All-terrain vehicle-related injuries remain a large public health problem in this country, with children more adversely affected than adults. According to researchers at Wake Forest Baptist Medical Center, the major risk factors for young riders also are entirely preventable.

"The injuries children sustain from ATV-related accidents are frequently more severe than injuries received from motor vehicle crashes," said Thomas Pranikoff, M.D., professor of pediatric surgical sciences at Wake Forest Baptist and lead author of the study published in the March online issue of the Journal of Emergency Medicine.

Pranikoff and colleagues reviewed data from 16 published studies conducted from 2000 to 2010 on the epidemiology and risk factors among ATV-related injuries in American children.

Data from 2013, the most recent reporting year from the U.S. Consumer Product Safety Commission, showed that there were an estimated 99,600 ATV-related injuries in the United States that required at least emergency department treatment. Of those, approximately 25 percent were in children under 16.

The factors that appear related to the relatively high rates of death and injury for children are more powerful machines, younger drivers and lack of safety equipment and risky driving behavior, Pranikoff said. The most common causes for ATV injuries among young riders are vehicle rollover, collision with a stationary object and ejection from the vehicle.

"Unfortunately, legislation and programs designed to reduce risks have largely been unsuccessful so we need to try a different approach to reduce injuries," he said.

Peer-to-peer and brief interventions, especially with the use of motivational approaches, have shown promise in changing risky behaviors in other arenas but have not been studied with respect to ATVs.

"As ATV use continues to rise in the United States with bigger and faster machines becoming more prominent, research to define effective means of changing ATV-riding behaviors in children, whether implemented in hospital, school or other settings, will be crucial in reducing pediatric injury and death," Pranikoff said.