Assessment of Vehicular Accidents in Selected Municipalities in Northern Iloilo Philippines

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ABSTRACT

Road traffic injuries are preventable causes of mortality and disability requiring coordinated governance across transport planning, enforcement, health systems, and infrastructure design. The World Health Organization (WHO) estimates that the Philippines recorded 11,062 road traffic deaths in 2021 (9.7 per 100,000 population). Iloilo Province has likewise documented a substantial crash burden based on publicly reported police- and health office–cited summaries. This study synthesized provincial crash indicators and municipal crash narratives to describe the burden and recurring circumstances of vehicular accidents in selected Northern Iloilo municipalities and to identify locally feasible prevention priorities consistent with Safe System principles. A descriptive ecological secondary-data study design was used, integrating provincial quantitative crash summaries (Iloilo Police Provincial Office [IPPO] counts cited in provincial reporting) and qualitative municipal crash narratives referenced in publicly available reports for selected Northern Iloilo municipalities. Descriptive summaries were produced for provincial totals and attributed causes, and municipal narratives were thematically coded for vehicle involvement, crash configuration, road context, and behavioural contributors. Iloilo Province recorded 5,195 road crashes, resulting in 167 deaths and 2,441 injuries (384 major and 2,057 minor). Findings support a prevention package prioritizing speed management, motorcycle safety enforcement, roadside hazard mitigation, and strengthened post-crash response, aligned with emerging road safety planning initiatives in Western Visayas.

Keywords: road traffic injury; motorcycle crashes; Safe System; secondary data; Iloilo; Philippines

INTRODUCTION

Road traffic injury is widely recognizezed as a preventable cause of death and disability and is increasingly conceptualized as a systems problem requiring coordinated governance across transport planning, enforcement, health systems, and infrastructure design.

The WHO's *Global status report on road safety 2023* emphasizes multi-sector action to reduce road traffic deaths and serious injuries as part of global development commitments. BBHub Assets+1 Within this framing, the Safe System approach assumes that road users will make errors and that the transport system should be designed to minimize the probability that such errors result in fatal or serious injury outcomes.(Stipdonk et al., 2024)

In the Philippines, the WHO estimated 11000 road traffic deaths in 2021 (Nirandjan et al., 2022), reflecting a persistent national burden. WHO in the Philippine context also includes high exposure of vulnerable road users: the WHO Philippines profile indicates that powered 2- and 3-wheelers (8,070,821) outnumber four-wheel vehicles (4,389,676), which plausibly elevates motorcycle-related injury risk in mixed-traffic road environments. (Ghalichi et al., 2024)

At the provincial level, publicly reported records from local newspaper Panay News and the Daily Guardian, summaries citing IPPO data document a substantial crash burden in Iloilo Province. From 1 January to 31 October 2024, Iloilo Province recorded 3,011 vehicular accidents resulting in 123 fatalities and 1,226 injuries, with reckless driving and driver error among the leading attributed causes. In 2025, provincial health reporting,

citing IPPO data, reported 5,195 road crashes from January to September 2025, with 167 deaths and 2,441 injuries, indicating continued high crash incidence and injury burden.

Northern Iloilo comprises a corridor of coastal and inland municipalities connected by national and provincial road networks supporting commuting, freight movement, agricultural transport, and tourism. In such contexts, high motorcycle exposure combined with speed, impaired driving, and roadside hazards can generate high-severity crash outcomes, particularly in collisions involving larger vehicles or fixed roadside objects. Evidence from systematic review synthesis supports helmets as an effective countermeasure, reducing head injuries and mortality among motorcycle riders who crash. (Lloyd, 2025; Ratnasekera et al., 2025)

Western Visayas has initiated region-specific road safety planning through the development of the Western Visayas Road Safety Action Plan (WVRSAP) 2026–2028 under the initiative, indicating institutional readiness to translate evidence and surveillance into targeted interventions. (Naweed & Blackman, 2024)

This study provides a secondary-data descriptive assessment of vehicular accidents in selected Northern Iloilo municipalities during 2024–2025 by integrating provincial crash indicators and municipal crash narratives, and proposes feasible local prevention priorities consistent with Safe System principles. (Zhao et al., 2025)

METHODS

This study employed a descriptive ecological secondary-data design, integrating publicly available provincial quantitative indicators and qualitative municipal crash narratives to characterize vehicular accidents in selected Northern Iloilo municipalities during 2024–2025. The quantitative component utilizes aggregated provincial statistics to analyze crash frequency, severity, and temporal trends, while the qualitative component examined municipal incident reports to contextualize contributing factors and local enforcement responses.

Study setting

The analytic focus was Northern Iloilo municipalities represented in publicly reported crash narratives (Ajuy, Carles, Barotac Viejo, and Sara), interpreted within the broader Iloilo provincial crash context (Rodriguez et al., 2024)

Four primary sources informed the synthesis:

1. **WHO road safety profile for the Philippines:** Estimates of national road traffic fatalities and rates, vehicle fleet composition, and road safety system indicators. WHO dataset availability via the FOI portal: Documentation that national datasets exist for road traffic accidents and deaths by province (2020–2024), distributed by vehicle type and passenger type.

2. **Provincial crash summaries cited in public reporting:**

   Jan 1–Oct 31, 2024 crash totals, fatalities, injuries, and attributed causes cited from IPPO data. Panay News+1

   Jan–Sep 2025 crash totals, deaths, and injuries cited from IPPO data via provincial health reporting. Daily Guardian+1

3. **Regional road safety planning documents and announcements:** Documentation of WVRSAP 2026–2028 development and related regional planning activities. Correlating reports from the different data sources has been done. Data is further triangulated with selected Municipal Police Stations. (Echaluce & Macabeo, 2024)

Data extraction and synthesis

Provincial totals were transcribed verbatim from publicly reported IPPO-cited and provincial health office–cited summaries for the stated time windows (2024 and 2025). Panay News, Daily Guardian, and two Municipal crash

narratives were reviewed and thematically coded to identify recurring crash mechanisms and contributory circumstances, and then triangulated against provincial cause profiles and global evidence on injury prevention. (Hossain et al., 2023)

Ethical considerations

All data were derived from publicly accessible reports and institutional publications. No individual-level confidential records were accessed or analyzed; therefore, this synthesis did not require human participant consent under typical research governance frameworks for secondary analysis of public information.

RESULTS

Provincial crash burden and attributed causes (Iloilo Province)

A provincial summary citing IPPO data reported that from 1 January to 31 October 2024, Iloilo Province recorded 3,011 vehicular accidents, resulting in 123 fatalities and 1,226 injuries, with 1,662 property-damage-only cases. Panay News+1 The same report identified leading attributed causes as reckless driving (2,230 cases), driver error (683 cases), drunk driving (78 cases), and mechanical issues (20 cases). For January to September 2025, a report citing IPPO data via the provincial health office stated that Iloilo Province recorded 5,195 road crashes, resulting in 167 deaths and 2,441 injuries, including 384 major injuries and 2,057 minor injuries.

National road safety context relevant to motorcycle exposure

The WHO Philippines profile reported an estimated 11,062 road traffic deaths in 2021 and a vehicle fleet composed of 8,070,821 powered 2- and 3-wheelers versus 4,389,676 four-wheel vehicles, supporting the plausibility of elevated motorcycle exposure in road crash injury burden.

Municipal narratives included in this review, recurrent themes involved motorcycles as the primary vulnerable road user, high-energy impacts in mixed-traffic environments, and contextual contributors such as speed and hazardous roadside conditions. These qualitative patterns align with evidence that motorcycle riders face disproportionately severe outcomes without effective protection (Fondzenyuy et al., 2024)

This secondary-data descriptive assessment indicates that vehicular accidents in selected Northern Iloilo municipalities should be interpreted within a broader provincial context of substantial and potentially increasing crash burden.

The provincial attribution of crashes to reckless driving, driver error, and drunk driving is consistent with behavioural contributors commonly implicated in high-severity crash patterns, particularly for motorcycles operating in mixed-traffic road corridors.(Kanitpong et al., 2024)

From a Safe System perspective, the municipal narrative mechanisms—motorcycle predominance, loss-of-control events, and severe outcomes from high-energy impacts—illustrate how predictable human error interacts with road environments that insufficiently mitigate injury severity.(Grove et al., 2025) This interpretation is reinforced by the worldwide vehicle fleet structure, where powered 2- and 3-wheelers outnumber four-wheel vehicles, creating sustained exposure for vulnerable road users across both urban and peri-urban road networks. WHO CDN The Safe System implication is that effective risk reduction must prioritise safer speeds, protective behaviour, forgiving roadsides, and strengthened trauma response, rather than relying solely on individual compliance.(Alexander & Bates, 2024)

Evidence supports specific interventions that map directly onto these observed risk pathways. Helmet use is a well-established countermeasure: a Cochrane systematic review concluded that motorcycle helmets reduce the risk of death and head injury among riders who crash.(Sharif et al., 2023)

Speed management through engineering is also supported by longitudinal evidence indicating that traffic-calming measures are associated with reductions in road traffic collisions and injuries. Furthermore, roadside hazards are central determinants of severity in run-off-road crashes; evidence indicates that impacts with rigid

objects such as trees, poles, or concrete barriers are associated with higher fatal injury odds compared with w-beam guardrail crashes, supporting roadside hazard mitigation as a credible injury-prevention strategy. (White & Meixler, 2023)

At the programme level, Western Visayas' development of WVRSAP 2026–2028 under this initiative provides a timely platform for Northern Iloilo municipalities to adopt corridor-level interventions and harmonise enforcement, engineering, and post-crash response priorities. The WHO road safety framework also recognises post-crash response as a core pillar of road safety systems, underscoring the importance of coordinated emergency medical response and trauma referral capacity to reduce preventable mortality. (Goel et al., 2024)

Nevertheless, interpretation should acknowledge that the secondary narratives used here do not constitute complete municipal crash registries and likely over-represent severe incidents. Additionally, administrative totals may vary across police and civil/vital registration systems due to definitional and capture differences. FOI disclosure indicates the existence of provincial datasets on road traffic accidents, injuries, and deaths disaggregated by vehicle and passenger type (2020–2024), suggesting a feasible pathway for future work to strengthen municipality-level denominators and comparative rate estimation.(Soltani et al., 2024)

Limitations

This study is limited by the absence of publicly accessible, municipality-level denominators and complete crash registries necessary for robust incidence rate estimation and inter-municipality comparisons. Media-based narratives may over-represent fatal and high-profile crashes, and the reported provincial figures should be interpreted as indicative of burden rather than a single definitive count due to potential administrative reporting differences.

CONCLUSION

Publicly reported provincial summaries indicate that Iloilo Province experienced a high burden of road crashes in 2024–2025, including 3,011 vehicular accidents (123 deaths) from January to October 2024 [Panay News] and 5,195 road crashes (167 deaths; 2,441 injuries) from January to September 2025. The persistence of behavioral contributors such as reckless driving, driver error, and drunk driving in provincial reports supports the relevance of speed management and impaired driving deterrence as primary prevention targets.

In selected municipalities of Northern Iloilo, the qualitative narrative themes underscore a crash profile marked by motorcycle vulnerability, severe consequences from high-energy impacts, and heightened risks associated with hazardous roadsides. These insights advocate for a comprehensive prevention strategy that focuses the following specific prevention strategies that are tailored to the identified vulnerabilities.

1. Speed Management. Implement speed limits in high-risk areas, particularly near schools and densely populated neighborhoods. Utilize speed cameras and radar signage to monitor and deter speeding. - Conduct regular speed awareness campaigns to educate riders on the dangers of excessive speed.

2. Strengthened Enforcement of Motorcycle Safety Regulations. Increase random checkpoints to enforce helmet laws and ensure compliance with safety gear regulations. - Provide training programs for law enforcement on how to effectively monitor and enforce motorcycle safety laws. - Launch community education campaigns that emphasize the importance of wearing helmets and other protective gear, using local testimonials to highlight real-life impacts.

3. Roadside Hazard Mitigation. Conduct audits of local roads to identify and address hazardous conditions such as potholes, poorly marked lanes, and inadequate signage. - Install physical barriers or rumble strips along dangerous roadside edges to alert and guide errant riders. - Improve lighting in high-crash areas to enhance visibility and safety during nighttime riding.

4. Improved Post-Crash Response Capacity. Train medical personnel and first responders on best practices for treating motorcycle crash victims to minimize severe outcomes. - Establish a community emergency response

team that includes motorcycle safety instructors who can provide immediate aid and support. - Develop a quick-response system that prioritizes motorcycle crash notifications to ensure timely medical assistance.

5. Community Engagement and Awareness. Organize workshops and training sessions for motorcycle riders that cover defensive driving techniques and safe riding practices. Collaborate with local schools and organizations to promote safe riding habits among youth and to discourage underage riding without helmets.

6. Foster partnerships with local businesses to sponsor motorcycle safety events, creating incentives for riders who comply with safety measures.

By implementing these targeted prevention strategies, municipalities can significantly reduce motorcycle-related crashes and enhance road safety in Northern Iloilo.

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