



Status Summary 2023: Road Safety Risk Factors

Bloomberg Philanthropies Initiative for Global Road Safety

CÓRDOBA,
ARGENTINA



JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

International
Injury Research Unit

Beginning in 2023, the Johns Hopkins International Injury Research Unit, through the Bloomberg Philanthropies Initiative for Global Road Safety, has been conducting observations in Córdoba to reduce road injuries and fatalities.

The following report highlights results from an ongoing study that captured observations of three risk factors:* speed, helmet use, and seat-belt and child restraint use. The results are based on data collected between April and July 2023.

*This study did not observe drink-driving and focusses on speed going forwards.

Speeding among motorcycles was very high



Speeding was highest among SUVs



Correct helmet use among motorcyclists was low

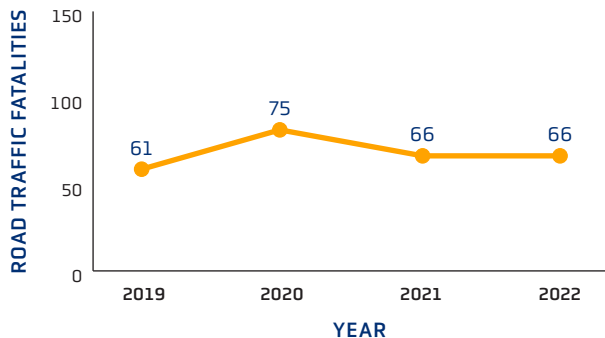


Seat-belt use among adult drivers was low

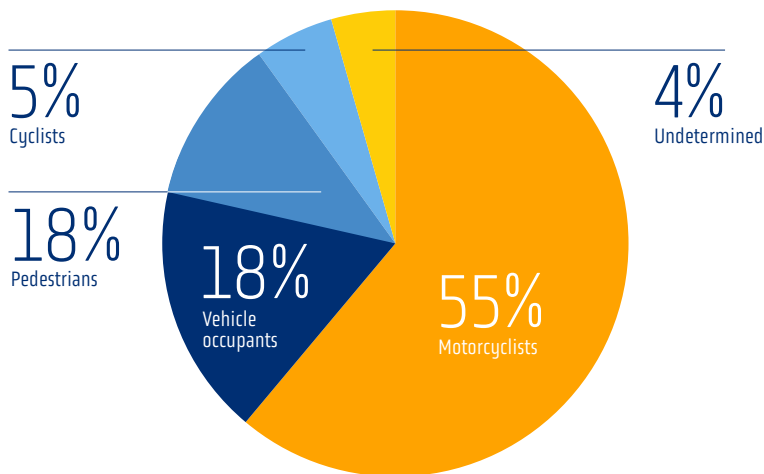


Road Traffic Fatalities in Córdoba

Road traffic fatalities have remained roughly stable since 2020



Deaths by road user, 2022



Vulnerable road users (motorcyclists, pedestrians, and cyclists) accounted for 78% of road traffic fatalities.

Recommendations

Transit Agents

- Increase enforcement of:
 - Speed limits among all vehicles, particularly SUVs, sedans/saloons, and motorcycles, and pickup/light trucks.
 - Correct helmet use among both drivers and passengers.
 - Seat-belt use among all occupants in the vehicle.
 - Age-appropriate child restraint use.

Secretary of Urban Development and Secretary of Metropolitan Development

- Implement a maximum speed limit of 30 km/h on roadways where motorized traffic mixes with pedestrians and cyclists, and 50 km/h in urban areas.
- Support efforts to enact a national road and motor vehicle safety law that includes reducing speed limits in line with global best practices (30 km/h on local and collector roads, and 50 km/h on arterial roads).
- Implement mass-media campaigns in coordination with enforcement efforts.
- Coordinate operations to control speeding in alignment with the provincial government.

Speed in Córdoba

Higher speeds lead to a greater risk of a crash and a higher probability of serious injury. An increase of 1 km/h in average vehicle speed results in an increase of 3% in the incidence of crashes resulting in injury and an increase of 4%–5% in the incidence of fatal crashes.*

*Save LIVES: A road safety technical package. Geneva: World Health Organization; 2017.



Speeding was very high among all observed vehicles (62%).



Speeding was highest among SUVs (66%) compared with other vehicle types.



Speeding was very high on local roads (76%) and collector roads (66%).



64% of taxi drivers and 42% of bus drivers were observed speeding.



Applying the global recommendation (30 km/h for local and collector roads and 50 km/h for arterial roads), 82% of the observed vehicles were traveling at unsafe speeds.

Functional classification of roads

Arterial road: These are roadways with high traffic volume; they provide a high degree of mobility and carry a high proportion of travel for long distance trips. These roadways carry the major portion of trips entering and leaving an activity center, as well as the majority of movements that either go directly through or bypass the area.

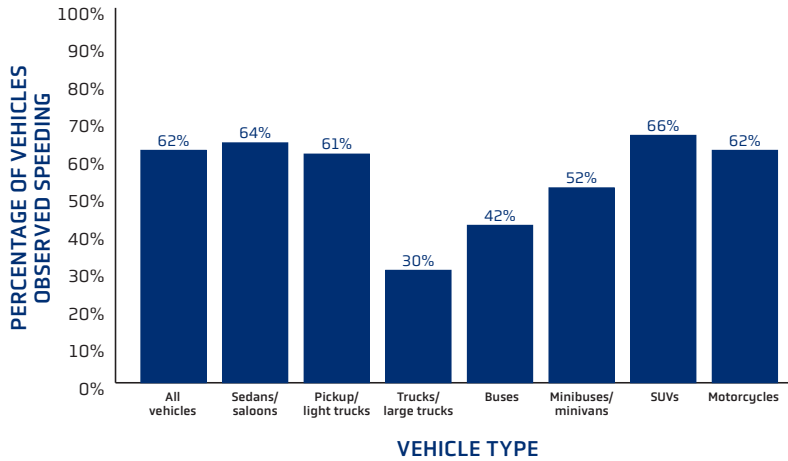
Local road: These roads provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas.

Collector road: These roads collect traffic from local roads and connect to arterial roadways. They penetrate neighborhoods and communities, collecting and distributing traffic between neighborhoods and arterial roads. Collector roads are shorter than arterial but longer than local roads.

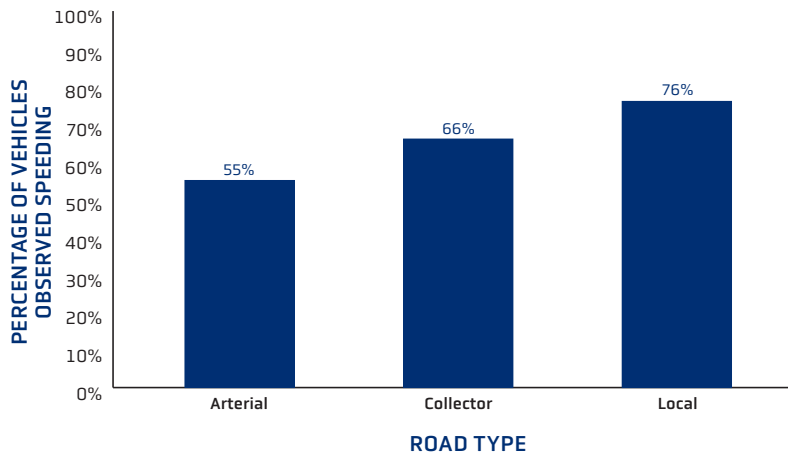
These roads provide less mobility than arterials at lower speeds and for shorter distances.

Key Findings on Speed in Córdoba

Speeding was very high across most vehicle types



Speeding occurred more frequently on local and collector roads



Recommendations

Municipal Transit Police and Road (Caminera) Provincial Police

- Strengthen enforcement of speed limits with a focus on:
 - Local and collector roads.
 - SUVs, sedans/saloons, motorcycles, and pickup/light trucks.

Secretary of Urban Development and Secretary of Metropolitan Development

- Implement mass-media campaigns in coordination with enhanced enforcement efforts, emphasizing the dangers of speeding.
- Implement a maximum speed limit of 30 km/h on roadways where motorized traffic mixes with pedestrians and cyclists, and 50 km/h in urban areas.

Helmet Use* in Córdoba

Using a motorcycle helmet correctly** can reduce the risk of fatality by 42% and the risk of serious head injury by 69% in the case of a crash.

*Overall helmet use was defined as strapped or unstrapped use of a helmet of any type.

**Correct helmet use was defined as the use of a standard helmet that was worn correctly and with the chin strap fastened.



Overall correct helmet use was low (59%).



Correct helmet use was lower among passengers (42%) compared with drivers (63%).



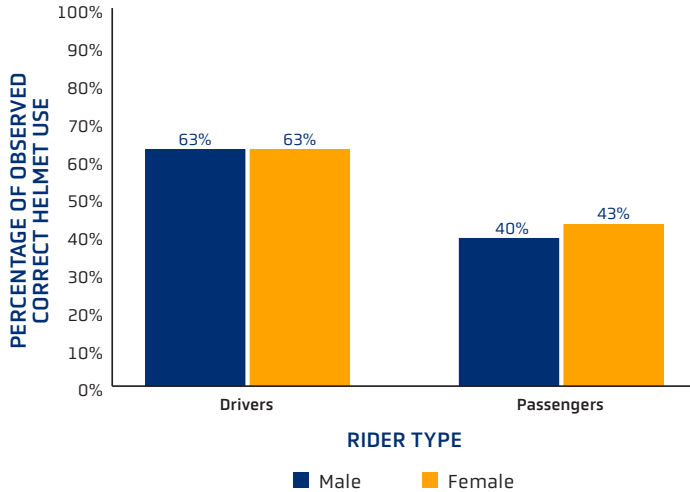
Correct helmet use was lower on collector/local roads (55%) compared with arterial roads (62%).



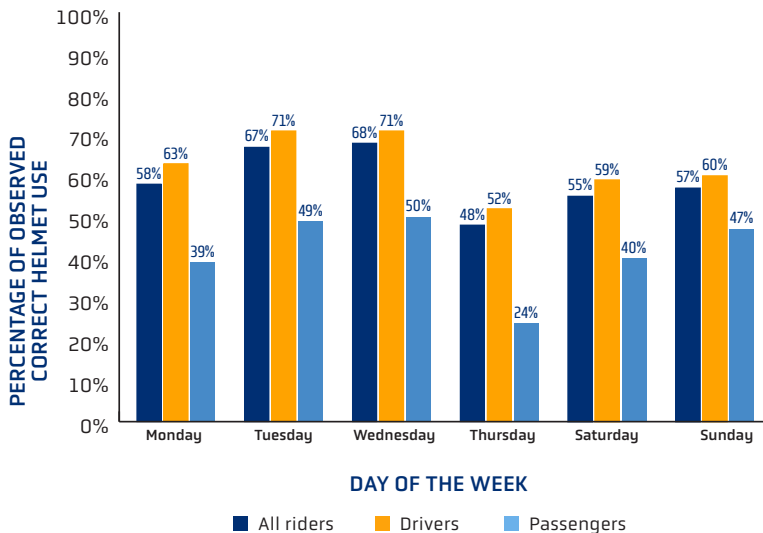
Correct helmet use was lowest between 9 a.m. and 11 a.m. (56%).

Key Findings on Helmet Use in Córdoba

Correct helmet use was lower among passengers



Correct helmet use was lowest on weekends



Recommendations

Transit Agents

- Increase enforcement of correct helmet use among all motorcyclists, focusing on:
 - Passengers.
 - Weekends.
- Make enforcement operations regular, visible, and widespread.

Secretary of Urban Development and Secretary of Metropolitan Development

- Implement mass-media campaigns in coordination with enhanced enforcement of correct helmet use, focusing on passengers.
- Advocate for enforcement of penalties and fines for driving without using a helmet correctly.

Seat-Belt and Child Restraint Use in Córdoba

Seat-belts and child restraints play a significant role in reducing the severity of injuries in the event of a crash; they reduce mortality by 50% in crashes in which motorists, passengers (including rear-seat passengers), and children would otherwise die. Children in front seats have a 40% higher road traffic injury risk than children in rear seats.



Overall seat-belt use was low (57%).



Seat-belt use among adult rear-seat passengers was very low (18%).



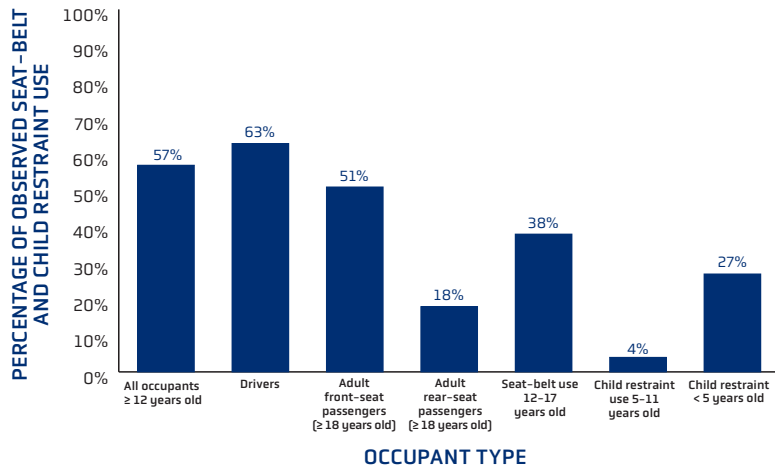
Child restraint use among children 5-11 years old was almost nonexistent (4%) very low among children < 5 years old.



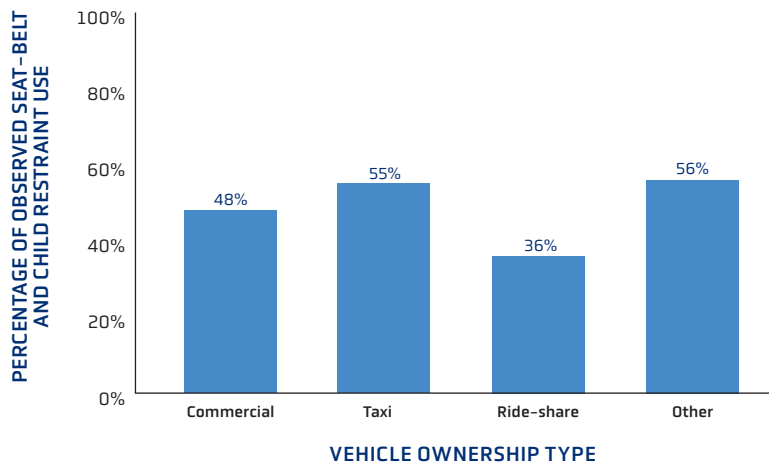
Seat-belt use was higher among female drivers (73%) compared with male drivers (61%).

Key Findings on Seat-Belt and Child Restraint Use in Córdoba

Seat-belt and child restraint use among adult rear-seat passengers and children 5-11 years old was very low



Seat-belt and child restraint use were lower among ride-share and commercial vehicles



Recommendations

Transit Agents

- Promote and enforce child restraint use as stated in the National Transit and Road Safety Law.
- Strengthen enforcement of seat-belt use, particularly among rear-seat passengers in all vehicle types.

Secretary of Urban Development and Secretary of Metropolitan Development

- Implement mass-media campaigns in coordination with enforcement efforts to increase seat-belt use among all occupants.



Segregated bike lane in the center of Córdoba, Argentina.

METHODS

Since 2023, the Johns Hopkins International Injury Research Unit has partnered with IPSIBAT/CONICET (Instituto de Psicología Básica, Aplicada y Tecnología, Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET) to conduct roadside observations. The methods for these findings were developed by the Johns Hopkins International Injury Research Unit and implemented in collaboration with IPSIBAT/CONICET. This report provides results from observational surveys that represent the population-level (citywide) prevalence of important road safety risk factors—speed, helmet use, and seat-belt and child restraint use—at baseline. In the last round of observations, for speed, there were 31,441 observations; for helmet use, there were 7,460 observations; and for seat-belt and child restraint use, there were 21,079 observations.

Observation sites were randomly selected, conditional on the safety of observers. Fifteen sites were randomly selected to capture the prevalence of risk factors that could be attributed to either implementation of targeted interventions or secular trends. For each risk factor, a standardized protocol for data collection was implemented. All risk factors were observed by selecting vehicles in a systematic quasi-random fixed sequence. Selection of the observation sites was done: 1) for seat-belts and

helmets, by randomly choosing 15 observation sites distributed over the 14 CPC (centros de Participación comunitaria); and 2) for speed, by randomly selecting one feasible observation site in each administrative region. Observations were performed between 8:15 a.m. and 5:30 p.m. on both weekdays and weekend days. The methods were designed to estimate citywide prevalence and cannot provide insights into interventions conducted in specific locations in the city. The data management team at Johns Hopkins International Injury Research Unit reviewed and cleaned the data to produce the analyses available in this report.

ACKNOWLEDGMENTS

Technical support was provided by city officials in Córdoba, Argentina; a consortium of international initiative partners; and local collaborators from IPSIBAT/CONICET.

CONTACT: jhsph.iiru@jhu.edu

CITATION:

Status Summary Report 2023: Road Safety Risk Factors in Córdoba, Argentina: 2023. Baltimore: Johns Hopkins International Injury Research Unit; 2023.



REPORT
PREPARED BY:

Bloomberg
Philanthropies

Initiative for Global
Road Safety

Vital
Strategies

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

International
Injury Research Unit

CONICET

Municipalidad
de Córdoba