2015; M. Krol et al., 2011; Pritchard and Sculpher, 2000; Stone et al., 2000). Productivity costs related to unpaid work also seem rarely included in economic evaluations (M. Krol et al., 2015), although this has not been studied extensively.

Ignoring potentially influential societal costs and effects jeopardizes the value of economic evaluations, since it hampers well-informed societal decision making. If evaluations do not consistently include the same cost categories whenever relevant, results of different evaluations become incomparable. The lack of consistency between studies and the fact that studies poorly adhere to the societal perspective may be explained by several factors. First, countries' decision making bodies often have different requirements regarding the content and methodology of economic evaluations. These requirements are commonly described in health economic (reimbursement submission) guidelines. An overview of such guidelines can be found at the ISPOR ‘pharmacoeconomic guidelines around the world’ web page (<http://www.ispor.org/peguidelines/index.asp>). Although such guidelines ought to increase consistency between economic evaluations conducted within a country, they may increase differences between countries. Second, in some areas there is a lack of consensus on how to measure and value costs and effects. This is also the case for productivity costs measurement and valuation. This may lead researchers to exclude these debated costs. Third, there may be practical difficulties with regard to estimating certain costs and effects, such as future medical costs (van Baal et al., 2011). Productivity costs measurement and valuation also can be troublesome, since often data is lacking as is consensus on how to measure and value these costs (M. Krol et al., 2013; Zhang et al., 2011a). Fourth, some aspects may simply have received little scientific attention, creating a lack of guidance hampering inclusion. This especially seems to be the case for productivity costs related to unpaid work.

Unpaid work is the production of goods and services that are not sold on the market. We distinguish three main types of activities: i) household work, such as cooking, cleaning, grocery shopping and other chores inside and around the house; ii) care work, such as taking care of (grand)children, helping out friends or family with cleaning, shopping or personal care and iii) volunteer work, such as helping out in a community center or at a sports club. It needs noting that separating unpaid labor from leisure time can be difficult. For instance, is baking a cake unpaid labor or rather leisure time? The ‘third person criterion’ has been proposed to separate unpaid production from leisure. This criterion implies that all elements replaceable by a third person (i.e. baking a cake) are considered unpaid labor (Reid, 1934) and all non-replaceable elements (e.g. enjoying the process of baking) are considered leisure. However, even when applying the third person criterion, distinctions between leisure and unpaid work remain difficult.

On a practical level, unpaid labor seems to be ignored in the vast majority of economic evaluations claiming to take a societal perspective (M. Krol et al., 2015; M. Krol et al., 2013). For instance in studies conducted in elderly patient populations, common reasoning seems to be that productivity costs are irrelevant since patients are too old to be in paid profession. However, although unpaid labor is a non-market commodity, it is of clear economic value. Since many health care technologies are targeted at elderly populations, who are more involved in unpaid work than in paid

professions, it is important not to ignore this value. Consequently, unpaid work should be included in economic evaluations of medical technologies aiming to take a societal perspective.

This paper hopes to increase the awareness of the importance of including unpaid labor in economic evaluations of health technologies. It provides an overview of the current role of unpaid work in economic evaluations. It does so by i) summarizing the recommendations made regarding unpaid work in some of the most influential health economic textbooks, ii) reviewing country specific health economic (reimbursement submission) guidelines in terms of unpaid labor, iii) reviewing available instruments for the measurement of lost productivity and iv) reviewing the place of unpaid labor in applied economic evaluations conducted in the area of rheumatoid arthritis. This disease area was chosen because of its impact on functioning, which is expected to lead to considerable losses of unpaid labor.

2. Health economic textbooks

As a first step and starting point, we examined the recommendations of three influential health economic textbooks (Drummond et al., 2005; Gold et al., 1996; Pauly et al., 2011) concerning the appropriate perspective and the measurement and valuation of unpaid labor in economic evaluations. Obviously, these are not the only available books. However, these books were selected, because they are very influential. They are often cited in scientific papers and regularly used in training and teaching.

In general, two prominent valuation methods may be distinguished: the opportunity cost method and the replacement cost (or proxy good) method. The former method values unpaid work using the value of competing time use, such as paid labor. The value of one additional hour of unpaid work then may be set equal to the hourly wage rate (or reservation wage) of the person performing the unpaid work. A compelling argument for applying the opportunity cost method is that “the value of production in the home must be at least as great as what could be earned in the labor market, otherwise the homemaker would choose to enter the labor market” (Drummond et al., 2005, p216). A positive aspect of this method is that it is closely related to economic theory. However, one may debate whether valuing the unpaid activities of someone who earns much on the labor market higher than those of a person earning less, should be considered appropriate or an adequate reflection of the produced goods. The latter method, the replacement cost method, takes a different approach. Under this approach, one values unpaid labor according to the value of the closest market substitute. Child care, for instance, could thus be valued based on the average price of hiring a professional nanny and housework based on the price of a professional housekeeper. A positive aspect of this approach is that it intuitively makes sense to value unpaid production based on what one should have to pay on the market to obtain it. A downside of the method is that it implicitly assumes paid professionals to be equally productive as the person they (could) replace, which may not be considered a proper reflection of reality. Moreover, for some unpaid production a market substitute might not be available. Besides, different unpaid work tasks may be valued differently, which can make the method more difficult to operationalize. For reasons of convenience one might, therefore, choose using one fixed price for the valuation of different types of unpaid labor. In the Netherlands, for instance, the value of 12.50 euro is applied (2009 values), which is based on the average price of a paid household worker (Hakkaart-van Rooijen et al., 2010). For more detailed information about the opportunity cost and the replacement cost method see, for instance, Posnett and Jan (1996), Van den Berg et al. (2006) or Koopmanschap et al. (2008).

In terms of appropriate perspective to take in economic

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