

RELATION BETWEEN ALCOHOL INGESTION AND HANDWRITING MODIFICATIONS – EXPLORATORY STUDY

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01 INTRODUCTION

According to Jean Gayet “each individual has a writing that is his own and that differs from the others”. The graphic identity can be influenced by intrinsic and extrinsic factors, including psychoactive substances such as alcohol. Several research studies suggest that the ingestion of intoxicants can be related with variability in handwriting, which may compromise the reliability of forensic handwriting analysis [1]. Regarding alcohol intake, some controversial results have been reported. While some studies have revealed observable changes in handwriting, such as tremors, irregular spacing, slower writing speed and loss of line fluency [2, 3]; others suggest that higher doses of alcohol seem to have a minimal impact on psychomotor performance [4].

Aim

With the aim of evaluate the possible association between changes in handwriting and amount of alcohol intake, an exploratory study was carried out.

02 MATERIALS AND METHODS

As part of this exploratory study, a convenience sample was collected during the bachelor’s degree dinner, where volunteers, students and professors, were invited to handwrite a specific sentence (“Ciências Forenses é o melhor curso da Egas”) under informal and anonymous conditions prior to alcohol ingestion (t_0). Approximately two hours later (t_1), after drinking alcohol *ad libitum*, the same participants were asked to rewrite the same sentence and self-report alcohol ingestion amount according to: low (0-300 mL), medium (300-600 mL) and high (>600 mL).

The sentence was chosen to ensure content uniformity and enable reliable comparative analysis of handwriting changes across the two-time stages.

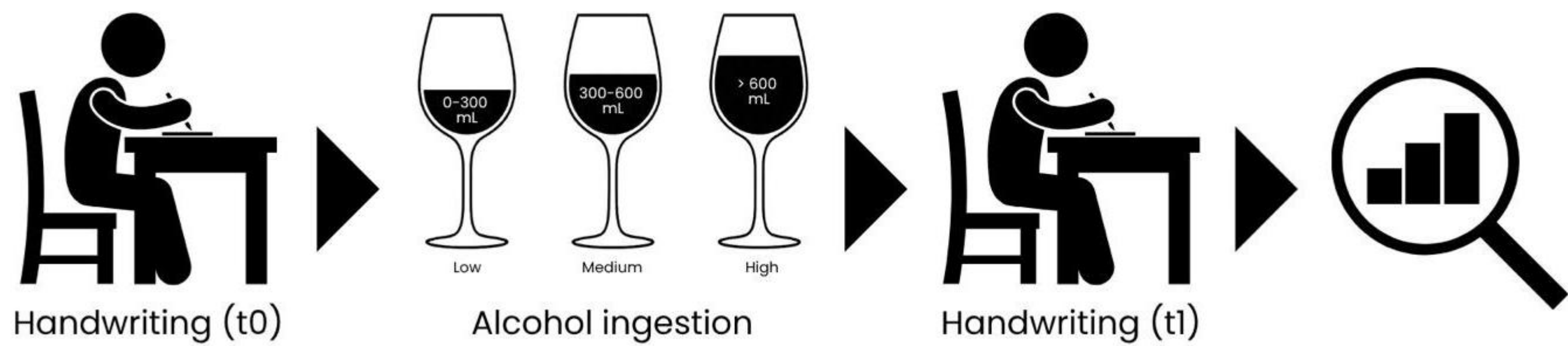


Figure 1. Schematic representation of the methodological sequence

03 RESULTS

In general, the findings indicate a relation between the quantity of alcohol ingested and the degree of handwriting alterations.

Table 1. Relation between the quantity of alcohol ingested and the degree of handwriting alterations

Graphoscopy features	Low alcohol intake (0–300 mL)	Medium alcohol intake (300–600 mL)	High alcohol intake (>600 mL)	Severity of modifications
	Letter spacing	1	2	3
	Word spacing	1	2	3
	Writing widht and letter size	2	3	4
	Letter connections	2	3	4
	Writing slant	2	3	4
	Writing speed	2	3	4
	Vertical distribution	1	2	4
	Pen Pressure and ink accumulation	1	2	4
	Stroke Lifting	2	3	4
	Letter Shape and motion	1	2	4
	Accent marks	1	2	4

04 CONCLUSIONS

The alterations observed in handwriting following alcohol ingestion may compromise the reliability of authorship attribution by obscuring distinctive graphic features. These findings highlight the importance of considering alcohol intake as a potential confounding factor in forensic handwriting analysis, particularly in questioned document examination where the influence of psychoactive substances is often overlooked.

References

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