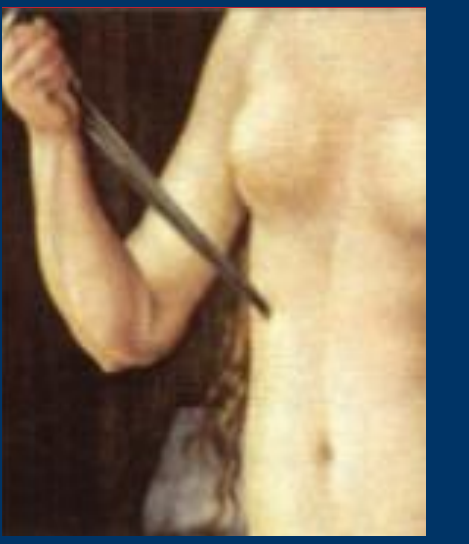


Executive functioning in suicide attempters



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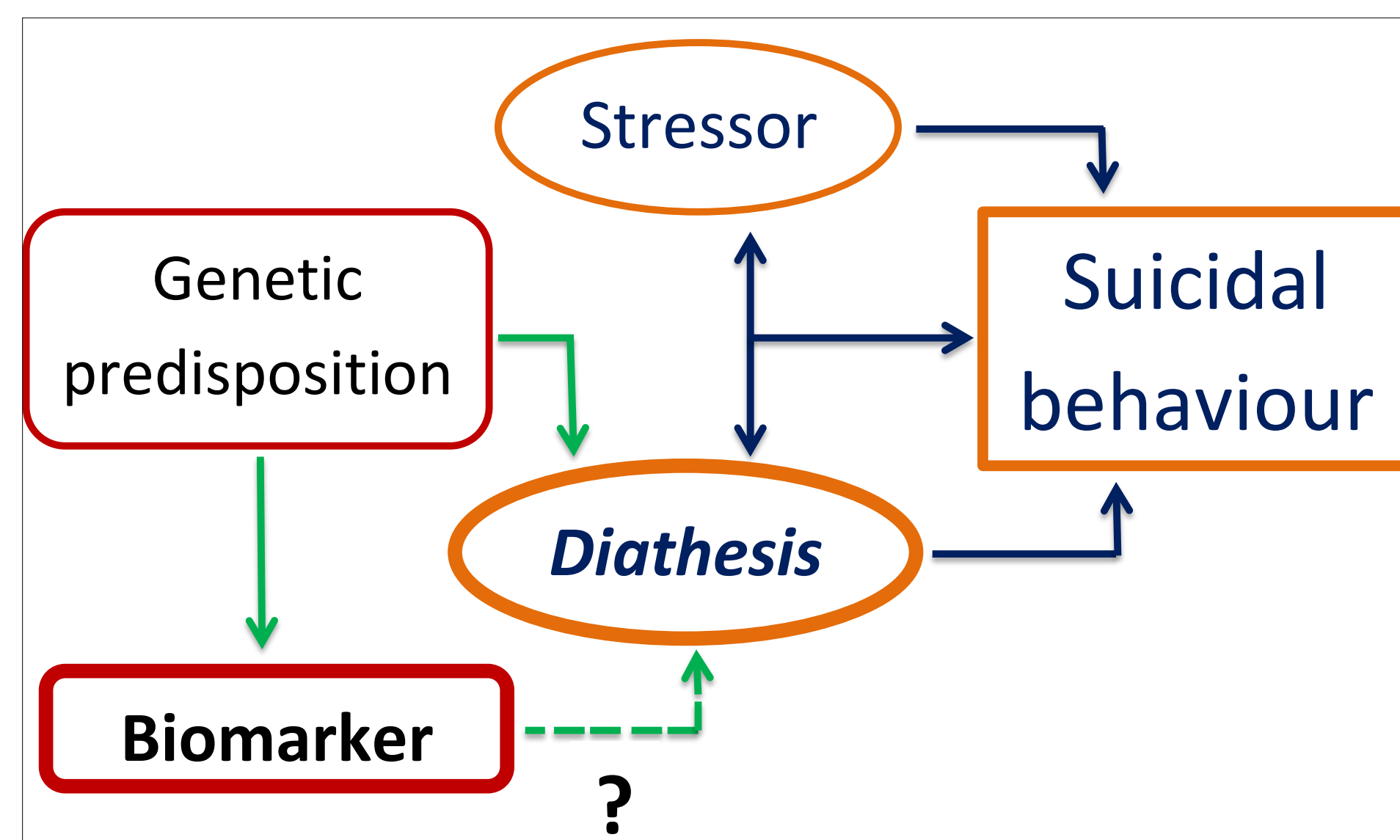


Introduction

BACKGROUND

Problems in predicting and preventing suicidal behaviour are due to the multiplicity of possible causes and a limited insight in predisposing mechanisms.

A Stress-Diathesis model has been proposed, giving insight into the causal mechanisms of suicidal behaviour (1). Nonetheless, the factors which are comprised in the diathesis, remain uncertain.



FORMER FINDINGS AND OBJECTIVES

Research findings increasingly suggest a causal role for neuropsychological dysfunctions as a biomarker of suicidal behaviour. More specifically, deficits in attention, fluency, problem solving and mental flexibility have been identified separately as possible vulnerabilities for suicidal behaviour (2).

The current study assessed these neuropsychological functions, trying to replicate former findings in one experiment, while searching for potential biomarkers associated with suicidal behaviour.

Methods

PARTICIPANTS

- 15 euthymic outpatients (SA), aged 22-59, with a history of Major Depressive Disorder (MDD) and minimum one suicide attempt.
- 53 euthymic controls (EC), aged 20-70, with no history of suicide attempt.

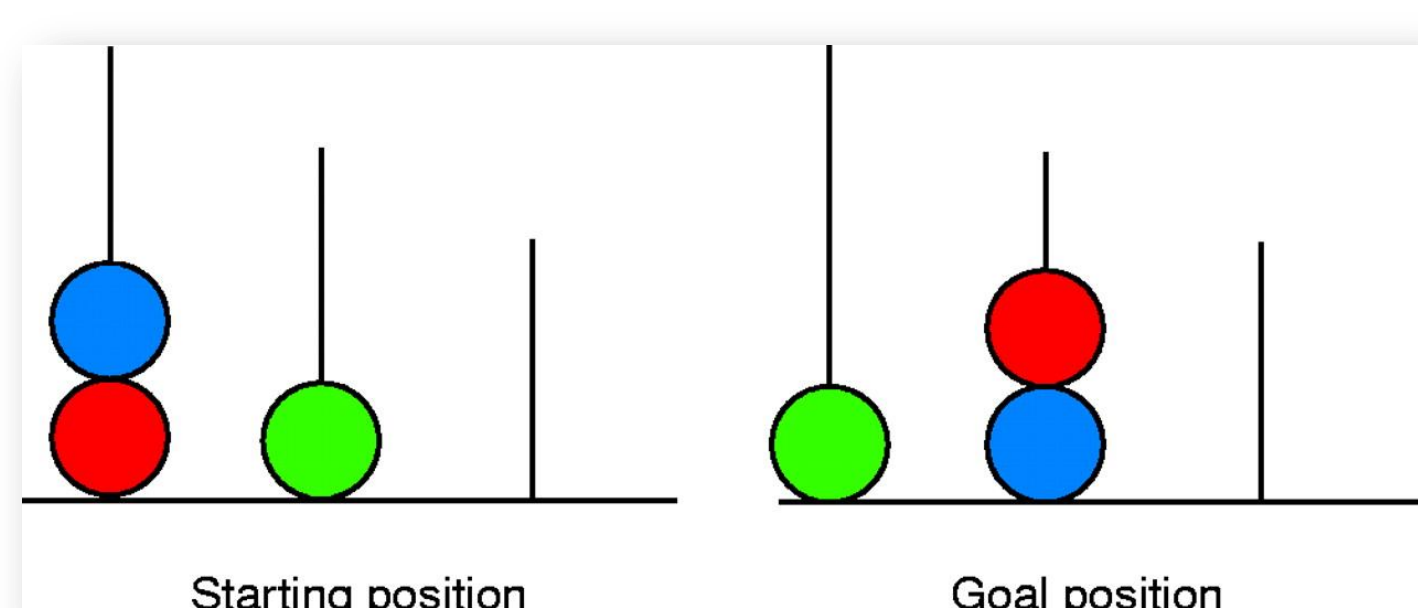
CLINICAL ASSESSMENT

Clinical assessment included:

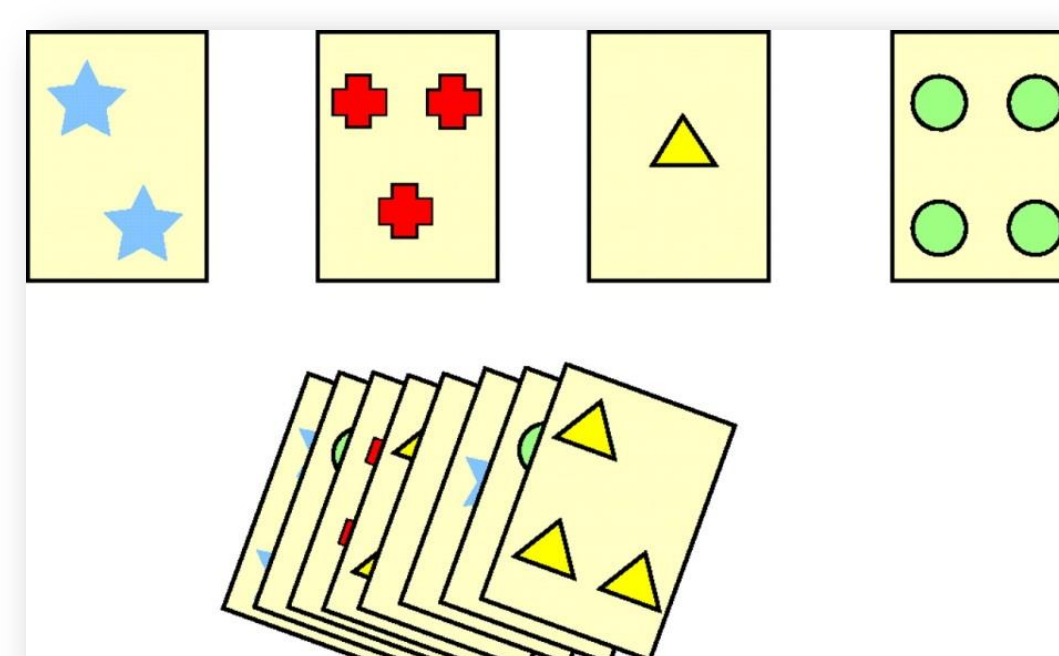
Scale for Suicidal Ideation (SSI); *Suicide Intent Scale (SIS)*; *Beck Hopelessness Scale (BHS)*; *Barratt impulsiveness scale (BIS-11)*; *State-Trait Anxiety Inventory (STAI)*; *Utrechtse Copinglist (UCL)*; *Beck Depression Inventory (BDI)*; *SCID*.

NEUROPSYCHOLOGICAL ASSESSMENT

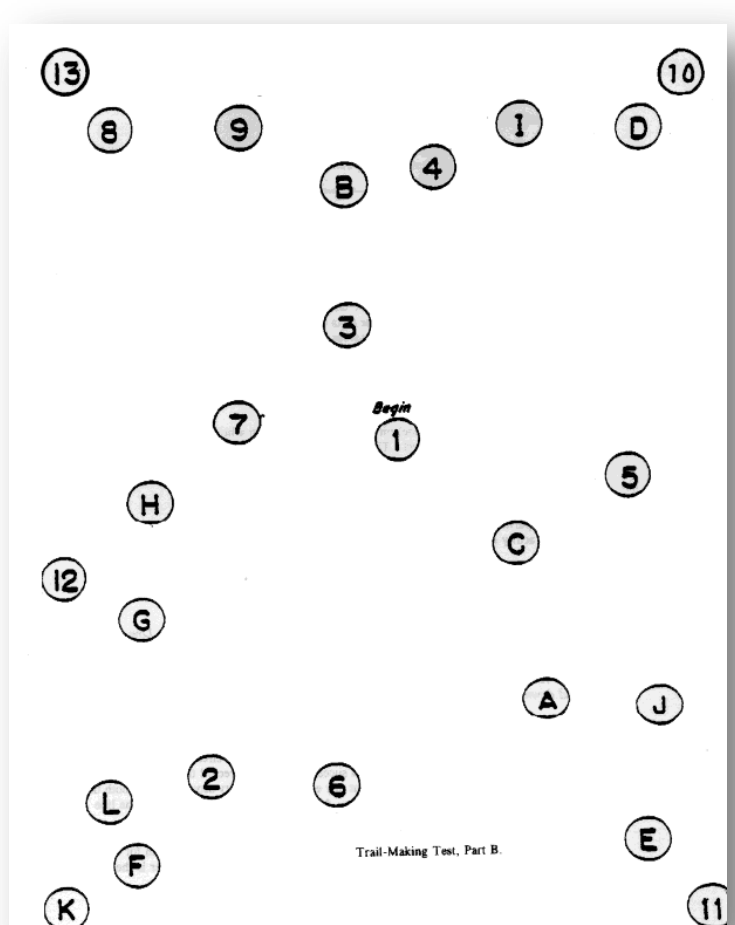
Tower of London Task



Wisconsin Card Sorting Test



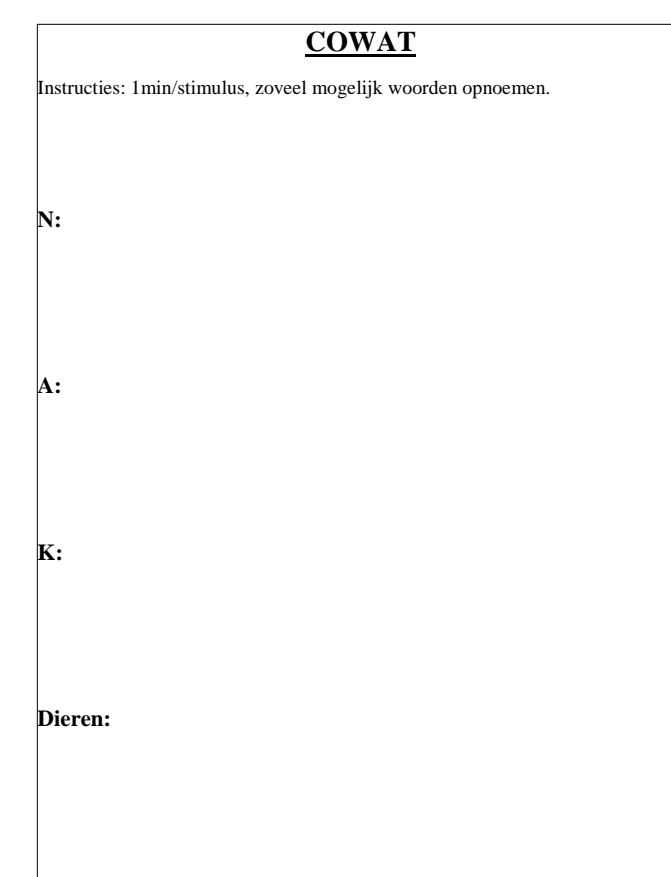
Trail making test



Stroop task



Controlled Oral Word Association task

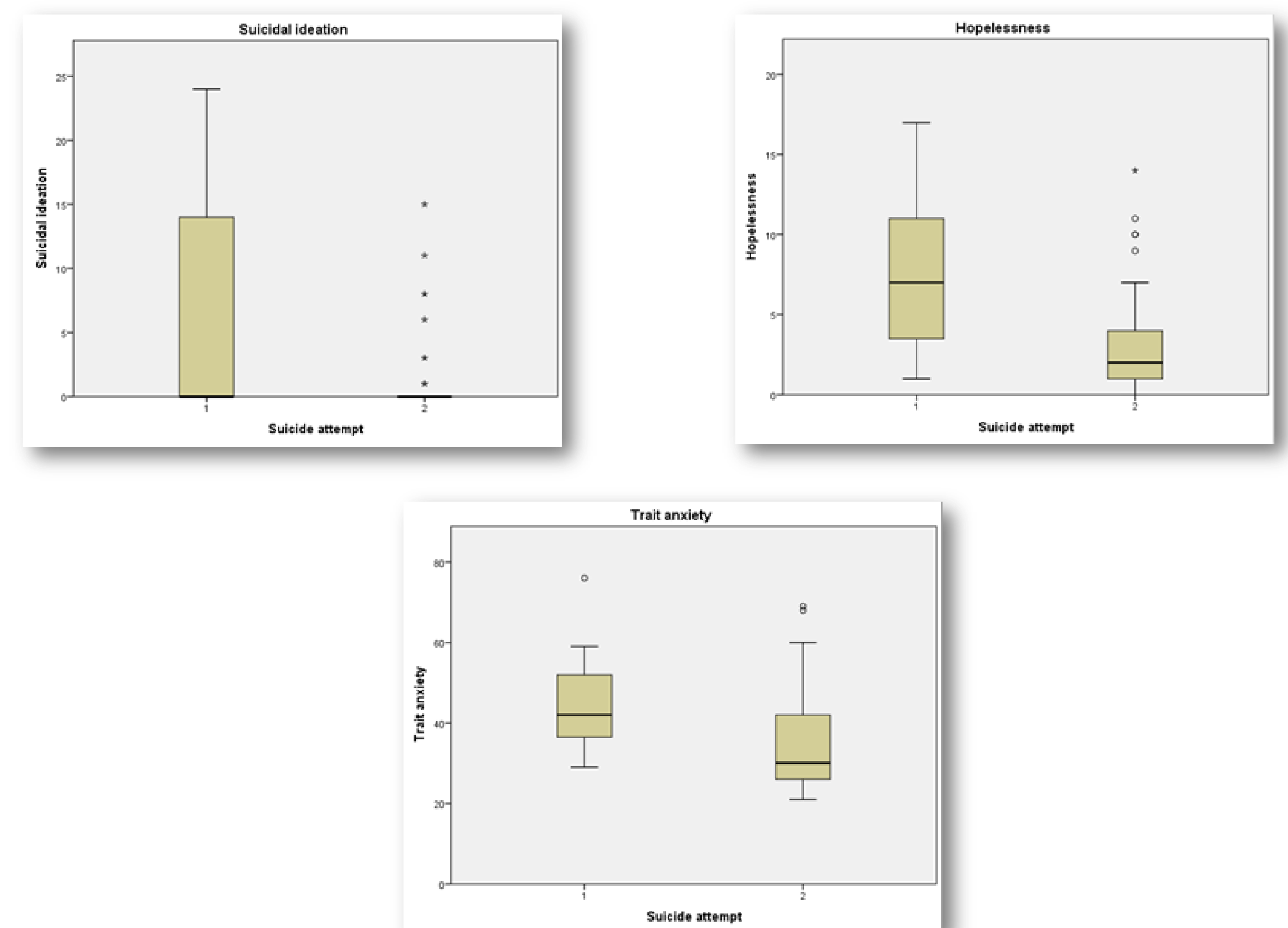


STATISTICAL ANALYSES

As the data were not normally distributed, Mann-Whitney tests were used for both clinical and neuropsychological variables.

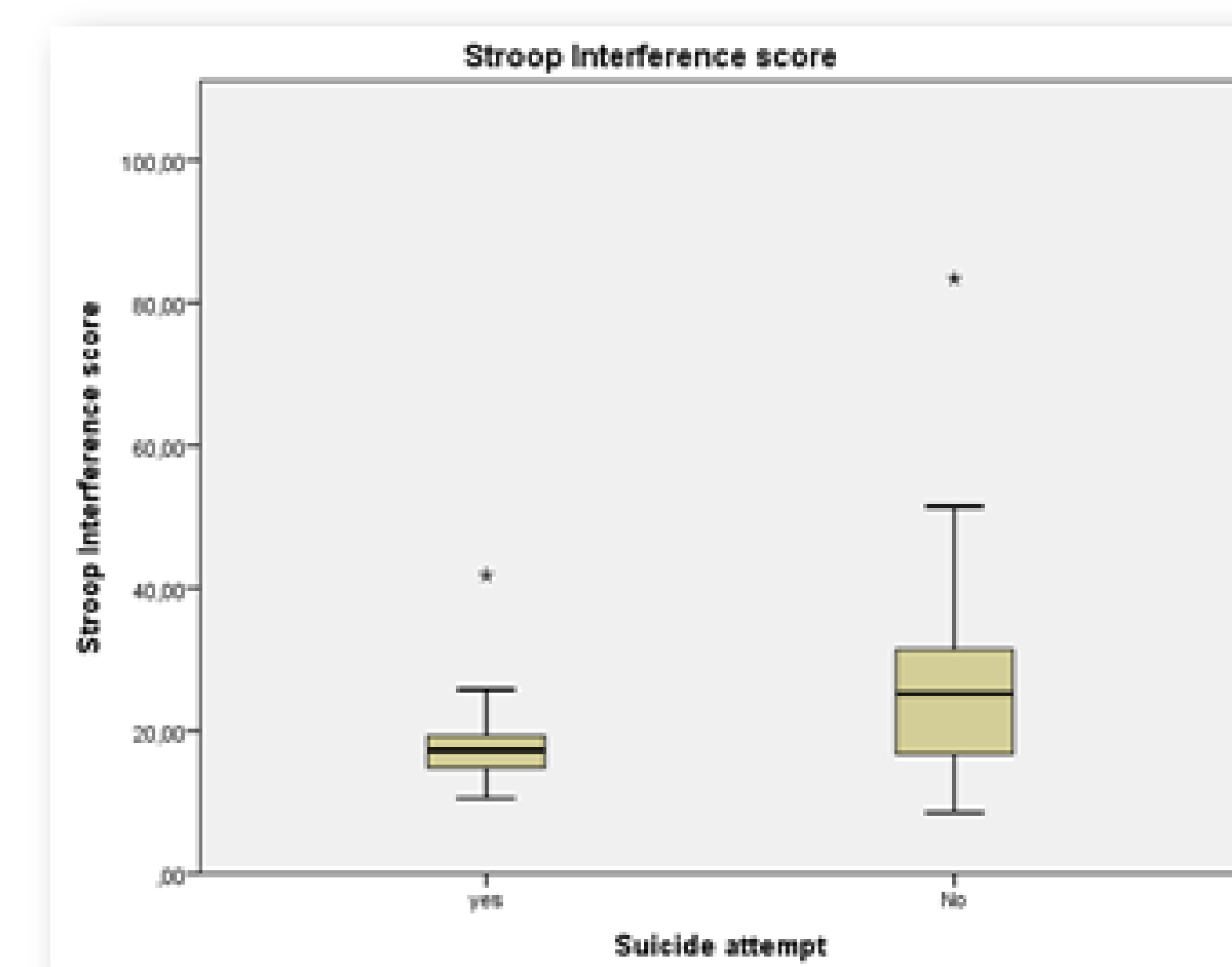
Results

DEMOGRAPHIC AND CLINICAL CHARACTERISTICS



Groups only differed on measures of current level of suicidal ideation ($Z = -2.67$, $p < 0.05$), hopelessness ($Z = -3.07$, $p < 0.01$), and trait anxiety ($Z = -2.90$, $p < 0.01$).

NEUROPSYCHOLOGICAL CHARACTERISTICS



EC performed worse on Stroop interference score ($Z = -2.113$, $p < 0.05$). No other significant differences between the groups were found.

Conclusion

The current results provide mixed support for a role of neuropsychological (dys-)functioning as a biomarker for suicidal behaviour. These results are thus only partially in accordance with previous studies.

Further research using brain-imaging techniques should elaborate on the current study and focus on other neuropsychological functions, specifically decision-making (3).

References

- (1) Hawton, K., van Heeringen, K. (2009). Suicide. *Lancet*, 373, 1372-1381.
- (2) van Heeringen, K., Godfrin, K., & Bijttebier, S. (2011). Understanding the suicidal brain: a review of neuropsychological studies of suicidal ideation and behaviour. In R. O'Connor, S. Platt & J. Gordon (Eds.), *The International Handbook of Suicide Prevention: Research, Policy and Practice*. Chichester: Wiley-Blackwell.
- (3) Tanaka, S., et al. (2004). Prediction of immediate and future rewards differentially recruits cortico-basal ganglia loops. *Nature Neuroscience*, 7, 887-893.