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Are national injury prevention and research efforts matching the distribution of injuries across sectors?

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ABSTRACT

In 2011, 88% of all unintentional injury fatalities occurred in home and leisure environments in Sweden, while transportation fatalities accounted for 10% and work/school injuries for 2%. The corresponding proportions among non-fatal injuries were 75, 12 and 13%, respectively. However, 83% of the national governmental expenditure on unintentional injury prevention in 2011 was allocated to transportation safety, 7% to home and leisure, and 10% to the work sector including schools. Likewise, around 85% of the governmental research budget aimed for unintentional injury research was allocated to the transportation sector, 9% to home and leisure environments, and 6% to the work and school sector. Our results reveal a striking lack of correspondence between problem profile and governmental countermeasures.

INTRODUCTION

Since the publishing of *Injury in America* in 1985,[1] few studies have compared national injury magnitudes with national public spending allocated to prevent and research these injuries. We undertook a brief study on this in Sweden with regard to cross-sectorial distributions, commissioned by the Swedish Consumer Agency (SCA). The SCA is responsible for central parts of the consumer product safety policy area in Sweden, including broad aspects of home and leisure safety. It was assumed that the national allocation of resources was skewed compared with the actual distribution of injuries in Sweden. This brief report summarises our findings. The full report is available in Swedish.[2]

METHOD

Data on unintentional injury occurrences were collected from the Swedish cause of death and Injury Data Base (IDB) registers. IDB is a part of the European Injury Data Base initiative and compiles injury data from emergency departments. In Sweden, IDB covers approximately 9% of the total population, allowing crude estimates of the overall injury magnitude and patterns in broad categories. Complementary data on unintentional occupational fatalities were collected from the Swedish Work Environment Authority since these are not distinguishable in the national cause of death register. Fatal and non-fatal injuries were divided into three broad sectorial categories: transportation, work/school and home/leisure environments.

Assessments on national governmental expenditure for *prevention* were based on annual account reports from relevant governmental agencies; 18 in total. For agencies with broader responsibilities (more than just injury prevention) spending intended for injury prevention was proportioned from the agencies' total budgets based on their distribution of efforts across all responsibilities. All costs related to injury prevention were then divided into the same three main sectorial categories, as stated above.

Assessments on national governmental expenditure for *research* were based on grants from governmental agencies and foundations partly entitled or fully intended to finance scientific research. First, all governmental agencies and foundations were reviewed in order to derive a list of possible financiers of injury research. Ten foundations and four agencies were listed. Second, grants from these financers were reviewed based on information available from their official records.

In order to triangulate our findings, a bibliometric analysis was performed using ISI Web of Science to identify Swedish scientific studies on injury research and their distribution across our three predefined sectors.

RESULTS

Figure 1 compares the proportions of unintentional injuries (deaths and emergency room visits), national governmental expenditure (prevention and research) and scientific publications across transportation, home and leisure, and work/school sectors in Sweden.

Annually, approximately 3000 individuals die and 150 000 attend hospital emergency rooms after attaining unintentional injuries. Of all injury fatalities, 88% occur in home and leisure environments. Among non-fatal injuries, 75% occur in home and leisure environments. Transportation injuries account for 10 and 12%, and work/school injuries for 2% and 13%, respectively.

National governmental expenditure on injury prevention in 2011 amounted to nearly Swedish Kroner (SEK) 8.3 billion (€920 million, or US $1.3 billion).[i] Of these, SEK 6.9 billion (83%) was allocated to transportation safety (mainly road traffic), 0.8 (10%) to the work environment sector including schools and 0.6 (7%) to home and leisure.

The total governmental research budget in 2011 amounted to around SEK 30 billion. For injury research, a total of approximately SEK 350 million (€40 million, or US $55 million) was identified, corresponding to 1% of the total. Around 85% was allocated to the transportation sector, 9% to home and leisure environments, and 6% to the work and school sector.

[i]Nominal exchange rates 2011 (average) were 6.5 SEK/USD and 9.0 SEK/USD.

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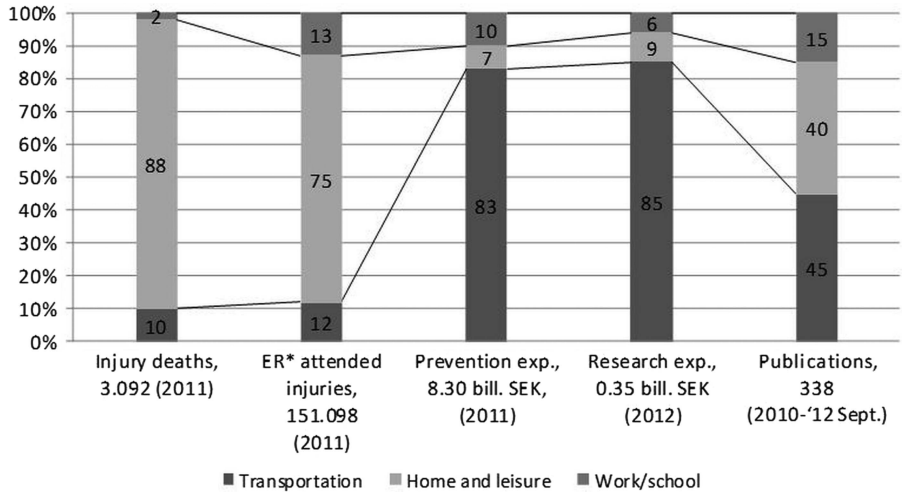

Figure 1 Proportional (%) distribution of unintentional injuries (fatal and non-fatal), national public expenditures (prevention and research) and publications across sectors, Sweden 2011–2012. *ER= hospital emergency rooms.

From 2010 to September 2012, a total of 109 scientific publications related to injury research in Sweden (clinical treatment excluded) and originating from Swedish researchers were identified in ISI, Web of Science. After excluding 18 studies of general and sector overarching content, the remaining 91 publications were distributed across sectors as follows: 41 (45%) transportation, 36 (40%) home and leisure, and 14 (15%) work environment.

DISCUSSION

The asymmetric allocation of national governmental resources, as compared to the actual distribution of injuries, emerges clearly from our results. A similar analysis was conducted already in 2000 but limited to preventative efforts.[3] The main difference since then is an even stronger public emphasis on transportation safety, increasing its share from 67 to 83% of the total governmental injury prevention expenditures between the two studies.

The striking lack of correspondence between the problem profile and societal countermeasures is a problem we think deserves a broader debate. Moreover, we have no reason to believe that this is an isolated Swedish situation. However, additional aspects could hypothetically influence the priorities that are made and help justify the revealed disproportions, as well as estimates on the marginal efficiency of measures available for preventative efforts. For example, the fact that home and leisure injuries are found to be on average less costly than transportation injuries,[4–6] the respect for individual freedom and private life, differences in societal costs underlying our numbers and differences in data quality across sectors.

If such factors are deliberately taken into account when resources are being allocated, one would expect these considerations to be clarified by those responsible, in this case the Swedish government. No such explanations have been found, however, which fuels presumptions of lacking strategies, and perhaps even knowledge, in this field among Swedish policymakers. The distribution of publications across sectors is more even, which may reflect broader sources of financing, since it was not possible in this analysis to select publications based on financial source. Besides national financing, a broad spectrum of alternatives is available within the public (local, regional, international) and private spheres. Many of the publications that were classified as home and leisure oriented relate to medical aspects and originate from clinical settings where researchers are often able to conduct research as part of their already paid clinical work.

Our methodological approach in this study was rough and explorative due to time and financial constraints. However, we are doubtful whether a more detailed study would alter the results more than marginally. All national agencies and foundations of major importance with respect to injury prevention and research were included, thus leaving the principal source of bias to possible miscalculations of resource allocations within each agency. A more thorough approach at this level would consume considerably more resources with questionable added value.

What is already known on this subject

- The distribution between the sectors work/school, home/leisure and transportation for number of deaths and injuries is known.
- The distribution of societal costs between different types of unintentional injuries is known.

What this study adds

- The discrepancy between unintentional injury occurrences and governmental efforts to reduce this societal burden is conspicuous.
- While almost 90% of all unintentional injury deaths (75% among non-fatal) occur in home and leisure environments, less than 10% of national resources intended for unintentional injury prevention and research are allocated to combat home and leisure injuries.
- Likewise, while only some 10% of all unintentional injuries occur in the transportation sector, this sector attracts 80–90% of all national resources available for unintentional injury prevention and research.

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Competing interests None.

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