Estimating implied rates of discount in healthcare decision-making

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RR West[1*]
R McNabb[2]
AGH Thompson[3]
TA Sheldon[4]
J Grimley Evans[5]

[1] University of Wales College of Medicine, Cardiff, UK
[2] Economics Section, Cardiff University, UK
[3] Department of Politics and the Graduate School in Social and Political Studies, University of Edinburgh, UK
[4] Department of Health Studies, University of York, UK
[5] Green College, University of Oxford, UK

* Corresponding author

Executive summary

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Executive summary

Objectives

The main objectives of the study were to consider whether implied rates of discounting from the perspectives of individual and society differ, and whether implied rates of discounting in health differ from those implied in choices involving finance or 'goods'. The study thus sought empirical estimates of discount rates implied by choices made by individuals for themselves compared with those made on behalf of society, and those involving 'health' compared with those involving 'wealth'. The study sought also to ascertain whether implied discount rates used by healthcare professionals compared with those used by the general public to see whether people making decisions about healthcare provision concur with those of the other main stakeholders, namely patients and potential patients. The study was in two parts: a review of the literature; and an empirical study in representative random samples of the general public and of healthcare professionals.

Methods

Literature review

The economics, health economics and social science literature was reviewed for previous comparisons of discounting on behalf of society and by individuals for themselves, and for comparisons of discounting in health and wealth. The literature was also searched for methodologies of eliciting choice, value judgements, ordering or ranking, appropriate for the estimation of equivalence at two points in time and hence of implied rates of discounting.

Empirical study

The second part of the study was an empirical estimate of implied rates of discounting in four fields: personal financial; personal health, public financial and public health, in representative samples of the public and of healthcare professionals.

Geographical setting

The samples were drawn in the former county and health authority district of South Glamorgan, Wales, covering the city of Cardiff and some surrounding towns and rural areas.

Samples studied

The public sample was a representative random sample of men and women, aged over 18 years and drawn from electoral registers. The health professional sample was drawn at random with the cooperation of professional leads to include doctors, nurses, professions allied to medicine, public health planners and administrators.

Interviews

Subjects were interviewed at home or, for health professionals, if more convenient, at work by a trained lay interviewer using a structured interview schedule. The interviews sought four comparisons in each of the four fields. Subjects were also asked for limited demographic information, so that they could be classified by age, gender, educational level, social class and long-term illness or disability, if present.

Measurements

The nature and form of the questions posed were developed on the basis of previous work in this area and three stages of piloting. The basic approach adopted was to elicit responses to choice of an amount at some variable time in the future, that in the subject's perception equates with some given amount in the present. This allowed estimation of implied rates of discount in each of the fields (personal financial, personal health, public financial and public health). Questions were all of the type: "how much £X in t years time would you consider equivalent to £1000 now?".

Findings and results

The literature on discounting, time preference and eliciting preferences is extensive, too extensive to review systematically with available resources. The review focused, therefore, on papers that compared and contrasted social and private discounting, health and wealth discounting and empirical measurement. The review revealed few empirical studies in representative samples of the population (more were classroom exercises with students), few direct comparisons of public with private decision-making and few direct comparisons of health with financial discounting. The review identified almost as many methods of

eliciting time preference as empirical studies of time preference: these included equipoise, standard gamble, time trade-off and person trade-off, and administration by questionnaire, postal survey, telephone interview and personal interview. Implied rates of discounting varied widely between studies depending on context, comparisons sought and mode of enquiry; for example, whether payment or receipt is to be expedited or postponed. Studies suggest that discount rates are higher the smaller the value of the outcome and the shorter the period considered. The relationship between implied discount rates and personal attributes was mixed, possibly reflecting the limited nature of the samples (mostly students) studied. Although there were few direct comparisons, some studies found that individuals apply different rates of discount to social compared with private comparisons and health compared with financial.

The present study, in a random sample of 385 (lay) people and 180 health professionals, also found a wide range of implied discount rates, with little systematic effect of age, gender, educational level or long-term illness.

There was evidence, in both the general public and health professional samples, that people chose a lower rate of discount in comparisons made on behalf of society than in comparisons made for themselves: medians of four financial questions in two samples were 0–9.5% and 5.0–12.5%, respectively, and of four health questions were 0–2.4 % and 0–7.7%, respectively. The differences were statistically significant.

Both public and health professional samples tended to choose lower discount rates in health-related comparisons than in finance-related comparisons: medians of four individual questions were 0–7.7% and 5–12.5% and of four societal comparisons were 0–2.4% and 0–9.5%, respectively. The differences were statistically significant.

On a technical note, both the present study and the literature review suggest that implied rates of discount, derived from responses to hypothetical questions, can be influenced by detail of question framing. Further research is indicated, possibly involving more in-depth interviewing and drawing inference on real, rather than hypothetical choices.

Conclusions

The present study suggests that both the lay public and healthcare professionals consider that the discount rate appropriate for public decisions is lower than that for private decisions. This finding suggests that lay people as well as healthcare professionals, used to making decisions on behalf of others, recognise that society is not simply an aggregate of individuals. It also implies a general appreciation that society is more stable and has a more predictable future than does the individual. There is fairly general support for this view in the theoretical literature and limited support in the few previous direct comparisons. The findings of the present study have implications for all public decision-making and particularly for healthcare planning.

Publication

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NHS R&D HTA Programme

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