eScooter in Germany – Accident development and challenges

7th IRTAD Conference: Better Road Safety Data for better outcomes
Lyon, 27-28 September 2022
Legislation
Facts and Figures
Injury patterns
Self reported behavior
Behavioral patterns
Prevention campaign
LEGISLATION REGARDING eScooters

- Electrically propelled motor vehicles
- Maximum design speed: 6 – 20 km/h
- Mandatory: handlebar, lighting, bell
  - national vehicle operational approval, insurance
- Minimum age: 14
- To be used on cycling infrastructure facilities or roads
- Users: BAC 0.5 ‰ for age over 21, no alcohol for novice drivers and below 21 years

Since 15th June 2019

Research about the impact of eScooter use coordinated by Bast, first results published in December 2020, final report upcoming
eScooter accidents and casualties 2020

- ACCIDENTS WITH CASUALTIES INVOLVING eSCOOTERS: 1884
  - KILLED: 271
  - SEVERE INJURED: 344
  - SLIGHTLY INJURED: 1535

Source: Destatis 2021
eScooter accidents and casualties

Source: Destatis 2022
eSCOOTER ACCIDENTS & CASUALTIES 2022

January - May 2022

- **Accidents with Casualties**: 2369
- **Killed**: 2
- **Severely Injured**: 339
- **Slightly Injured**: 1794

Source: Destatis 2022
FURTHER INSIGHTS FROM 2021 (which are similar to 2020)

- 41.4% younger than 25 years, 43% between 25 and 44, 3.4% 65 and more years.
- 2/3 of eScooter users involved in accidents were male.
- Main responsible: around 52% are eScooter users.
- Main cause of accident: DUI, wrong use of road, unappropriate speed.
- Main known accident types:
  - driving accidents (loss of control)
  - turning into a road or crossing it
  - accident between vehicles moving along in carriageway

Source: Destatis 2022
PERSONS involved in eScooter accidents and other party 2021 (in %)

- Total 5535
- 3 and more parties involved: 61
- Single accident: 37
- Other party of accident:
  - Car: 61
  - Bicycle or pedelec: 18
  - Pedestrian: 13
  - HGV: 3
  - Other: 5

Source: Destatis, 2022
Study done by:

Heinz-Lothar Meyer¹ · Max Daniel Kauther² · Christina Polan¹ · Benedikt Abel¹ · Carsten Vogel¹ · Bastian Mester¹ · Manuel Burggraf¹ · Marcel Dudda¹

¹ Klinik für Unfall- Hand- und Wiederherstellungschirurgie, Universitätsklinikum Essen, Essen, Deutschland
² Klinik für Unfallchirurgie und Orthopädie, Kinderorthopädie, Agaplesion Diakonieklinikum Rothenburg, Rothenburg, Deutschland

analysed the injury patterns of 68 eScooter users who after an accident went to the emergency room of the high level trauma center from the University of Essen by their own (62%) or were taken there by ambulance (also with emergency doctor = 17.7%) between 15th June 2019 and 31th October 2020.

**INJURY PATTERNS**

Results:

- More male than females
- Only 11.8% of the accidents were registered by the police
- eScooter users had similar as bicycle riders head injuries and injuries of the upper extremities, but more eScooter users had an injury score ≥ ISS 16 and a longer duration of hospitalization compared to bicycle and e-bike users
- Only 1.5% of eScooter users wear a helmet (52.9% of e-bike users and 53.3% of cyclists)
- 44.1% of the eScooter accidents occurred between 18:00 hs. and 06:00 hs. (evening and nighttime), 70% as leisure purpose
- 70.6% had to stay in the hospital, 16.6% in ICU
- Around 30% had a surgery
- 11.8% were under the influence of alcohol (62.9% of them having the accident during nighttime), all with head/brain injuries
SELF-REPORTED MISBEHAVIOR

Source: DVR, Survey August 2020

N: 1003
BEHAVIOURAL PATTERNS

• Despite a meanwhile quite good knowledge of the rules, there are clear deficits in knowledge about improper use of sidewalks.
• In the case of existing cycling facilities a high proportion of compliance could be observed.
• As soon as these are missing and/or other location features gain importance (e.g. cobblestones, touristic sights) the compliance is decreasing and especially the use of sidewalks and driving in the wrong direction increases.

Is it allowed to use the sidewalk?

Ride without risk!
https://www.dvr.de/praevention/kampagnen/roll-ohne-risiko

WRRS for young employees campaign 2020:
https://www.scoooot-dvr.de/

WRRS 2020
https://www.wie-kommst-du-an.de/e-scooter

Source: German Road Safety Council
THANK YOU

Jacqueline Lacroix
jlacroix@dvr.de

Own pictures