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Driving Change: Virtual Reality as a Tool to Reduce Aggressive Driving Among Young Drivers

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ABSTRACT

Aggressive driving among young drivers is a significant public health and social concern, contributing to road accidents, interpersonal conflicts, and psychological stress. Age-related impulsivity, underdeveloped emotional regulation skills, and limited driving experience make young drivers particularly vulnerable to aggressive responses in traffic. Traditional educational and therapeutic approaches have shown limited effectiveness in reducing such behaviours, highlighting the need for innovative and engaging solutions.

This literature review examines the potential of Virtual Reality (VR) as an educational and psychological intervention tool for reducing aggressive driving behaviours among young drivers. VR offers immersive, safe, and controlled environments that realistically simulate complex traffic scenarios, providing a safe and controlled environment for training. Within these virtual contexts, individuals can practice emotional self-regulation, test alternative behavioural responses, and develop adaptive coping strategies without the risks associated with real-world driving.

Findings from existing studies indicate that VR-based interventions enhance drivers' emotional awareness, improve regulatory capacities, and reduce impulsivity and aggression while driving. Moreover, VR facilitates active and experiential learning processes, bridging the gap between theoretical education and practical skill development. The adaptability of VR technology enables personalised interventions tailored to individual psychological profiles, thereby further enhancing its effectiveness.

VR represents a promising tool for transforming road safety education and behavioural interventions for young drivers. By integrating psychological principles with technological innovation, VR-based programs offer a novel approach to reducing aggressive driving and fostering safer, more responsible driving behaviour.

Keywords: aggressive driving; young drivers; virtual reality; emotional self-regulation; behavioural intervention; traffic psychology