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Exploring the relationship between sensation seeking and risky driving behaviour

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Abstract

The personality trait of sensation seeking has been the most widely studied dimension in the area of traffic accidents and violations (Gianfranchi, Taglabue, Spoto, & Vidotto, 2017). This study aimed to explore the relationship between sensation seeking and the likelihood of engagement in risky driving behaviours in a sample of 26 undergraduate psychology students. Participants completed the Brief Sensation Seeking Scale (BSSS; Stephenson, Hoyle, Slater, & Palmgreen, 2003) and a Risky Driving Behaviour questionnaire (Ivers et al., 2009) and results were analysed using a Pearson product-moment correlation. The findings of this study indicate that there was no relationship between sensation seeking tendencies and risky driving behaviour; $r = -0.08$, $n = 26$, $p = .71$, thus contradicting much of the previous literature in this area. Limitations and future directions are discussed in relation to additional personality factors and age.

Introduction

A number of human factors have been documented as contributing to accidents involving traffic collisions (Grayson & Maycock, 1988, as cited in Ulleberg & Rundmo, 2003) as well as general risk-taking behaviour on the road (Ulleberg & Rundmo, 2003). A number of personality factors have been linked to risky driving behaviour, most notably impulsivity (Pearson, Murphy & Doane, 2013) and sensation seeking (Dahlen, Martin, Ragan, & Kuhlman, 2005; Ulleberg & Rundmo, 2003).

Sensation seeking is most frequently described using Zuckerman's (1994) theory, and states that this involves "the seeking of varied, novel, complex, and intense situations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience" (p.27). Individuals who score high on measures of sensation seeking are anticipated to enjoy experiences that are unpredictable, and constantly seek for exciting things to do in order to increase arousal levels (Arnett, 1996; Zuckerman & Kuhlman, 2000), including engagement in risky driving behaviour.

The trait of sensation seeking has been the most widely studied dimension in the area of traffic accidents and violations (Gianfranchi et al., 2017), and is consistently noted as a positive predictor of engagement in risky driving behaviours. Jonah's (1997) review of the existing literature up until the end of the 1990's concluded that, out of 40 reviewed studies, only four did not find a strong, positive and significant link between sensation seeking and some element of risky driving behaviour; situations in which a driver may engage in behaviour that could harm themselves or other people, including speeding, talking on a mobile phone whilst driving and running red lights (Dahlen et al., 2005). Ulleberg et al. (2003) have also shown that drivers who score high on measures of sensation seeking are far more likely to violate traffic laws, as well as overestimate their own capabilities as a driver in avoiding hazards. The results of this study support more recent findings that individuals with low levels of sensation seeking are far better able to react appropriately and safely to traffic hazards, and are more likely to be associated with safer driving in general (Rudin-Brown, Edquist, & Lenne, 2014).

Finally, Zuckerman (1979) proposes that sensation seeking is a trait of temperament that differs amongst all individuals, and can be measured in a number of different ways. The Brief Sensation Seeking Scale (BSSS; Stephenson et al., 2003) is a shortened version of Zuckerman's (1979) original sensation seeking scale and has been shown to be reliable and

valid in a number of empirical studies (see Saletti, Chang, Perez-Aranibar, & Campos, 2017), and will therefore be used to measure levels of sensation seeking for this study.

The aim of this study is to further explore the relationship between sensation seeking and the likelihood of engaging in risky driving behaviours in a sample of undergraduate students. Based on the literature presented throughout, it is hypothesised that there will be a strong, positive relationship between sensation seeking and risky driving behaviours.

Method

Participants

Twenty six undergraduate psychology students were recruited via convenience sampling to take part in this study (five males, 21 females). Participants ranged in age between 18 and 60 (M = 27.58, SD = 11.13). Twenty four of those who took part held a full driving licence whilst the remaining two possessed a provisional driving licence.

Design

A correlational design was employed for this study in order to assess the strength and direction of the relationship between levels of sensation seeking and engagement in risky driving behaviour. A Pearson's product-moment correlation was used to analyse the data.

Materials

The Brief Sensation Seeking Scale (BSSS; Stephenson et al., 2003) was used to measure sensation seeking tendencies amongst participants (see appendix A). This questionnaire consisted of eight statements and participants were instructed to respond to these statements in relation to how they generally felt about themselves. The scale included statements such as 'I would like to explore strange places' and 'I like wild parties'. Responses were given on a five-point Likert scale with participants having to choose how much they agreed with each statement (1 = strongly disagree to 5 = strongly agree, with a neutral 'neither disagree nor agree' included at point 3). Final scores obtained from the questionnaire could fall between eight and 40, with higher scores indicating higher sensation seeking tendencies.

A Risky Driving Behaviour (RDB) questionnaire developed by Ivers et al. (2009) was used to assess participant's engagement in risky driving practices (see appendix B). The scale included 14 statements and participants were asked to respond according to how often they

engaged in each driving behaviour on a five-point Likert scale (0 = never, 1= hardly ever, 2 = sometimes, 3 = often and 4 = very often). This questionnaire included items such as 'speed up if someone is trying to pass' and 'drive without wearing a seatbelt'. Final scores obtained from the RDB questionnaire had the potential to range between zero and 56, with higher scores indicated greater engagement in driving behaviours that are considered to be risky.

Procedure

Participants were recruited via an email sent by the lead researcher inviting them to take part in the online study. Once participants had clicked on the relevant link, they were first presented with consent information (see appendix C) and asked to read and agree to take part in the study. Once consent had been provided, participants were then presented with a short questionnaire collecting demographic information such as age and gender (see appendix D). Following this, participants completed the RDB questionnaire and then the BSSS. Once all of the relevant details had been submitted by the participants, debrief information was again provided via the online medium. This outlined the aims and main hypotheses of the study, as well as reminding participants of their right to withdraw. Participants were prompted to consider submitting their final results to complete the study and, if they were happy to do so, to select the final submit button. Participants were finally thanked for their participation in this study.

Results

The means and SD's for the variables included in this study are presented in table 1 below. As can be seen, the average score for sensation seeking is relatively mid-value, whilst the mean score for participant's levels of RDB is quite low in relation to the potential range of scores. This could highlight that, as an overall sample, participants do not generally take part in risky driving practices.

Table 1.
Descriptive statistics for variables included in study.

Variable	**M**	**SD**	**Range**
SS	25.88	4.49	17 – 36 (out of 40)
RDB	14.58	7.89	2 – 31 (out of 56)

A Pearson product-moment correlation was conducted to explore the relationship between levels of sensation seeking and risky driving behaviours. Figure 1 highlights the direction of the relationship. The results of this show that there was a weak, negative relationship between the two, but that this was non-significant; $r = -0.08$, $n = 26$, $p = .71$, indicating that there is no relationship between sensation seeking and risky driving behaviours. The original hypothesis for this study that there will be a strong, positive relationship between the two must, therefore, be rejected.

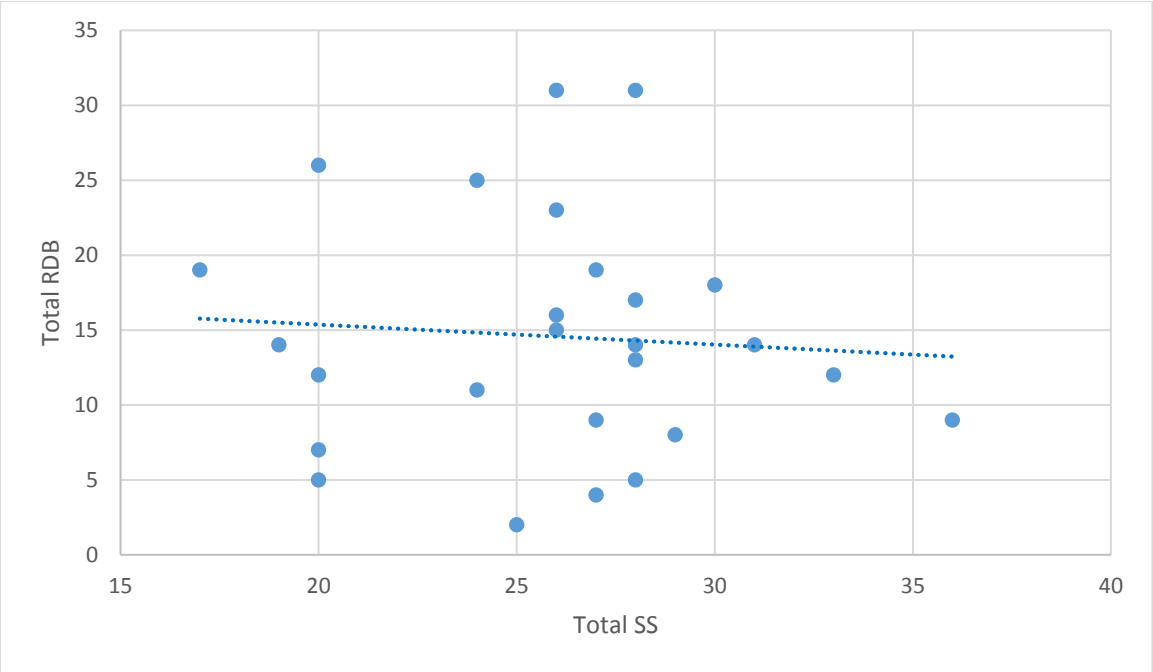

Figure 1.
Scatter graph depicting correlation between SS and RDB

Discussion

As outlined above, the hypothesis has to be rejected due to the findings of this study highlighting that there is no relationship between sensation seeking tendencies and engagement in risky driving behaviours. This result is in stark contrast to those discovered by Dahlen et al. (2005) who noted that individuals who score highly on measures of sensation seeking are far more likely to be involved in traffic accidents as a result of risky driving, as well as conclusions made by Ulleberg et al. (2003) stating that sensation seeking tendencies have the ability to predict engagement in risky driving practices. A review of literature by Jonah (1997) did note that there were four studies that did not find a significant, positive

relationship between these two variables, however, and therefore the findings of this study support this to some extent. The relationship between these two variables still has merit to be explored further.

There may be key factors that have influenced the results of this study. First of all only sensation seeking was measured and, whilst claimed by Gianfranchi et al. (2017) that this is the most widely related dimension to risky driving, there are a number of researchers that offer an explanation into other personality factors that may influence engagement in risky driving behaviour. Hatfield, Williamson, Kehoe and Prabhakharan (2017) have demonstrated that impulsivity has predictive value when it comes to exploring predictors of risky driving, and Widyanti and Sutanto (2017) have also provided a justification for the measure of Type A Personality to explain the variance in risky driving behaviour.

The average age of participants who took part in this study was just 27 years. This may have had an impact on the outcome of the analysis for several reasons. Firstly it is widely documented that younger drivers, specifically between the ages of 18 and 24, are the most involved in accidents on the road, and that this risk is almost three times higher than road users who are older and more experience (European Road Safety Observatory [ERSO], 2006). Secondly, Arnett (2000) infers that individuals between the ages of roughly 18 to 25 are engaging in a period referred to as the 'emerging adult' (p. 469), and that this period is distinguished as qualitatively distinct from adolescence and young adulthood. Worthy, Jonkman and Blinn-Pike (2010) and Deery (1999) add to this that individuals in the period of emerging adulthood find it increasingly difficult to comprehend risk, and are still developing the cognitive capabilities to recognise road hazards. Therefore, it is possible that this could have had an impact on the findings of this study. Future studies should aim to include a wider range of participants of all different ages, from novice drivers to far more experienced, to determine whether there is a link between SS and RDB.

Finally, males are underrepresented in the sample used for this study and this could be a factor that may have influenced the results considerably. Men are consistently documented as scoring higher than women on measures of sensation seeking (Cross, Cyrenne, & Brown, 2013; Zuckerman, 1994) and are also noted as being involved in more road and traffic accidents (Lucidi et al., 2010). Gathering an equal and representative sample of males and females would allow for further comparison of the gender differences in both SS and RDB, as well as exploring the link between SS on RDB.

In conclusion, the findings of this study do not support much of the previous literature on the relationship between sensation seeking and engagement in risky driving behaviour. Future studies to explore this should aim to include measures of additional personality factors that are considered to be related to risk-taking, as well as considering recruitment of a representative sample of males and females, and novice and experienced drivers.

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