



The Capability Approach:
developing an instrument for
evaluating public health
interventions

EXECUTIVE SUMMARY

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PK Lorgelly, K Lorimer, E Fenwick, AH Briggs

*UNIVERSITY OF GLASGOW
SECTION OF PUBLIC HEALTH AND HEALTH POLICY*

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*PK Lorgelly, K Lorimer, E Fenwick, AH Briggs
Section of Public Health and Health Policy, University of Glasgow*

Research Question

There is a growing interest in the application of Sen's capability approach to the evaluation of health care programmes, including public health interventions.¹ This project sought to develop a questionnaire to measure outcome within the capabilities framework, for use in the evaluation of public health and social interventions.

Background

The capability approach suggests that wellbeing should be measured not according to what individuals actually do (functionings) but what they can do (capabilities). While Sen preferred not to stipulate what these capabilities might be, Nussbaum suggested a list of ten items: life expectancy, bodily health, bodily integrity, senses imagination and thought, emotions, practical reason, affiliation, other species, play, and control over one's environment.² There are a limited number of empirical applications of the approach, in part because many secondary data sources measure an individual's choices, their functionings, and not their capabilities *per se*. In response to the lack of empirical research, Anand *et al* sought to measure capability by utilising data from the British Household Panel Survey. Upon finding incompleteness, they developed further indicators. The result is a set of more than 60 indicators, which reflect Nussbaum's list of ten capabilities. Anand *et al* found strong evidence of a link to wellbeing, but noted that further research was required, particularly in terms of tailoring samples to focus on specific issues. While Anand's is not the only approach to measuring capabilities, its survey design is practical for use in large research projects which involve self completing questionnaires or interviews. It is also a generic approach, much like the SF-36 is a generic measure of health, and so offers the potential to provide a summary measure of wellbeing and capability, negating the need to develop specific instruments for every evaluation of complex social and public health interventions.

Economic evaluation – which seeks to identify whether a proposed change in service provision (be that through large scale regeneration, a screening programme or smoking cessation counselling) is a good use of scarce resources – involves comparing the additional costs associated with the change and the additional outcomes achieved by the change. Economic theory prescribes that such evaluations take a welfarist approach, that is where outcomes are valued in monetary terms (e.g. cost benefit analysis – common in environmental economics). However, due to difficulties in placing a monetary value on life and health, within the speciality of health economics, an extra-welfarist approach has developed, whereby health is valued for health's sake and outcomes are commonly assessed using quality adjusted life years (QALYs). One issue of assessing health related quality of life (HRQoL) and QALYs within an evaluation of complex social and public health interventions is that the focus is too narrow – simply health. The capability approach has a

much wider focus (that is a broader evaluative space) and as such would appear to be an appealing alternative.

Aim

This project aimed to:

- further develop and refine the survey instrument as proposed by Anand et al
- validate the instrument for use in public health evaluations
- propose how future evaluations might employ the capability approach

Methods

This project was conducted in three phases:

- Phase One reviewed the literature on capability, questionnaire design and outcome measurement; this informed the initial design and layout of the questionnaire (version 1). Members of the public were recruited for five focus groups, during which they discussed the range of questions, style of elicitation, their understanding and the overall questionnaire design. The results of these focus groups, together with secondary analysis of Anand's original YouGov data,³ then informed the first revision of the questionnaire (version 2). This revised version was piloted in a postal survey and via interviews with members of the general public.
- Phase Two involved a thematic analysis of the interview data and a quantitative analysis of all completed questionnaires with the aim of identifying areas in which the questionnaire could be further reduced. The questionnaire was then redesigned using the reduced set of questions (version 3) prior to further interviews and a postal survey. The results from the second phase were used to validate and test the reliability of the instrument.
- Phase Three involved an analysis of the data from version 3 of the questionnaire, including further reflection on the debate between 'functioning' and 'capability' (by means of eliciting the public's preferences regarding each), and also an attempt to generate an index of capability.

Capability approach as an outcome measure

In October 2007, version 3 of the questionnaire was sent out to 1000 addresses within Glasgow City. Thirty-two were returned with incomplete or as ineligible addresses, while 180 questionnaires were returned completed. This resulted in a response rate of 18.6%. In addition, during October and November 2007, 18 respondents completed the questionnaire in an interview setting; therefore a total sample of 198 was available for analysis.

Demographically, this sample was broadly representative of the Glasgow population, though with a higher proportion of white and female respondents than in the population as a whole. Notably the proportion of respondents living in each deprivation decile was very representative of the Glasgow population; this was achieved by a strategy of over-sampling in the most deprived areas.

Analysis of the questionnaire responses found that respondents had a range of capabilities, and that these capabilities appear to be sensitive to one's gender, age, income and deprivation decile. An analysis of inequalities within individual capabilities and questions about capabilities found that males were better at predicting their life expectancy ('life' capability), whilst males also believed that they are more likely to be victims of assault ('bodily integrity' capability). The elderly (those older than 60 years of age) were more likely to report that their health limited their activities of daily life relative to younger respondents ('bodily

health' capability), while a higher proportion of younger respondents (those aged under 60 years old) felt they were likely to experience discrimination outside of their place of employment compared to older respondents ('affiliation' capability). Those living in more deprived areas were found to report greater limitations in their daily activities due to their health status ('bodily health' capability), as well as feel less safe walking in their neighbourhood ('bodily integrity' capability), report having fewer opportunities to socialise ('emotions' capability) and were less able to afford to own property than respondents in the more affluent areas of Glasgow City ('control over one's life' capability). Those in low income groups were also found to have worse health in terms of limiting daily activities ('bodily health' capability), and to predict life expectancies well below that expected given their age and gender ('life' capability), compared to those in higher income groups. Respondents with low household incomes also reported limitations in terms of socialising with friends and family ('emotions' capability) and owning property ('control over one's life' capability). They were also less likely to feel they could influence local decision making ('control over one's life' capability), more likely to report losing sleep over worry ('emotions' capability) and rarely able to enjoy recreational activity ('play' capability) relative to respondents with high household incomes.

An index of capability, estimated by assuming equal weight for each capability question, found that the average level of capability amongst respondents was 12.44, with a range of 3 to 17.75 (and a possible maximum of 18). This index was found to be highly correlated with a measure of health (EQ5D) and wellbeing (global QoL), although some differences were apparent; implying that the questionnaire has the potential to be a valid measure of outcome for public health interventions.

Similar inequalities to those described above for specific capabilities were found to exist across groups with respect to the index as a whole. While no differences were found between males and females or across age groups, those respondents residing in the more deprived areas and those respondents with lower incomes were found to have less capability as measured by the index. A multivariate approach, however, found that income was a greater driver of inequalities in capability than was area-based deprivation.

Future work and applications of the approach

While the benefits of using a capability approach to evaluate social and public health interventions are numerous (e.g. a richer evaluative space with a focus of equity) implementing the approach, by using this reduced and refined questionnaire, will involve a number of challenges. In order to operationalise the approach for use in economic evaluations, it will be necessary to generate an index, whereby an individual's capability is described by a composite single number, which reflects the relative importance of the different dimensions/domains. However, there will be issues with estimating these degrees of relative importance (so called preference measurement), including whose preferences to elicit, how to elicit them, and to what (and whether) to anchor the index. But the greatest challenge will be that the extra-welfarist approach, which advocates using cost per quality adjusted life year (QALY) gained, is the favoured norm in economic evaluations. However, the capability approach provides strong competition both practically and theoretically, especially as a means of measuring the effectiveness (and cost effectiveness) of social and public health interventions. Given this, future research will consider a preference based approach to generating an index of capability and will seek to test the instrument and index in an evaluation of a public health intervention.

References

¹ Amartya Sen, a Nobel prize winner, is a development economist who has contributed to research on welfare economics, human development theory, mechanisms of poverty, and political liberalism. The capability approach is a conceptual framework for evaluating social states in terms of human well-being.

² Martha Nussbaum is a philosopher who collaborated with Sen on issues of ethics and development. Much of her work on the capability approach focuses on the role of gender.

³ Paul Anand and colleagues initially developed the questionnaire to test the relationship between happiness and life satisfaction. The survey was administered by the professional social research company YouGov

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