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## The willingness to pay to reduce school bullying

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## ABSTRACT

The number of programs used to reduce bullying in schools is increasing, but often with a lack of understanding of the effectiveness and monetary benefits. This paper uses a discrete choice experiment conducted in Sweden in the spring of 2010 to elicit the willingness to pay (WTP) to reduce school bullying. Non-parametric and parametric approaches indicate a mean marginal WTP of 5.95–8.48 Swedish kronor (€0.66–0.95) for each reduced victim of bullying. The aggregate societal WTP for each reduced statistical victim of bullying, referred to here as the value of a statistical bullying-victim (VSBV), is then 585,090–835,280 Swedish kronor (€65,446–93,431). The VSBV may be interpreted as the aggregate WTP to prevent one statistical case of a bullying-victim. The result may be used to conduct economic evaluations of antibullying programs, which is demonstrated here by a simple cost–benefit analysis of one of the most common antibullying programs. The VSBV may also be relevant for providing policymakers with useful information on taxpayers' preferred allocations to antibullying programs in general.

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## 1. Introduction

A substantial share of children and adolescents attend a school where they are victims of direct and/or indirect bullying (Beatty & Alexeyev, 2008). Direct bullying includes teasing, taunting, threatening, hitting or name-calling, while examples of indirect bullying are leaving others out on purpose and spreading vicious rumors. Using a national representative sample of Swedish adolescents aged 15 in 2005/06, approximately 5% of the boys and 3% of the girls stated that they had been bullied repeatedly during the previous few months. These estimates are similar to earlier national studies dating back to 1997/98 (6% of boys and 4% of girls bullied) and 1993/1994 (5% of boys and 5% of girls bullied). The share of adolescents stating that they had been bullied during the last school year was higher, 11–14% in 2005/2006 (Danielson, 2006; Danielson &

Sundbaum, 2003). There is more substantial variance in the international prevalence estimates of bullying, which tend to be between 5 and 15% (Beatty & Alexeyev, 2008; Christie, 2005). Most of these studies are based on a typical definition of bullying as outlined in an early work by Olweus; a pupil is bullied when (1) he/she is exposed, repeatedly and over time, to negative actions on the part of one or more of the other pupils, (2) the relationship between the bully and the bullied individual is characterized by an imbalance of power, and (3) the bully has the intention of doing harm (Limber, 2004; Olweus, 1978, 1993).

Being a victim of bullying is associated with low self-esteem, self-harm, suicidal intention, depression, loneliness and physical ill-health (Barker et al., 2008; Fekkes, Pijpers, Fredriks, Vogels, & Verloove-Vanhorick, 2006; Ferguson, Beatruais, & Horwood, 2003; Hawker & Boulton, 2000; Nansel, Craig, Overpeck, Saluja, & Ruan, 2004; Nishina, Juvonen, & Witkow, 2005; Rigby, 2003). It has also been shown that pupils who are bullied at a young age invest less in higher education compared to non-bullied control pupils (Brown & Taylor, 2008). On average, bullies,

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have poorer academic skills, perform below average in school, often lack empathy, are more likely to have substance abuse problems and face an increased risk of becoming criminals in adult life (Juvonen, Graham, & Schutser, 2003; Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000; Le, Miller, Heath, & Martin, 2005; Merrell & Isava, 2008; Nansel et al., 2001; Sourander et al., 2007).

Programs to reduce school bullying are on the increase, but there is often a lack of understanding of their effectiveness and monetary benefits. In 2007, the Swedish Ministry of Education and Research financed a project to summarize published data on the effectiveness of antibullying programs currently being used in Swedish schools. The preliminary results indicated that only 1 of the 21 antibullying programs in Swedish schools could be considered as evidence-based with proven efficiency in a proper evaluation (SNAE, 2007). In a similar context, the Swedish Council on Health Technology Assessment evaluation of 33 programs, used in Swedish schools to prevent mental ill-health among children, found that only seven programs had any evidence-based meaningful effects (SBU, 2010).

Antibullying programs are often described as being based on a “whole-school” approach, focusing on general interventions across all individuals, or an “individual-based” approach, targeting a small number of pupils that are considered to be at risk of being bullied or becoming bullies (e.g. disciplinary methods, parent training). A recent meta-analysis of 16 studies of school-based bullying-intervention (“whole-school” and “individual-level” programs) found that, for 10 out of 28 outcome variables, studies identified a significant reducing effect on bullying (Merrell & Isava, 2008). Another meta-analysis, only including “whole-school” anti-bullying programs, concluded that the majority of programs evaluated did not produce any significant beneficial effects (Smith, Schneider, Smith, & Ananiadou, 2004). A report on 59 studies documenting 30 different antibullying programs shows an average reduction rate in victimization (being bullied) of 17–23% (Ttofi, Farrington, & Baldry, 2008). The most important program elements for reducing bullying were disciplinary methods, videos, work with peers, parent training, cooperative group work and school yard supervision. Further, the number of elements and intensity of the programs were related to the size of the effect.

However, we have not been able to identify any studies that evaluate the total welfare effects of the intervention programs, i.e. none of the studies relate the costs of the interventions to the benefits.<sup>1</sup> If a region, municipality, school et cetera, plans to invest in an antibullying program, it is relevant to compare the benefits and the costs of the program in order to ascertain if the investment is worthwhile. A cost–benefit analysis requires both the costs and the benefits of the intervention to be monetized.

If the present value of monetized benefits of the program is larger than the costs, according to the Hicks–Kaldor criteria, the program can be said to increase welfare. Costs of the antibullying programs are mostly personnel costs (training and implementation), and some programs may also include material costs (educational material et cetera). It is more difficult to value the benefits of an antibullying program, i.e. the economic value of reduced bullying, and market data cannot (at least directly) be used for this purpose.

In this paper we show how the benefits of an antibullying program can be valued by estimating the societal willingness to pay (WTP) to reduce school bullying. We apply a discrete choice experiment (DCE) using a stated preference method. As stated, this can be used as a measure to compare the implementation costs with the benefits and thus obtain an economic and welfare evaluation of antibullying programs. It may also provide policymakers with useful information on taxpayers’ preferred allocations to antibullying programs. The rest of the paper is structured as follows: Section 2 describes the data collection and the DCE. Section 3 contains the descriptive statistics of the data, and Section 4 presents the econometric approach to estimating WTP. The results are shown in Section 5, and in Section 6 we show how the results can be used in economic evaluations of antibullying programs illustrated with a simple cost–benefit analysis of a common antibullying program. The paper is concluded with a discussion in Section 7.

## 2. Survey design

The data in this paper come from a stated preference (SP) survey conducted by mail in February 2010, with a reminder sent out three weeks later, in the municipality of Örebro in Sweden. The survey was sent to a random sample of 2001 individuals between the ages of 18 and 70 based on the Swedish Governments Personal- and Address-Register (SPAR), which includes all individuals with an address and currently living in Sweden. Örebro, situated approximately 200 km west of the capital Stockholm, has a population of 134,000, making it the seventh most populated municipality in Sweden. Most aspects of the demographic and socioeconomic characteristics of the municipality are in line with the national average (Örebro, 2010a).

We chose to implement the survey in a specific municipality in Sweden, using a “community analogy” in order to increase the respondents’ association with the hypothetical good. This has been argued to increase both the likelihood of responding to the survey as well as the quality of responses (Kalman & Royston, 1997). There are drawbacks to using a specific municipality, since estimates of WTP may not be representative for the Swedish population. However, earlier work on WTP in terms of health risks in Sweden show no large geographical variation (Carlsson, Daruvala, & Jaldell, 2010), and we considered that the benefits of carrying out the DCE in a specific municipality would outweigh the costs.

The survey consisted of three different parts, (1) introduction of the concept of bullying and its prevalence in the municipality of Örebro and Sweden, (2) the actual

<sup>1</sup> The aforementioned study by Brown and Taylor (2008) finds that bullied pupils have lower life-time incomes, partly via lower levels of investment in higher education. Hence, this can be seen as a monetization of some of the consequences of bullying, but still the total welfare effects which we try to address here are larger than the human capital effects.

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