

General Aspects of Sleep for Mother and Infant

Perspectives on feeding and sleep, from pregnancy to playground

Philips Avent, Amsterdam, Netherlands

March 16, 2018

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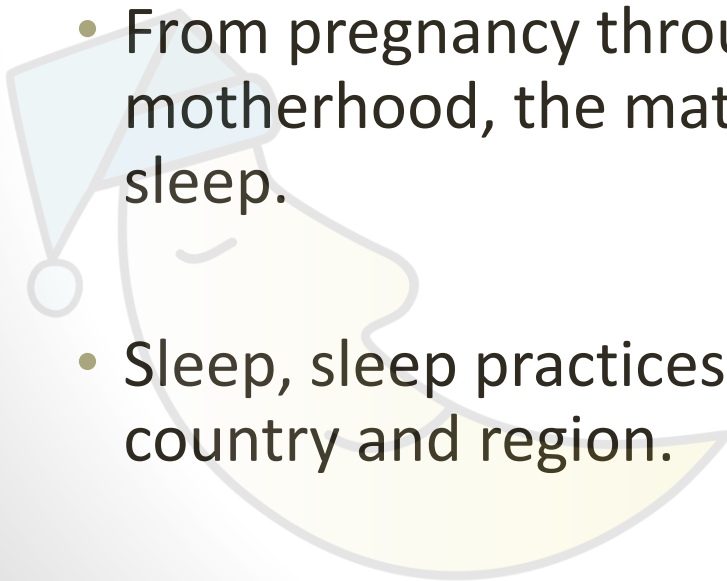
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Conflict of Interest Declaration

- Funding through an unrestricted grant from Johnson's Baby
- Consultant for Rest Devices

Main Ideas

- Understanding sleep throughout development is critical to supporting families and young children.
- There is great variability in sleep, particularly in the first three years.
- From pregnancy through the first few years of motherhood, the maternal experience is affected by sleep.
- Sleep, sleep practices, and sleep concerns vary by country and region.



General aspects of sleep

- Sleep: what, how, and why?
- Maternal sleep: pregnancy and beyond
- Sleep by age
 - Newborns, Infants, Toddlers
- Caregiver concerns and goals

General aspects of sleep

- **Sleep: what, how, and why?**
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Sleep: what is it?

“... reversible behavioral state of perceptual disengagement from and unresponsiveness to the environment.”

Sleep: what is it?

Architecture in newborns

- Active sleep (AS)
 - ~50%
 - “REM-like”
- Quiet sleep (QS)
 - “non-REM-like”
- Indeterminate (IS)
- ~50-minute cycles



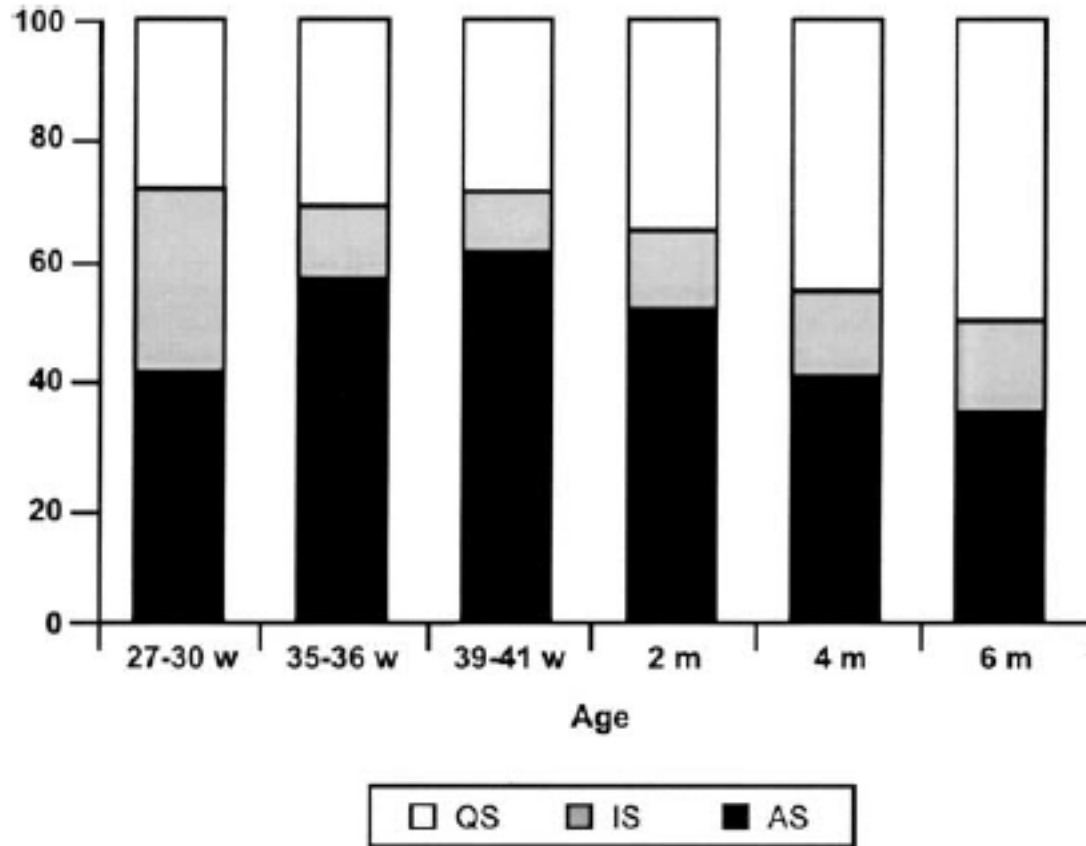
Sleep: what is it?

Architecture during infancy and later

- NREM
 - Stages N1 - N3
- REM
 - declines throughout childhood
- Cycles gradually increase through childhood (~100 minutes)



Sleep: what is it?



Sleep: how do we become sleepy?

- Homeostatic process
 - “process S”
 - Sleep pressure builds while awake
- Endogenous circadian rhythm
 - “process C”
 - Duration and timing of sleep-wake cycles

Sleep: why is it?

Largely unknown, but we know we need it!

- Health and immunity
- Memory
- Attention and executive functioning
- Reaction
- Emotion regulation

General aspects of sleep

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Maternal sleep: pregnancy

“I remember never feeling rested.”

“You get up every 2-4 hours to go to the bathroom and/or change positions.”



“Throughout the whole pregnancy I had a lot of fatigue so I was napping any chance I got.”

Maternal sleep: pregnancy

38%
insufficient
sleep

76%
poor sleep
quality

49%
daytime
sleepiness

100%
frequent
night wakings



Maternal sleep: pregnancy

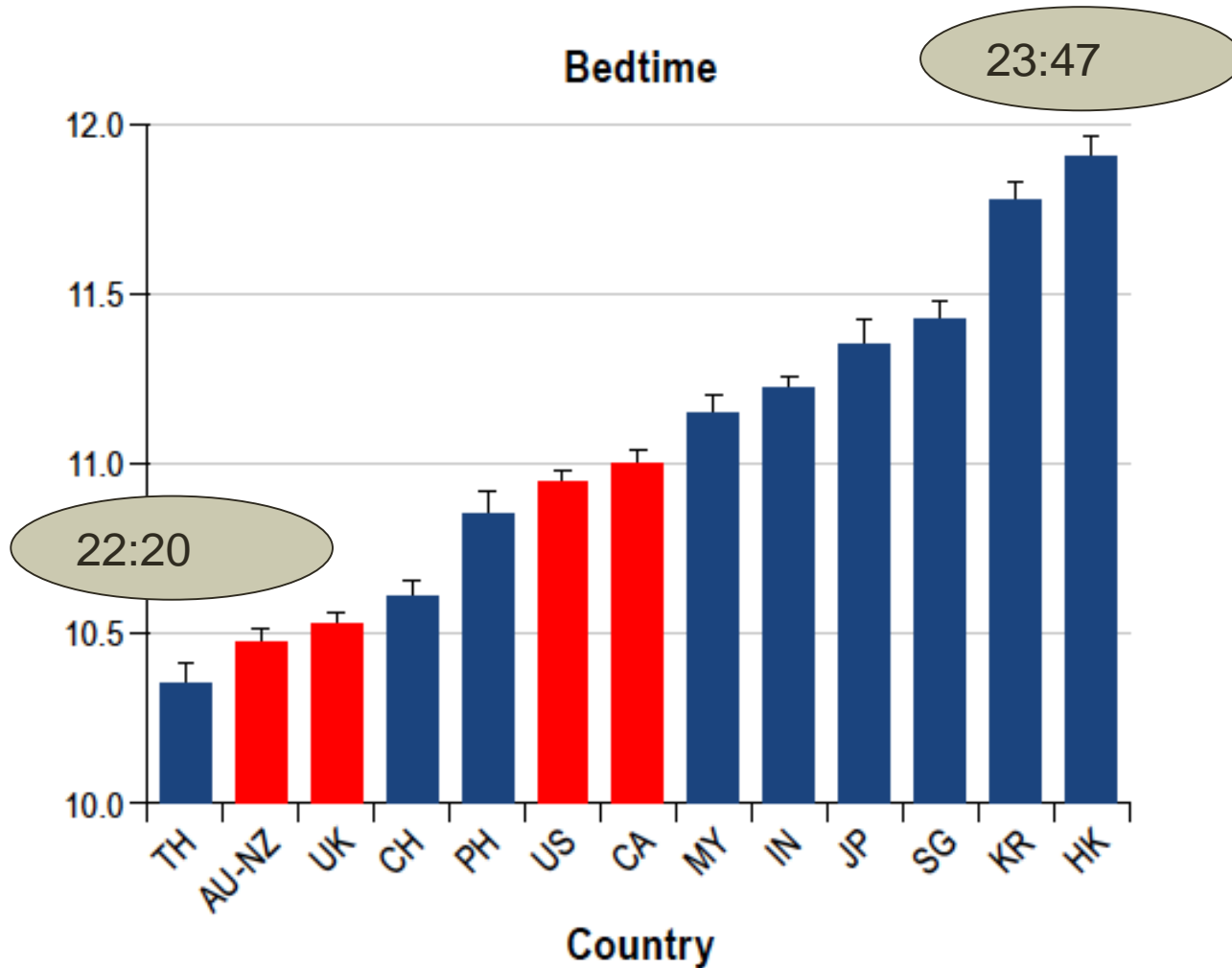
57%
insomnia

24%
RLS

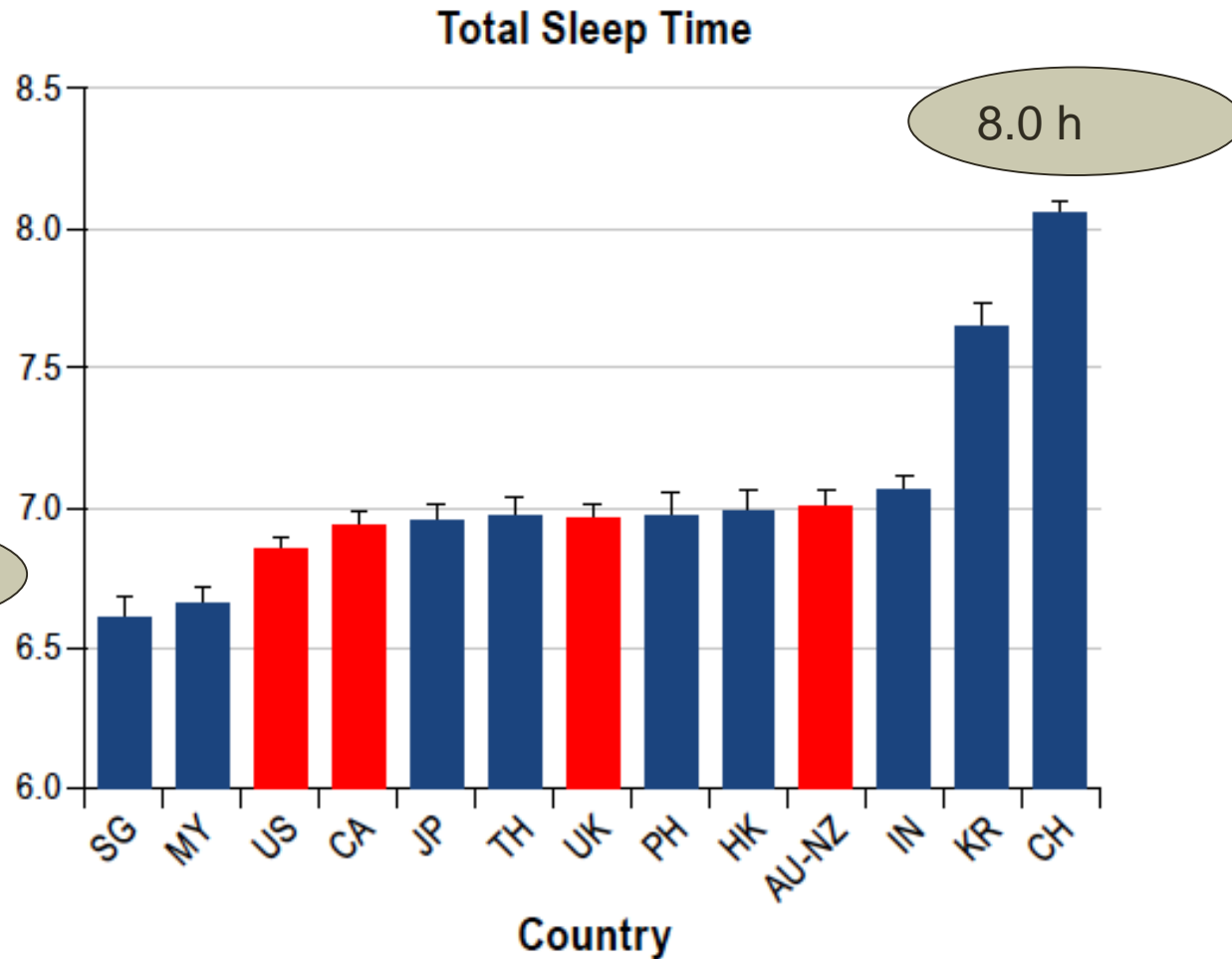
19%
**sleep-disordered
breathing**



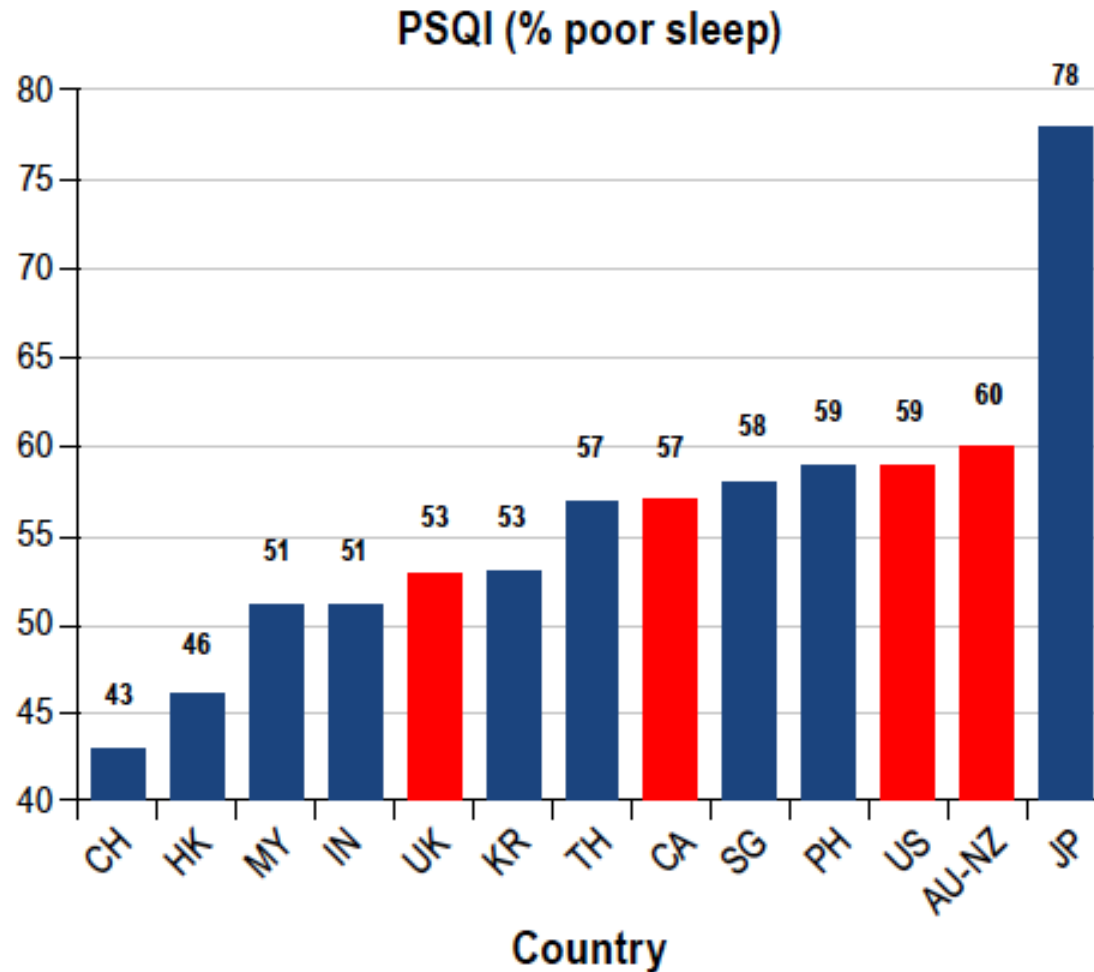
Maternal sleep: birth to 6 years



Maternal sleep: birth to 6 years



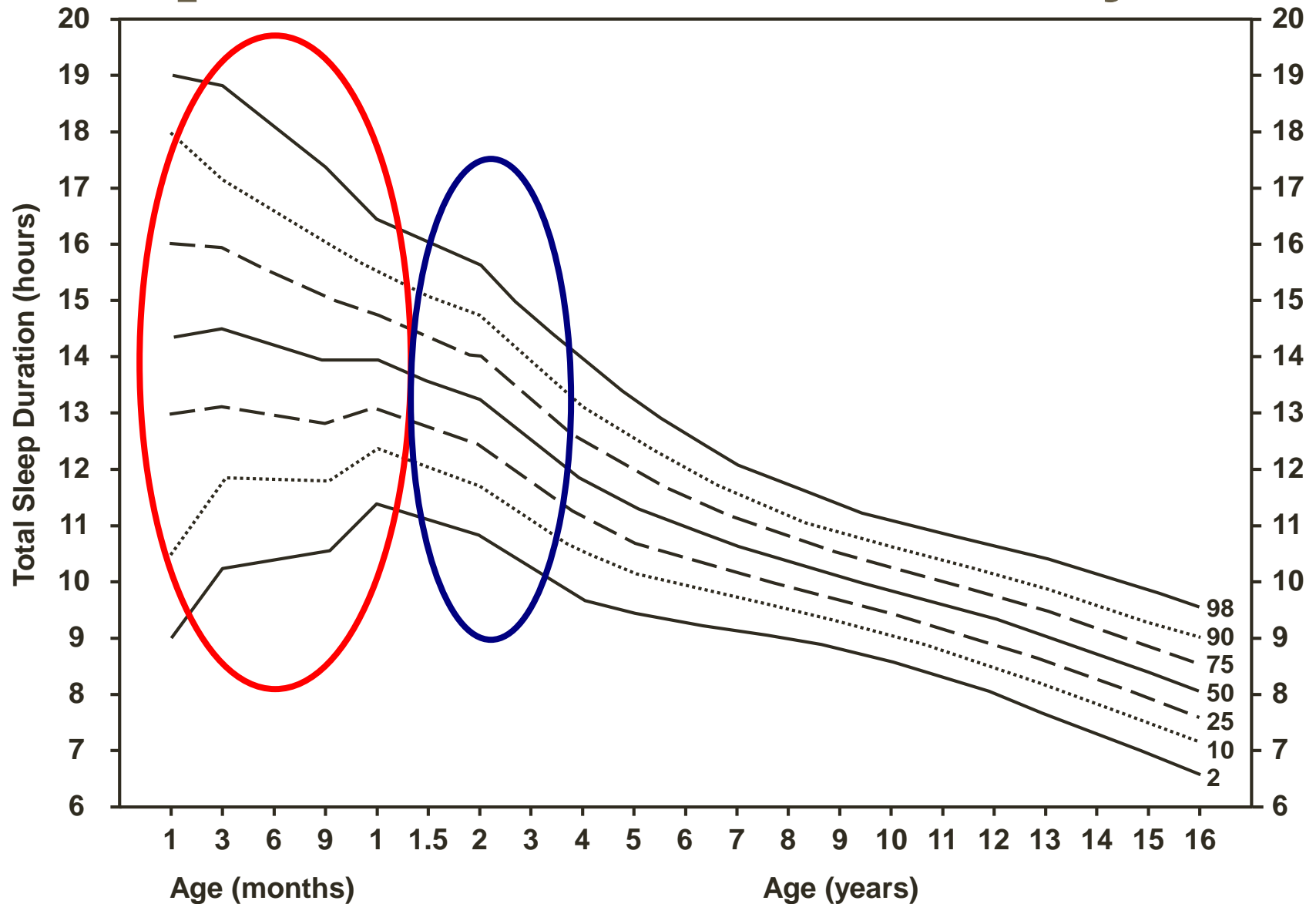
Maternal sleep: birth to 6 years



General aspects of sleep

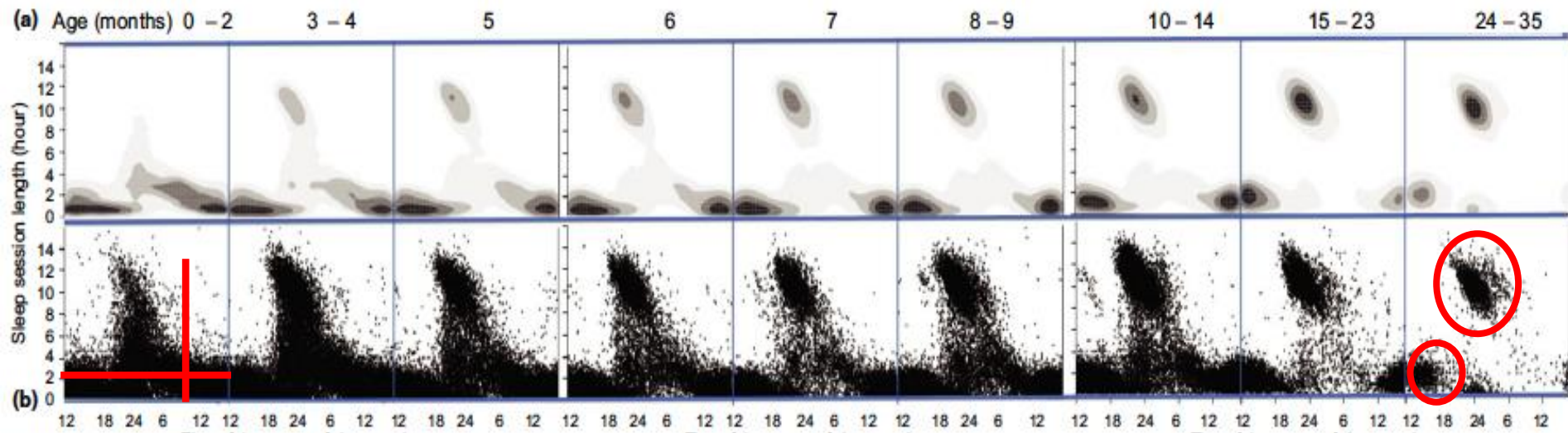
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Sleep duration and variability



Sleep consolidation

Age groups (9), 0-35.9 months



Time of day (12:00 p.m. start)

Sleep by age

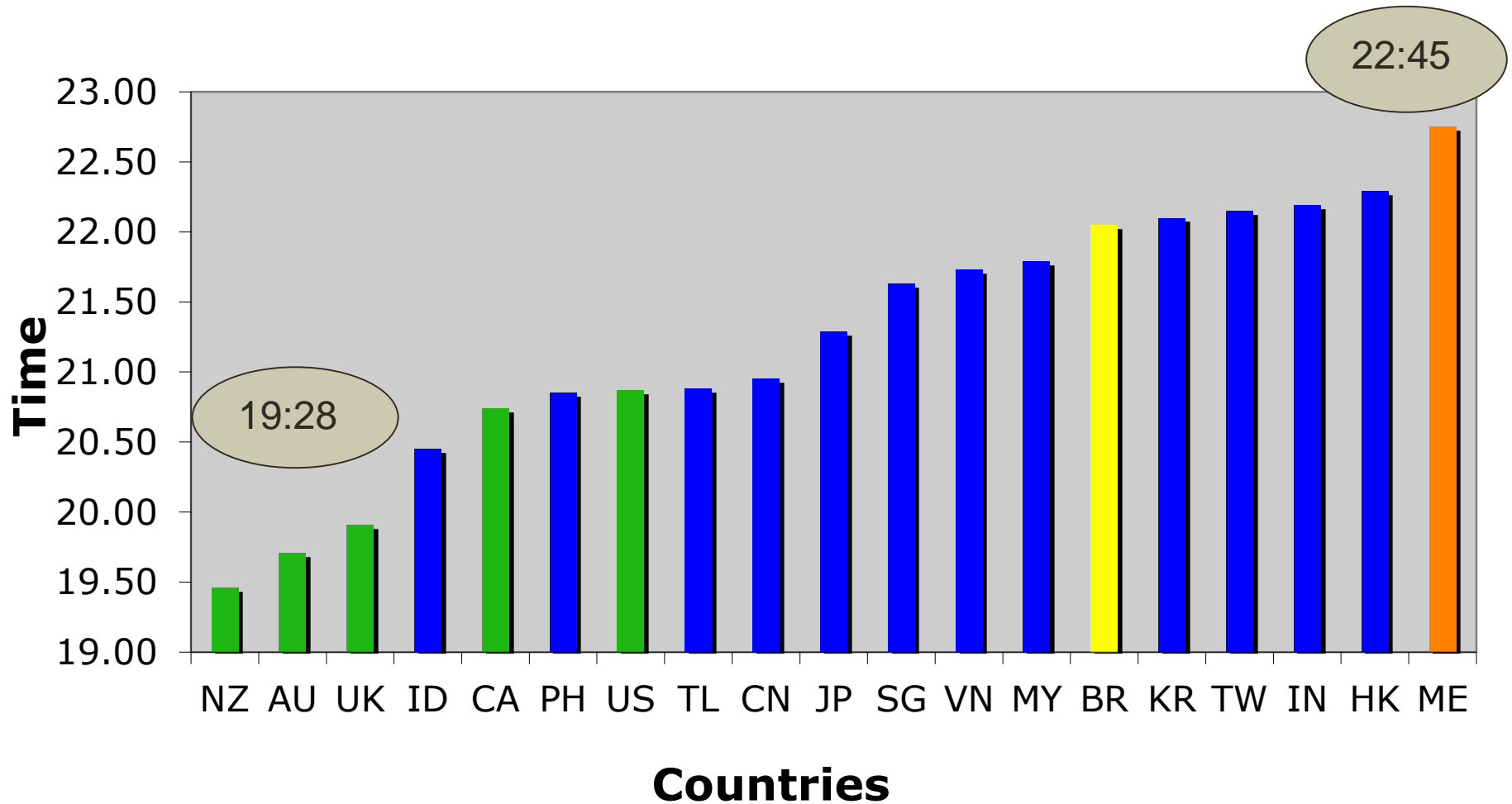
- Global studies
 - N > 30,000 (4 studies)
 - Birth to 3-years-old
 - Predominantly-Asian countries (12)
 - Predominantly-Caucasian (5)
 - Brazil
 - Middle East (14+, Arabic Speaking)

Participants (n=33,717)



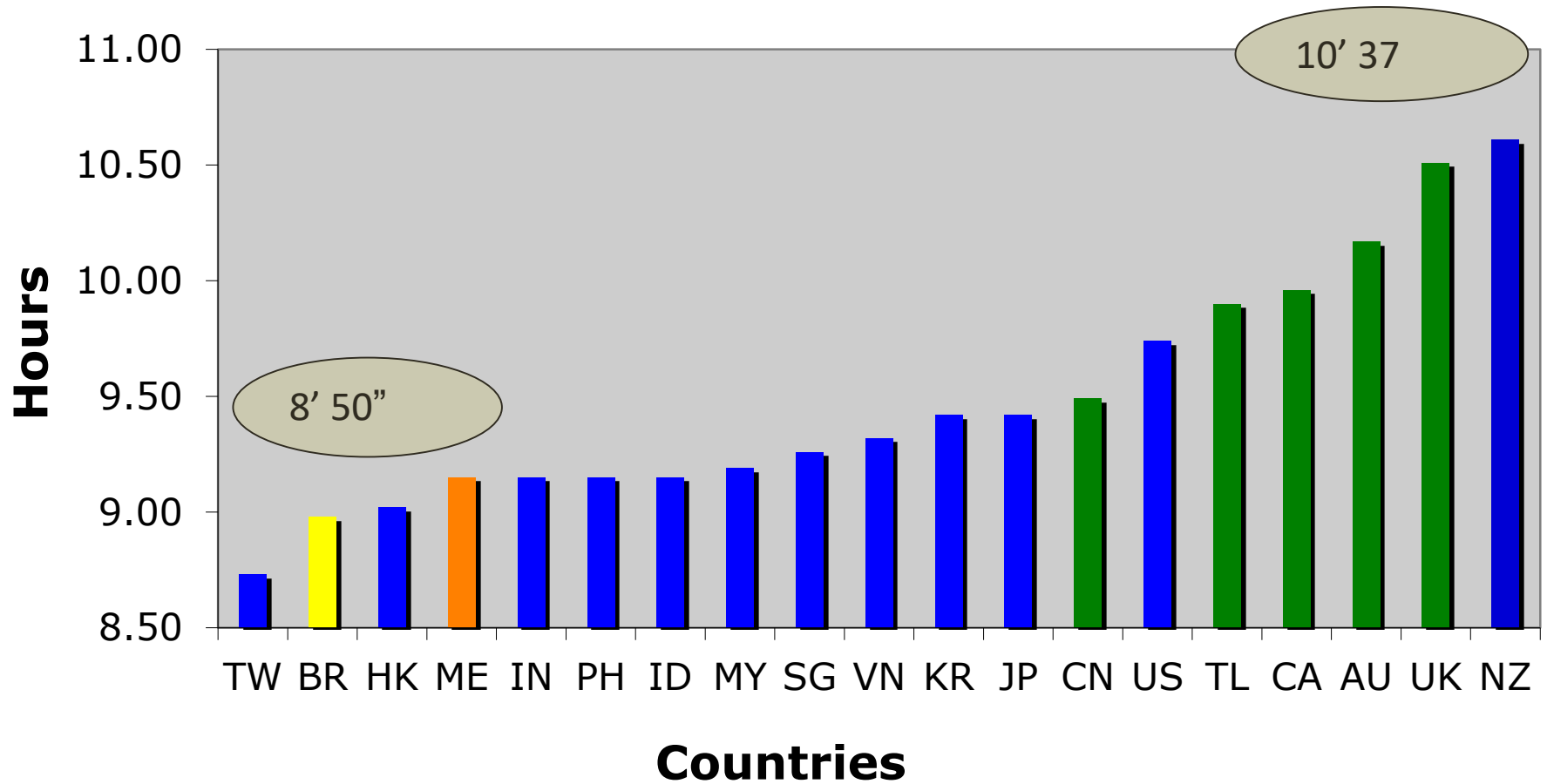
Bedtime (birth-3 years)

What time do you usually put your child to bed at night?



Nighttime sleep (birth-3 years)

How much total time does your child spend sleeping during the night?



Sleep by age



Sleep by age

- Prenatal (~28 weeks gestational age)
- Newborns (0-2.9 months)
 - Range 9.3-20.0 hours*
 - Sleep periods ~30 minutes to 3-4 hours
 - Driven by hunger/feeding
 - Daytime sleep is equal to nighttime sleep
- Safe sleep!



*Galland, Taylor, Elder, & Herbison, 2012

Sleep by age

- Infants (3 to 11.9 months)
 - Range 8.8 - 17.8 hours*
 - Sleep consolidation
 - 3-4 hours of daytime sleep
 - 3-4 naps/day or 2 consistent naps
- Many babies can sleep for longer stretches at 6m
- Night wakings – all babies do it!
 - Self-soothers (developmental skill)
 - Signalers

Sleep by age

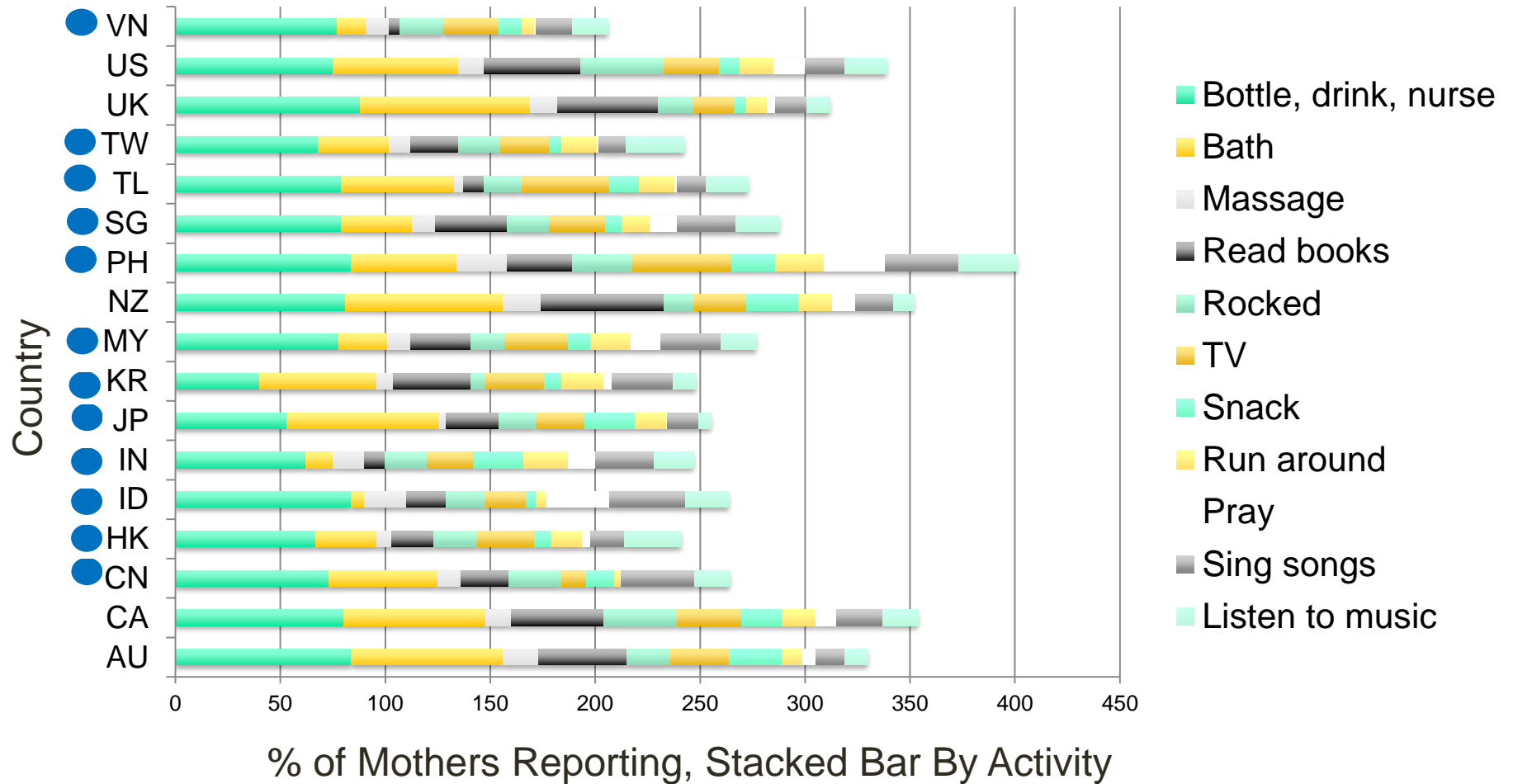
- Toddlers (12 to 36 months)
 - Range 9.7-15.2 hours*
 - 1.5 to 3 hours of daytime sleep
 - Move from 2 naps to 1 by ~18 months
- Bedtime resistance/struggles & night wakings
- Nighttime fears
- Routines, schedules, transition objects, caregiver limit-setting and reinforcement skills

*Galland, et al., 2012

Sleep by age

- Routines, 5 or more nights per week
 - United Kingdom: 80%
 - United States: 67%
 - Brazil: 66%
 - China: 67%
 - Middle East (region): 46%
 - India: 40%

Bedtime routine activities

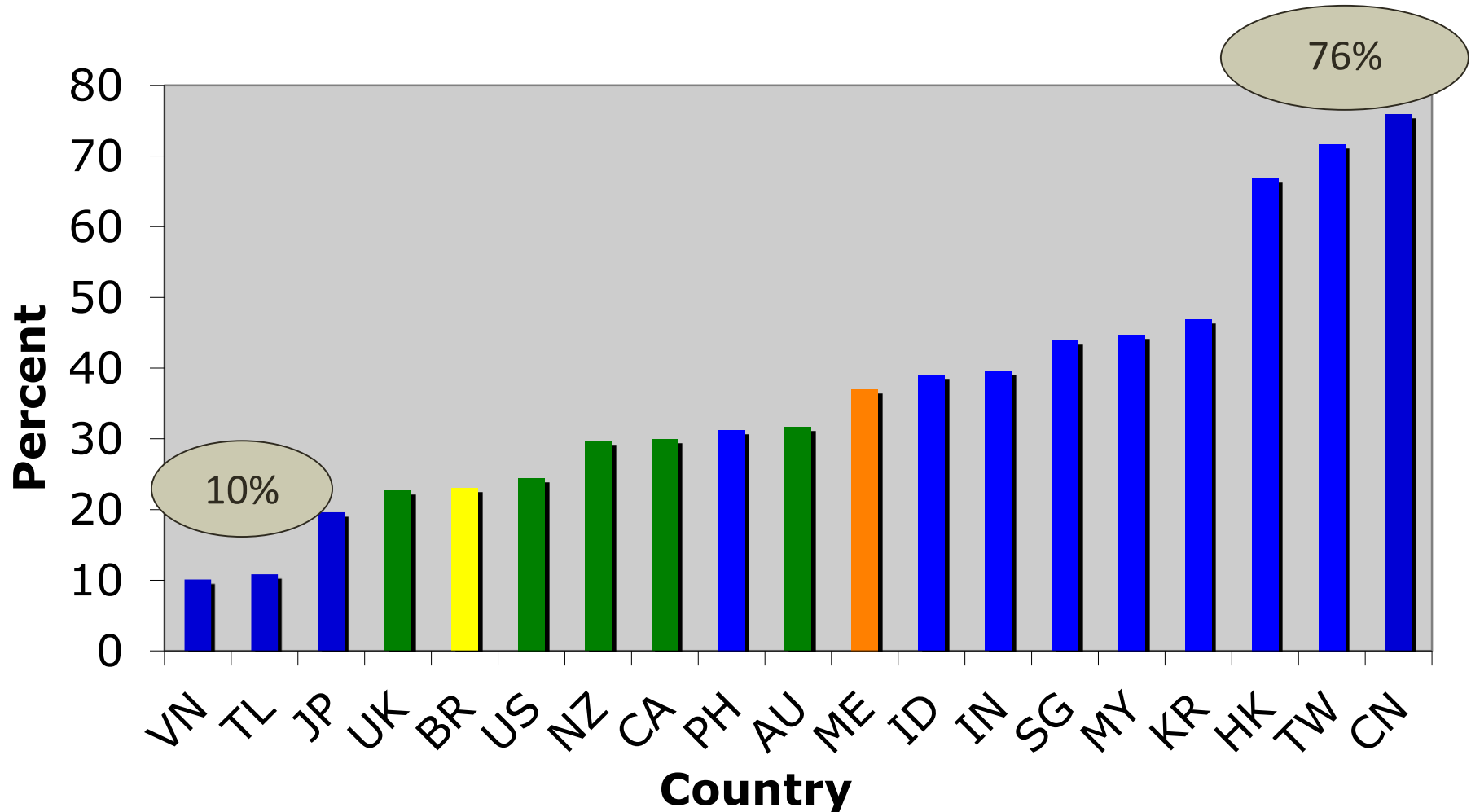


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Caregiver concerns and goals

Do you consider your child's sleep a problem?



Caregiver concerns and goals

- 807 (51% girls; 49% boys)
- Highly Educated, US sample
 - 79% graduate
 - 17% college
- Around 35 years old
 - Range: 23 to 62 years
 - $M = 34.9$ years
- Young toddlers, on average
 - Range: birth to 37 months
 - $M = 16.5$ months

Caregiver concerns and goals

Is your baby's sleep a problem?

What, if anything, would you change about your baby's sleep?

Caregiver concerns and goals

29.6%

Help! 99.5%



Caregiver concerns and goals

70.4%

I still want to change

87.1%



Caregiver concerns and goals

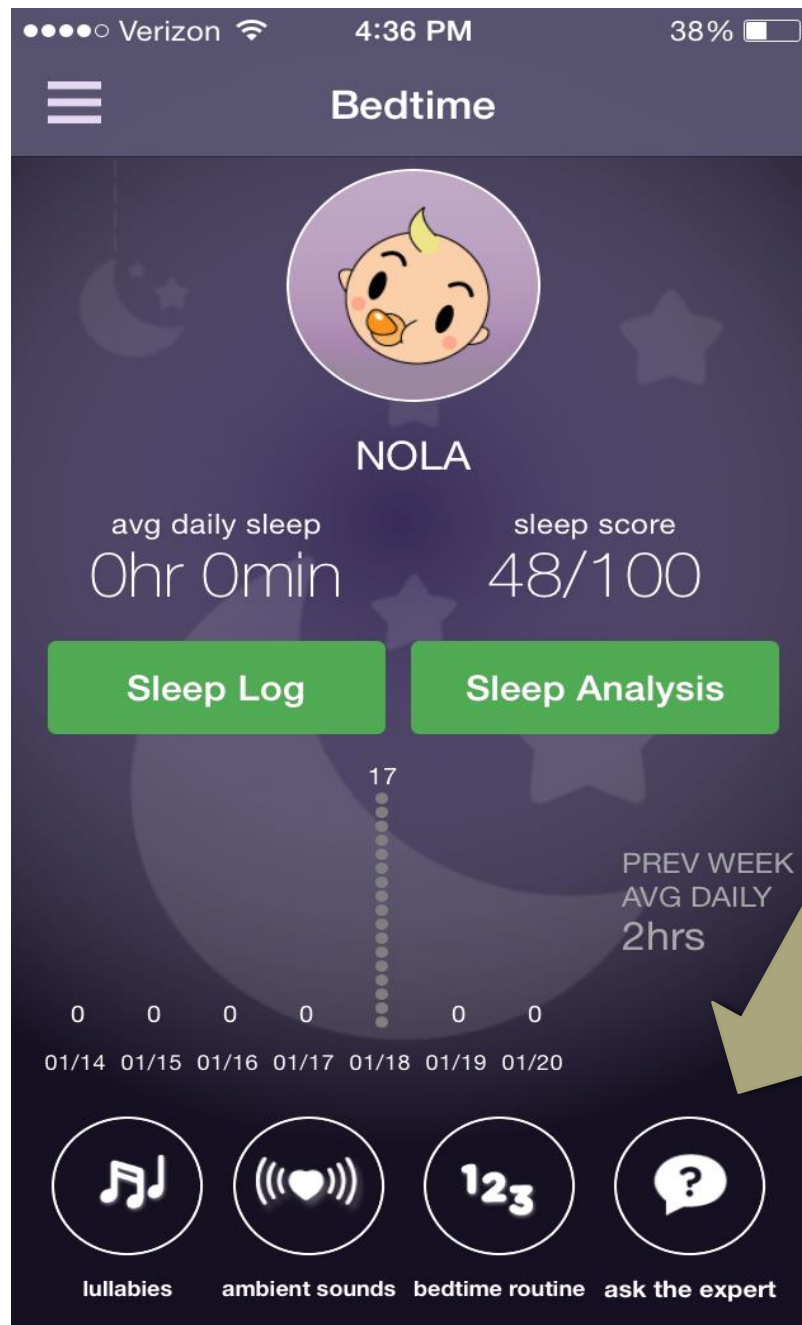
75%

- Reduce night wakings
- Fall asleep independently or without aid
- Earlier bedtime/later morning wake (schedule)

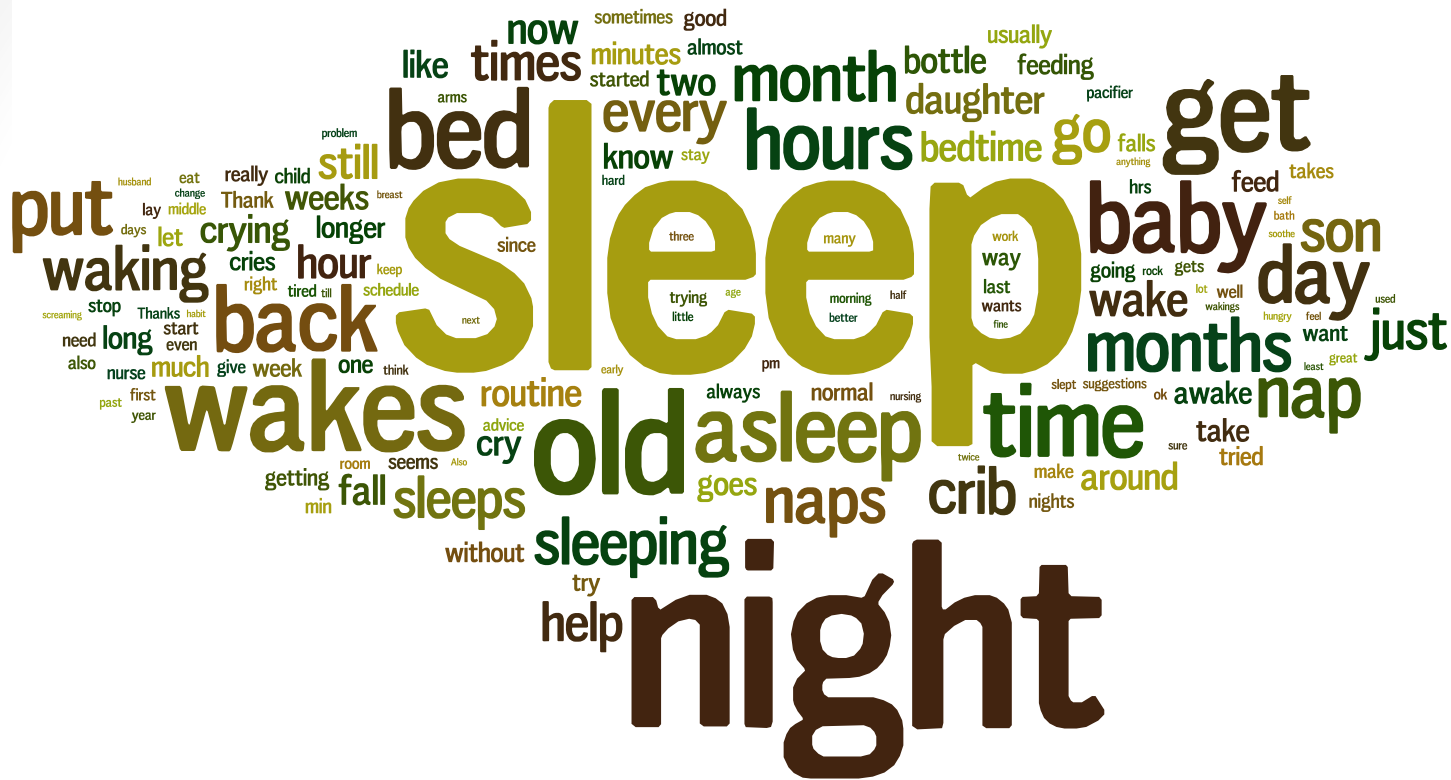
Caregiver concerns and goals

What are caregivers really concerned about?

- 1,287 sleep-related questions, 10 months
- 53.9% infants, 23.8% newborns, 17.8% toddlers
- US
- Submitted through “Ask the Expert”
 - Free smartphone app
 - Johnson’s Bedtime[®] App



Mindell, et al., 2015



85%

Night Wakings

Sleep Schedules

Bedtime problems

Rest easy.

Search anything related to baby sleep:

Bedtime routine, waking at night, sleep terrors...

 Search

Oh baby, how're we doin'?

How old is your baby?

0



36

8 months



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