CHAPTER IX
LIMITATIONS, IMPLICATIONS AND SUGGESTIONS

Every study has its limitations because of the size of the sample, the scope of research, and its geographical or demographical constraints. No research is complete in itself, therefore, the present investigation also suffered from few shortcomings.

Firstly, the study was limited to the city of Chandigarh and its vicinity areas of Mohali and Panchkula, which comparatively are relatively planned cities as compared to the other cities of India. The homogeneous road environment that the locale offered has its own pros and cons, also the size of the city is relatively small, and the same study could have presented a better understanding if conducted in larger cities such as metros, with diverse population. Secondly, this study was purely quantitative in nature with much reliance on the self-report measures. These measures suffer from social desirability wherein the respondents deliberately try to give socially acceptable and desirable responses. This type of limitation can be negated provided if it is supplemented with an observational study, peer related behavioral observation, driving logs and like. Thirdly, since the self-report measure assessed did not have a lie score to check social desirable responses, there is a probability of biased responses on part of the participants. Fourthly, the present study employed purposive sampling technique due to the nature and design of the study though the random sampling technique could have offered a better representative sample. Fifthly, only young drivers and that too within the limited age range were selected. Though it was done to ensure homogeneity, yet inclusion of a wider age group range could have offered better generalization to people belonging to different age groups.

The biggest constraint encountered in the present study was the non-availability of sufficient psychological research and literature in Indian context necessitating dependence upon the research conducted abroad. Similar studies need to be replicated in more and more cities and metros of India, for all age groups, and drivers of different vehicles since an entire range of diversity of vehicle struggle for space on the roads here. More research is needed to get an insight into the unsafe driving behavior, the role various psychological attributes play, and the resultant impact it can have to save precious human lives and reduce the trauma of road crashes. Additional research in this area is could provide better understanding of behavioural issues in the Indian context. The qualitative aspects can also be explored by using a phenomenological approach to identify driving behavioural patterns and motivations underlying these behaviours.
For more in-depth study and future research, self-reporting technique must be supplemented with observation data and simulation studies. The self-reporting method through questionnaires has the limitation of respondents resorting to socially desirable responses, but these can be cross-checked with observational data and simulation studies. Since the present investigation did not touch the behavioural patterns of habitual offenders, future research could focus on their underlying motivations for indulging in unsafe driving behaviour.

**Implications and Suggestions**

A developing country like India, where road accidents are assuming epidemic proportion, requires major policy initiatives to effectively put into place stringent process to improve the entire ecosystem of road safety, involving a dynamic legislative system which minutely looks into the existing legal provisions, adapt and upgrade them to conform to the changing driving realities.

Road safety’s ecosystem has diverse stakeholders right from a road user to the parents, teachers, community, vehicle manufacturers, road engineering departments, traffic police, transport department, media, politicians, legislators, the judiciary, to name just a few. The need is to bring to the fore the reality of mounting human fatalities and injuries amongst all key players so that gravity of the situation is understood and further loss of life and property could be prevented, or at least mitigated through a collaborative method. A collective responsibility and a multi-disciplinary approach are required to launch a full-fledged multi-pronged campaign to contain the growing epidemic. Collective intervention of all stakeholders can ensure better controls and possible reduction in road fatalities and injuries.

The present study found prevalence of unsafe driving among young population of drivers which reflects the need for psychological interventions to save precious human lives, prevent trauma of debilitating injuries, and reduce economic impact on families and the organizations. The present study had been successful in distinguishing between male and female drivers, traffic offenders and non-offenders and two-wheeler and four-wheeler drivers and their psychological make-up impacting their driving behaviour on road. Psychological measures should be deployed to screen young drivers before they are given the driving license, to segregate the possible offenders in such groups, for further counseling, training and a course in defensive driving. There is a need to follow a structured approach in training and issuing driving license for every
driver in the country. For example, a recent systematic review showed educational strategies that targeted aggressive and “other high-risk driving behaviours” by way of mass media campaigns to be effective when implemented together with other types of interventions, such as legislation and enforcement (Elder et al., 2004). Habitual offenders, however, require much stricter implementation of punitive measures, with red marking on the license for every offence, leading to suspension of driving license for repeated offences. Therefore, the psychological assessment and application of behavioural change techniques for habitual traffic offenders could be implemented. Road rage drivers must undergo a compulsory counselling session under a trained psychologist, as well as have their driving license temporarily withdrawn for that period. Hence, a comprehensive and integrated ecological approach that embraces education together with behavioural modification, enforcement, environmental and engineering interventions are recommended.

Unsafe driving, as this study revealed, is directly influenced by psychological factors of impulsiveness, sensation-seeking, vengeance, driving anger and boredom proneness. Therefore, certain strategies need to be devised to help young drivers control and manage these facets of human behaviour. According to the reasoned theory, behavioural change can be brought about by influencing behavioural attitudes or social norms concerning behaviour and an example of an intervention strategy would be to convince motorists of the risks and consequences of an adverse driving behaviour. Behavioural change can also be effected through stringent legislation and better enforcement. The effectiveness of enforcement becomes potent if perceived risk of being caught and punished is evident (Homel, 1990). This becomes possible if enforcement is frequent and regularly carried out for a long period of time (Zaal, 1994), coupled with random checks to increase chance of detection (European transport safety council, 1999). Low perceived risk of being detected and punished, despite stricter penalties) would be relatively ineffective (Ross, 1993).

Several strategies could be employed such as the need for graduated driving license system (GDLS) under which a new driver gets full license only after acquiring necessary experience and skills involving a learner licensing phase, an intermediate, and a provisional or probationary licensing phase. Such practices are operational in Australia, North America, Europe and several other developed nations. Similar licensing system with thrust on driving skills, traffic-rules knowledge, defensive driving together with certain classes on spreading awareness
on road rage and how to keep emotions under control while driving could be implemented. A periodic review of behaviour, data on offences committed, and subsequent actions, could be linked to Adhaar Card, with a centralized control room, so that no offender can obtain another duplicate driving license, from any other state.

Educational interventions at the sub-junior level in schools can help children become more aware, conscious of their responsibility towards others, knowledge of traffic rules and driving behaviour. Not only the future gets better road users and drivers, children can be the best ambassadors in bringing about behavioural changes amongst their parents and elders.

Compulsory knowledge of traffic rules and behavioural norms has the potential to influence behaviour and inculcate better values and social norms. Sensitizing the parents on significance of road safety and helping them become better role models of driving as they have a great role in influencing their child's driving behaviour. Implementation of environmental processes to automate intervention process by installing traffic lights, speed recording cameras, etc, also prevent traffic violations as these devices work as deterrents too. The existing legislative measures with respect to traffic like higher fines, loss of license, warning letters, mandatory jail time etc. should be enforced. This will act as an effective barrier towards unsafe driving.

**Conclusion**

Based on the findings of the present study, it is clear that there is a crucial need to develop, test, and validate assessment tools that can characterize and predict unsafe driving behaviour tendencies. Future studies could focus on getting information from self-report measures together with observational data from on-road behaviour and driving simulation studies. Further, multiple psychological factors in relation to unsafe driving can be studied as with most human behaviour, there is a stated and unstated, a conscious and unconscious motivation for most traffic disputes involving several factors. Today aggressor could be male or female, young (usually), or old, educated or uneducated, rich or poor. Violent traffic disputes are rarely the result of a single incident but the cumulative result of a series of stressors (Chakraborty, Singh, Lal, & Tariq, 2009). The need of the hour is thus to be a responsible driver and to think in terms of 'other road users' rather than 'other vehicles'. In conclusion, this study contributes to an improved understanding of how certain psychological factors can influence one's driving behaviour in an Indian context.