

# Impulsivity in novice drivers

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## 1. Introduction

Traffic injuries are an important public health problem all over the world. In the year 2006 there were about three times more fatalities in traffic per 1000000 inhabitants in Estonia (152) compared to Northern Countries, Finland, Sweden and Denmark (55, 49, and 58 respectively) and about twice as many in the European Union on average (86) (Estonian Road Administration, 2007).

Novice drivers are an important risk-group in traffic. In the studies of drivers who were in hospital after a traffic accident it has been shown that most of them were novice drivers or had a little driving experience (McEvoy et al., 2007). A study on novice drivers shows that there were more traffic violations and more negative attitudes towards safe driving in the year 2001 compared to year 1978 (Laapotti et al., 2003).

The studies of risky behaviour in drivers have brought upon two important personality features: excitement seeking and impulsivity. These traits are related to risky traffic behaviour like drunk driving, speed limit exceeding and not using safety-belt (Arnett et al., 1997; Jonah, 1997; Golias and Karlaftis, 2002). Excitement seeking as a tendency to search for new and exciting experiences is a stable personality marker and is often associated with impulsivity (Zuckerman, 1994). Impulsivity is defined by a scope of various tendencies including low self-control and inability to hold back one's desires (Costa and McCrae, 1989). In the context of everyday life, the approach of Dickman (1990), which differentiates Dysfunctional Impulsivity or Thoughtlessness (tendency to act with less forethought than most people which leads the subject to difficulties) and Functional Impulsivity or Fast Decision Making (tendency to act with little forethought when such a style is optimal), may bear particular significance. Different facets of impulsivity may be adaptive like Fast Decision Making based on the Dickman Inventory and Excitement Seeking based on five factor personality inventory subscale (Costa and McCrae, 1989) or maladaptive like Thoughtlessness based on the Dickman Inventory and Disinhibition based on five factor personality inventory subscale (Costa and McCrae, 1989). In earlier studies we have shown that drunk driving was associated with higher scores of maladaptive types of impulsivity (Thoughtlessness and Disinhibition) and high-risk driving (exceeding speed limits over 20km/h) more with higher scores of adaptive types of impulsivity (Fast Decision Making and Excitement Seeking) (Eensoo et al., 2004; Paaver et al., 2006).

## 2. Aim

The aim of this work was to study if different types of impulsivity on novice drivers differ from randomly chosen control-drivers.

## 3. Methods and subjects

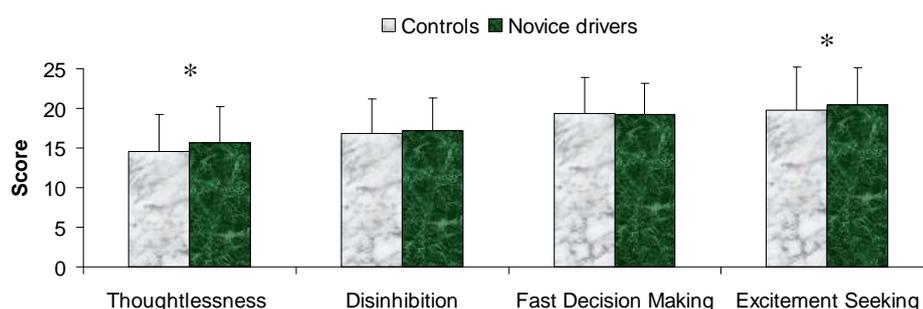
The male novice drivers ( $n=803$ , mean ages  $21.3\pm 7.0$  years) filled impulsivity inventory in driving school. Male car drivers ( $n=509$ , mean age  $36.7\pm 11.8$  years), randomly chosen controls from driving license database, filled impulsivity inventory in laboratory. Impulsivity inventory was based on the Dickman Impulsivity Inventory (Dickman, 1990) and impulsivity-related subscales of the NEO Personality Inventory (NEO-PI, Costa and McCrae, 1989; adapted for Estonian by Pulver et al., 1995). Altogether four different facets of impulsivity were measured: Thoughtlessness and Fast Decision Making based on the Dickman Inventory and Disinhibition and Excitement Seeking based on NEO-PI subscales. Each of the four scales consisted of 6 items.

In statistical analysis the t-test procedure were used to compare different groups. Analyses of covariance were used controlling the effect of third variable in statistically significant association.

## 4. Results and discussion

Novice drivers had significantly higher scores in Excitement Seeking (mean scores  $20.4\pm 4.7$  vs  $19.8\pm 5.4$ ,  $p=0.03$ ) and Thoughtlessness ( $15.7\pm 4.5$  vs  $14.6\pm 4.6$ ,  $p<0.0001$ ), and a similar tendency in Disinhibition ( $17.2\pm 4.1$  vs  $16.8\pm 4.4$ ,  $p=0.1$ ) than controls (Figure 1). Age had significant effect on Excitement Seeking but not on Thoughtlessness. If the effect of age on impulsivity measures was controlled for, the significant group effects persisted.

Figure 1. Different facets of impulsivity (mean score $\pm$ SD)



\*  $p<0.05$ , significant difference between novice drivers and controls

Our results show that novice drivers may have higher risks in traffic due to their higher impulsivity. This may refer to a cohort effect of growing impulsivity, because the age of the drivers was not completely responsible for their higher Thoughtlessness and Excitement Seeking. More and more careless driving stile among novice drivers compared 1978 and 2001 years has described also Laapotti et al. (2003). Excitement Seeking may lead to

conscious risk taking in traffic. Thoughtlessness is associated with tendency not to plan and think one's actions through, also leading to negative consequences. In our earlier study we have shown that high-risk drivers who admitted the risk of „driving too fast“ had higher scores in Thoughtlessness, Disinhibition, Fast Decision Making, and Excitement Seeking compared to risk-denying controls (Paaver et al., 2006). This may reflect that impulsive drivers take risks voluntarily. Thus informing these drivers about their risky tendencies is not enough – probably these drivers lack the appropriate skills for controlling their impulsive tendencies.

## 5. Conclusion

The fact, that novice drivers have significantly higher impulsivity than control drivers might be considered in traffic injuries prevention activities. Psychological intervention might be helpful for improving abilities of self regulation and for decreasing risk of traffic accidents among novice drivers.

## 6. Acknowledgements

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