Safety Science 48 (2010) 1469–1476

Contents lists available at ScienceDirect

Safety Science

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

Official reporting and newspaper coverage of road crashes: A case study

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ARTICLE INFO

Article history:
Received 13 November 2009
Received in revised form 7 July 2010
Accepted 13 July 2010

Keywords:
Crash
Reporting
Rate
Newspaper
Coverage

ABSTRACT

This paper describes a case study in Flanders–Belgium on the reporting rate of road crashes. Crash data from three sources were compared: official crash data, data retrieved from an insurance company and newspaper articles. A sample of 140 injury crashes with motorcyclists from an insurance company was used as the reference category. The purpose was to explore factors that contribute to the likelihood of crashes (not) to be reported in official statistics and newspapers. Logistic regression analyses and chi-square tests were used to reveal differences in reporting rate according to some variables. About 80% of the crashes with severe injuries were reported in the official statistics whereas the reporting rate for crashes with slightly injured was about 55%. Newspapers covered about 50% of crashes with severe injuries. The reporting rate in both official statistics and newspapers increased with the severity of the crash.

1. Introduction

1.1. Problem

Approximately three persons a day are killed in road crashes in Belgium. Twenty persons get severely injured and 160 people get slightly injured (Statistics Belgium, 2007). Crash statistics are one of the most important data sources for road safety policy. Consequently, their correctness might be influential to policy evaluation and to the perception of the importance of the road safety problem (Evans, 2004). Road infrastructure investment programs use to be based – at least partly – on the official numbers of crashes at particular locations. Obviously, such a policy assumes accurate crash data.

However, the collection of road crash data might be biased or incomplete for a plenty of reasons. One important reason is the under-reporting of crashes, which means that crashes that should be included in official databases are not. Under-reporting can be related to a number of reasons (Elvik and Vaa, 2004; Hauer, 1997):

- Police intervention is not asked and even not legally required for each road crash, e.g. not for crashes with property damage only nor for crashes with only pedestrians. Without police intervention, no official reporting of a crash can happen.
- Some information may get lost in the reporting process or might be incorrectly provided for various reasons such as misclassification of injury severity, lack of information on seat belt wearing or alcohol use, missing location data and encoding errors.

A correct reporting of crashes is believed to be of utmost importance since many policy measures and evaluation studies largely rely on the quality of the underlying crash counts. Not only the simple reporting rate of the entire mass of crashes is important, but also the question whether this rate is structurally dependent of variables like the involved types of road users (pedestrians, car drivers, bicyclists...), time of the day, day of the week, injury severity, age and gender of the involved. Under-reporting is defined as the share of crashes that ought to, but are not reported in the total number of reportable crashes. For example, a higher rate of under-reporting for crashes with some user categories might lead to a systematic underestimation of the magnitude of the safety problem for those categories.

The purpose of the present paper is to examine the reporting rate of road crashes in Belgium by means of a case study in which crash data from three sources were compared: official crash data, data retrieved from an insurance company and newspaper articles.

1.2. Crash reporting procedure

Injury crashes in Belgium are legally required to be reported to the police. Reporting is optional in case of property damage only. Information on injury crashes is registered in a crash reporting form that is an obligatory attachment to the official minutes of the crash. After completion, the crash reporting form is transferred by the police to the Federal Public Service Economy, that takes care

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doi:10.1016/j.ssci.2010.07.007

of the aggregation and dissemination of the results. In case of fatalities or injuries that result in a fatality within a period of 30 days after the crash, a supplementary data stream is created since the Federal Public Service Justice delivers routinely mortality data to the Federal Public Service Economy. Therefore, the fatality data are double-checked. No information on property damage only-crashes is collected at the national level.

In the official data, a distinction is present between three types of injuries: killed (on the spot or within 30 days after the crash), seriously injured (at least 24 h in a hospital) and slightly injured (injured and not belonging to one of the two previous categories).

1.3. Media reporting

Media are playing an important role in the creation of health awareness, e.g. road safety attitudes in a population (Connor and Wesolowski, 2004). One aspect of this health awareness relates to the perceived reasons of mortality. Frost et al. (1997) suggest that mass media are creating a biased perception of different causes of death. The number of reported crashes and the way of reporting are likely to be influential to the perception of the risk of certain behaviors. Whenever this risk does not correspond with the real risk, biases in the perception of the risk might occur. Traffic crashes just like other events are more likely to get reported by news media when they are newer, more rarely occurring or more dramatic (Adams, 1992). The seriousness of the problem is not necessarily a determining factor. Consequently, it is possible that people have a wrong or biased perception of the size of the injury risk in traffic.

In the present study, the official reporting rate of a sample of road crashes is checked. Moreover, the coverage of the sample crashes in newspapers is examined and some checks were done on the correctness of the presented information.

2. Data

Data from three different sources were collected: an insurance company, the official database and an electronic media archive.

2.1. Insurance data

A sample of insurance data on 140 injury collisions with at least one motorcyclist was provided by an insurance company and served as a reference category. This sample was previously used for an in-depth analysis of motorcycle crashes (Van Hout, 2007). The information in the dataset was obtained from several documents: the official minutes of the crash like recorded by the police, the collision declaration filled out by the involved parties and medical information such as a doctor's certificate containing information about the nature and severity of the injuries. In a number of cases, supplementary information was present from an insurance inspector's field report. Furthermore, in a limited number of cases, mainly in case of fatalities or critically severe injuries, a detailed report of a forensic expert was available.

The examined crash files were those where the opponent (regarded from the viewpoint of the insurance company's customer) was a motorcyclist. A consequence of this approach was that all included crashes were crashes with at least two road users. Single-vehicle-crashes are therefore not present in this database.

The data covered the period between 1991 and 2005. All selected crashes occurred in the Flanders region in Belgium.

2.2. Official data

Official crash data were retrieved from the detailed database of road crashes in Belgium (Statistics Belgium, 2007) and were available for the period 1991–2005.

2.3. Newspaper articles

Information on the coverage of road crashes in written media (newspapers) was retrieved from Mediargus (www.mediargus.be), a professional information provider, which includes the Dutch speaking Belgian newspapers. Mediargus covers articles that were published since 1988. An implicit assumption was that the Mediargus database covers the content of the included newspapers completely and correctly with respect to this issue.

3. Method

Fig. 1 reflects the conceptual relation between the three different data sources. The insurance data act as reference category. The insurance data were for the purposes of the previous in-depth analysis (Van Hout, 2007) thoroughly checked and cleaned. Consequently, the reliability of the resulting information concerning date, location and severity of the injuries in the crash was considered high.

In a first step, it was checked whether the crashes that occurred in the insurance database were also present in the official crash data. The data were matched manually, based on the available information on date and location of the crashes in both datasets. In case of uncertainties, also information about age and gender of

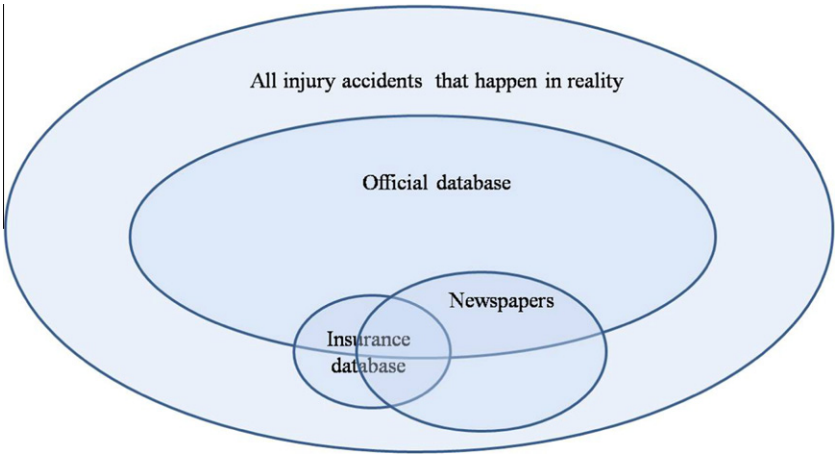

Fig. 1. Conceptual relation between different data sources.