Pediatric Insomnia and Toddler Behavior Problems

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Sleep Difficulties in Children

- Sleep problems are among the most common complaints presented to pediatricians
- Peaks in the first 6 months of life
- Prevalence: 20-36% of infants and children
- Combination of infant and parental health and behavior, and the environment
- Associated with difficulties in later development such as anxiety, aggression, over activity and impulsivity
  - Sleep Problems sustained across infancy and early childhood are associated with five times greater odds of children exhibiting hyperactive behavior at age 5

(Galland et al., 2017; Hatch et al., 2019)

Table 1. Summary of Normal Sleep Parameters in Children

Age	*Total sleep time*	*Naps (on average)*
0 to 2 months	16 to 18 hours	3.5 per day at 1 month of age
2 to 12 months	12 to 16 hours Most children 6 to 9 months of age sleep through the night	2 per day at 12 months of age
1 to 3 years	10 to 16 hours	1 per day at 18 months of age
3 to 5 years	11 to 15 hours	50% of 3-year-olds do not nap
5 to 14 years	9 to 13 hours	5% of whites and 39% of blacks nap at 8 years of age
14 to 18 years	7 to 10 hours	Napping in this age group suggests insufficient sleep or a possible sleep disorder

Information from references 10 and 11.

(Carter et al., 2014)

Sleep and Behavior Problems

- Sleep and behavioral problems are linked through difficulties of regulating emotions as both develop during early childhood
  - Link may be due to the underlying emotional mechanism relating to anxiety anger as well as self regulation abilities
- Sleep problems at 24 months can predict internalizing problems at 36 months
  - Bidirectional relationship
  - Trouble falling asleep has been associated with anxiety
    - In early childhood this may be due to pre sleep anxiety and separation anxiety
- Sleep problems at 36 months can predict internalizing and externalizing problems at age 4
  - Bed time resistance has been associated with difficult temperament adhd and anxiety may be due to anger or resistance when instructed to go to bed
- Short sleep duration and frequency of night awakening at 18 months can predict internalizing and externalizing problem at age 5

(Conway, Miller & Modrek, 2017)

Common Sleep Disorders in Children

- Obtrusive sleep apnea
- Parasomnias sleepwalking
- Confusional arousals
- Sleep terrors
- Nightmares
- **Behavioral insomnia of childhood**
- Delayed sleep phase disorder
- Restless legs syndrome

Table: https://www.aafp.org/afp/2014/0301/hi-res/afp20140301p368-t2.gif

(Carter et al., 2014)

Behavioral Insomnia

Sleep onset association type:

- Difficult initiating or maintaining sleep
- Characterized by the child's inability or unwillingness to fall asleep or return to sleep in the absence of specific conditions, such as a parent rocking the child to sleep
- 23% of 2 year old have bene reported by parents to have problems with sleep onset

Bedtime Resistance:

- Bedtime refusal/stalling
- Occurs when parents fail to set appropriate limits and boundaries, such as when the parents allow the child to sleep in their bed when the child refuses to sleep.
- Refusal to return to sleep after nighttime awakenings
- 42% of 12-35 month olds have problematic bedtime resistance
- Bedtime resistance can persist until age 12

Most children with behavioral insomnia of childhood have features of both types

(Carter et al., 2014; (Conway, Miller & Modrek, 2017)

Sleep Interventions for Infants

- Educating and training parents about how to manage infant at bedtime and night waking may reduce problematic bedtime behavior and improve sleep
  - Even when interventions are relatively brief (2-3 consultations) outcome effect have been reported

Prevention is the best treatment for behavioral insomnia of childhood

- Educate parents on normal sleep patterns, good sleep hygiene, realistic expectations, setting boundaries, and sleep plans
- Focus on regular and consistent feedings, nap times, bedtime routines, and sleep-wake times

Parental consistency in implementing strategies is a key component

- Emphasize a regular sleep schedule and bedtime routine
- Implementing strategies consistently was associated with children having less sleep problems

(Galland et al., 2017; Hatch et al., 2019)

Education about normal sleep behaviors

- Infants can learn sleep routines
- Need to be given a chance to learn to settle themselves
- Some learn easily others need more help

Healthy sleep patterns

- Set limits when handling infant
- Establish a regular pattern
- Notice and act on infant's tired signs early
- Darken sleeping place day and night ('cue' for sleep time)
- Put infant into their bed awake
- Give infant a brief chance to settle by themselves so they can learn to go to sleep on their own
- Keep night time quiet time

(Galland et al., 2017)

Education Continued

Safe sleeping

- Child should have their own place to sleep in room
- Put infant on their back
- Use a clean, firm, tightly fitting mattress
- Keep bed clear of “extras”
- Co-sleeping is unsafe if adults have been drinking, taking drugs, or sedatives or if baby is less than 3 months old

Parent self care

- Caregivers getting rest and sleep is important
- Meals in freezer
- Limit visitors
- Accept offers of help
- Go to bed early.. soon after baby

(Galland et al., 2017)

Education Continued

The very difficult to soothe child

- Children are born with different temperaments
- Can learn to have healthy sleep patterns
- Can sense feelings- remain as calm as possible
- Parents may need some time out to remain calm (ask a partner, a friend or relative for help)

Checking baby

- Quietly and where child can't see
- Try not to pick infant up when asleep

Night feeding

- Keep the lighting dim
- If you need to talk, talk softly and quietly
- Try not to drag out the feeding
- Place baby into the cot awake or drowsy
- Consistency is vital

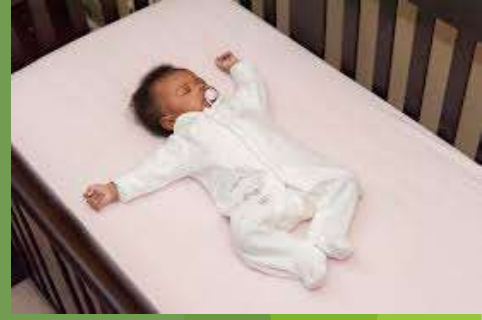
(Galland et al., 2017)

What if baby won't settle?

- Stay calm, keep everything quiet, use dim lighting
- Don't take infant out of their cot immediately
- Try and let infant settle on their own
- Allow around 2-3 minutes in the first month, and 5 minutes at 3 months
- If infant keeps crying then wait for a further 2 minutes (use a timer)
- If necessary, talk quietly, and stroke, rub or pat infant gently
- If they begin to calm and settle then leave the room
- If infant starts to cry, they may need another quiet feed or a cuddle and then try settling again
- If infant is well fed, talk quietly as before and stroke, rub, or pat baby gently
- If they begin to calm and settle then leave

(Galland et al., 2017)

Bedtime Strategies for Infants



- Establish a regular routine to create expectations
- Infants are more likely to become self-soothers (fall asleep on their own) when consistently placed in the crib awake vs. already asleep
- Allow the infant to fall asleep on their own (without touching or feeding them)
- Provide a consistent environment for the infant to sleep in
- Minimize parents sleeping with their infants on the same surface
- Calm, quiet and soothing behaviors at settling time
- Extinction techniques (placing the child in bed and ignoring until the morning, or for a set period) are effective

Avoid:

- Rocking, holding or feeding baby to sleep
- Bright lights, frantic and busy rocking and loud noises
- Lots of activity whilst baby is falling asleep

(Galland et al., 2017)

Interventions for Childhood Behavioral Insomnia

Parental Education

- Parents should be taught about good sleep practices
  - consistent feedings
  - nap times
  - bedtime routines
  - regular sleep-wake times
  - placing the child in bed drowsy but awake

(Carter et al., 2014)

Modified Extinction

- Child is placed in bed at a predetermined bedtime
- The child's crying, calls for the parents, and tantrums are **ignored** until the following morning
  - significant cries for suspected injuries or illnesses are not ignored
- Cries are ignored to prevent reinforcing negative learned behavior
  - (e.g., crying is rewarded with parental response/presence)
  - This technique can be difficult and distressing for parents
- Modified version for decreased parental distress:
  - A parent stays in the child's room, but follows the same technique

(Carter et al., 2014)

Graduated Extinction

- A parent checks on the child on a fixed schedule (e.g., every 10 minutes) or in gradually increased intervals (e.g., first check-in after five minutes, second check-in after 10 minutes)
- Parental interactions with the child are calming and positive, but last no more than one minute at a time
- Gradually move out of room: Bed –Door- Outside

(Carter et al., 2014)

Positive Bedtime Routine & Faded Bedtime with Response Cost

- Positive bedtime routines: Relaxing/calming activities are implemented before bedtime (e.g., bedtime stories)
- Faded bedtime: Bedtime is delayed until the predicted time of sleep onset to decrease the time the child spends in bed awake
- Response cost: The child is removed from bed for a specific amount of time if sleep onset does not occur within the desired period

(Carter et al., 2014)

Scheduled Awakenings

- Parents must document the pattern of nighttime awakenings
- The child is awakened before the normally predicted nighttime awakening, and the number of scheduled awakenings is slowly decreased over time.

(Carter et al., 2014)

Positive Sleep Onset Associations

- Children are able to self-soothe back to sleep with the help of positive sleep onset associations
  - Blanket
  - Pillow
  - Stuffed animal
  - Pacifier
- However, when the child requires adult assistance with falling back to sleep, this would be considered a negative sleep association
  - Caregiver lying beside the child
  - Riding in the car

(Chidekel, 2016)

Toddler Behavioral Problems

Behavioral Problems

- Repeated pattern of behavior that interferes with learning or engagement in prosocial interactions with peers and adults
  - Disrupted sleeping and eating routines, physical and verbal aggression, property destruction, severe tantrums, self-injury, noncompliance, and withdrawal
- 10% to 15% of young children have mild to moderate behavior problems
- 21% of preschool children meet the criteria for a diagnosable disorder
  - 9% classified as severe
- Children living in poverty are especially vulnerable and exhibit rates that are higher than that of the general population

(Powell, Dunlap & Fox, 2006)

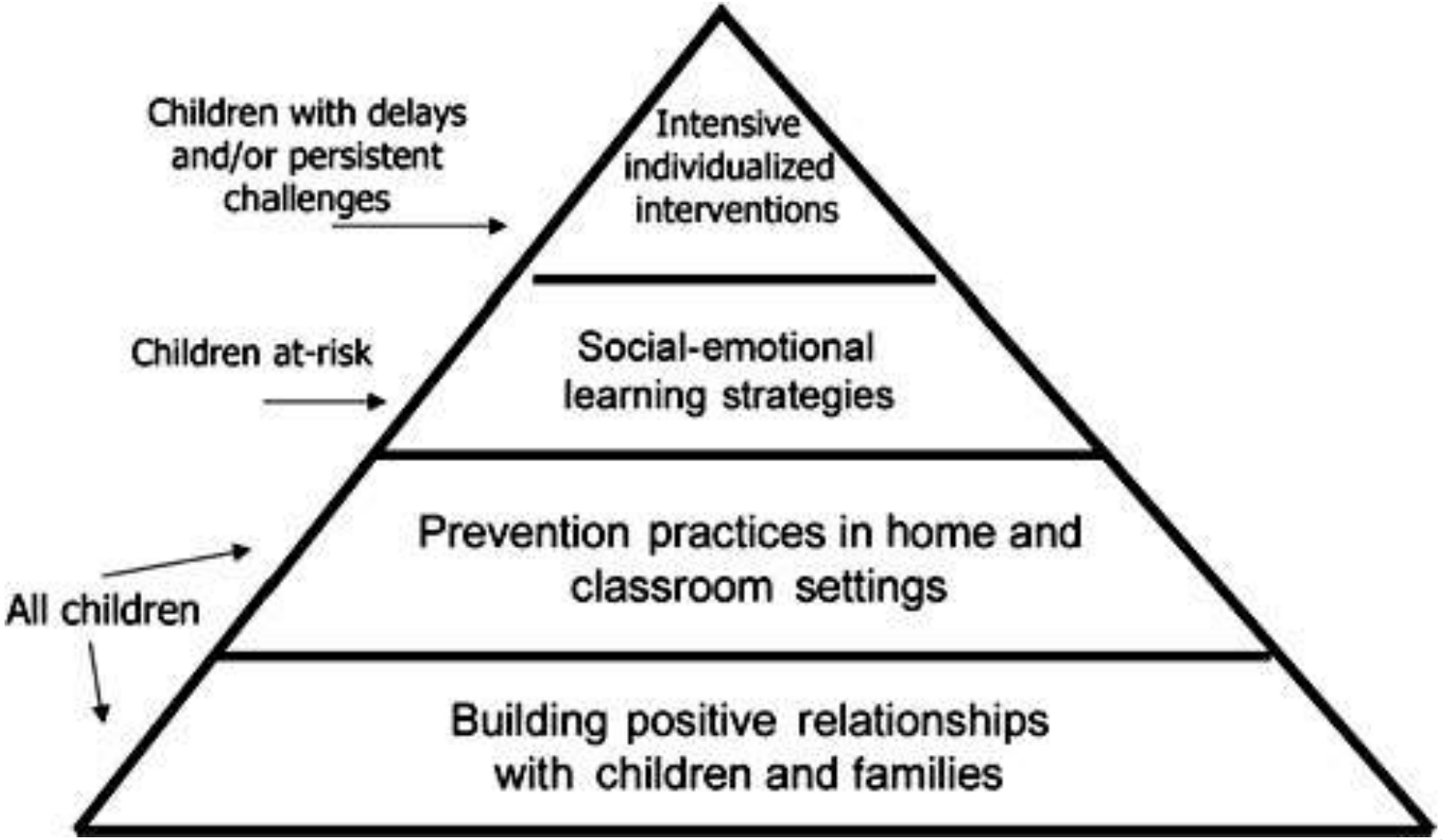
Behavioral Problems

- Some children who exhibit challenging behaviors at an early age out grow behaviors before entering school, other children's problems continue and even intensify
  - Leading to school failure and social maladjustment

- For toddlers and preschoolers identified with clinical levels of disruptive disorders 50% have been found to display problematical levels of challenging behaviors 4 years later and into the school years

(Powell, Dunlap & Fox, 2006)

A model for promoting children's social competence and addressing challenging behavior



(Powell, Dunlap & Fox, 2006)

Interventions for Toddler Behavioral Problems

Parent Focused Interventions

- Emphasize teaching skills to parents
  - such as giving effective instructions; contingent use of attention, praise, and rewards; setting reasonable and consistent limits; and use of logical and natural consequences and mild negative consequences (time out)
  - Teach skills for encouraging children's acquisition and use of social skills
- Parent Child Interaction Therapy (PCIT)
  - Ages 2-7
- Parent Management Training (PMT)
  - Change the environment
    - Active ignoring
  - Incorporate behavioral plans
    - With use of reinforcers
  - Use consistent discipline strategies

(Powell, Dunlap & Fox, 2006)

Child Focused Interventions

- Therapy that includes social-emotional curricula
  - Designed to teach social skills and decrease children's problematic behaviors
  - Teaches cooperative play and friendship skills, understanding and expressing emotions, empathy, self-calming and self-management skills, and problem solving in conflict situations
  - Teaching materials and techniques geared to engaging young children, such as stories, puppets, simple games, pictures and videotaped vignettes, role-play and dramatic play, and art activities, are used
- Medication Management
  - Although pharmacological interventions are potentially efficacious there is controversy around their use in young children
  - Effective nonpharmacological interventions are utilized as front line treatment
  - Stimulants for inattention and hyperactivity & SSRI for anxiety
    - While recent studies suggest that methylphenidate is relatively well-tolerated by young children, some suggest that side effects might be more marked in preschoolers than in school-aged children
    - Some researchers have argued that there is the potential for negative long-term effects on the developing brains of young children chronically medicated

(Powell, Dunlap & Fox 2006; Sonuga-Barke et al., 2006)

Questions

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