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# A Latent Profile Analysis of Callous-Unemotional Traits and Emotional Behavioural Problems in Early Childhood: Associations With Self-Regulation

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## 1. Background

### Callous-Unemotional Traits and Emotional Behavioural Problems

- Prior studies have shown that **callous-unemotional (CU) traits** are a **childhood risk factor** for **externalising problems** such as conduct problems<sup>1,2,3</sup>
- Additionally, children with CU traits have been found to display symptoms of **internalising problems** like anxiety, fear, and depression<sup>4</sup>
- Externalising and internalising problems can **co-occur** alongside varying levels of CU traits during **early childhood**<sup>5,6</sup>

### Children's Self-Regulation and Different Profiles of Children

- **Poorer** self-regulation has been associated with **elevated levels** of callous-unemotional traits, externalising problems, and internalising problems<sup>7</sup>
- Therefore, **differences in children's self-regulation** have been examined to better understand the **heterogeneity** of the various profiles identified<sup>7,8</sup>

### Research Gaps

- There is a lack of research exploring the **heterogeneity** of profiles with **CU traits and internalising problems**, though they often co-occur<sup>1,9</sup>
- Not many studies have investigated CU traits during **early childhood**, as compared to the extensive research done during middle childhood and adolescence<sup>10</sup>



### Research Questions

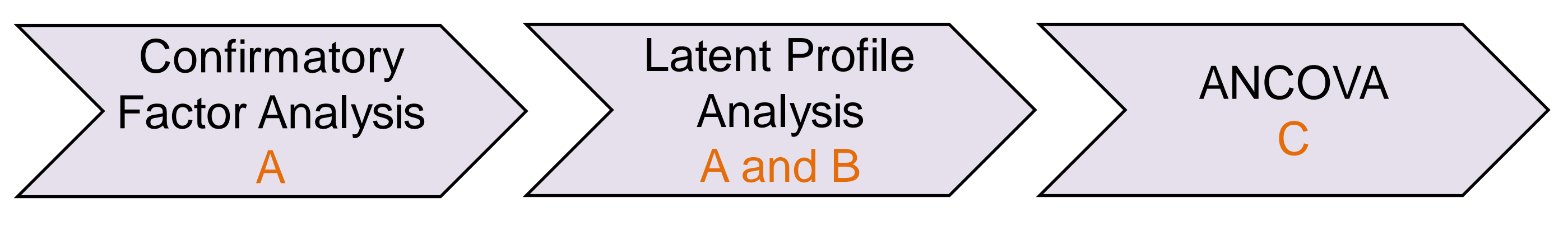
- 1 To what extent do **CU traits, externalising problems, and internalising problems** co-occur within children during **early childhood**?
- 2 How does children's **self-regulation** associate with the **different patterns** of CU traits and emotional behavioural problems in children?

## 2. Methodology

- Participants were **475 mother-child dyads** ( $M_{maternal\ age} = 30.70$ ,  $SD_{maternal\ age} = 5.08$ ) from Singapore's largest collaborative longitudinal birth cohort study: Growing Up in Singapore Towards healthy Outcomes (GUSTO)
- Mothers' self-report on their child's **CU traits, emotional behavioural problems, and self-regulation** were collected when their child was 6 and 7 years old

| Construct Measured     | Child's Age | Measure  | Example of Items  |
|------------------------|-------------|--|---|
| Callousness            | 6           | Inventory of Callous-Unemotional Traits <sup>11</sup> (A)            | • Does not seem to know "right" from "wrong"                                      |
| Uncaring               |             |  | • Tries not to hurt others' feelings (reversed)                                   |
| Externalising Problems | 7           | Child Behavioural Checklist <sup>12</sup> (B)                        | • Cruelty, bullying or meanness to others   |
| Internalising Problems |             |  | • Cries a lot   |
| Self-Regulation        | 7           | Behaviour Rating Inventory of Executive Function 2 <sup>13</sup> (C) | • Has outbursts for little reason<br>• Does not think before doing (is impulsive) |

- Statistical analyses were conducted as follows:



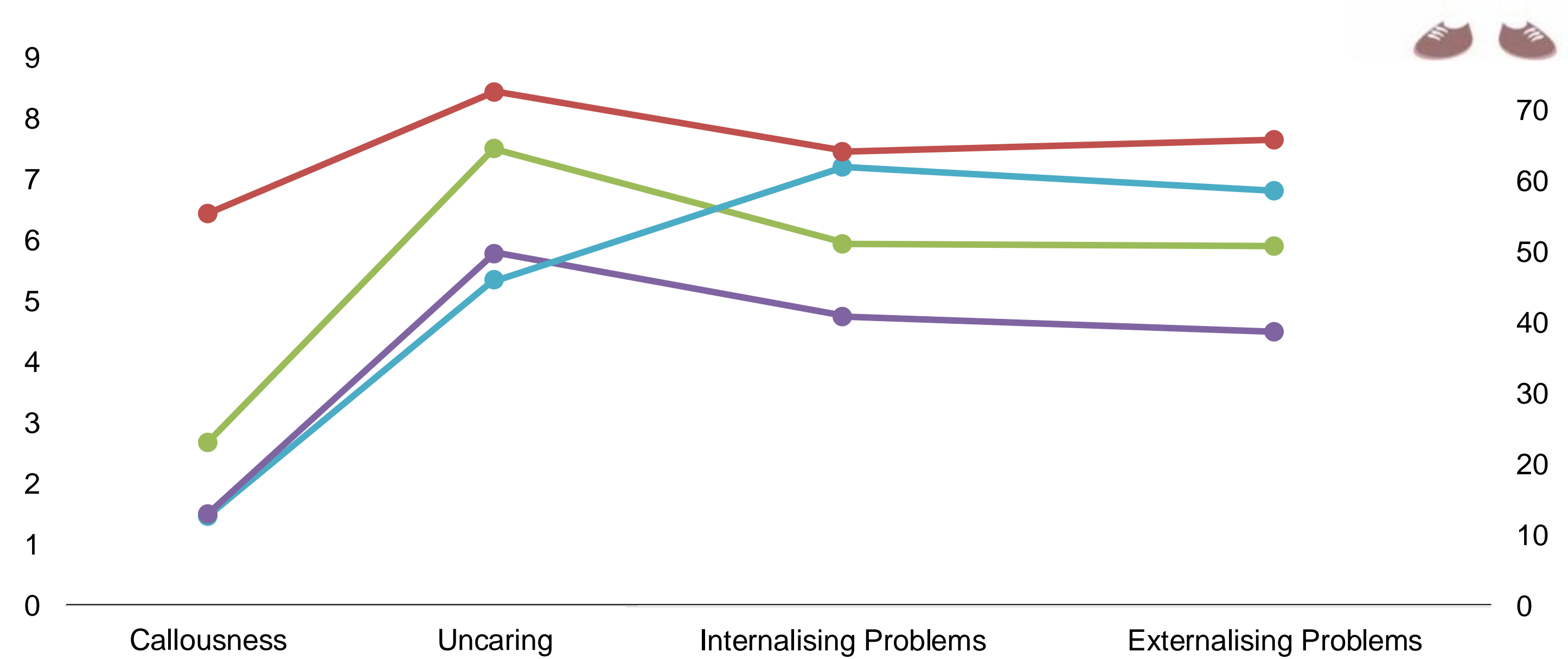
## 3. Results

### A) Confirmatory Factor Analysis: 2-Factor Model

- A factor analysis was done to **confirm the factor structure** of the Inventory of Callous-Unemotional Traits (i.e., callousness, unemotional, and uncaring dimensions<sup>11</sup>)
- A good model fit was found for the **2-factor model: callousness and uncaring**<sup>14</sup>, CFI = .94, TLI = .93, RMSEA = .05 (90% CI: .04, .06)



### B) Latent Profile Analysis: 4 Identified Profiles



**Mixed Risk**  
Low CU traits, **high** externalising and internalising problems

**High Risk**  
High CU traits, **high** externalising and internalising problems

**Medium Risk**  
Medium CU traits and externalising and internalising problems

**Low Risk**  
Low CU traits, **low** externalising and internalising problems

## 4. Discussion

### Key Findings

- Various patterns of co-occurrence of CU traits, externalising problems, and internalising problems emerged during early childhood (i.e., **mixed risk, high risk, medium risk and low risk**)
- Children's **self-regulation** is related to the **heterogeneity** of the different profiles identified
  - Children from the mixed risk group had **poorer self-regulation** and had **more emotional behavioural problems** than medium risk children, despite having **significantly lower levels of CU traits**

### Implications

- This study is the **first** in Singapore to examine CU traits along externalising problems and internalising problems using a **person-centred approach**
- It explored the **associations** between the **identified profiles** and **children's self-regulation capacities**



### Limitations and Future Directions

- The study utilised **parent-reported data** only, which can introduce **reporting bias**<sup>15,16</sup>
- Future research can include longitudinal **parental, teacher and self-reported data**

### C) ANCOVA: Differences in Children's Self-Regulation Across the 4 Profiles

- Children belonging to the high risk group had **significantly lower levels of self-regulation** compared to the low risk and medium risk group ( $p < .001$ )
- Children in the mixed risk group had **significantly lower levels of self-regulation** than those in the medium risk group ( $p = .002$ )

## 5. References

Scan for references:



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