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PERSONALITY PROFILE OF ACCIDENT-PRONE AUTO-RICKSHAW DRIVERS

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ABSTRACT

Background: The personality characteristics of commercial drivers can be a significant factor in rate of occurrence of accidents. Many driving related variables may also contribute towards such outcome.

Aim: The study aimed to find the correlates of driving related variables and personality characteristics of accident-proneness (defined by history of accidents in the past) in commercial auto-rickshaw drivers of Ranchi, India.

Materials and Methods: A cross-sectional study was designed in which 60 male drivers aged 18–50 years, selected randomly from a list of licensed auto-rickshaw drivers in Ranchi, were assessed on various self reported driving related parameters and Eysenck's Personality Questionnaire- Hindi adaptation (Thakur and Thakur, 1986).

Results & Conclusion: Result showed that neuroticism dimension had significant positive correlation (r=.296, p< .05) with total number of accidents. No other dimensions had any significant relationship with the total number of accidents. Higher neuroticism in EPQ indicates

emotional liability and over reactivity Accident prone and the non-accident prone group together scored high on extraversion and low on neuroticism dimensions indicating towards a general tendency of being sociable and easygoing.

Keywords: Personality, auto-rickshaw driver, neuroticism, psychoticism, extraversion

Introduction

Driving skills and style constitutes two vital human elements in vehicular driving. Driving skills improves with practice and repetition over time, while driving style involves individual's characteristics and attitude to driving [1]. Driving commercial vehicles is a risky job considering high occupational exposure to hazardous environmental conditions on the road [2] and threat of accidents [3]. Research in the developed nations has shown certain demographic factors and personality traits as important causes of risky driving and traffic accidents [4]. Characteristics that have shown to predict risky driving are lower age and male gender [5], less driving experience [6], higher aggression [7, 8, 9], impulsivity, poor self-control [10, 11], anxiety [12, 13], and sensation seeking [9].

Thus personality traits have been attributed to the nature of driving and associated outcome in terms of accidents and traffic rule violations. Indian studies in this context are few. Barnes [14] studied Indian transport workers in the roadways, railways and aviation sector and found roadways drivers to manifested more stress, fatigue and physical health symptoms compare to the other groups. Considering the dearth of studies in the Indian context, the current study was conceptualized to explore the personality traits of commercial auto-rickshaw drivers and find its relationship with driving related adverse outcome in terms of accidents and other consequences.

Methods

The study was conducted in the city of Ranchi, capital to the state of Jharkhand, India. It is the administrative as well as commercial hub of the state. Here public transport within the city is mainly based on auto-rickshaws and manual rickshaws. The routes on which auto-rickshaws ply are defined by the Transport Department of Jharkhand. The study sample consisted of 60 male drivers aged 18–50 years, selected randomly from a list of licensed auto-rickshaw drivers obtained from the Transport Department. Individual drives were initially primed about the

research and its objectives. Only those who gave informed consent were then recruited as participants. The study was approved by the internal review board of the Central Institute of Psychiatry, Ranchi, India.

Sociodemographic and clinical data were collected with a form particularly developed for the study. Besides the sociodemographic variables, information on driving-related clinical variables such as duration of driving, total accidents (which defined *accident proneness*), average number of accidents per year, total number of legal prosecutions, daily working hours, alcohol history, and job satisfaction was obtained. To assess the personality profile, this study used a Hindi version of Eysenck's Personality Questionnaire (EPQ) which is well validated in the Indian population [15]. The test has 107 items that measures four dimensions viz., extraversion, neuroticism, psychoticism and lying.

Statistical analysis was carried out with SPSS version 16.0. Independent sample *t* test and Pearson's χ^2 test were used to study the group differences in sociodemographic and driving-related variables as well as personality factors. Pearson correlation coefficient was used to assess bivariate relationship between driving-related variables and personality characteristics. The level of significance was kept at $p < .05$.

Results

Table 1 summarizes the characteristics of the sample. The mean age of our sample was 30.86 years (*SD* 8.47) and the mean number of years of formal education was 9.21 (*SD* 3.24). Substance users accounted for 61.67% of the sample ($n = 37$); the most common substance (other than nicotine) was, cannabis and alcohol. Both accident- and nonaccident-prone drivers were comparable in terms of age, education, marital status, average driving speed, average distance covered per day, vehicle ownership and number of legal prosecutions. There was significantly higher frequency of breaking rules ($p = .007$), crossing speed limits ($p = .014$), and a trend towards higher frequency of substance use ($p = .098$), carrying extra persons (i.e., more than allowable limit; $p = .074$) in accident-prone drivers.

Table 2 summarizes the drivers' personality characteristics as measured with the EPQ. There was no difference in the scores between the two groups ($p < .05$).

Table 3 shows Pearson bivariate correlation between total number of accidents and various EPQ dimensions. It was seen that neuroticism dimension had significant positive

correlation (r=.296, p< .05) with total number of accidents. No other dimensions had any significant relationship with the total number of accidents.

TABLE 1. Characteristics of Accident-Prone (*N* = 37) and Nonaccident-Prone (*N* = 23) drivers

Variables	Accident-Prone (M ± *SD*)	Nonaccident-Prone (M ± *SD*)	*t*	*P*
Age (years)	30.86 ± 8.47	29.21 ± 6.66	.792	.432
Formal education (years)	9.21 ± 3.24	9.82 ± 3.25	.707	.482
Duration of driving (years)	7.64 ± 5.96	7.91 ± 5.63	.107	.865
Driving speed (km/h)	45.40 ± 9.88	40.43 ± 6.55	2.13	**.037**
Distance covered (km/day)	122.30 ± 32.37	106.96 ± 43.50	1.56	.124
Legal prosecutions	4.45 ± 8.63	2.21± 4.20	1.16	.251
	n (%)	**n (%)**	χ^2	***P***
Marital status				
single	11 (29.73)	8 (34.78)	.167	.778
married	26 (70.27)	15 (65.22)		
Vehicle ownership				
own	19 (51.35)	14 (60.87)	.519	.471
rented	18 (48.65)	9 (39.13)		
Breaking rules				
yes	30 (81.08)	11 (47.83)	**7.24****	.007
no	7 (18.92)	12 (52.17)		
Crossing speed limits				
yes	16 (43.24)	3 (13.04)	**5.98***	.014

no	21 (56.76)	20 (86.96)		
Carrying extra persons				
yes	20 (54.05)	7 (30.44)	3.19	.074
no	17 (45.95)	16 (69.56)		
Substance use				
yes	31 (83.78)	8 (34.78)	2.73	.098
no	6 (16.22)	15 (65.22)		

Notes: **p* < .05, ***p* < .01 (two-tailed)

TABLE 2. **Personality characteristics of Accident-Prone (*N* = 37) and Nonaccident-Prone (*N* = 23)**
drivers as measured with EPQ

Variables	**Accident-Prone (M ± *SD*)**	**Nonaccident-Prone (M ± *SD*)**	***t***	***P***
Extraversion	6.16±1.90	5.34±2.08	1.55	.126
Neuroticism	5.46±1.48	5.08±1.27	.996	.323
Psychoticism	4.70±2.34	4.34 ±1.72	.628	.533
Lie scale	5.48±1.26	5.60±.1.43	.346	.731

TABLE 3. Pearson bivariate correlation (*r*) between the total number of accidents and EPQ scores

EPQ scales	**Total no. of accidents**
Extraversion	-.057
Neuroticism	.296*
Psychoticism	.145
Lie scale	-.018

Notes: **p* < .05 (two-tailed)

Discussion

In our study, age was not related to accident proneness. Substance use, specifically alcohol, has been associated with higher rates of accidents in drivers [16, 17, 18, 19]. In our study, too, substance use was more common in accident-prone drivers. In our study population the commonly abused substances were alcohol and cannabis both of which have shown to deteriorate driving performance. Moreover drivers using such substances have been shown to have personality correlates of potentially unsafe driving [20, 21]. Risky driving and violations of traffic regulations were reported more often in drivers involved in fatal accidents [22]. Our study had similar findings: breaking rules, crossing speed limits and carrying extra persons (i.e., more than recommended) were more frequent in accident-prone drivers. Though our study showed no significant difference in mean scores between those who were accident prone and those who were not, this might be due to the limited sample size that restricted the power of the test. On the other hand neuroticism scores correlated positively with total number of accidents in the drivers. Higher neuroticism in EPQ indicates emotional lability and overreactivity [23]. Such emotionally overresponsive persons have difficulty to return to normal state when faced with intense emotional triggers. Findings in prior research [12] have shown anxiety to be significantly correlated with excitement-seeking and risky driving behavior in a sample of Norwegian adolescents. Excitement-seeking in turn in this study was significantly correlated to risky driving behavior and collisions. While another study [13] pointed towards higher driver stress to be related to self reports of driving lapses, errors and violations.

In addition the study sample of drivers in both the accident prone and the non accident prone group together scored high on extraversion and low on neuroticism dimensions indicating towards a general tendency of being sociable and easygoing. On the other hand high scores in psychoticism dimension as a group indicates towards hostile attitudes, being unsympathetic and tough minded. In this context drivers who are prone to stress and anxious by nature stand out from the group as having increasing propensity to meet with accidents.

The findings of this study should also be interpreted taking in account the following limitations. Such as, the study relied completely on self report of data on driving related variables and outcome (i.e. number of accidents). Self report data is often marred by recall bias and socially acceptable nature of recall. Moreover the small sample size restricted the power of statistical tests.

Conclusion

Considering the small number of studies conducted on driving accidents and personality profile of drivers the current study is a valuable addition to the literature. Despite the limitations of small sample and self report of data the findings reveal that personality characteristic of stress proneness and anxiety as important correlates of traffic accidents in commercial auto-rickshaw drivers of Ranchi, India.

References

1. Timo, L., Juhani, P., and Helsingin, Y. (1997). *Personality factors, driving style and traffic safety"* (University of Helsinki, Department of Psychology, Traffic Research Unit, P.O. Box 13, Fin – 00014).
2. Baker, S. P., Wong, J. ,and Baron, R. D. (1976). Professional drivers: protection needed for high-risk occupation. *American Journal of Public Health, (66),* 649–654.
3. Issever, H., Onen, L., Sabuncu, H. H., and Altunkaynak, O. (2002). Personality characteristics, psychological symptoms, and anxiety levels of drivers in charge of urban transportation in Istanbul. *Occupational Medicine* (London), *52(6),* 2002, 297- 303.
4. Holland, C., Geraghty, J., and K. Shah. (2010). Differential moderating effect of locus of control on effect of driving experience in young male and female drivers. *Personality and Individual Differences, 48,* 821–826.
5. Shinar, D., and Compton, R. (2004). Aggressive driving: an observational study of driver, vehicle, and situational variables. *Accident Analysis and Prevention, 36,* 429–437.
6. Kweon, Y. J., and Kockelman, K. M. (2003). Overall injury risk to different drivers: combining exposure frequency, and sensitivity models. *Accident Analysis and Prevention, 35,* 441–450.
7. Dahlen, E. R., Martin, R. C., Regan, K., and Kuhlman, M. M. (2005). Driving anger, sensation seeking, impulsiveness, and boredom proneness in the prediction of unsafe driving. *Accident Analysis and Prevention, 37,* 341–348.
8. Deffenbacher, J. L., Lynch, R. S., Filetti, L. B., Dahlen, E. R., and Oetting, E. R. (2003). Anger, aggression, risky behavior, and crash-related outcomes in three groups of drivers. *Behaviour Research and Therapy, 41,* 333–349.
9. Ulleberg, P., and Rundmo, T. (2003). Personality, attitudes and risk perception as predictors of risky driving behavior among young drivers. *Safety Science, 41,* 427–443.

10. Tillmann, W. A., and Hobbs, G. E. (1949). The accident proneness automobile driver: a study of the psychiatric and social background. *American Journal of Psychiatry, 106(5),* 321–331.
11. Hilakivi, I., Veilahti, J., Asplund, P., Sinivuo, J., Laitinen, L., and Koskenvuo, K. (1989). A sixteen-factor personality test for predicting automobile driving accidents of young drivers. *Accident Analysis and Prevention, 21(5),* 413–418.
12. Oltedal, S., and Rundmo, T. (2006). The effects of personality and gender on risky driving behavior and accident involvement. *Safety Science, 44,* 621–628.
13. Westerman S. J., and Haigney, D. (2000). Individual differences in driver stress, error, and violation. *Personality and Individual Differences, 29,* 981–998.
14. Barnes, B. L. (1992). Stress in transport workers. *Indian Journal of Clinical Psychology, 19,* 14-17.
15. Thakur, G. P., and Thakur, M. (1986). Hindi adaptation of the Eysenck personality questionnaire (Adult). *Indian Journal of Clinical Psychology, 13,* 81-86.
16. Reynaud, M., LeBreton, P., Gilot, B., Vervialle, F., and Falissard, B. (2002). Alcohol is the main factor in excess traffic accident fatalities in France. *Alcoholism: Clinical and Experimental Research, 26(12),* 1833–1839.
17. Movig, K. L., Mathijssen, M. P., Nagel, P. H., van Egmond, T., de Gier, J. J., Leufkens, H. G. M., and Egberts, A. C. G. (2004). Psychoactive substance use and the risk of motor vehicle accidents. *Accident Analysis and Prevention, 36(4),* 631–636.
18. Fujita, Y., and Shibata, A. (2006). Relationship between traffic fatalities and drunk driving in Japan. *Traffic Injury and Prevention, 7(4),* 325–327.
19. Biecheler, M. B., Peytavin, J. F., Sam Group F., and Martineau, H. (2008). SAM survey on "drugs and fatal accidents": search of substances consumed and comparison between drivers involved under the influence of alcohol or cannabis. *Traffic Injury and Prevention, 9(1),* 11–21.
20. Bedard, M., Dubois, S., and Weaver, B. (2007). The impact of cannabis on driving. *Canadian Journal of Public Health, 98(1),* 6–11.
21. Donovan, D. M., and Marlatt, G. A. (1982). Personality subtypes among driving-while-intoxicated offenders: relationship to drinking behaviour and driving risk. *Journal of Consulting and Clinical Psychology, 50(2),* 241–249.

22. Rajalin, S. (1994). The connection between risky driving and involvement in fatal accidents. *Accident Analysis and Prevention, 26(5),* 555–562.
23. Eysenck H. J., and Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire*. London: Hodder and Stoughton.