

Emotion Regulation and Driving Behaviour Among Young Adults

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Abstract

The present paper examines the effect of emotion regulation and driving behavior among young adults. 200 students between the age group of 19-26 from different parts of India were taken.) Emotion Regulation Questionnaire and Dula Dangerous Driving Index scale were used for collecting data. To analyze the obtained data, the Spearman correlation and Mahn-Witney test were used in the study. The result of the present study indicates that there is no significant relationship between Emotion regulation and Driving behavior. But the findings show that there is a significant difference between male and female students, regarding driving behavior. The findings also show that there is no significant difference between male and female students about cognitive reappraisal and expressive suppression. The study provides insight into emotion regulation and driving behavior among young adults.

Keywords: Driving behavior, emotion regulation, Cognitive reappraisal, Expressive suppression

INTRODUCTION

Road traffic injuries are the eighth leading cause of death worldwide. They are also the primary cause of death for people aged 15-29 years old. In addition, they result in significant financial costs, particularly for developing economies. In this regard, the devastating effects of traffic crashes are concerned not only with global public health but also with sustainable development, according to "World Health Organization (WHO), 2013."

According to statistics, young drivers are more likely to be involved in road crashes than any other age group. In Israel, drivers under the age of 24 are responsible for 19% of car crashes resulting in injury, despite only making up 14% of licensed drivers in the country (Israeli Central Bureau of Statistics, 2016). Therefore, policymakers are focused on promoting road safety among younger drivers. To achieve this goal, research has been conducted worldwide to understand different driving styles and how they are adopted by various age groups. Driving proficiency denotes a driver's capacity to effectively manage vehicle control and respond adeptly to intricate traffic scenarios. This proficiency is presumed to be enhanced through regular practice or training.

India has seen a rise in road traffic fatalities since 2007, despite an increase in motorization and population worldwide. According to the Global Status Report on Road Safety (2013, 2015, 2018), there were 105724, 137572, and 150785 deaths in India respectively. These accidents lead to a loss of about 3% of GDP. Globally, road traffic injuries are one of the leading causes of death, with over 1.2 million deaths reported each year (Global Status Report on Road Safety, 2015). Most of these accidents can be predicted and prevented through proper traffic engineering and management principles. However, the abnormal behavior

of drivers has been identified as a problem, and extensive research has been conducted worldwide to understand it. In India, driver behavior is the least investigated and understood, making it challenging to educate and train Indian drivers for the challenges they face on the road. Therefore, it is essential to study and classify aberrant driver behavior in the Indian context to develop a framework that can help traffic engineers take preventive measures in road design and traffic control.

Trógolo, M. A., Melchior, F., & Medrano, L. A. (2014) conducted a study on 'The role of difficulties in emotion regulation on driving behavior, and in this study, 137 Argentinean drivers were surveyed to explore the link between emotion regulation difficulties and driving styles. The findings demonstrated that greater challenges in emotion regulation were connected to anxious, angry, dissociative, and risky driving behaviors, while better emotion regulation correlated with careful driving. The study underscores the importance of evaluating emotional skills in driver examinations and considering emotion regulation interventions for individuals with problematic driving behaviors.

Roidl, E., Frehse, B., & Höger, R. (2014) conducted a study on 'Emotional states of drivers and the impact on speed, acceleration, and traffic violations—A simulator study' with seventy-nine participants, four different traffic situations triggered distinct emotions, each with critical elements (e.g., slow cars, obstacles) based on these factors. Results showed that anger led to increased acceleration and higher speeds, persisting for 2 km after the event. Anxiety and contempt had similar but weaker effects, promoting negative and risky driving patterns like anger. Fright correlated with stronger braking and reduced speeds immediately following the critical event.

Cordellieri, Baralla, Ferlazzo, Sgalla, Piccardi, and Giannini (2016), conducted a study on "Gender Effects in Young Road Users on Road Safety Attitudes, Behaviors, and Risk Perception" delves into the impact of gender on road safety attitudes among 2681 young drivers aged 18–22. The study investigates attitudes toward road safety, driving behavior in hypothetical situations, accident risk perception, and concerns about such risks. The findings reveal notable gender differences in road safety attitudes and driving behavior, specifically in areas such as negative attitudes toward traffic rules, risky driving, drugs and alcohol, and tolerance toward speeding. These differences hold across young drivers from nine European countries, providing a consistent pattern of results. A significant aspect of the study is its exploration of risk perception. While the level of risk perception is similar for both genders, males exhibit lower levels of concern about the risk of a road accident. This nuanced difference between risk perception and worry sheds light on potential explanations for variations in the frequency of car accidents between male and female drivers.

Lavanya TP and Manjula M conducted a study in 2017 on "Emotion Regulation and Psychological Problems Among Indian College Youth," Lavanya TP and Manjula M address the high prevalence of emotional disorders in this population. The study itself delves into the specific emotion regulation strategies of Indian college youth, revealing a predominant use of positive strategies. Notably, the research establishes a significant correlation between negative emotion regulation and psychological problems. This study enriches the existing literature, offering insights crucial for developing interventions to support students navigating the complexities of emotional regulation during their college years.

Parlangeli, Bracci, Guidi, and Marchigiani (2018) conducted a study on "Risk perception and emotion regulation strategies in driving behavior: An analysis of self-reported data." The research investigates the differences in driving behavior between males and females in a sample of 490 participants aged 14 to 30. The findings suggest a developmental profile wherein the ability to drive without errors aligns with

psychological maturation in emotional control. Interestingly, girls seem to progress more rapidly in this maturation process, although they do not differ from males in attention management resources.

SIGNIFICANCE OF THE STUDY

The purpose of this study is to investigate and understand the relationship between emotion regulation and driving behavior among young adults. The study helps in understanding how emotions impact driving, by examining how emotions influence their actions behind the wheel. The study addresses mental health issues, informs evidence-based policies and driver training programs, identifies factors contributing to risky driving, and raises awareness about the significant influence of emotions on safe driving practices, benefiting individuals and society as a whole. The study helps to know whether there is any difference between males and females, in emotion, while driving.

Operational definition

Driving behavior is the description of intentional and unintentional characteristics and actions a driver performs while operating a motor vehicle.

Emotion Regulation The American Psychological Association (APA) defines emotion regulation as the process of managing and modifying emotional responses. It involves strategies and techniques individuals use to control, shape, or change their emotions to adapt to different situations and promote well-being.

Young Adults Young adulthood is a unique developmental period that occurs between the ages of 18 and 25, during which key developmental tasks allow the young adult to participate in self-exploration and identity formation.

METHODOLOGY

Statement of the problem

Relationship between Emotion regulation and driving behavior among young adults

Objectives

To study the relationship between cognitive reappraisal and driving behavior

To study the relationship between expressive suppression and driving behavior

To find out whether there is any significant difference between male and female young adults with regard to their cognitive reappraisal.

To find out whether there is any significant difference between male and female young adults with regard to their expressive suppression.

To find out whether there is any significant difference between male and female students with regard to their driving behavior.

Hypothesis

H1: There is a significant relationship between cognitive reappraisal and driving behavior

H2: There is a significant relationship between expressive suppression and driving behavior

H3: There is a significant difference between male and female young adults with regard to their driving behavior

H4: There is a significant difference between male and female students with regard to their cognitive reappraisal

H5: There is a significant difference between male and female students with regard to their expressive suppression.

Research design

This research study follows a quantitative design. Quantitative research design refers to the collection and evaluation of numerical data to test a hypothesis or to identify patterns and correlations within the numbers. The techniques mostly used in quantitative design are Surveys and Questionnaires.

Tools for the study

Emotion Regulation Questionnaire

A 10-item scale was designed to measure respondents' tendency to regulate their emotions in two ways: Cognitive Reappraisal and Expressive Suppression. Respondents answer each item on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The Cronbach's α of the ERQ total scores and subscales were acceptable (0.73 ~ 0.82), indicating that the ERQ had acceptable to excellent levels of internal consistency reliability, and validity.

Dula Dangerous Driving Index

Dula Dangerous Driving Index consists of 31 items, with Likert scale as A= never, B= rarely, C= sometimes, D= often, E= always. The cross-cultural form of the Dula Dangerous Driving Index is a valid and reliable tool for assessing driving behavior in India.

Sampling Design

Sampling selection

The sampling method used in this study is the Convenient sampling method. For this study, a total of 200 samples are selected, which includes 100 male and 100 female young adults in India. The age group selected for the study is between 19-26 years. The samples are young adults who are residing in India and have at least one year of experience in driving.

Collection of data

The study was conducted based on emotion regulation and driving behavior among young adults. For the data collection, male and female young adults residing in India, and having one experience of driving are selected. The need and importance of the study are explained to the participants and the questionnaires have been shared with them, from which they can select the options by their level of agreeing to the statements.

Statistical Analysis

Statistical data analysis is a procedure of performing various statistical operations. Data in the statistical analysis consists of variables. For analyzing data, the statistical techniques used in the study will be

1. Spearman correlation, for finding the relationship between variables.
2. Mahn-Witney test in order to analyze the mean differences between variables.

RESULT

To test the first two Hypotheses, as the data is not normally distributed spearman correlation was done to find the relationship

Table 1 Correlation between cognitive reappraisal and driving behavior

		Cognitive reappraisal	Driving Behavior
Cognitive reappraisal	Correlation Coefficient	1.000	.029
	Sig. (2-tailed)		.688
	N	200	200
Driving Behavior	Correlation Coefficient	.029	1.000

	Sig. (2-tailed)	.688	
	N	200	200

* $p < .05$ (two-tailed)

Table 1 indicates the correlation between Cognitive reappraisal and Driving behavior among young adults and it is evident from the table that, there is no correlation between cognitive reappraisal and Driving behavior as the r-value ($r = 0.688$), which is not significant). Thus, the hypothesis which states that there is a significant relationship between Cognitive reappraisal and Driving behavior is rejected.

Table 2
Correlation between Expressive suppression and Driving behavior

		Expressive Suppression	Driving Behavior
Expressive Suppression	Correlation Coefficient	1.000	.028
	Sig. (2-tailed)		.698
	N	200	200
Driving Behavior	Correlation Coefficient	.028	1.000
	Sig. (2-tailed)	.698	
	N	200	200

* $p < .05$ (two tailed)

Table 2 indicates the correlation between Expressive Suppression and Driving behavior among young adults and it is evident from the table that there is no significant correlation between Expressive Suppression and Driving behavior as the r-value ($r = 0.698$). Thus, the hypothesis which states that there is a significant relationship between Expressive Suppression and Driving behavior is rejected.

Table 3 Mean, SD, and Gender differences with regard to driving behavior

	Gender of college students	N	Mean	SD	Z	P
Driving Behavior	Males	100	67.98	16.594	-4.395	0.000
	Females	100	57.85	18.499		

** $p < 0.001$, * $p < 0.05$

The mean value of Driving behavior was found to be 67.98 (SD 16.594) and that of females was found to be 57.85 (SD 18.499). The obtained Z value was found to be -4.395 and the p-value was found to be .000. The results indicate that the p-value is less than, 0.05, the significance level. So, findings in the Table 3 show that there is a significant difference between male and female young adults regarding driving behavior. Therefore, the hypothesis that there is a significant difference between male and female young adults with Driving behavior is accepted.

Table 4 Difference between males and females regarding Cognitive Reappraisal

Variables	Male		Female		Z	p
	M	SD	M	SD		
Cognitive Reappraisal	27.62	6.013	27.65	5.433	-.550	.582
**$p < 0.001$, *$p < 0.05$						

Table 4 shows the difference between males and females regarding Cognitive reappraisal. The mean and standard deviation of Cognitive reappraisal of males are 27.62 and 6.013. The mean and standard deviation of Cognitive reappraisal of females are 27.65 and 5.433 respectively, From the table, it is evident that, for males, the mean of Cognitive reappraisal is almost similar to that of females. The obtained Z value was found to be -.550 and the significant value is 0.582. The results indicate that the significance value is higher than, 0.05, the significance level. So findings in Table 4 show that there is no significant difference in cognitive reappraisal based on gender. Hence, the hypothesis is rejected.

Table 5 Difference between males and females with regard to Expressive Suppression

Variables	Male		Female		Z	p
	M	SD	M	SD		
Expressive Suppression	17.00	4.641	16.29	3.937	-1.649	0.099
**$p < 0.001$, *$p < 0.05$						

Table 5 shows the difference between males and females with regard to Expressive Suppression. The mean and standard deviation of Expressive Suppression of Males are 17.00 and 4.641. The mean and standard deviation of Expressive Suppression of Females are 16.29 and 3.937 respectively, From the table, it is evident that, for females, the mean of Expressive Suppression is higher than that of males. The obtained Z value is -1.649 and the significant value is 0.099. The results indicate that the significant value is higher than, 0.05, the significance level. So, the findings in the Table show that there is no significant difference in expressive suppression based on gender. Therefore, the hypothesis is rejected.

DISCUSSION

The present study seeks to investigate the relationship between Emotion regulation and Driving behavior among young adults. The sample consists of 200 students (100 Male and 100 Female college students) in the age group of 19 to 26 residing in different parts of India. A convenient sampling method was used to collect the data. The tools used in the study are the Emotion Regulation Questionnaire which includes two subscales, Cognitive reappraisal and Expressive suppression, and another tool the Dula Dangerous Driving Index. The data collected were analyzed using SPSS.

The findings of the present study show that there is no significant relationship between Emotion regulation and Driving behavior. The results also indicate that there is no correlation between Cognitive reappraisal and Expressive suppression with regard to driving behavior, among young adults in India, predominantly the ones residing in Bangalore and Kerala. The study also shows that there is no significant difference between male and female young adults with regard to Cognitive reappraisal. Also, in the analysis of Expressive Suppression on gender difference, there is no significant difference between male and female

young adults with regard to Driving behavior. However, the results also have shown that there is a significant difference between male and female young adults with regard to Driving behavior.

As per the literature review, a study was conducted in 2016 by, Cordellieri, Baralla, Ferlazzo, Sgalla, Piccardi, and Giannini (2016) with respect to gender difference among young drivers. The findings of the study revealed notable gender differences in road safety attitudes and driving behavior and the study also reveals that the difference between risk perception and worry gives explanations for variations in the frequency of car accidents between male and female drivers. So this study supports the results of the current study which shows that there is a significant difference between male and female young adults with regard to driving behavior.

SUMMARY AND CONCLUSION

The study aimed to find out the relationship between Emotion regulation and driving behavior. The sample consists of 100 male and 100 female young adults residing in India, predominantly in Bangalore and Kerala, totaling 200 students. A convenient sampling method was adopted for data collection. The Emotion Regulation Questionnaire and Dula Dangerous Driving Index were used for data collection. The data gathered were statistically analyzed using SPSS software.

On analyzing the results and discussion, it can be concluded that there is no significant difference in Emotion regulation and Driving behavior. Contradictory to the findings of the previous studies, the results of this study reveal that there is no significant relationship between Emoting regulation and driving behavior among young adults. The findings of this research will create awareness among young adults to drive safely, especially males, as their way of driving shows a difference from that of females.

IMPLICATIONS

The results of this study can help shape gender-sensitive policies on transport infrastructure and road safety, enabling customized interventions to address unique issues faced by each gender. The knowledge could influence the creation of driver education initiatives targeted specifically at a particular gender, to encourage safer driving behaviors among young adults in both genders. It is imperative to comprehend how cultural and societal norms affect driving behavior differently across females. Technological advancements may also emerge, such as smartphone applications tailored to the unique requirements of male and female drivers or gender-specific safety measures in automobiles.

Limitations of the study

- The sample was selected using convenient sampling
- The sample size was small, a larger sample size would have increased the generalizability of the results.
- Age groups other than 19-26 are excluded.

Suggestions for future research

- Future research can be conducted that follows drivers across demographic groups to monitor how their ability to control emotions develops and how it affects their driving behavior.
- Researching the impact of cultural differences in emotion control on driving behavior may also be helpful.
- Evaluation can also be done to know how well self-care techniques, like mindfulness training, help drivers better control their emotions.

Ethics followed

- The participant's consent was taken before the study.
- Participants; details and responses were kept private.
- The participant's data were not utilized for any other reason than the agreed upon research project.

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