ABSTRACT

Adolescent Motorcycle Safety in Indonesia: Age, Psychology, Riding Behaviors and Parental Supervision: A Scoping Review

Dimas Wisnu Wardhana, Ratih Wirapuspita Wisnuwardani, Ida Ayu Indira Dwika Lestari

Correspondence E-mail : dimaswisnuwardhana@yahoo.com

Background: Motorcycle-related road traffic injuries are a public health concern among adolescents in Indonesia. Evidence on age, psychological factors, riding behaviors, and parental supervision remains fragmented across studies using different outcome measures.

Objective: To map evidence on age, psychological factors, riding behaviors, and parental supervision related to adolescent motorcycle crash risk in Indonesia and identify research gaps.

Methods: Scopus, PubMed, GARUDA, DOAJ, TRID, and Google Scholar were searched for publications from 2016–2026, supplemented by reference screening and targeted web searches. Eligible participants were Indonesian motorcyclists aged 10–19 years or separately reported eligible subgroups. Evidence was synthesized descriptively and narratively.

Results: Of 2,104 identified records, 339 reports underwent full-text assessment, and 47 were included. Evidence on age was predominantly descriptive, while associations involving knowledge, attitudes, and family-related factors varied across studies. Speeding (incidence rate ratio [IRR] = 1.261; 95% CI: 1.176–1.351), riding errors (IRR = 1.191; 95% CI: 1.109–1.278), and unsociable riding (IRR = 1.269; 95% CI: 1.150–1.400) were associated with self-reported crash frequency in one study. Another study reported an association between aggressive driving among motorcyclists and crashes (OR = 5.32; 95% CI: 1.701–16.635). Greater parental monitoring was associated with lower risky riding scores in one study (B = −0.212; p = 0.018), although findings across family-related measures were inconsistent. Educational interventions primarily assessed knowledge and attitudes rather than crash reduction.

Conclusion: Evidence on adolescent motorcycle safety in Indonesia is heterogeneous. Unsafe riding behaviors were associated with crashes in some studies, without establishing causality. Future research should standardize age-specific reporting, distinguish behavioral outcomes from crashes, and evaluate interventions using direct safety outcomes.

Keyword : adolescent motorcyclists; road traffic crashes; risky riding behavior; psychological factors; parental monitoring.