

NON-PHARMACOLOGICAL SLEEP INTERVENTIONS FOR CHILDREN WITH ANGELMAN SYNDROME: A SCOPING REVIEW

Evidence to guide occupational therapists in supporting sleep and family well-being

Joseph Barrett, OTD/S
Colorado State University
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Shelly Lane, PhD, OTR/L, FAOTA
Capstone Site Mentor
Colorado State University

Jaewon Kang, PhD, OTR/L
Capstone Faculty Advisor
Colorado State University

Julie Silver-Seidle, PhD, OTR/L
Capstone Program Coordinator
Colorado State University

INTRODUCTION

- Sleep is a **fundamental occupation and co-occupation** that supports emotional regulation, learning readiness, and overall health.
- Angelman syndrome (AS)** is a neurogenetic disorder caused by loss of **UBE3A** on chromosome **15q11–q13**, characterized by global developmental delay, epilepsy, and limited or absent speech, with up to **80% of AS-children** experiencing chronic sleep disturbances.
- Sleep disruption affects the child's **performance patterns, daily routines, and engagement** in meaningful occupations, while simultaneously challenging **caregiver regulation, occupational balance, and family functioning**.
- Occupational therapists address sleep through **non-pharmacological, routine-based, and environment-focused strategies** that consider **sensory demands, co-occupational patterns, and contextual fit**. However, evidence guiding OT practice in sleep support for children with AS remains **limited** and **underexplored**.



PURPOSE

- To synthesize current evidence on **non-pharmacological sleep interventions for children with AS**, examine **child and caregiver outcomes** through an occupational lens, and identify gaps requiring **OT-led research and practice innovation**.

CONCEPTUAL MODEL

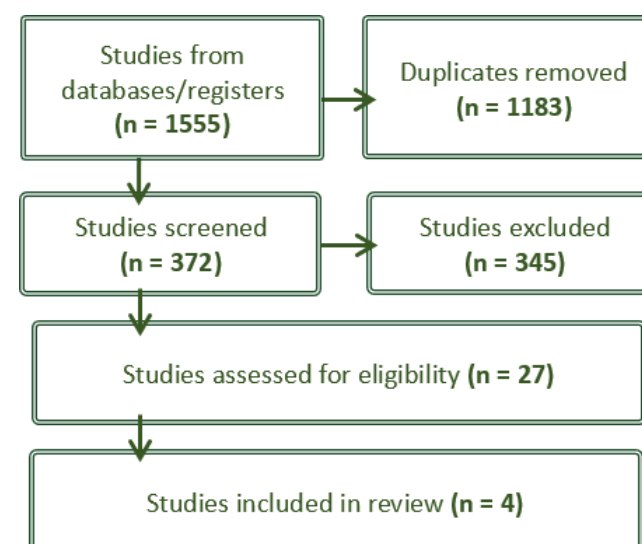
Figure 1. Person–Environment–Occupation–Performance (PEOP) Model



The **PEOP** model provided the theoretical anchor for the review, framing **sleep** as a co-occupation produced by dynamic interactions among **intrinsic regulation, caregiver participation, performance patterns, and environmental press**. This lens supported the **organization and interpretation of findings** on routines, contextual supports, and opportunities to advance OT-led studies on sleep and participation for children with AS.

METHODS

Figure 2. PRISMA-ScR Flow Chart.



- Design:** Scoping review followed **PRISMA-ScR** and **JB**I guidelines.
- Protocol:** Preregistered on **Open Science Framework** (OSF; <https://doi.org/10.17605/OSF.IO/35CNJ>)
- Databases:** PubMed, CINAHL, APA PsycINFO, Web of Science, and AS foundations.
- Data Management:** Dual screening and data charting consensus conducted in **Covidence**.
- Three studies contributed to the **synthesis**.
- One study was retained for **contextual interpretation** only.

RESULTS: STUDY CHARACTERISTICS

Table 1. Study Characteristics and Key Findings

Study Design Randomized Control Trial (n=1), Single-case (n=1), case report (n=1)
Sample 1-20 with AS.
Intervention Type Behavioral (n=1), caregiver-mediated (n=1), multi-component (n=1)
Measures Sleep diary (n=3), actigraphy (n=1), observation (n=1), questionnaire (n=2)
Outcomes Improvements in sleep onset (n=3), night-wakings (n=3), total sleep (n=2), caregiver stress (n=2)
OT Relevance Performance patterns and routines, environmental supports, co-occupational caregiver-child interactions

RESULTS: INTERVENTION OUTCOMES

Behavioral (n = 1)

- Improved independent sleep onset, reduced night wakings, and greater sleep efficiency
- High caregiver-reported feasibility and satisfaction



Caregiver-Mediated (n = 1)

- Improved sleep onset, wake after sleep onset, and total sleep time
- Decreased caregiver stress and increased confidence



Multicomponent (n = 1)

- Increased total sleep time

Gaps

- No OT-led studies
- Limited sensory or environmental focus
- Small samples, varied measures
- Caregiver or participation outcomes



CONCLUSION

- Evidence across three small studies indicates that **behavioral, caregiver-mediated, and multicomponent strategies** can improve **sleep initiation, maintenance, and caregiver well-being** in children with AS.
- Consistent with the PEOP model, these findings highlight **OT opportunities** to structure **routines, adapt environments**, and support **co-occupational caregiver participation** that promotes **rest and family balance**.

IMPACT & FUTURE DIRECTIONS

Impact

- This review is the first synthesis of non-pharmacological sleep interventions for children with AS, establishing a foundation for OT to advance evidence-informed sleep support for this population.

Future Directions

- Develop **OT-led sleep interventions** tailored to AS.
- Incorporate **sensory and environmental assessments** into sleep protocols, given their absence in current AS-specific research.
- Include **participation and family-level outcomes**, not only sleep metrics.
- Conduct **larger or multi-site studies** to strengthen generalizability.
- Examine links between **sleep improvement and broader occupational performance**.

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Learn more about Angelman Syndrome



References

