

# Associations Between Diaper Need and Child Sleep in Under-resourced Families

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ABSTRACT: Objective:

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income, child disability status, and race). Multiple linear regression was also used to explore diaper need as a predictor of IS and PP while controlling for food insecurity, significant demographic variables (child age, household income, and child disability status), and PB. In this sample, many of the children were at risk of or diagnosed with a developmental disability. Children with a disability are at higher risk of sleep disorders than their typically developing peers.<sup>25</sup> Disability was measured and controlled for in all statistical models.

The aim of this study was to measure the relationship between diaper need and child sleep. We used the IS subscale, PP subscale, and total score to quantify child sleep. The IS subscale, PP subscales, and total scores were considered outcome measures (dependent variables). The PB subscale, separate from the total score, was not used as an outcome measure in our analysis because it was not a direct measure of child sleep. In previous studies, parent behavior has been identified as a factor that affects pediatric sleep.<sup>19</sup> Therefore, the PB subscale was included as a covariate in multiple linear regression models for the association of diaper need with IS subscale scores and the association of high diaper need with PP subscale scores.

## RESULTS

### **Sample Description**

One hundred and twenty-nine caregivers were consented and completed the study. Sample demographics are shown in Table 1. Most of the participants were female (76%,  $n = 98$ ). Sixty-two percent ( $n = 80$ ) identified

hygiene and consistent calming bedtime routines) and diapering supplies for child sleep promotion.

Although we did find a relationship between diaper need and infant sleep (IS score), we did not find a relationship between diaper need and parent perceptions of sleep (PP score). A discrepancy between parents' positive perceptions of child sleep and child sleep compared with current recommendations has been noted previously.<sup>7,27</sup> However, we did find a significant relationship between high diaper need and parent perceptions of poor child sleep (PP score). This finding may suggest that parents' perspective of sleep becomes more negative when diaper need is a greater challenge.

### **Limitations**

This was a cross-sectional study. The results indicate significant relationships but cannot determine causation,

**Table 2.** Diaper Need and Parent Perception of Infant Sleep (n = 129)

Total Score <sup>a</sup> (n = 129)						
Diaper Need	b	SE	CI 95% Lower	CI 95% Upper	t	p
(r <sup>2</sup> )	-.01	.01	-.03	.01	-.10	0.00
/ (r <sup>2</sup> )	-.01	.01	-.03	.01	-.10	0.00
Infant Sleep Subscale <sup>c</sup> (n = 128)						
Diaper Need	b	SE	CI 95% Lower	CI 95% Upper	t	p
(r <sup>2</sup> )	-.01	.01	-.03	.01	-.10	<0.001
/ (r <sup>2</sup> )	-.01	.01	-.03	.01	-.10	0.00
Parent Perception Subscale <sup>d</sup> (n = 129)						
Diaper Need	b	SE	CI 95% Lower	CI 95% Upper	t	p
(r <sup>2</sup> )	-.01	.01	-.03	.01	-.10	0.00
/ (r <sup>2</sup> )	-.01	.01	-.03	.01	-.10	0.00

**Implications**

Sleep is a priority for many families, but socioeconomic barriers can impede the achievement of health-

ful sleep.<sup>7,28</sup> Obtaining adequate sleep is critical in the infant and toddler period. Adequate sleep is associated with child flourishing and socioemotional health.<sup>4,29</sup>

The COVID-19 pandemic has uncovered health disparities among children and the importance of measures that minimize social determinants of health.<sup>30</sup> There are many complexities and considerations related to social determinants of health, parents' perceptions, and ability to manage sleep. While diaper need is not an independent nor the only factor, ensuring adequate access to diapering supplies may contribute to improved sleep outcomes for children at a critical period in their development. This is especially important for children with or at risk for developmental disability. Regulated sleep is often challenging for these children at baseline,

and appropriate sleep patterns are associated with improved health and better developmental outcomes.<sup>1,4,5</sup>

screen and include organizations that provide diapering supplies on resource lists and parent handouts. Finally, this study has policy implications, including the possible inclusion of diaper supplies in safety net programs.

## CONCLUSION

Diapers are important hygiene items during the foundational early childhood years. Sleep is critical for child health and growth. In this study, we found that an inadequate supply of diapers was associated with decreased pediatric sleep. Access to diapers is a potentially modifiable factor with possible benefits to child sleep quantity and quality.

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