Background

• Suboptimal sleep is bidirectionally associated with mental health difficulties.
• The causal mechanisms between this relationship are complex and unclear.
• A possible contributing neurocognitive mechanism may be cognitive control.
• This may be more pertinent during adolescence due to the shift in sleep architecture and critical periods of executive functioning development.

Hypotheses

H1: Sleep difficulties and anxiety and depression will be associated.
H2: Sleep and cognitive control will be associated.
H3: Cognitive control will be associated with mood.
H4: Executive control will mediate the sleep and mental health relationship.

Method

Participants, Procedure and Design

• The sample consists of 78 participants aged between 13 and 15 years old (Mmale = ± SD = 2.01; 1 female). Participants were recruited and tested in schools.

Measures

<table>
<thead>
<tr>
<th>Subjective measures</th>
<th>Objective measures</th>
<th>Actigraphy for 7 nights</th>
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</thead>
<tbody>
<tr>
<td>Sleep difficulties (PSQI)</td>
<td>Go No-Go Task</td>
<td>Forward Digit Span Task</td>
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<tr>
<td>Anxiety and Depression symptoms (HADS)</td>
<td>Alternate Switching Task</td>
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<tr>
<td>Inhibition and Shifting difficulties (BRIEF)</td>
<td>Forward Digit Span Task</td>
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Subjective data Results

H1: Sleep and mental Health Correlations

Significant associations were found between sleep difficulties and anxiety, and depression. Inhibition did not mediate the relationship between sleep difficulties and anxiety and depression symptoms.

H2: Sleep and Cognitive Control Correlations

Significant associations were found between sleep difficulties and shifting. No significant associations were found for inhibition.

Conclusion

• The expected associations were found in H1, H2 and H3 for subjective data.
• Mediation analysis with subjective data suggests that sleep difficulties exert effects on anxiety symptoms by impacting shifting, which in turn effect anxiety and depression symptoms. This is in line with the proposed model.
• No significant models using objective data may suggest that these relationships are specific to self-report in a general population sample that do not meet the clinical threshold.

References

[Insert references here]