



Nighttime Breastfeeding and Postpartum Depression: *A practical look at depression, breastfeeding, and maternal sleep*

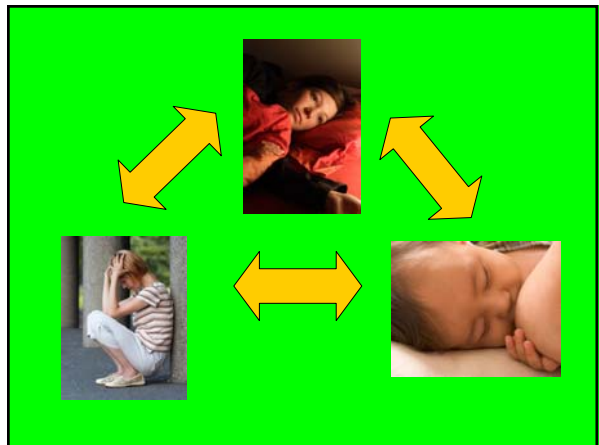
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The Problem of Fatigue



• Current recommendations

- “Even for moms with fresh buns out of the oven, sleeping is not a luxury—it’s a medical necessity.”
- “Humans need 8.4 hours of uninterrupted sleep per night in order to function at their best (*the key word being uninterrupted*).”



Excerpt from a popular book on Postpartum Depression

- “Sleep in a separate area away from the baby and the adult on duty

- Use earplugs and a white noise machine...if necessary. The goal is to make sure that you aren’t hearing the baby or other noises so you can achieve uninterrupted sleep”



Excerpt from a popular book on Postpartum Depression



- “If you’re breastfeeding or pumping, it’s important to empty both breasts before bed so you won’t be awakened engorged and in pain during your off-duty shift.
- If you can pump during the day, your partner can use your milk for off-duty feedings.”

Excerpt from a popular book on Postpartum Depression

- Current program with hospital stay up to 5 days for women at high risk for depression
- Personal or family history of depression, depression in pregnancy
 - Infants room out
 - Breastfeeding women encouraged to pump and/or use formula for night feedings
 - Benzodiazepines used to encourage consistent nighttime sleep onset (week 1)



Ross et al. *J Psychiatry Neurosci* 2005; 30: 247-256

- Is the answer as simple as avoiding nighttime breastfeeding?



- What are the key questions?


- Depression and sleep disruption
- Breastfeeding and sleep disruption
- Breastfeeding and fatigue
- Breastfeeding and depression
- Depression and breastfeeding in a high-risk group



- Sleep terminology

- Sleep latency (time it takes to get to sleep)
- Sleep efficiency (time spent sleeping minus total time in bed)
- REM latency (time it takes to enter REM from sleep onset)






Is there a relationship between sleep disruption and depression?

In U.S. National Sleep Foundation *Sleep in America Poll* (2005)

- 50% report feeling tired or fatigued at least one day a week
- Of fatigued individuals
 - 77% of have at least one symptom of insomnia
 - 89% report a sleep disorder at least a few nights a week
 - 32% report that they get less sleep than they need
 - 29% take 30 minutes or more to fall asleep


National Sleep Foundation 2005 *Sleep in America Poll*

- Insomnia significantly increases the risk for new-onset depression and anxiety disorders
- Sleep disturbances are among the most common symptoms of psychiatric disorders




Ross et al. *J Neurosci Psychiatry* 2005; 30: 247-256

- General population study in Japan (N=24,686)
- Sleep duration <6 hours or >8 had highest rates of depression
- Sleep duration 6-8 hours had lowest rates




Kaneita et al. *J Clin Psychiatry* 2006; 67: 196-203

- German population study (N=4181) adults 18-65 years
- 35.2% report current sleep problems
- Sleep problems associated with one or more physical problems and one or more mental disorders
- Sleep problems associated with more morbidity



Stein et al. *Psychosom Med* 2008; 70: 913-919

- Study of indigenous tribes in NW British Columbia (N=430)
- Sleep problems common
 - 17% insomnia
 - 18% restless leg syndrome (RLS)
 - 8% apnea
- Each independently related to moderate to severe depression



Froese et al. *J Clin Sleep Med* 2008; 15: 356-361




- Prospective study of 112 mothers
- Highest rates of depression at 3 months for mothers who
 - Slept <4 hours at night and
 - Napped <60 min during the day

Goyal et al. *Arch Women's Ment Health* 2009; 12: 229-237


Study of 2830 women at 7 weeks postpartum

- Poor sleep was an independent risk factor for depression
- Factors associated with poor sleep
 - Depression
 - Previous sleep problems
 - Primiparity
 - Not exclusively breastfeeding
 - Younger or male infant



Dorheim et al. *Sleep* 2009; 32: 847-855

• How does depression impact sleep?

- Bidirectional relationship between poor sleep quality and major depression
 - Poor sleep quality is a risk factor for depression
 - Depression is a risk factor for poor sleep quality

Posmontier *JOGNN* 2008; 37:722-737

- Sleep abnormalities in depressed new mothers
 - Decreased sleep time and reduced REM latency

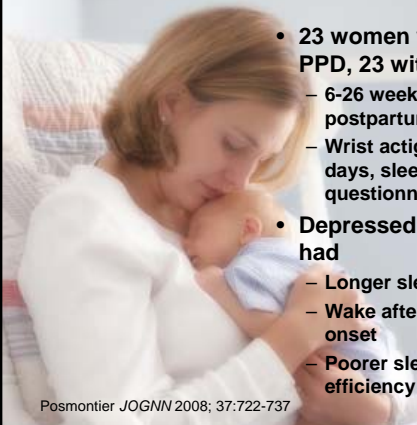


Ross et al., *J Psychiatry Neurosci* 2005, 30: 247-256

- Taiwanese study of mothers 13-20 pp (N=163, 50% depressed)
- Sleep of depressed mothers
 - Overall poorer quality
 - Longer sleep latency (25 v 20 minutes)
 - Shorter sleep duration
 - More daytime dysfunction




Huang et al. *J Nurs Res* 2004; 12: 287-295




- 23 women with PPD, 23 without
 - 6-26 weeks postpartum
 - Wrist actigraphy 7 days, sleep diary, questionnaire
- Depressed women had
 - Longer sleep latency
 - Wake after sleep onset
 - Poorer sleep efficiency

Posmontier *JOGNN* 2008; 37:722-737

- Longitudinal study of 124 mothers (3rd trimester, 1, 2, 3 mos postpartum)
 - 26% depressed during pregnancy
 - 15% depressed postpartum
- Depressed women had significantly more sleep problems



Goyal et al. *J Perinat Neonat Nurs* 2007; 21: 123-129



- “For new mothers, a complaint of trouble falling asleep may be the most relevant screening question in relation to their risk for postpartum depression”

Goyal et al. *J Perinat Neonat Nurs* 2007; 21: 123-129



- 253 pregnant women (83 depressed)
- During 2nd and 3rd trimesters, depressed women had more sleep disturbances
- Higher NE and cortisol levels
- Newborns of depressed mothers had more sleep disturbances and less time in deep sleep

Field et al. *Infant Behav Dev* 2007; 30: 127-133



- Study of Chinese-American mothers and fathers of babies in the NICU (N=22, 17)
- After NICU, 93% mothers, 60% fathers reported sleep problems
 - Difficulty falling asleep
 - Higher frequency waking during the night
 - Total sleep time lower for mothers
 - Mothers’ perceived fatigue higher than fathers

Lee et al. *Issues Ment Health Nurs* 2007; 28: 593-605

- Do breastfeeding mothers have more sleep disruptions and higher daily fatigue?



- Study in France
- Compared exclusive bf (N=129) and exclusive formula (N=114) mothers (2-4 days, 6 weeks, 12 weeks pp)
- No significant difference at any time point in fatigue symptoms



Callahan et al. *J Hum Lact* 2006; 22: 182-187



- 72 couples at 1 month pp
- 80% exclusively breastfeeding
- 93% of babies in parents' room, 51% in parents' bed
- Sleep and fatigue not associated with type of birth, parents' ages, or parent-infant bedsharing
- EBF mothers had more awakenings but a comparable total time sleeping compared with non-EBF mothers
- Recommends nurses emphasize "sleeping for two"

Gay et al. *Biol Res Nurs* 2004; 5: 311-318



- Study of 33 mothers at 4 weeks postpartum
 - Data were collected via sleep Q'aires for 5 days
- Breastfed infants slept less than bottle-fed infants
- Breastfeeding mothers who bedshared got the most sleep in a 24-hour period
- Lowest amount of sleep for breastfeeding, non-bedsharing mothers

Quillin & Glenn *JOGNN* 2004; 33: 580-588

- Study of 133 new mothers & fathers (3 mos postpartum)
 - Questionnaire and actigraphy data
- 67% EBF, 23% mixed, 10% formula
- EBF mothers slept 40 minutes longer than mixed feeding mothers
- Mothers who gave BM slept 47 min longer than mothers who gave formula at night
- Fathers who gave BM slept 38 min more than fathers who gave formula at night

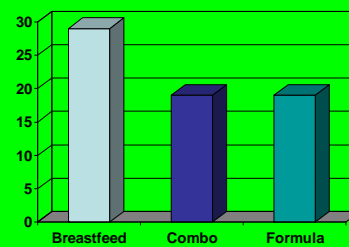


Doan et al. *J Perinat Neonat Nurs* 2007; 21: 200-206

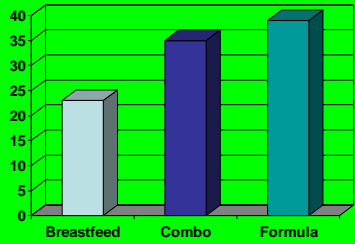
- Online survey of 6,410 mothers with infants aged 0-12 months (Mean age=6.96 months)
- From 59 countries
 - U.S. (N=4,789)
 - European Union/Eastern Europe (N=545),
 - Canada (N=416)
 - Australia/New Zealand (N=186)
 - Middle East (N=56)
 - Central and South America (N=32),
 - Asia (N=30)
 - Africa (N=13)



Energy Level on Most Days is Excellent/Very Good



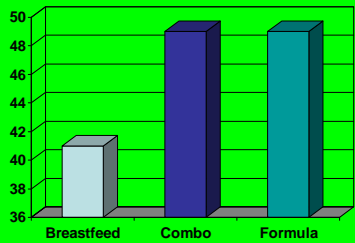
Daily Energy is Fair/Poor



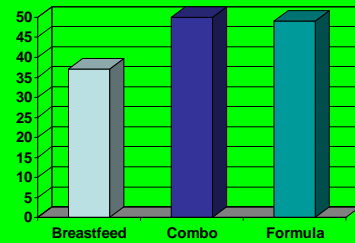
On most nights, do you think breastfeeding



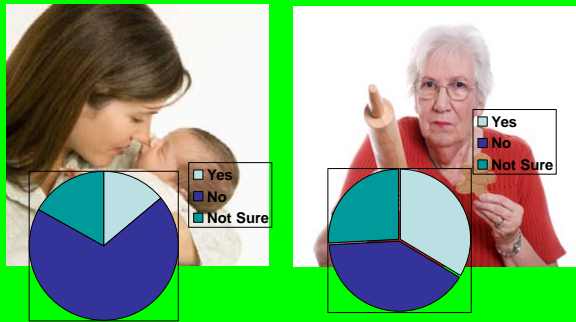
Not Getting Enough Sleep



Is the Amount of You Are Getting Sleep Negatively Affecting Your Health?



Would you get more sleep if formula feeding?



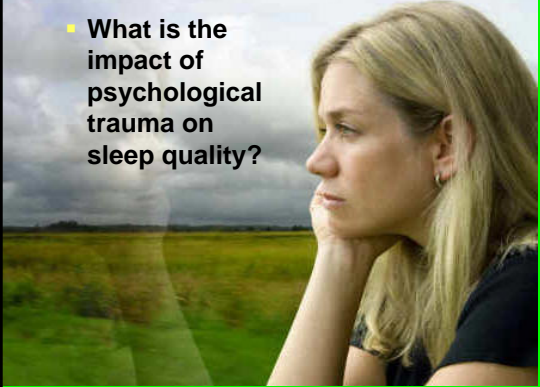
- “Using supplementation as a coping strategy for minimizing sleep loss can actually be detrimental because of its impact on prolactin hormone production and secretion.....”





- “.... Maintenance of breastfeeding as well as deep restorative sleep stages may be greatly compromised for new mothers who cope with infant feedings by supplementing in an effort to get more sleep time.” (p. 201)


Doan et al. *J Perinat Neonat Nurs* 2007; 21:200-206




- What is the impact of psychological trauma on sleep quality?

Kendall-Tackett, *Trauma, Violence & Abuse*: 8, 117-126

- A 3 year follow-up of mothers who had MDD postpartum
- Half had a history of CSA
- CSA women were had significantly more depressed and anxious, with greater life stresses



Buist & Janson, *Child Abuse Neglect* 2001, 25: 909-921



- Study of primiparous women (107 CSA, 156 control)
- Child sexual abuse associated with maternal depression and partner violence at 2-4 years postpartum

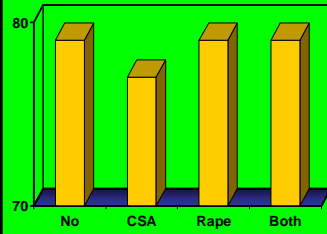
Schuetz & Eiden, *Child Abuse Negl* 2005; 29: 645-659




Comparison of four groups

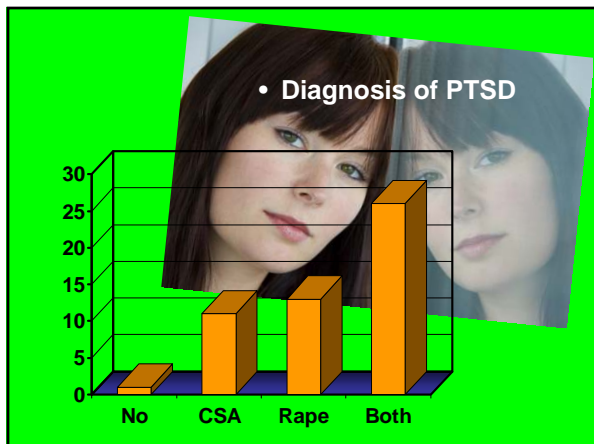
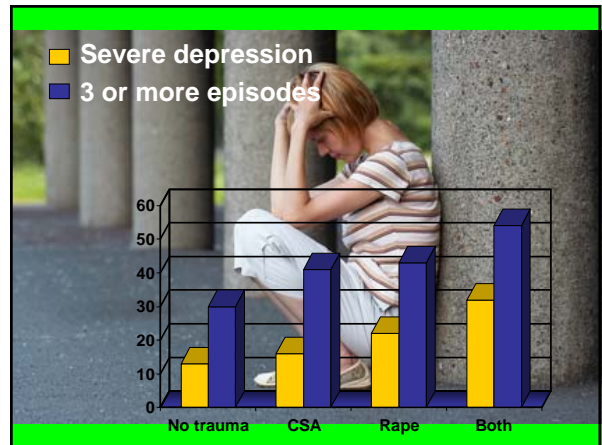
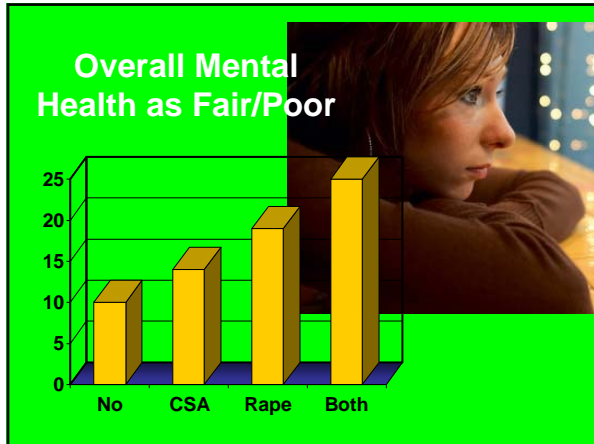
- No childhood sexual abuse, rape or adult trauma (N=2679)
- Child sexual abuse only (N=142)
- Rape as a teen or adult (N=715)
- Child sexual abuse and rape (N=137)


• Breastfeeding



Group	Breastfeeding Rate (%)
No	~78
CSA	~75
Rape	~78
Both	~78







- In a primary-care sample
 - 52% of sexual abuse survivors reported that they could not sleep at night
 - 36% reported nightmares
 - 53% reported intrusive symptoms sudden thoughts or images of past events

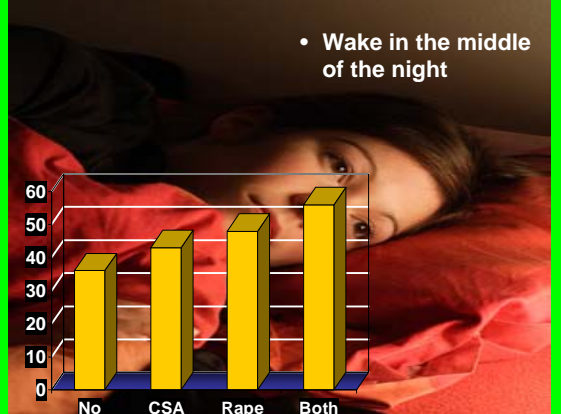
Hulme, *Child Abuse Neglect* 2000, 24: 1471-1484



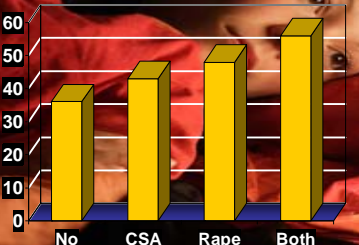
Minutes to Get to Sleep



Group	Minutes to Get to Sleep
No	~20
CSA	~23
Rape	~25
Both	~28



- Wake in the middle of the night

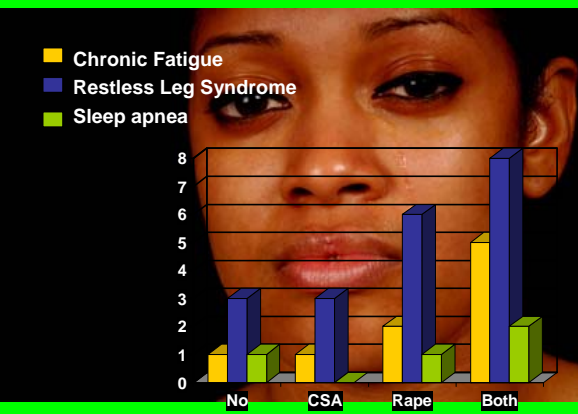


Group	Percentage
No	~40
CSA	~48
Rape	~52
Both	~58

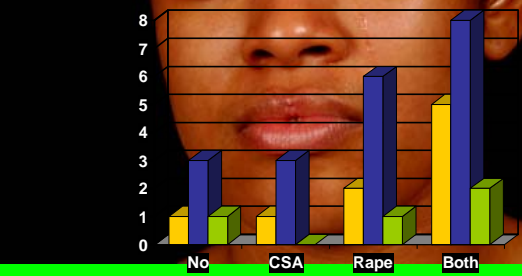


- 80% of sexual assault survivors had sleep-breathing or sleep-movement disorders
- Both increased depression and suicidality
- Fragmented sleep potentiated symptoms for women after a sexual assault


Krakow et al. *Crisis* 2000; 21:163-170



- Chronic Fatigue
- Restless Leg Syndrome
- Sleep apnea



Group	Chronic Fatigue	Restless Leg Syndrome	Sleep apnea
No	1	3	1
CSA	1	3	1
Rape	2	6	1
Both	5	8	2



- A couple of other caveats

- Depressive symptoms in early postpartum related to:

- Decreased breastfeeding duration
- Increased breastfeeding difficulties
- Decreased breastfeeding self-efficacy



Dennis & McQueen *Pediatrics* 2009; 123: e736-751

- Review of 49 studies on breastfeeding and depression

- Bottle feeding increases the risk of depression
- Breastfeeding decreases risk of depression



Dennis & McQueen *Pediatrics* 2009; 123: e376-e751

- Mother-baby separation may backfire
- Sleep is a physiologically vulnerable state
- Must feel secure to downregulate vigilance



- Adults with insecure relationship with partners have poorer quality sleep and smaller percentage of Stage 3-4 sleep



Carmichael & Reis, *Health Psych* 2005; 24, 526-531; Troxel et al. *Psychosom Med* 2007; 69, 692-699

- The same would likely be true when mothers and babies are separated
- They may not be able to downregulate enough to go into deep sleep



- Implications

- Sleep *is* related to maternal mental health
- Daytime fatigue is a symptom we should address
- But we shouldn't assume that sleep disruptions are due to the baby
- Or that separation is always the answer



- Plan of care should be individualized for every mother



- Questions we should ask
 - What was sleep like before you had your baby?
 - How many minutes does it take for you to fall asleep?
 - Do you wake in the middle of the night when everyone else is asleep?
 - Do you have a sleep disorder?
 - Have you ever been depressed?
 - (if appropriate) Do you have a history of psychological trauma?



- Some approaches
 - Strategies for coping with fatigue
 - Treat depression
 - Cognitive-behavioral sleep interventions



Possible medications for sleep

- Some antidepressants
- Atypical antipsychotics (e.g., olanzapine)
- SARIs (e.g., trazadone)
- Sleeping pill (e.g., zolpidem)
- No benzodiazepines for trauma survivors
- If using sleep medications, baby should not bedshare



- Rule out physical conditions
 - Hypothyroidism, anemia, autoimmune disease
 - TSH, T3, T4, CBC, Sed rate
- Possible sleep study



- Possible limiting nighttime feeds
 - 4-5 hours of uninterrupted sleep may be less disruptive to breastfeeding than 8 hours
- Informed consent about how this may impact breastfeeding



Corwin & Arbour MCN 2007; 32:215-220

- We can also provide hope
- It won't always be this way



Many thanks to all of you who helped us with this study. We couldn't have done it without you.

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