

# Alcohol gel ingestion amongst homeless Eastern and Central Europeans in London: assessing the effects on cognitive functioning and psychological health.

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## Introduction

Over the last couple of years intentional consumption of alcohol based hand gels has been reported especially amongst non-UK national, alcohol dependent, homeless individuals in London (Homeless Link, 2008; Garapich 2011; Thames Reach, 2012).



Whilst alcohol misuse is known to be associated with impaired cognitive functioning ((Bernardin et al, 2014; Norton & Halay, 2011) and mental health problems (Uekermann et al, 2003; Boden and Fergusson, 2011) the effects of additional ingestion of alcohol gel are unknown.

The current study aimed to explore cognitive and psychological functioning in users who intentionally ingest alcohol gel compared with ethyl-alcohol only misusers and controls.

## Design / Methods

### Participants

All Male, Central and Eastern European service users from the Passage Resource Centre.

- 14 alcohol only misusers (mean age 39 years),
- 14 alcohol gel users (mean age 43 years)
- 12 controls (mean age 31 years)

### Assessment Measures

- **Alcohol Use Disorders Identification Test (AUDIT;** Saunders et, 1993) :to assess harmful and hazardous drinking, including abuse and dependence in the last 12 months.
- **Alcohol Gel Questionnaire (AGQ):** Adapted specifically for this study the wording of the AUDIT was adjusted to measure hazardous and harmful consumption of alcohol gel.
- **The Hospital and Anxiety and Depression Scale (HADS)** (Zigmond and Snaith, 1983)
- **The Prospective and Retrospective Memory Questionnaire (PRMQ ;**Smith et al 2000) = measuring everyday prospective and retrospective memory.
- **Digit span task:** A sub-test of the Wechsler Adult Intelligence Scale – Third edition (WAIS –III; Wechsler, 1997) was used to assess verbal working memory. Output measures include Digit Span Forwards (DSF) Digit Span Backwards (DSB) and total score (DST)

Digit span test		
	Column 1	Column 2
Forward test	(3) 2-6-5	(3) 2-8-1
	(4) 1-5-2-3	(4) 1-9-5-2
	(5) 2-4-7-6-1	(5) 5-2-1-4-3
	(6) 4-2-1-9-3-7	(6) 8-5-3-1-4-7
	(7) 3-6-4-8-5-2-9	(7) 6-8-1-4-7-2-5
	(8) 7-5-8-2-9-6-1-3	(8) 2-8-5-9-7-3-1-4
	(9) 5-8-6-4-2-7-3-9-1	(9) 4-2-5-8-1-3-9-7-6
	(2) 2-1	(2) 2-8
	(3) 5-8-4	(3) 3-2-8
Backward test	(4) 4-8-9-1	(4) 2-9-4-1
	(5) 6-8-7-2-1	(5) 3-5-9-7-6
	(6) 5-8-1-7-4-6	(6) 4-3-1-9-2-5
	(7) 8-5-3-6-7-2-9	(7) 5-3-2-4-1-6-8
	(8) 1-7-4-3-8-9-5-2	(8) 6-8-4-7-5-3-9-2
	Maximal digit number for forward test ( ) +	
	Maximal digit number for backward test ( ) = Total score ( )	

- **Block Design Task:** A subtest of the Wechsler Adult Intelligence Scale – Third edition (WAIS-III; Wechsler, 1997) was used to assess participants' visuo-spatial abilities.



## Results

Figure 1: Audit Scores

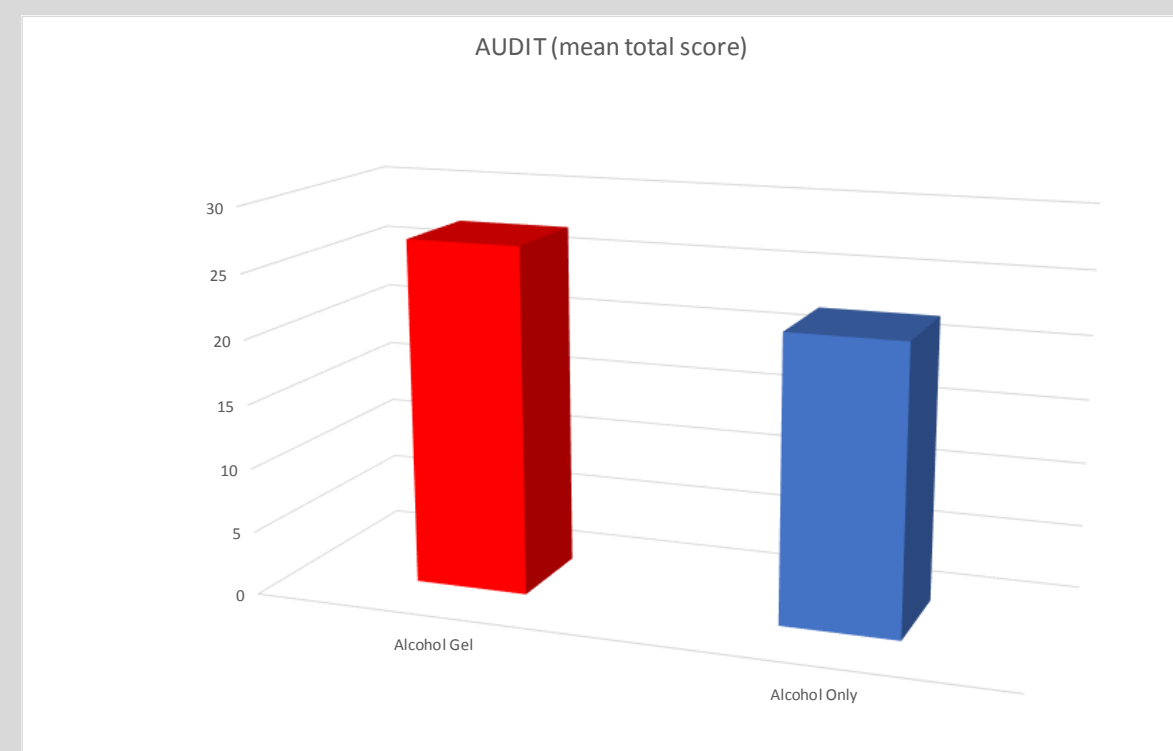


Figure 2: HADS Scores

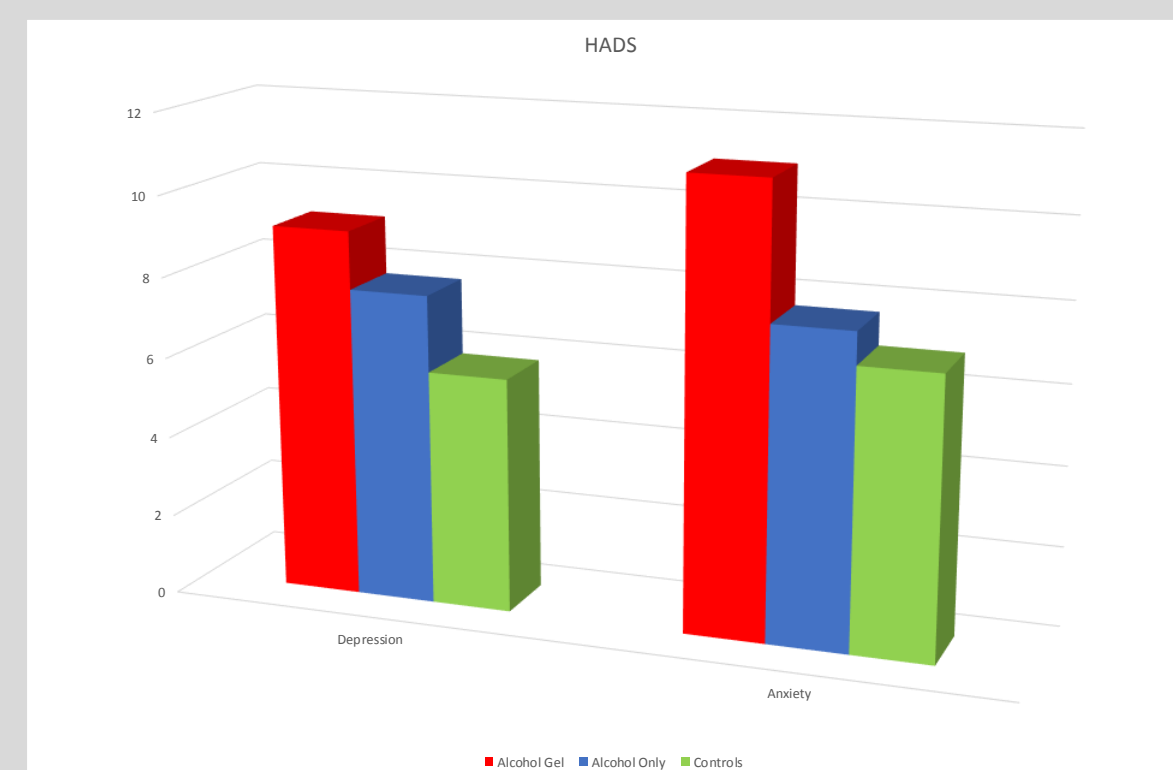


Figure 3: Digit Span Task Scores

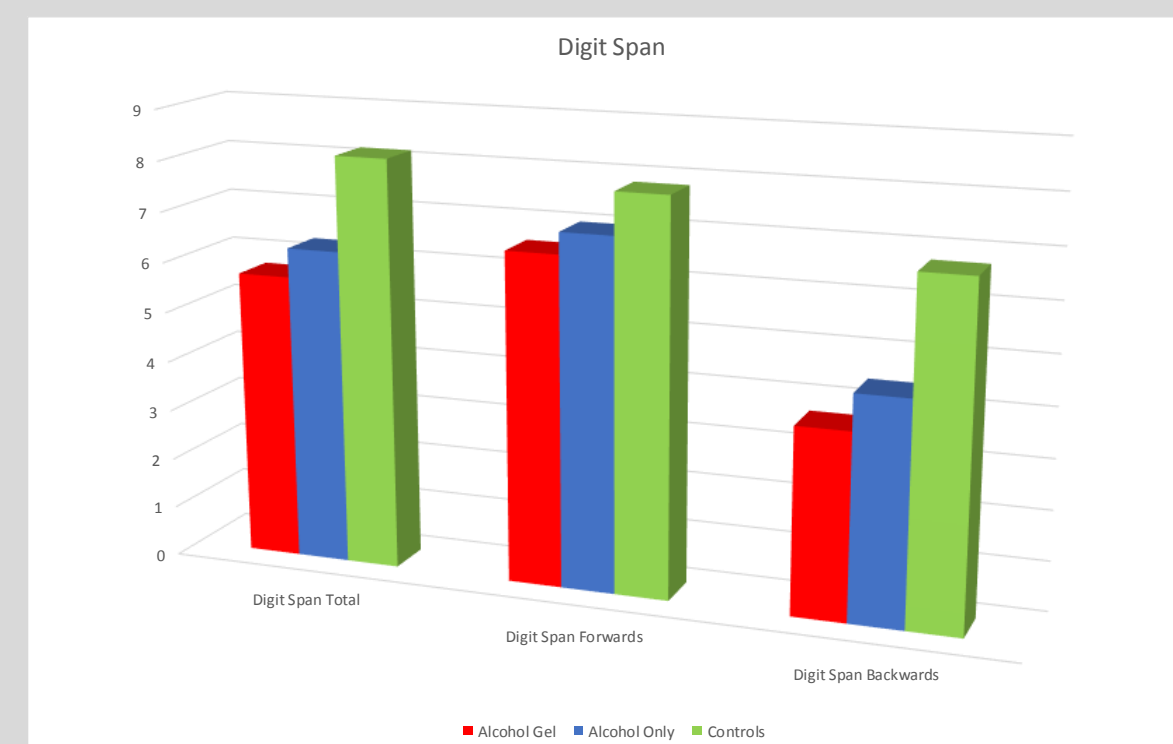


Figure 4 : Block Design Task Scores

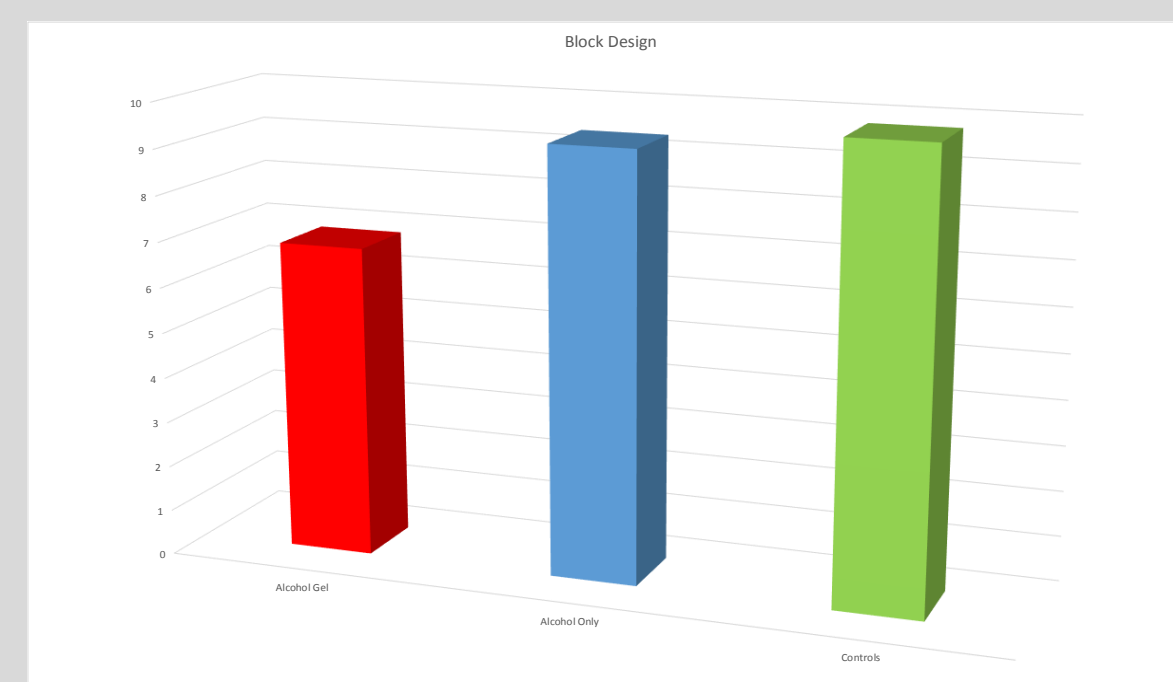
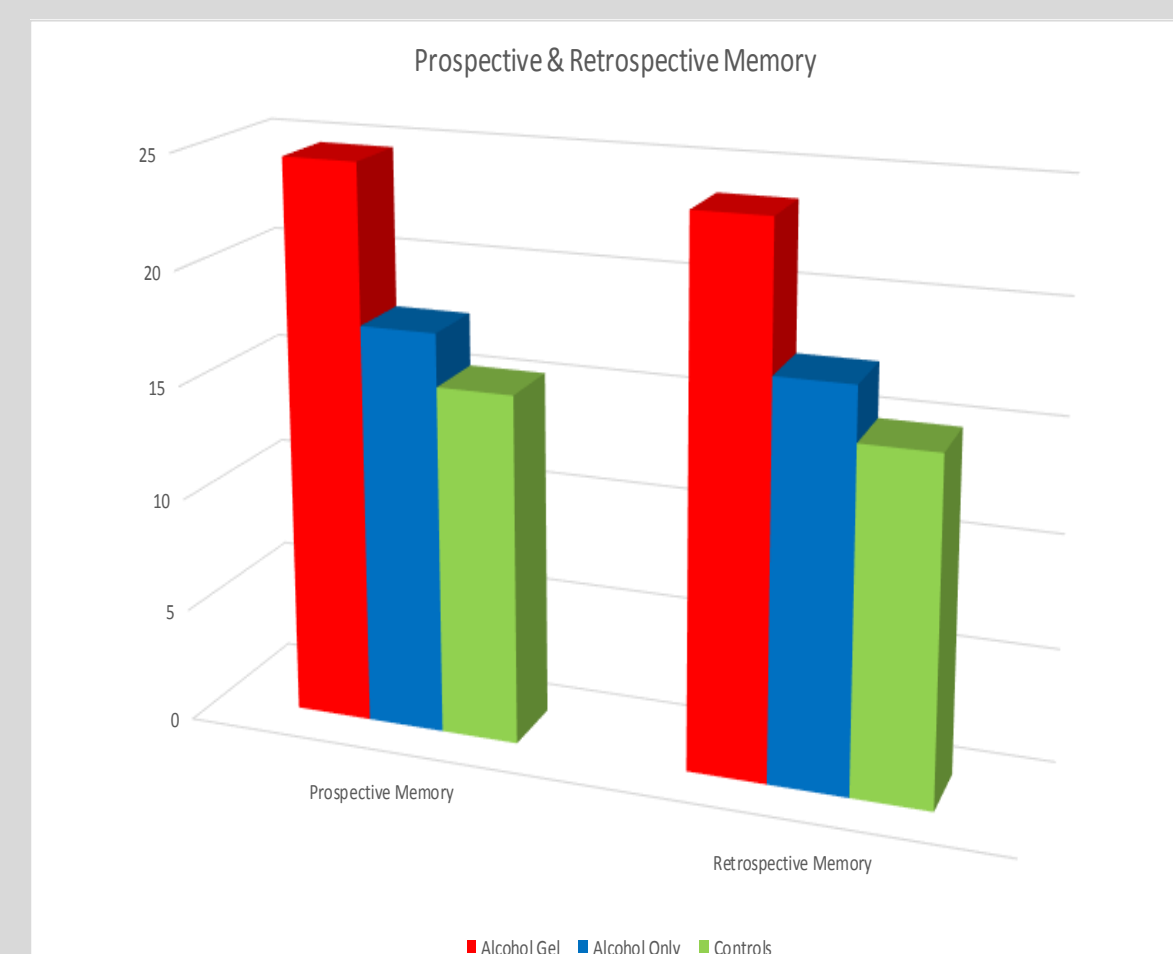


Figure 5: PRMQ Scores



### Results summary:

- Alcohol gel users did not differ from alcohol only users in terms of alcohol dependence (AUDIT).
- Alcohol gel users performed significantly worse on the Block Design task and PRMQ relative to both alcohol only and control groups.
- Alcohol gel users performed significantly worse on the digit span relative to controls.
- Alcohol gel users reported significantly higher levels of anxiety relative to controls, but no significant difference on levels of depression.
- Both alcohol misusing groups scored comparatively on digit span backwards, with both groups performing significantly worse than controls.

## Conclusions

This is the first known study to identify and assess the cognitive and psychological effects associated with alcohol gel ingestion in an alcohol misusing homeless population.

Alcohol gel use was associated with poorer visuo-spatial and memory abilities relative to a comparable alcohol misusing group who did not report alcohol gel ingestion, and with higher levels of anxiety and poorer working memory relative to a non-alcohol misusing homeless control group.

Given the increase in reported intentional ingestion of alcohol gel physical and psychological health warrants further investigation.

## Implications

Alcohol gel use should be considered when homeless service users present themselves with alcohol needs.

The potential cognitive consequences of alcohol gel use may influence engagement with every stage of assessment and treatment of the service user, and thus needs to be considered.

Determining potential consequences of ingestion might help inform educational strategies, treatments amongst homeless alcohol misusing individuals and should be considered within harm minimisation strategies for this group of users especially as those reporting its use are less able to access alcohol dependency services (Garapich, 2011).

## References

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