

Reducing intrusive memories after early pregnancy loss using a brief cognitive task involving Tetris computer gameplay:  
A randomised controlled trial

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Early pregnancy loss (EPL) is psychologically traumatic for many women, leading to symptoms of posttraumatic stress including distressing intrusive memories (flashbacks) of the event.

This study assesses the efficacy of a brief cognitive intervention, including Tetris computer gameplay, received soon after EPL, in reducing intrusive memories of trauma and related psychopathology compared to an active control group.

Introduction

**Study Design:** Single-blind randomised controlled trial

**Participants:** Women aged ≥ 18 years were recruited from the early pregnancy unit (EPU) in a West London hospital following a diagnosis of EPL (miscarriage or ectopic pregnancy).

**Randomisation:** 1 to 1 ratio using Sealed Envelope™ random allocation software

**Intervention:** Memory reminder procedure and 15 minutes of Tetris game-play using mental rotation

**Control:** Listening to podcast for 15 minutes

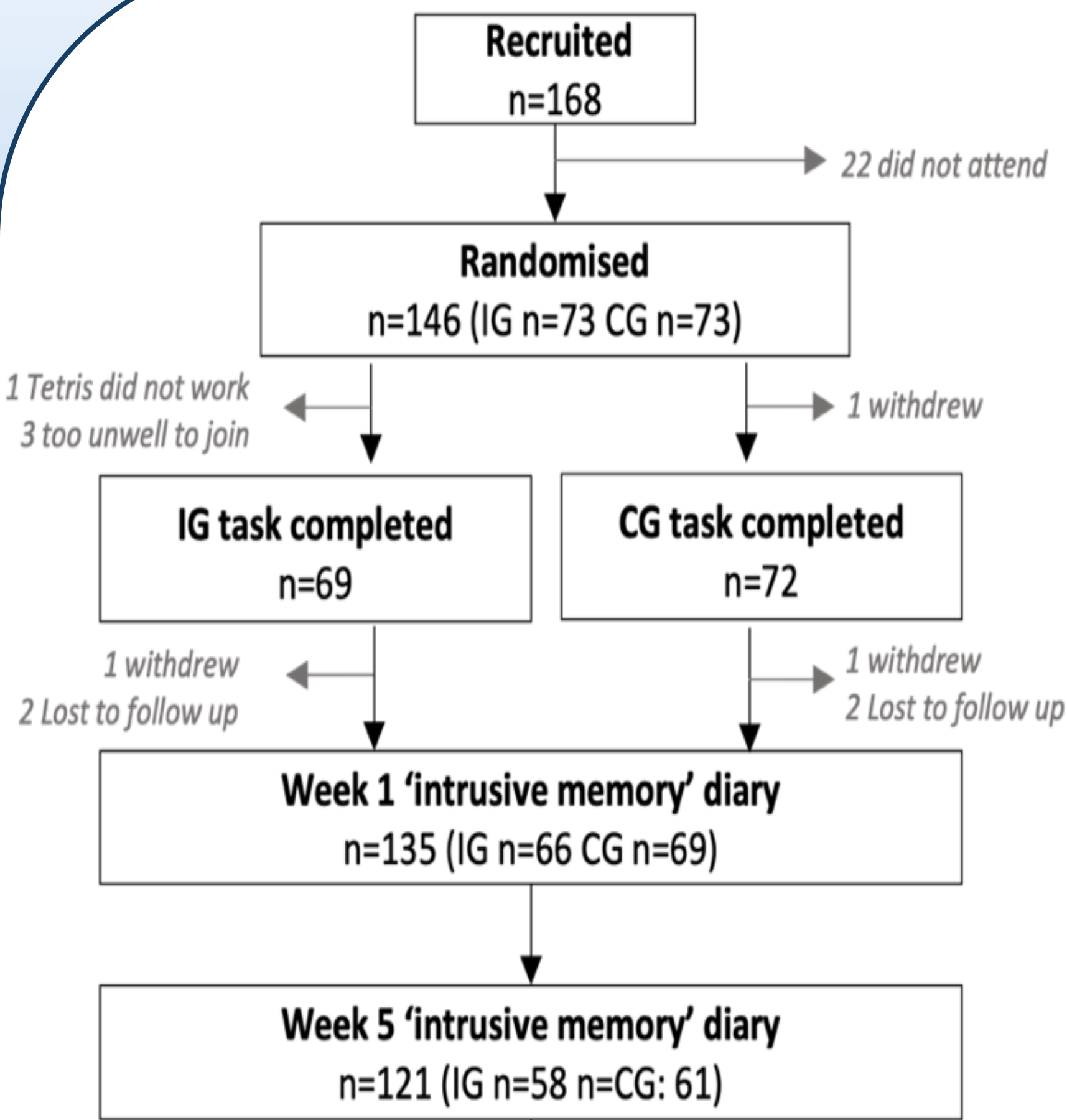
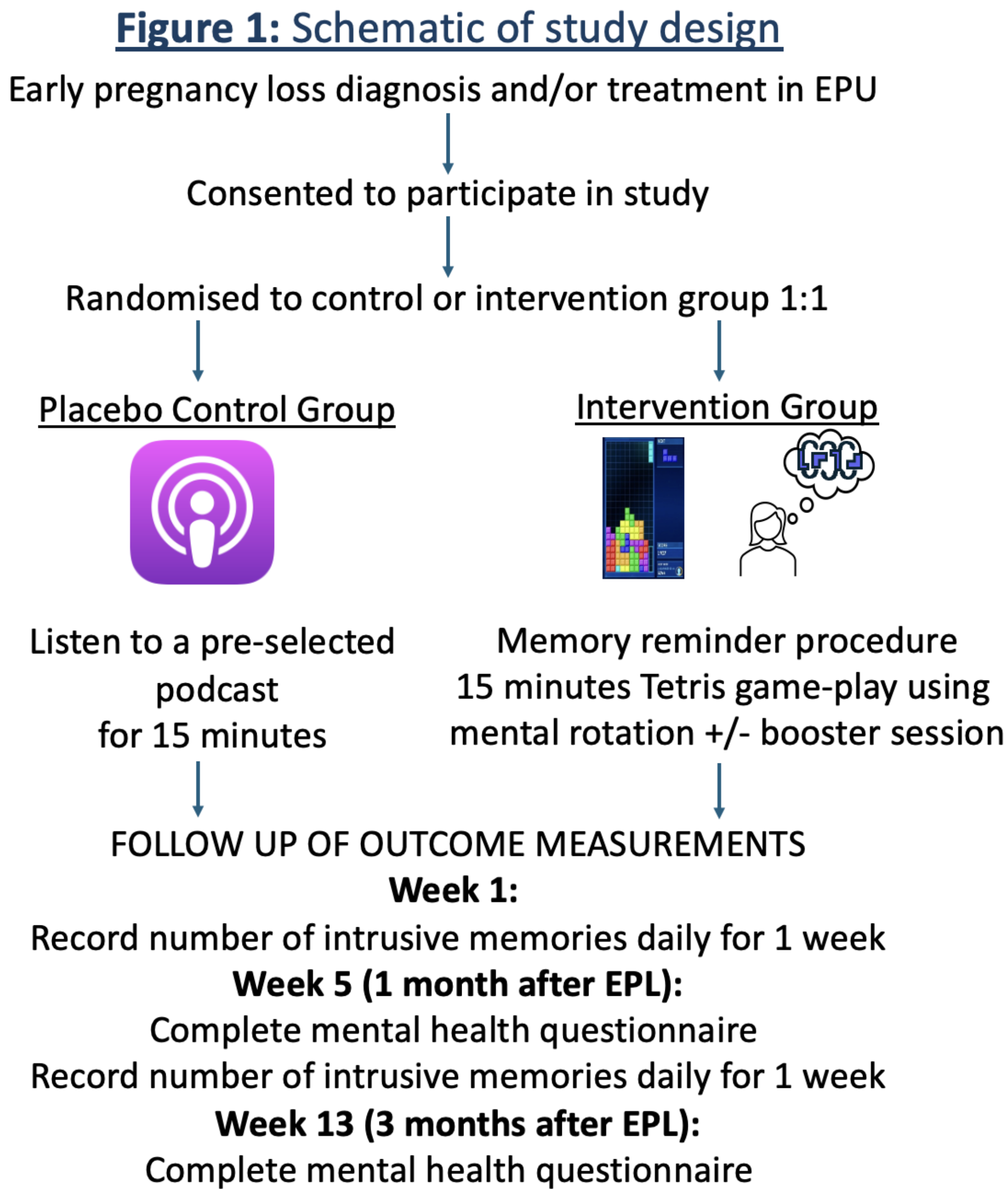
Participants completed the intervention or control task during a follow up video call within 72 hours of discharge from EPL treatment/follow up. Figure 1 represents a schematic of the study design.

**Outcomes:** An intrusive memory diary was used to record daily number of intrusive memories for 7 consecutive days in Week 1 and Week 5 following intervention or control task.

Validated questionnaires were used to measure PTSD, anxiety, depression and functional impairment in week 5 and week 13 but are not presented in this abstract

**Statistical Analysis:** Between-group differences were tested using a two-tailed t-test (α=0.05) and Cohen’s d effect sizes were calculated in a per protocol analysis.

Method



Demographic and clinical characteristics

|                                        | Control Group n=72 | Intervention group n=66 |
|----------------------------------------|--------------------|-------------------------|
| Age, mean (SD)                         | 36 years (4.2)     | 36 years (4.2)          |
| Gestational age from LMP, mean (SD)    | 69.7 days (14.9)*  | 67.2 days (17.1)*       |
| Previous mental health problems, n (%) | 28 (41%)*          | 18 (27%)*               |
| Type of pregnancy loss                 |                    |                         |
| -Miscarriage (%)                       | 66 (96%)*          | 62 (94%)*               |
| -Ectopic (%)                           | 3 (4%)*            | 4 (6%)*                 |

\*Not statistically different (Fischer's exact test p>0.05)

Results

This is the **first study** that shows that a **brief cognitive intervention involving Tetris computer gameplay** results in **significantly fewer posttraumatic intrusive memories** at 1 and 5 weeks following an early pregnancy loss.

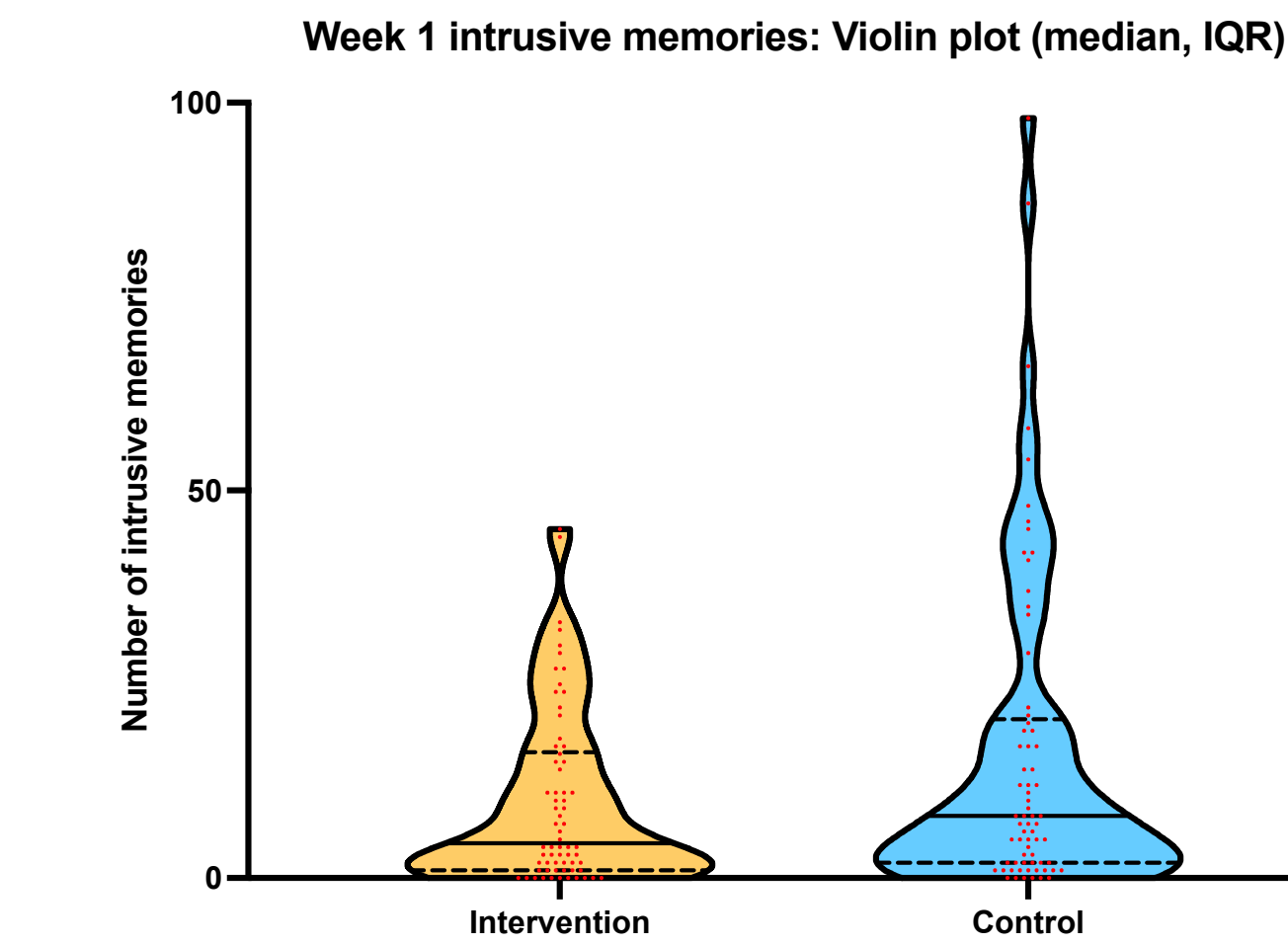
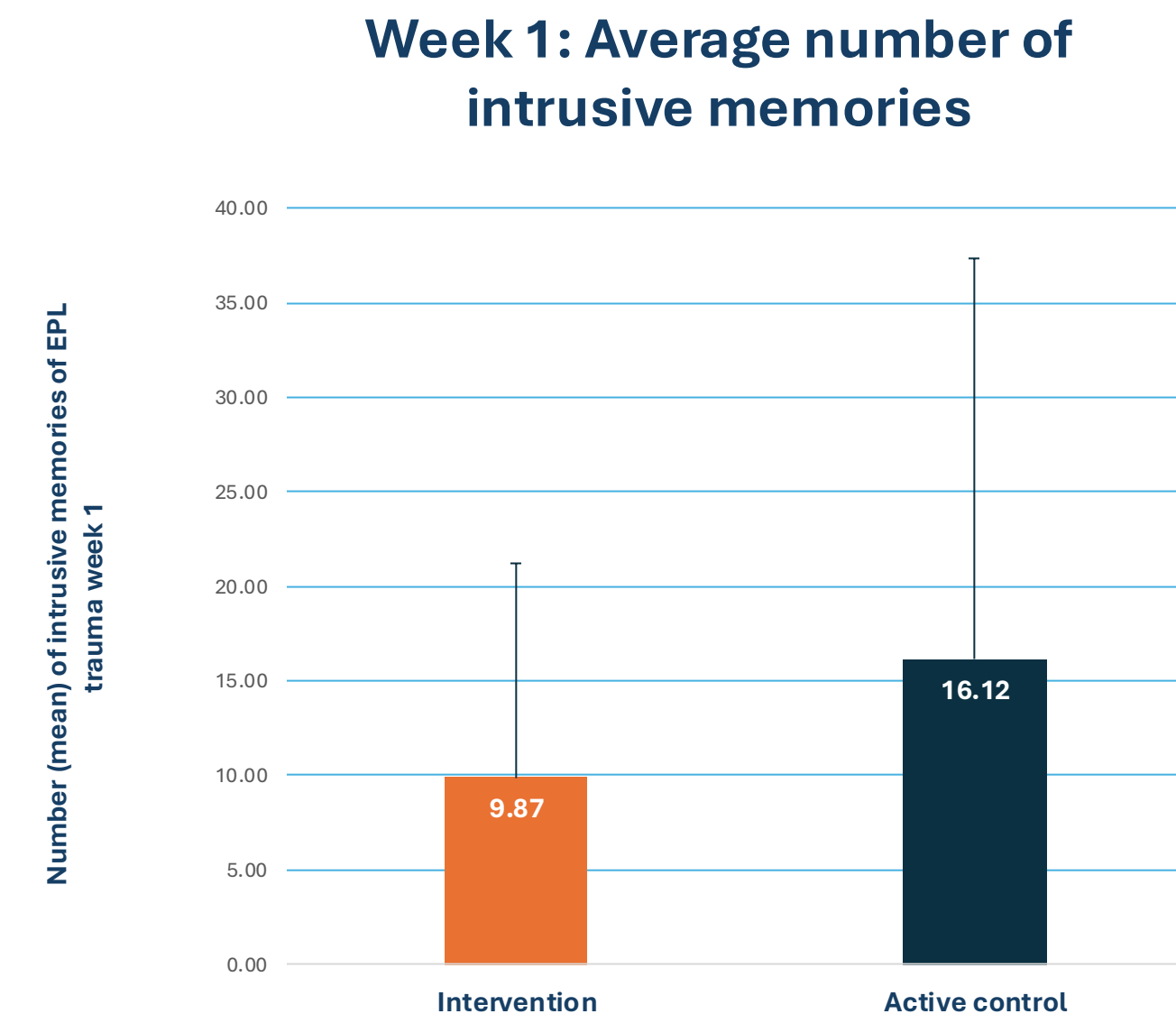
Further analysis of secondary outcomes is required to assess the rates of psychopathology after longer term follow up.

Conclusion

**Week 1**

**38%** fewer intrusive memories were reported by the intervention group in week 1 (p=0.03).

The intervention achieved a **treatment effect size of d=-0.36** (95% CI -0.7 to -0.02).



**Week 5**

**54%** fewer intrusive memories were reported by the intervention group in week 5 (p=0.03).

The intervention achieved a **treatment effect size of d=-0.4** (95% CI -0.7 to -0.02).

