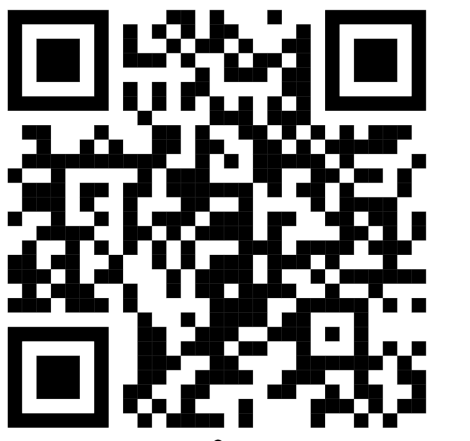


Young, drunk, and fast: The paradoxical effects of hazardous drinking on cognitive performance in younger adults

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Background & Aims

Hazardous drinking linked to cognitive deficits, including; attention, learning, memory, and executive function^{1,2,3}

Processing speed underpins more complex abilities⁴, and is assessed using reaction time (RT)⁵. Processing speed is impaired in diagnosed alcohol use disorders^{6,7}

Mixed evidence surrounding hazardous drinking and processing speed^{8,9,10}

Function often assessed using stimulus response tasks, the sensory mode of stimuli delivery may impact results^{11,12}

Vibrotactile stimulation (vibration via touch) useful as able to restrict distractions, and highly accurate RT recording^{13,14,15}

Study aimed to use vibrotactile stimuli to assess simple and choice RT in hazardous and non-hazardous drinkers, to be considered in context of previous literature

Methods

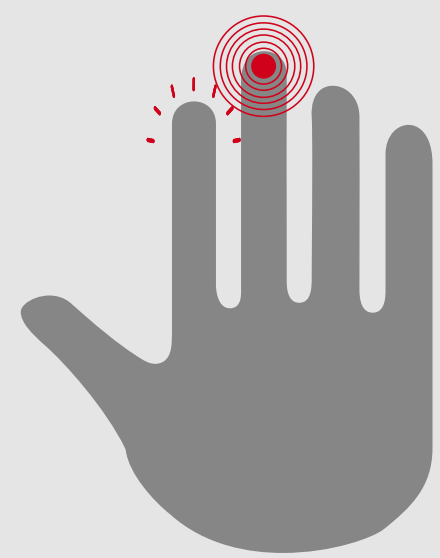
Cross-sectional between-subjects design
N = 86

Measures:

- Vibrotactile reaction time tasks (simple and choice; objective function)
- EFI (subjective function)
- HADS (mood)
- AUDIT, SADQ, TLFB-A (alcohol use)

Analyses:

- MANCOVAs on RT and EFI scores, between hazardous and non-hazardous drinkers
- Bivariate correlation between objective / subjective function



Vibrations stimulate fingertip, must respond with adjacent fingertip ...



.. simple RT stimulates only middle finger (respond with index finger), choice RT could stimulate either finger (two possible responses)



Results

Hazardous drinkers faster during choice RT...!

Further analysis of four groups, hazardous and non-hazardous drinkers, both subdivided by age into 'older' (30+ years) and 'younger' (18-29 years);

- Younger hazardous drinkers better than both older groups at simple RT, while older non-hazardous drinkers worse than both younger groups at choice RT.

Subjectively, EFI subscales Strategic Planning and Impulse Control better in non-hazardous drinkers. When compared across the four age / drinking groups, subjective function worse in younger hazardous drinkers.

Finally, Organisation and impulse Control positively correlated with choice and simple RT, so as subjective function improved, RT increased (slower/poorer processing speed).

Conclusions

Paradoxical results considered in context of;

- Premature aging hypothesis
- Impulsivity (though no speed / accuracy trade-off)
- Neurotransmitter systems

Furthermore, poorer subjective function in young hazardous drinkers indicates either;

- Metacognitive deficit
- Increased effort
- Issues with vibrotactile perception as cognitive function assessment in this group (neuropathy?)

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