Accident Analysis and Prevention 48 (2012) 246–253

Contents lists available at SciVerse ScienceDirect

Accident Analysis and Prevention

journal homepage: www.elsevier.com/locate/aap

Valuation of morbidity and mortality risk reductions. Does context matter?

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ARTICLE INFO

Article history:
Received 15 August 2011
Received in revised form
20 December 2011
Accepted 15 January 2012

Keywords:
Willingness-to-pay
Contingent valuation
EQ-5D
Traffic
Health
Risk

ABSTRACT

The main research purpose of the present study was to test for any differences in the valuation of morbidity and mortality risk reductions across two contexts; traffic and health. A contingent valuation study on preferences for morbidity and mortality risk was carried out in Denmark in 2007. Respondents were randomised into two different arms: one arm in which the valuation took place in the context of health and another arm in which the context was traffic. In both contexts, the inferior health state was described by way of the standardized EQ-5D descriptive system. We obtained a total sample of 520 respondents from an online database. In the present study we found clear evidence of a context effect on expressed valuations of identical risk reductions. This was true irrespective of whether the adverse outcome in question was death or inferior health. This result suggests that interventions targeting risks of death or risks of ill health should not necessarily be valued equally across sectors. From a welfare economic perspective, the use of the same estimates across contexts – and especially across sectors – could be misleading and in worst case lead to inefficient resource allocations.

1. Introduction

Many public programmes within the traffic and health care sector deliver health and safety risk reductions to members of the public. In order to guide policy making and optimise social welfare, one wishes to analyse whether net investment in terms of resource use is justified by the value of the additional risk reductions achieved. Evaluating public programmes in the realm of a Cost Benefit Analysis (CBA) requires welfare economic estimates of individual's morbidity and mortality risk valuation. In a number of countries (including Denmark) official guidelines have been formulated on how to conduct CBA. These guidelines frequently refer to across-sector preference-based unit-prices which can be applied in the evaluation of interventions. A condition for using identical preference-based benefit estimates across sectors is that individuals give equivalent values to comparable risk reductions across context such as traffic and health. On the other hand, if individuals exhibit different preferences for equivalent risk reductions across context, Sunstein (1997) and Beattie et al. (1998) argue that this would suggest the use of context specific values and hence the use of different preference-based values across sectors in the evaluation of public policy programs.

There is a large literature on how context-related factors influence willingness-to-pay (WTP) for risk reductions offering different explanations as to why a difference between values in the traffic and health care sector could be expected. The following risk characteristics have been identified in the literature; voluntariness of exposure, controllability, dread, severity, knowledge and whether it is private and public exposure (McDaniels et al., 1992; Slovic et al., 1980). According to Shogren (1991a), the empirical risk valuation literature typically assumes that risks are independent of individual actions. Yet, the author acknowledges that risk is endogenous i.e. an individual can often affect the probability that an event will occur (the ex ante risks) and the expected outcomes (ex post consequences) (Shogren, 1991b). Weber and Milliman (1997) and Slovic (1964) describe risk taking as a function of (a) decision makers' perception of the riskiness and (b) their attitude towards this perceived risk. Hence, individual variation in WTP estimates could be expected as a consequence of individual differences in the perception of the riskiness of the options and in risk preferences (i.e. the extent to which the individuals are risk averse or more risk seeking).

Previous research has focused on the influence of context in the valuation of the risk of premature death see e.g. Chilton et al. (2002, 2006); Jones-Lee et al. (1985); Tsuge et al. (2005) whereas studies focusing on context effects in the valuation of morbidity risk have not received a similar level of consideration in the literature. Risk valuation studies relating to risks of morbidity have been carried

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doi:10.1016/j.aap.2012.01.018