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Library Services

# README file

1. **About the data set**

* Title: Alcohol Processing Speed Data
* Creators: Anna Powell, School of Psychology LJMU (ORCID 0000-0002-4879-4124); Harry Sumnall, Public Health Institute LJMU (ORCID 0000-0002-7841-9245); Cecil Kullu, Mersey Care NHS Foundation Trust; Lynn Owens, University of Liverpool (ORCID 0000-0001-7549-9350); Catharine Montgomery, School of Psychology LJMU (ORCID 0000-0003-2805-5807).
* The creators hold the rights for the dataset.
* Year of publication 2024

2 . **Description**

*Aims*: To assess changes in vibrotactile reaction time (RT) from baseline (at the start of a detoxification programme) across early abstinence. We hypothesised that 1) compared to 35 controls, the 66 individuals with alcohol dependence (AD) would perform more poorly (greater scores) on all RT scores at both timepoints, and 2) in AD participants, outpatients would demonstrate greater processing speed recovery by follow-up than those in the inpatient setting.

*Design:* Cross-sectional analysis of RT, assessed in both controls and individuals receiving treatment for alcohol dependence. To examine predictors of RT variables (which included simple reaction time, reaction time variability, choice reaction time, and fatigue), we conducted multivariate multiple linear regression. Predictors were age, gender, mood state, and group (control versus AD). Analyses were conducted separately on data collected at two timepoints (baseline and follow-up), both during early abstinence. Cross-sectional methods were used, as controls in the previously recruited study were tested only once but were compared to AD at both abstinence duration points.

Repeated-measures analysis also assessed the difference in RT between baseline and follow-up, between inpatient and outpatient AD participants. This was examined via a mixed 2x2 MANCOVA, with treatment setting (outpatient vs. inpatient) as the between-groups factor, time as the within-groups factor, gender as a covariate, and RT measures as dependent variables.

*Setting:* AD data was collected at inpatient and outpatient clinics in Liverpool, UK. Control data was obtained from a previous study recruiting a general population sample, and was age-and-gender matched against AD patients, by age ± 5 years.

*Participants:* AD participants were eligible if they had an ICD-10 diagnosis of alcohol dependence, and were currently undergoing detoxification from alcohol. All participants had to be aged 18+, and fluent in English. Exclusion criteria for both groups were pregnancy or a condition affecting sensation in dominant hand. Therefore, 66 participants with AD were recruited, and 35 control participants were age-and-gender matched to these (total N = 101). Of the AD participants, 45 of these remained at follow-up.

*Measurements:* Vibrotactile reaction time variables were assessed using the Brain Gauge Pro. These included mean scores (milliseconds) of simple RT, RT variability, Choice RT, and Fatigue (a measure of whether RT performance worsened between the start and end of the test battery). Lower scores in all RT measures indicate better function. Alongside these, Treatment setting was recorded, whilst Age, and Gender was collected via questionnaire (controls) and passed to the research team by clinical staff (AD participants). Mood state was assessed via questionnaire. These variables were included in analyses. Additional data collected included Alcohol use (AUDIT and SADQ-C scores) via questionnaire (controls) and passed on by clinical staff in addition to Age of first drink, Start of problem drinking (age), Units per day, Years of problem drinking, Substance use, Clinical status regarding relapse or abstinence, Total daily starting Librium dose, and Detox related Librium prescribed (yes/no) (AD participants).

*Findings:* Group (AD vs control) significantly predicted choice RT at baseline and follow-up but did not significantly predict simple RT or RT variability, which is inconsistent with previous findings. At follow-up, mental fatigue was also predicted by group, and MANCOVA indicated that this had worsened in inpatients but improved in outpatients.

*Conclusions:* Recovery of RT measures so early in the treatment journey was not in line with previous research which indicates persisting deficits. The interaction between setting and timepoint indicates that despite being typically less medically complex, outpatients require ongoing support and monitoring during their recovery.

* **Data should be cited using this DOI: 10.1177/02698811241254830**
* **Paper accepted for publication in the Journal of Psychopharmacology.**

**3. Contact details** [**a.powell1@ljmu.ac.uk**](mailto:a.powell1@ljmu.ac.uk)**;** [**c.a.montgomery@ljmu.ac.uk**](mailto:c.a.montgomery@ljmu.ac.uk)

**4. Terms of use**

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**5.Project and funding information**

* Title: Changes in processing speed during early abstinence from alcohol dependence
* November 2020 – August 2023.
* We declare that no competing interests exist, and that we received no specific funding for this work.

**6.Contents**

AlcoholProcessingSpeedData.csv

AlcoholProcessingSpeedScript.R (Analysis code for open source analysis software R Studio)

**5. Methods**

**Design and Setting**

We conducted a cross-sectional analysis of AD data collected at inpatient and outpatient alcohol treatment settings compared to age-and-gender matched control data, with the former collected at two time-points in early abstinence. Repeated-measures analysis also assessed change in RT score between baseline and follow-up, between inpatient and outpatient AD participants.

**Participants**

AD participants had an ICD-10 diagnosis of alcohol dependence, and were currently undergoing detoxification from alcohol. All participants were aged 18+, and fluent in English. Exclusion criteria for both groups were pregnancy or a condition affecting sensation in dominant hand. 66 participants with AD were recruited, and 35 control participants were age-and-gender matched to these (total N = 101). Of the AD participants, 45 remained at follow-up.

**Statistical Analysis**

To examine predictors of vibrotactile reaction time, we conducted multivariate multiple regressions at baseline and follow-up, with age, gender, mood state, and group (control vs AD) as predictors. We also conducted a mixed 2x2 MANCOVA on AD data available at both timepoints (n = 45) with treatment setting (outpatient vs. inpatient) as the between-groups factor, time as the within-groups factor, gender as a covariate, and RT measures as dependent variables.