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Accidents in Germany: Results of the Telephone Survey »German Health Update« (GEDA) 2009

Avoiding accidents is of great importance, both for the people affected and their families – and from a societal perspective. According to estimates by the Federal Institute for Occupational Safety and Health (www.baua.de), more than eight million people, or about 10 % of the total population, are injured every year as a result of accidents [1]. About 19,000 people a year are killed in accidents [2]. The health-economic impact of accidents can only be roughly estimated on the basis of official statistics on the direct and indirect costs of injuries and other consequences of external causes (ICD-10 S00 to T98). Every year almost 5 % of direct medical costs is spent on treating them [3]; they account for some 13 % of the annual number of working days lost due to sick leave among the members of a major health insurer (AOK [4]) and nearly a quarter of lost employment years in Germany [3].

The overall situation as regards accidents in Germany is, however, only incompletely reflected by official statistics. One reason for this is that important areas (e. g. accidents that happen during leisure activities) are not systematically recorded. Representative surveys are therefore an important additional source of information. They provide an overview of non-fatal accidents.

The following analyses on non-fatal accidents in Germany are based on selected results from the Robert Koch Institute's study 'German Health Update' (GEDA www.rki.de/geda). This representative telephone health survey of a total of 21,262 respondents aged 18 years and older was conducted between 2008 and 2009. The evaluations also include contextual analyses of accident data including socio-demographic and socio-economic factors, which in many cases are hardly recorded in official statistics. However, they are important when it comes to designing preventive measures.

Young men are affected by accidents especially frequently

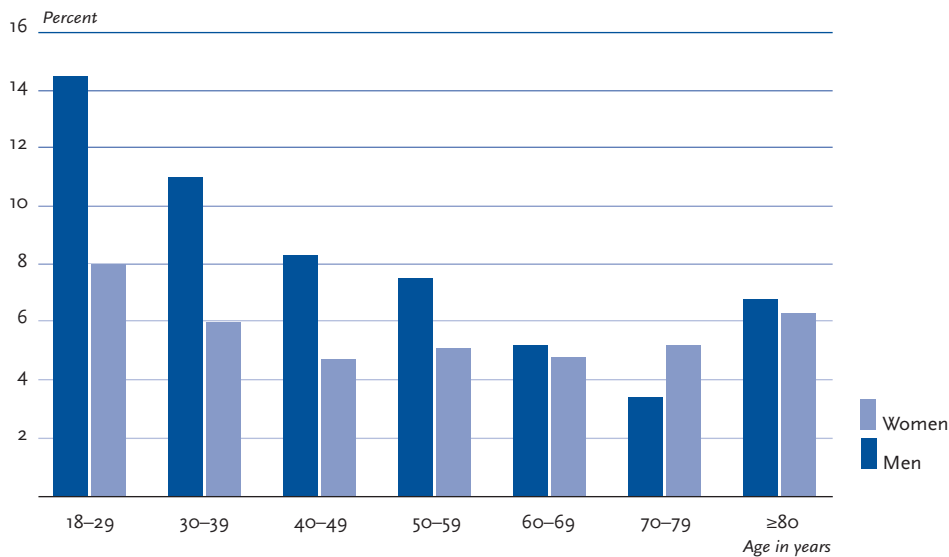
The results of the GEDA Telephone Health Survey reveal that about one in twelve adults (8.2 %) received medical attention due to an injury over the previous twelve months. The overwhelming majority of the people affected suffered unintended injuries, i.e. injuries caused by accidents (7.1 %). People who reported intentional injuries – i.e. experienced an attack, a brawl or deliberately self-inflicted injuries, were not included in the following analysis.

While the majority of the people affected by an accident only reported one accident over the previous twelve months, 13.7 % were actually injured more than once. The number of multiple injuries was particularly high (20.0 %) among 18- to 29-year-olds.

Figure 1

Percentage of women and men who had at least one accident injury requiring medical attention during the last twelve months, by age

Source: GEDA 2009



Men are more frequently affected by accident injuries than women. This applies to almost all age groups (Figure 1). The younger the men are, the more vulnerable they are to accidents. This also applies to women, albeit at a lower level. With increasing age, the accident rate falls more quickly in men than in women. Slightly more injuries requiring medical treatment are then reported again in the oldest age group. In the logistic regression model, both a younger

age and male gender proved to be significant factors influencing an increased likelihood of an accident. The risk of injury to men, for example, is 1.5 times higher than the risk to women (OR=1.5 95 % CI: 1.4 to 1.7, age-adjusted).

Most people sustain injuries at home or during leisure time

In GEDA 2009 about one in 20 respondents reported an accident at home or during leisure time outside the home (Table 1). The age-adjusted risk of injury among men during leisure time is about twice as high as among women (OR=1.9 95 % CI: 1.6 to 2.3). The accident risk in the home is slightly, but not significantly, higher in the case of women.

Looking at all the respondents who suffered an accident in the previous twelve months, the majority – two thirds – had an accident in the home environment or during leisure pursuits.

Domestic accidents are most common among women: two out of five women who had had an accident were inju-

German Health Update (GEDA)

Data holder:	Robert Koch Institute
Objectives:	To provide up-to-date data on health-related issues, to analyse temporal developments and trends
Survey method:	Computer-assisted telephone interviews (CATI)
Population:	Residential population of Germany aged 18 and over
Sample:	21,262 women und men
Cooperation rate:	51,2 %
Survey period:	July 2008 to June 2009
Data capture on accidents:	A total of 21,246 people answered the question as to whether they had experienced an injury or a case of poisoning needing medical attention over the previous 12 months. Those who said yes were subsequently asked three further questions on the number of injuries, the location where they were injured, and the cause of the injury. This made it possible to distinguish accidents (unintentional injuries) from intentional injuries (violence, deliberately self-inflicted injuries).

Table 1
Accident casualties by gender and accident location (multiple answers possible)

As a percentage of all respondents

Source: GEDA 2009

Accident location	Women	Men	Total
Workplace ²	1.2 %	3.5 %	2.5 %
Traffic	1.0 %	1.0 %	1.0 %
At home	2.4 %	2.0 %	2.2 %
Leisure	1.6 %	3.2 %	2.3 %
Total	5.6 %	8.7 %	7.1 %

¹ The analysis covered the four most important accident locations. Accidents in schools/ training centres were not analysed, because they were reported by very few respondents (18 men, 10 women aged 18 to 29).

² The reference population for the percentage of people who had had an accident at work was restricted to people at risk – i.e. people who were in employment at the time of survey.

Table 2
Accident locations¹, by gender (multiple responses possible)
As a percentage of all accident casualties
 Source: GEDA 2009

Accident location	Women	Men	Total
Workplace	10.5 %	27.2 %	20.4 %
Traffic	18.3 %	11.8 %	14.5 %
At home	42.7 %	24.0 %	31.6 %
Leisure	28.5 %	37.0 %	33.5 %
Valid information on accident location	871	600	1.471

¹ The analysis covered the four most important accident locations. Accidents in schools/training centres were not analysed, because they were reported by very few respondents (18 men, 10 women aged 18 to 29).

red in the home environment (Table 2). Both sexes mention accidents »at home« more and more frequently as they grow older: only 18.2 % of the 18- to 29-year-old casualties had a domestic accident, compared to 69.4 % of accident victims aged 80 and older.

Looking at all the accident locations where men were injured over the previous twelve months, recreational accidents (outside the home) were the most common (Table 2). Nearly half of all male accident victims under 30 suffered from accidents during leisure time (49.2% of accident casualties who reported where the accident happened). Younger people in particular had accidents during leisure time. Over a third (38.4 %) of adults who had a recreational accident over the previous twelve months were younger than 30.

The frequency of accidents during leisure time is probably related to sporting activity. People who reported that they had suffered an accident during leisure time are significantly more active in sports than the uninjured. The intensity of physical activity is also a factor: people who are actively involved in sports for more than four hours a week on average in the previous three months have the highest accident rates.

Men have more accidents at work

2.5 % of all respondents – men significantly more frequently than women – reported injuries from an accident at work in the previous twelve months (Table 1). A logistic regression showed that the risk of injury was about three times higher (OR=3.1 95 % CI: 2.3 to 4.1, age-adjusted) among employed men than women.

The work-accident rate is also related to a person's occupational status: while 5.7 % of male workers had an occupational accident within a year, this only happened to 2.3 % of the salaried employees. The probability of an occupational accident increases with the number of weekly working hours.

However, even then women are more seldom affected by workplace accidents than men when one takes into account that they more rarely have worker status and more often have part-time jobs. Overall, over a quarter of the

male accident casualties had had a workplace accident, but only one in ten of the women (Table 2).

Taking a more differentiated look at traffic accidents

One in 100 people had a traffic accident – i.e. an accident on public paths, roads or squares – in the previous twelve months (Table 1). Men and women have about the same risk of involvement in a traffic accident. There are no significant differences with age, either.

In the Robert Koch Institute's 2004 Telephone Health Survey, traffic accidents were subjected to a differentiated evaluation according to the kind of road user. It was found that the largest group of people who had been involved in a traffic accident were travelling on foot. Half of them were aged 60 or older. The second-largest group were travelling by bicycle [5]. It can be assumed that a certain proportion of traffic-accident victims covered by the survey were not recorded in official accident statistics, since accidents are only registered when the police are called to the scene. Special attention should be paid to the above-mentioned road-user groups in more in-depth analyses and when drafting accident-prevention measures.

Influence of social situation on accident statistics

GEDA covers several parameters relating to a person's socio-economic situation, including education and vocational training. The ISCED (International Standard Classification of Education) system makes it possible to compress the information collected into three levels of qualification: simple, intermediate or higher vocational training [6]. This classification is used below as an indicator of the respondents' social status.

Among both women and men, the overall accident rates vary only slightly with the level of education. In the case of occupational and recreational accidents, however, there are

Tabelle 3
Accident casualties by level of education (ISCED¹), gender, accident location² (multiple answers possible)
As a percentage of all respondents
 Source: GEDA 2009

Accident location	Simple education	Intermediate education	Higher education
Women	5.4 %	5.7 %	5.9 %
Men	9.7 %	8.4 %	8.8 %
Total	6.9 %	7.0 %	7.6 %
Workplace ³	2.3 %	2.8 %	1.8 %
Traffic	1.2 %	0.9 %	1.1 %
At home	2.3 %	2.2 %	2.2 %
Leisure	2.2 %	2.2 %	2.9 %

¹ ISCED classification see [6].

² The analysis covered the four most important accident locations. Accidents in schools/training centres were not analysed, because they were reported by very few respondents (18 men, 10 women aged 18 to 29).

³ The reference population for the percentage of people who had had an accident at work was restricted to people at risk – i.e. people who were in employment at the time of survey.

correlations with socio-economic parameters. For example, the accident rate at work is lowest among the best educated (Table 3). Compared to the group with an intermediate education level, highly educated people are significantly less likely to suffer an accident at work (OR=0.6 95% CI: 0.5 to 0.8).

However, significantly higher accident rates were determined for this group in the case of accidents during leisure time compared to people with an intermediate education (OR=1.4 95% CI: 1.1 to 1.7) or simple vocational qualifications (OR=1.4 95% CI: 1.1 to 1.8). The leisure accident risk is probably also influenced by the degree of sporting activity: people in a favourable social situation are often more active in sports in their leisure time [7]. The influence of age and gender was statistically monitored in all the analyses, as the educational level of the respondents varies with age and gender. Half of the women in the oldest age group, for example, have a low level of education (cohort effect).

Abstract

It can be deduced from the available data that about 7% of adults in Germany suffer an accident-related injury needing medical attention within twelve months. In its latest estimate for 2007, the Federal Institute for Occupational Safety and Health puts the number of people injured in accidents at over 8 million [1]. However, this figure also includes children. Various studies show that their likelihood of having an accident is higher compared to adults [8, 9].

In the 2009 GEDA Health Survey, younger men were identified as being especially vulnerable to accidents. The GEDA results correlate well with the estimates of the Federal Institute on the most important locations of accidents – two-thirds of accidents happen in the home or during leisure time. The 2009 GEDA confirmed the importance of home and leisure accidents. The resulting injuries requiring treatment are of considerable economic significance. A more extensive study of these accident areas, particularly relating to aspects of effective accident prevention, appears imperative in this context.

Representative telephone surveys provide valuable information for monitoring accidents in Germany. They deliver important information specifically on accident areas where there are no official statistics, e.g. home and leisure accidents, and traffic accidents that are not reported to the police. Telephone surveys make it possible to link information on accidents with socio-demographic characteristics, a useful source of information on target groups and focal areas for accident-prevention measures. The only limiting factor is that certain population groups – such as the seriously ill, people living in institutions, and migrants – are in general under-recorded in (telephone) surveys. Furthermore, the depth of information is relatively limited, compared, for example, to the statistics on

work-related accidents provided by the statutory accident-insurance institutions.

The aim of accident monitoring in Germany should be to improve our knowledge on accident victims and places where accidents tend to be concentrated, in order to develop concepts on accident prevention. Health monitoring at the Robert Koch Institute will continue to make a contribution in this field in the future. In the on-going 2010 GEDA telephone health survey, accidents are being recorded in greater depth as part of a special module, for example with questions on how the accidents happened and what the consequences were (injuries, healthcare).

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Key message

- ▶ The prevalence of medically treated, non-fatal injuries in adults is approx. 7% per annum based on data from GEDA 2009
- ▶ Men, especially younger men, have a higher accident risk than women.
- ▶ Two-thirds of all accidents happen at home or during leisure activities outside the home.
- ▶ Work-related accidents affect more men than women; occupational status is a factor.
- ▶ People with a higher education are more at risk from leisure accidents than less-well-educated people.
- ▶ The Robert Koch Institute's surveys are a suitable data source for an overview of non-fatal accidents.

Bibliography

- 1 Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (2007) Unfallstatistik: Unfalltote und Unfallverletzte 2006 in Deutschland
www.baua.de/nn_40770/de/Informationen-fuer-die-Praxis/Statistiken/Unfaelle/Gesamtunfallgeschehen/pdf/Unfallstatistik-2007.pdf (Stand: 25.02.2010)
- 2 Statistisches Bundesamt (2010) Gesundheit: Todesursachen in Deutschland 2008. Wiesbaden: Statistisches Bundesamt, Wiesbaden
- 3 Statistisches Bundesamt (2008) Gesundheit: Krankheitskosten 2002, 2004 und 2006. Wiesbaden: Statistisches Bundesamt, Wiesbaden
- 4 Wissenschaftliches Institut der AOK (WIdO) (2010) Arbeitsunfähigkeit bei erwerbstätigen AOK-Mitgliedern
www.gbe-bund.de (Stand 22.04.2010)
- 5 Saß AC (2008) Das Unfallgeschehen in Deutschland – Auswertung des Unfallmoduls im Telefonischen Gesundheitssurvey 2004. Deutsches Ärzteblatt 36: 604–608
- 6 Schroedter JH, Lechert Y, Lüttinger P (2006) Die Umsetzung der Bildungsskala ISCED-1997 für die Volkszählung 1970, die Mikrozensus- Zusatzerhebung 1971 und die Mikrozensus 1976–2004. ZUMA-Methodenbericht 2006/08, Zentrum für Umfragen, Methoden und Analysen (ZUMA), Mannheim
- 7 Lampert T (2010) Tabakkonsum, sportliche Inaktivität und Adipositas: Assoziationen mit dem sozialen Status. Deutsches Ärzteblatt International, 107 (1–2): 1–7
- 8 Kahl H, Dortsch R, Ellsäßer G (2007) Verletzungen bei Kindern und Jugendlichen (1–17 Jahre) und Umsetzung von persönlichen Schutzmaßnahmen. Ergebnisse des bundesweiten Kinder- und Jugendgesundheitssurveys (KiGGS) 2003–2006. Bundesgesundheitsbl–Gesundheitsforsch–Gesundheitsschutz 50: 718–727
- 9 Kreieder M, Holeczek M (2002) Unfallverletzungen in Heim und Freizeit im Jahr 2000, Repräsentativbefragung, Kapitel 5.2 Kinderunfälle. Schriftenreihe der Bundesanstalt für Arbeitsschutz und Arbeitsmedizin. BAuA, Dortmund, Berlin, Dresden, S 91–104
- 10 Kurth BM, Lange C, Kamtsiuris P et al. (2009) Gesundheitsmonitoring am Robert Koch-Institut. Sachstand und Perspektiven. Bundesgesundheitsbl–Gesundheitsforsch–Gesundheitsschutz 52: 557–570

GBE kompakt

Published by

Robert Koch Institute
Nordufer 20
13353 Berlin

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How to quote the title:

Saß AC (2010) Accidents in Germany:
Results of the Telephone Health Survey
»German Health Update« (GEDA) 2009.
Published by the Robert Koch Institute, Berlin.

GBE kompakt 2/2010
www.rki.de/gbe-kompakt (last revised: 29.04.2010)