

# Perinatal Depression

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ALABAMA AT BIRMINGHAM

# Maternal Depression...did you know?

- Maternal depression is the.....  
#1 complication of childbirth
- Depression is the #1 cause of  
disease-related morbidity in  
women
- Maternal depression is at the top  
of the list of the “Most significant  
mental health issues impeding  
children’s readiness for school”

Mental Health Policy Panel, Department of Health Services  
(2002)

No patience



Grumpy

Irritable



Can't  
focus



Frustrated

## Unfortunately, very few get treated

- If treatment were provided, an estimated 80% would show benefits in terms of reduced symptom severity.
- Only 52% of those with major depressive disorder receive treatment.
- 38% of those receiving treatment receive what is judged to be “only minimally adequate” treatment.

# Today's Take-Home Messages

1. Untreated perinatal depression unnecessarily hurts mothers, infants, children, and families
2. Adding depression screening to your practice can make a huge difference to the health trajectories of mothers and their families
3. In addition to screening, there is much you can do to support families suffering from depression symptoms

# Maternal Depression

- Approximately 12% of all women experience depression in a given year
- For low-income women, the estimated prevalence doubles to at least 25%
- For pregnant and postpartum and parenting women, rates are in general range from 5-25%
- Low-income mothers of young children, pregnant and parenting teens report depressive symptoms in the 40-60% range
- Leading cause of disease-related disability among women.

# Depressive Disorders in Mothers

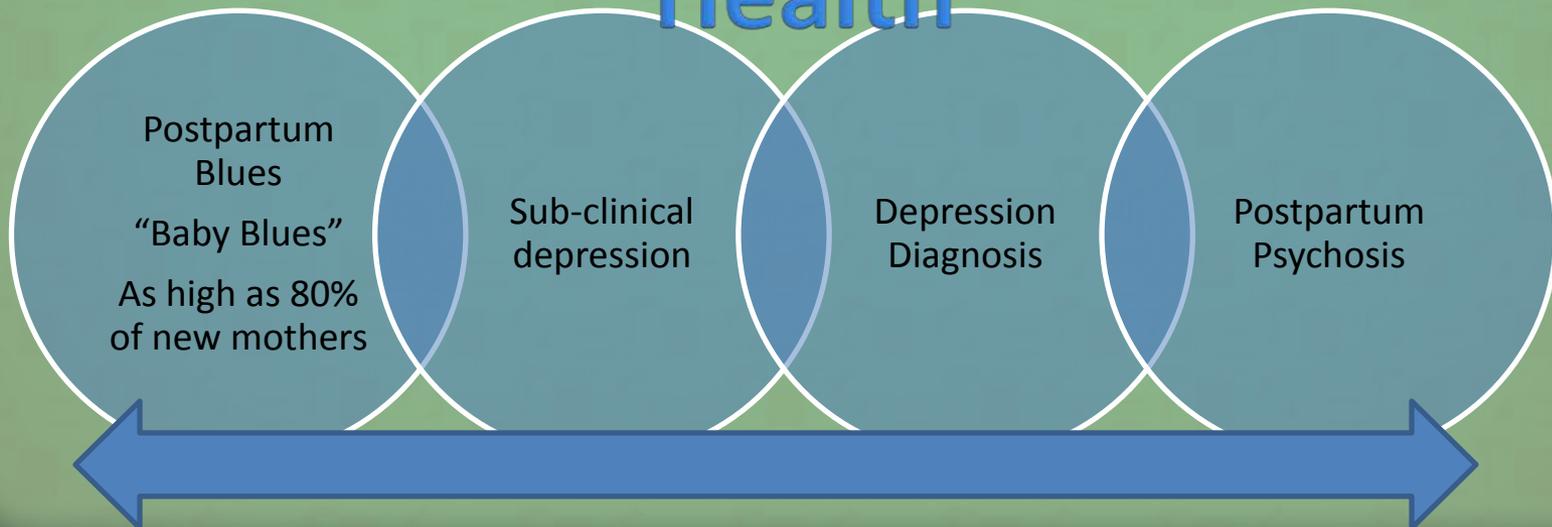
**Prenatal Depression:** 10-20% of pregnant mothers

Crying, weepiness; Fatigue; Appetite disturbance; Loss of pleasure; Guilt; Anxiety/hopelessness; Poor fetal attachments; Irritability

Diagnosis complicated by pregnancy symptoms: Overlap with fatigue, appetite changes, hypersomnia;

Affects fetal development: Detection and treatment critical for promoting birth outcomes and reducing birth outcomes disparities

## Continuum of Postpartum Mental Health



## Video on postpartum depression

- <http://www.youtube.com/watch?v=yH3WMQ0-ooU>

# Post partum Depression

Onset	Usually within the first two to three months post-partum, though onset can be immediate after delivery (distinguishable from “baby blues” as it lasts beyond two weeks post-partum)
Prevalence	10 to 20% of new mothers
Symptoms	<ul style="list-style-type: none"><li>Persistent sadness</li><li>Frequent crying, even about little things</li><li>Poor concentration or indecisiveness</li><li>Difficulty remembering things</li><li>Feelings of worthlessness, inadequacy or guilt</li><li>Irritability, crankiness</li><li>Loss of interest in caring for oneself</li><li>Not feeling up to doing everyday tasks</li><li>Psychomotor agitation or retardation</li><li>Fatigue, loss of energy</li><li>Insomnia or hyper-insomnia</li><li>Significant decrease in appetite</li><li>Anxiety manifested as bizarre thoughts and fears, such as obsessive thoughts to harm the baby</li><li>Feeling overwhelmed</li><li>Somatic symptoms (headaches, chest pains, heart palpitations, numbness)</li><li>Poor bonding with the baby (no attachment), lack of interest in the baby, family, or activities</li><li>Loss of pleasure or interest in doing things one used to enjoy (including sex)</li><li>Recurring thoughts of death or suicide</li></ul>



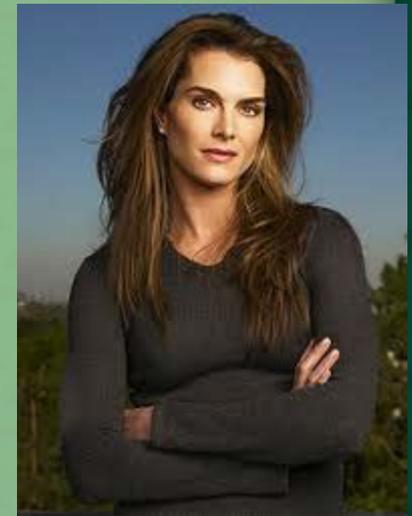
# Symptoms unique to Post Partum Depression

- Intrusive thoughts of harming the infant
- Extreme anxiety
  - Excessive worry, unable to control worry, mind going 'blank', poor focus, restless or 'keyed up,' tense
- Anger or agitation
- Extreme feelings of guilt
  - Wanting to run away, leave, get away
- Obsessive thoughts of inadequacy as a parent
  - "Wanting to have this baby was a mistake"
- Extreme exhaustion yet difficult sleeping
- Feelings of disconnection from the baby
- Feeling a loss of control over one's life
  - A fog over my head or living in a fog
  - "If this is what it's going to be like, I don't want to do it"

# Maternal depression: An equal opportunity disease

“I never thought I would have postpartum depression...I thought I would be overjoyed...instead I felt completely overwhelmed. This baby was a stranger to me. I didn't feel joyful. I attributed feeling of doom to simple fatigue and figured that they would eventually go away. But they didn't; in fact, they got worse. I wanted her to disappear. I wanted to disappear. At my lowest points, I thought of swallowing a bottle of pills or jumping out of the window of my apartment.”

Brooke Shields, July 2005



# Major risk factors for Post Partum Depression

## #1 Previous maternal or postpartum depression

- Recurrence rate 50-80%

## #2 Depression or anxiety in pregnancy

- 23% of women with depression postpartum had depression in pregnancy
- Depression any other time in life
- Family history of depression or mood disorder (e.g., bipolar)
- Current/recent stressful life events

# Other Post Partum Depression Risk

**Factors:** Think about how many risk factors the population you work with has

- Inadequate social, familial or financial support
- Minority status
- History of sensitivity to hormonal shifts
- Delivery of premature infant
- History of miscarriage or abortion
- Abrupt weaning
- Childhood sexual abuse
- Controlling or perfectionist personality
- Single parent
- Isolation from family
- Infertility
- Long, difficult labor
- Significant loss in life
- History drug/alcohol abuse
- Multiples (twins, triplets)

# Myths of Motherhood:

Contribute to stigma, lack of detection and recognition of PPD and are barriers to women seeking treatment

- Pregnancy is wonderful
- Motherhood is instinctive/intuitive mothering capability
- Mothers should be happy when the baby is born
- Perfect baby
- Perfect mother
- Motherhood is mandatory to be a “real” woman
- Babies sleep
- Babies are beautiful
- “Natural” births are better
- Madonna images



# Perpetuation of beliefs in myths include...

- Mothers...
  - Feeling of guilt and shame by not being able to live up to mythical expectations
  - Fear of being judged a bad person
  - Fear of baby being taken away
  - Being seen as having a weak character
  - Fear of being a “Bad” mother
- These feelings can be magnified when either dismissed or not acknowledged by professionals as real

# Facts about Post Partum Depression

- Remains
  - Under-recognized
  - Under-diagnosed
  - Under-treated
- 50% of all cases go undiagnosed and untreated
- Only 12-20% of women with maternal depression actually receive treatment (Horowitz, 2006)
- Episodic, but without treatment can turn chronic
  - Most moms will feel better in 6 months even without treatment, but then will re-occur.
  - Moms with untreated depression that turns chronic are likely to still have depression symptoms at 2 year (Horowitz, 2007, 2009)

# Treatment for Post Partum Depression

- Highly responsive to treatment
- Most common types of treatment are:
  - Psychotherapy
    - Individual, group, or mother-infant/family
  - Medications
    - Antidepressants
  - Goal: Right treatment for the individual woman's needs, context, and goals

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**How does maternal depression impact mothers, their children, family, and society in general?**

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# Maternal depression and child outcomes

- Depressed mothers:
  - provide less stimulation, are less responsive to infants, show more parenting difficulties, are less likely to seek appropriate medical care for their child and less likely to use prevention practices (*car seats, smoke alarms*)
- Children exposed to maternal depression are at higher risk of:
  - delayed cognitive and language development, mental health problems, suboptimal physical growth and myriad interpersonal, neuroendocrine, and behavioral problems
- Maternal depression associated with poorer outcomes in the child from infancy through adulthood

# Maternal Depression and Participation in Programs

- Mothers may appear:
  - Disengaged
  - 'Lazy' or unmotivated
  - Express good intentions, lack follow-through
  - Angry, feelings of guilt, disappointment
- Reduced memory recall, learning, performance
- Slower progress towards goals
  - Increased cost of care

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**RELATIONSHIP BETWEEN MATERNAL  
DEPRESSION AND CHILD AND FAMILY  
OUTCOMES**

**Examples from my research**

# Parenting for the First Time Study

- 682 women – no previous live births
- Sample
  - 396 teens (15-18 yrs old when pregnant, had not graduated high school or obtained GED)
  - 286 adults (22-35 years)
    - 169 low resource adults
      - no formal education beyond high school/GED
      - - lived in low resource neighborhoods
    - 117 high resource adults
      - completed at least 2 years post-secondary education
      - Income substantially above poverty
- 65% African American, 19% European American, 14% Hispanic/Latina, and 3% other race/ethnic identity

# Parenting for the First Time Data Collection

- Face-to-face interviews with mothers in clinic or community setting
  - Last trimester of pregnancy and 6 months
- Face-to-face interviews in lab (combined with child assessments)
  - 12, 24, and 36 months
- By telephone
  - Every two weeks between birth and 4 months
  - 4, 8, 18, and 30 months
- Home visits and additional interviews with mothers
  - 4, 8, 18, and 30 months

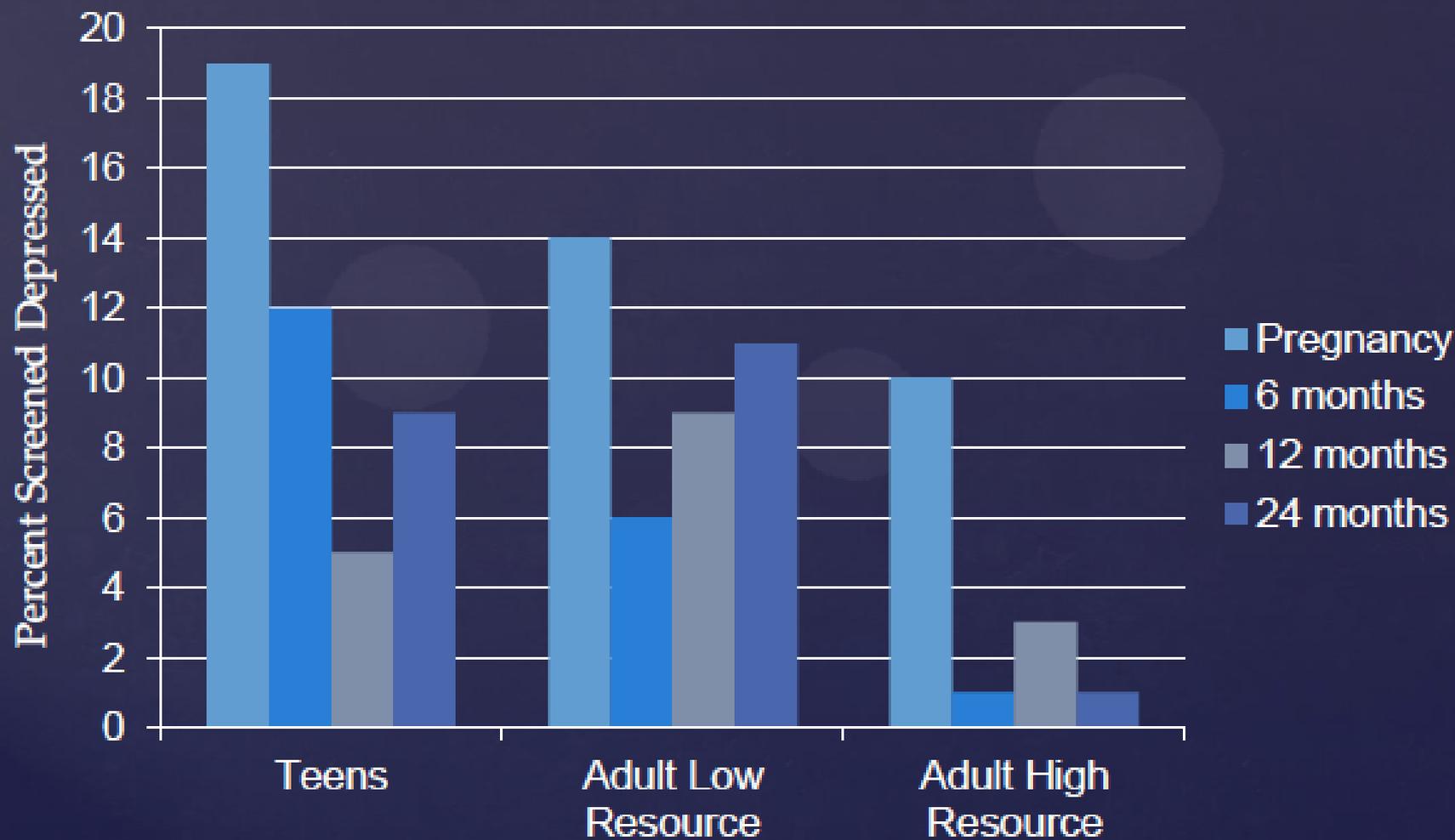
# Teen mothers reported highest rates of depressive symptoms

Parenting for the First Time Study	None	Mild-Moderate Depression	Moderate–Severe Depression	Severe Depression
<b>During Pregnancy</b> ( $\chi^2 (6) = 15.05, p < .05$ )				
Teen	36.9	<b>41.8</b>	<b>17.2</b>	<b>4.1</b>
Adult Low Resource	48.7	32.9	15.8	2.5
Adult High Resource	49.1	40.2	10.7	0
<b>6 months post-partum</b> ( $\chi^2 (6) = 21.36, p < .01$ )				
Teen	58.0	<b>26.9</b>	<b>11.3</b>	<b>3.8</b>
Adult Low Resource	73.2	19.5	4.9	2.4
Adult High Resource	80.2	19.8	0	0

## Beck Depression Clinical Ratings: Fluctuation over time varied as a function of maternal age and income-education resources

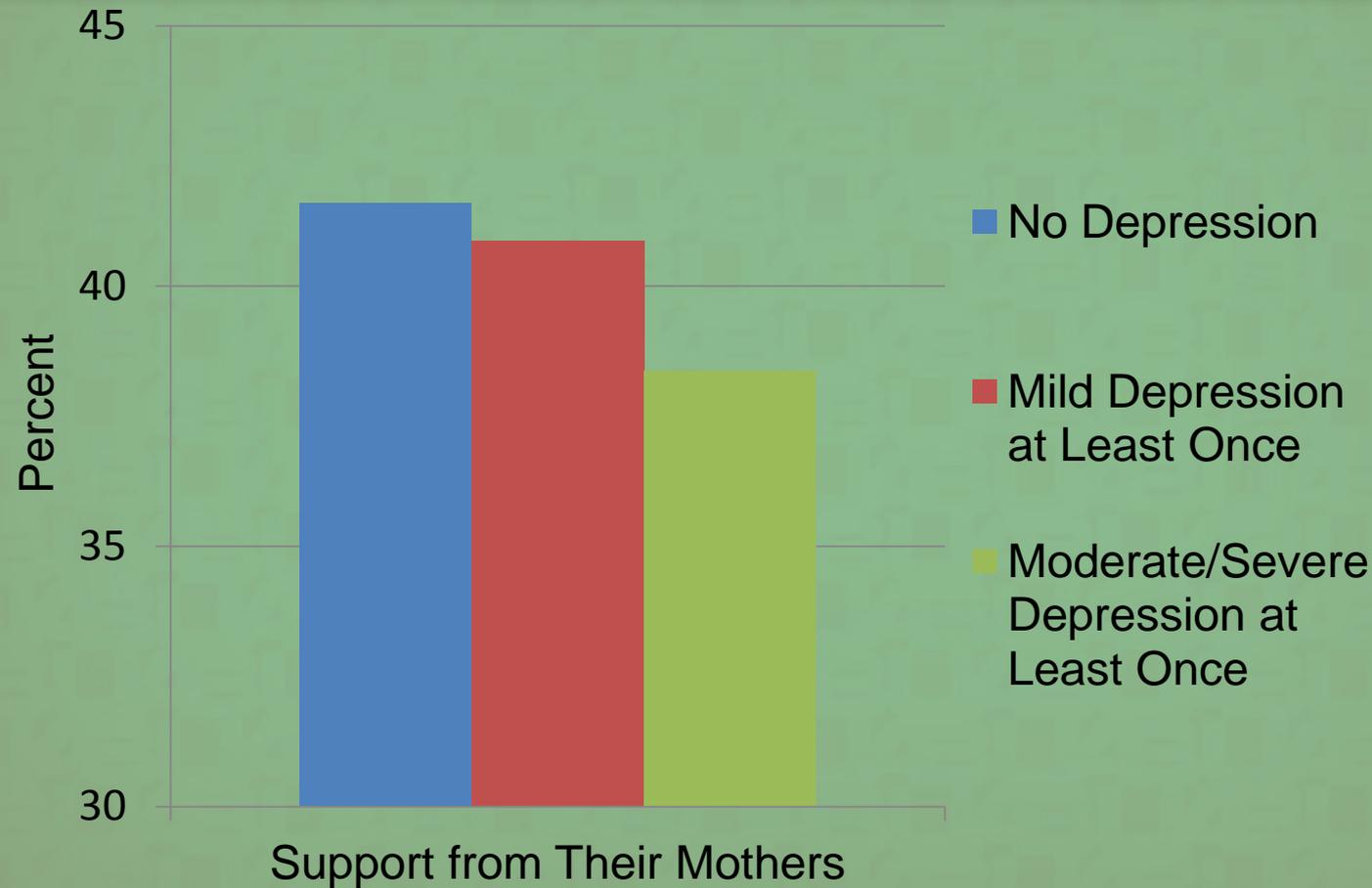
Parenting for the First Time Study	None	Depressed at Both Time Points	Depressed Only in Pregnancy	Depressed Only Post- partum
Teen Mom	25.4%	32.1%	33.0%	9.6%
Adult Low Resource	33.3%	16.7%	41.0%	9.0%
Adult High Resource	44.3%	15.2%	35.4%	5.1%

# High Fluctuations in Maternal Depression from pregnancy through 2 yrs Post-partum

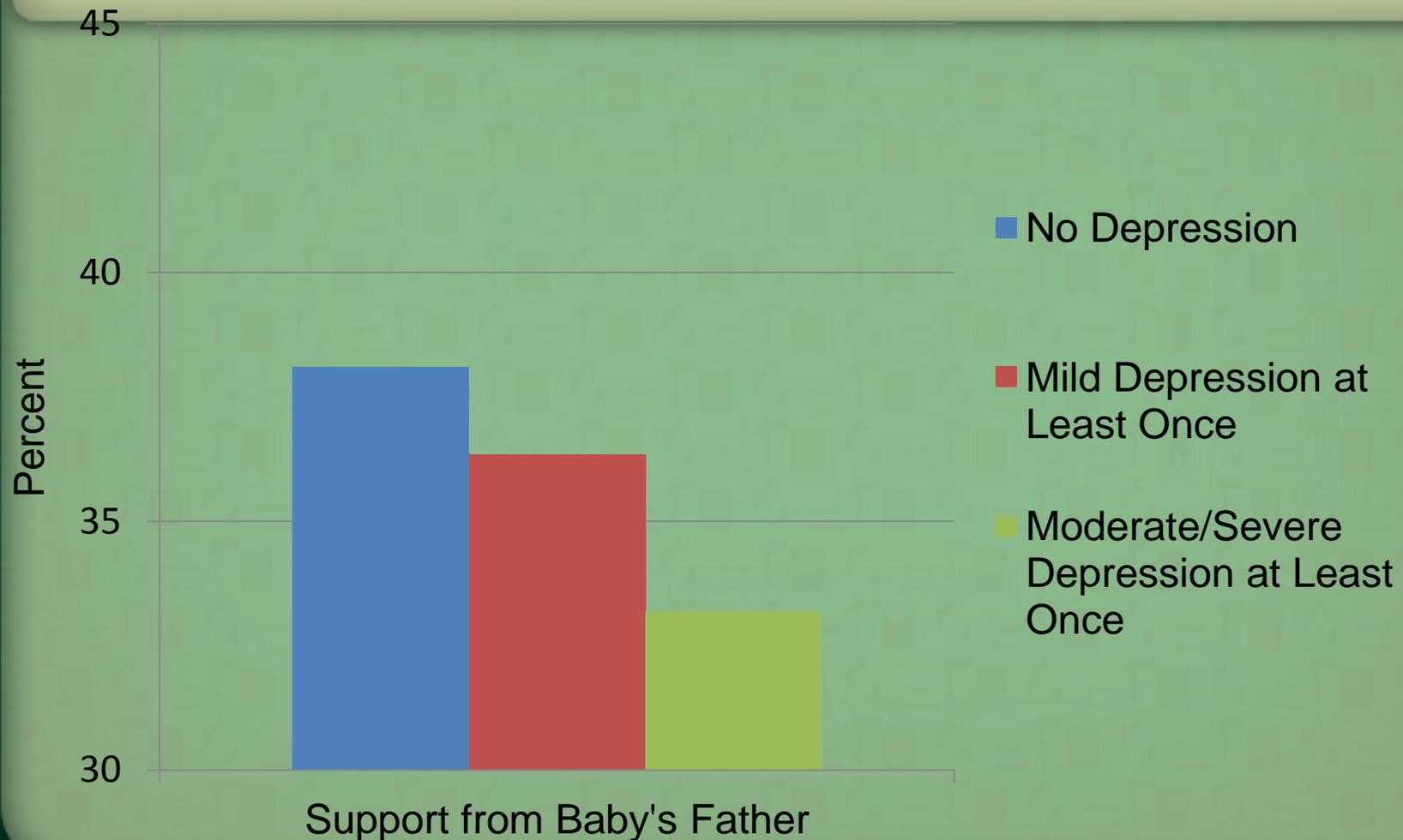


Parenting for the First Time Study

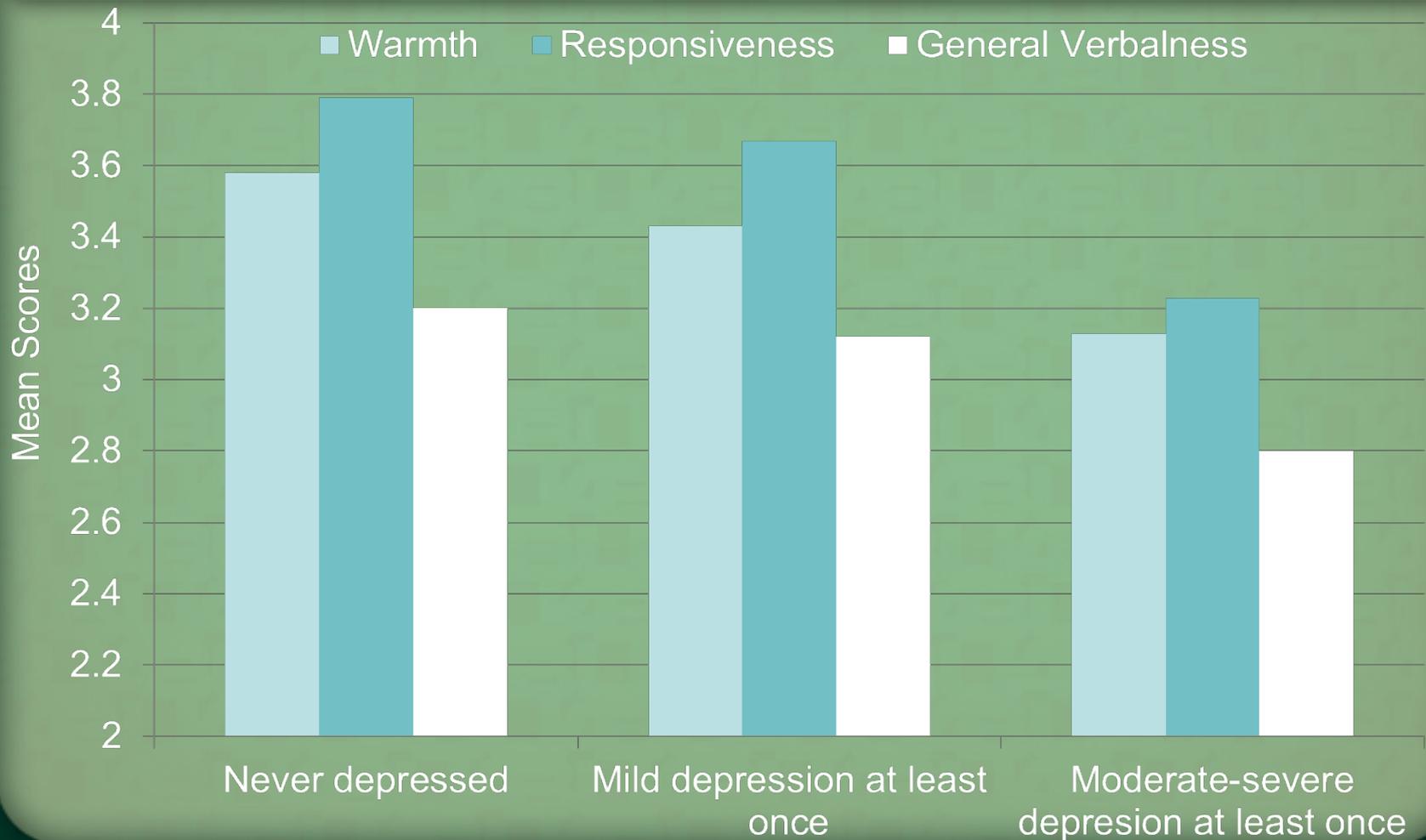
## Mothers with more severe depression had significantly lower rates of social support from their own mothers



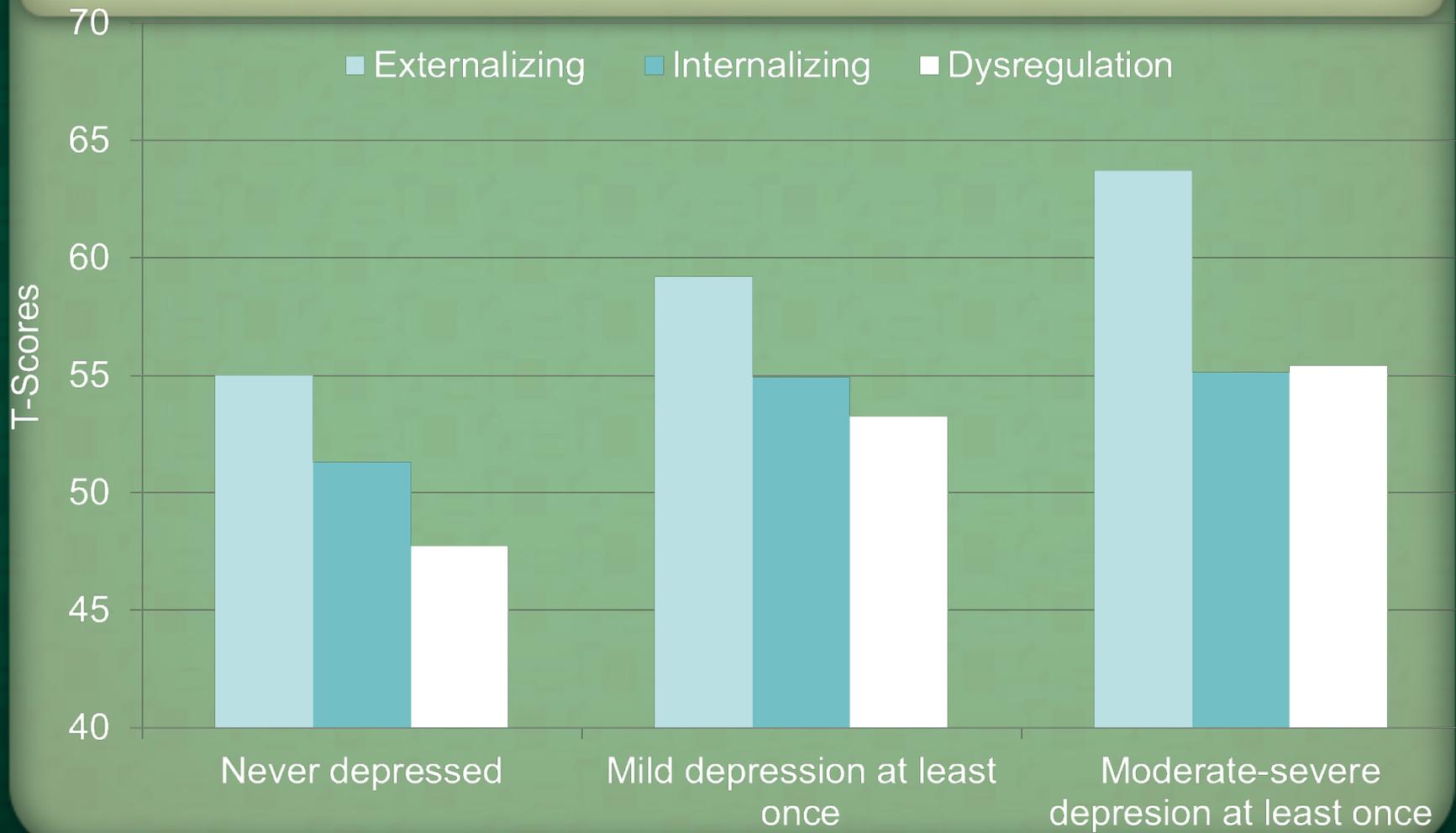
## Mothers with more severe depression had significantly lower rates of social support from the baby's father



# Mothers with no depression displayed significantly more warmth and responsiveness toward their children



# Children of mothers who were never depressed had significantly lower ITSEA Externalizing and Dysregulation T-Scores



## Maternal Depression and Short Inter-pregnancy Intervals (The TAPP Study)

- Short inter-pregnancy intervals are considered a risk factor for post-partum depression.
- We investigated whether depression during the inter-pregnancy interval is a risk factor for short-interpregnancy intervals.
- The study sample was inner city, adolescent mothers served in a community-based clinic that provided both prenatal care and ongoing teen parenting health and social service supports.

# The Teen Alliance for Prepared Parenting (TAPP; Director, Loral Patchen)

- Program serves 13 – 18 yr old mothers in inner city clinics, providing:
  - Childbirth education
  - Parenting supports
  - Abstinence/Family planning counseling
  - Life skills development
- Program Aims:
  - To extend the inter-pregnancy interval among teen mothers
  - To prevent additional unintended pregnancies during teen years



## Data Collection Methods

- Reviewed records of 58 adolescent mothers to abstract caseworker notes about mental health issues or concerns, including the timing of the mental health concern (when receiving prenatal care every 2 wks through post-partum period at 2 and 6 wks then every 10-12 wks thereafter)
- The sample included 29 mothers with a short inter-pregnancy interval (< 24 mos) and 29 who did not become pregnant in the 24 mos after delivering a child

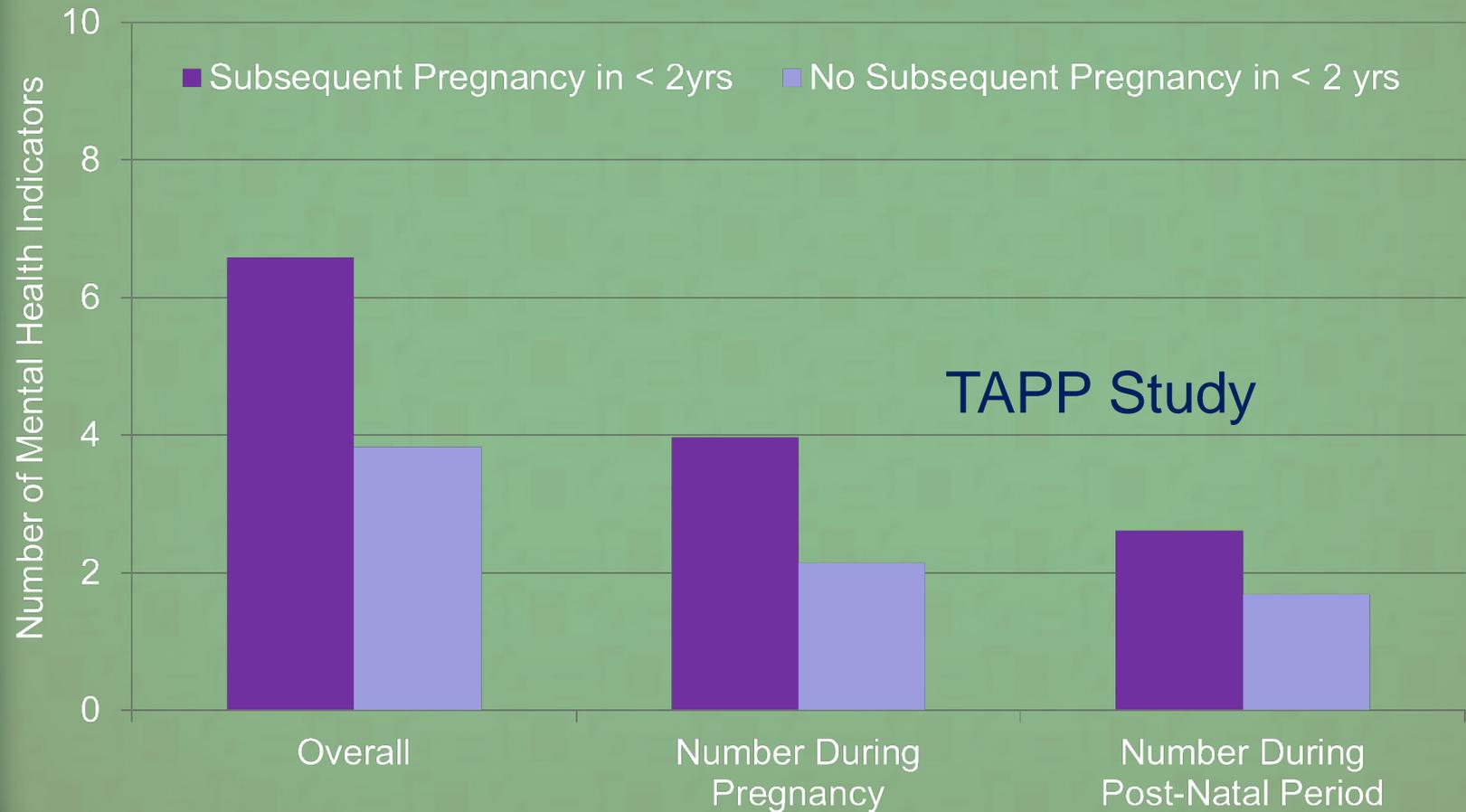
TAPP Study

# Examples of mental health notations searched for in records

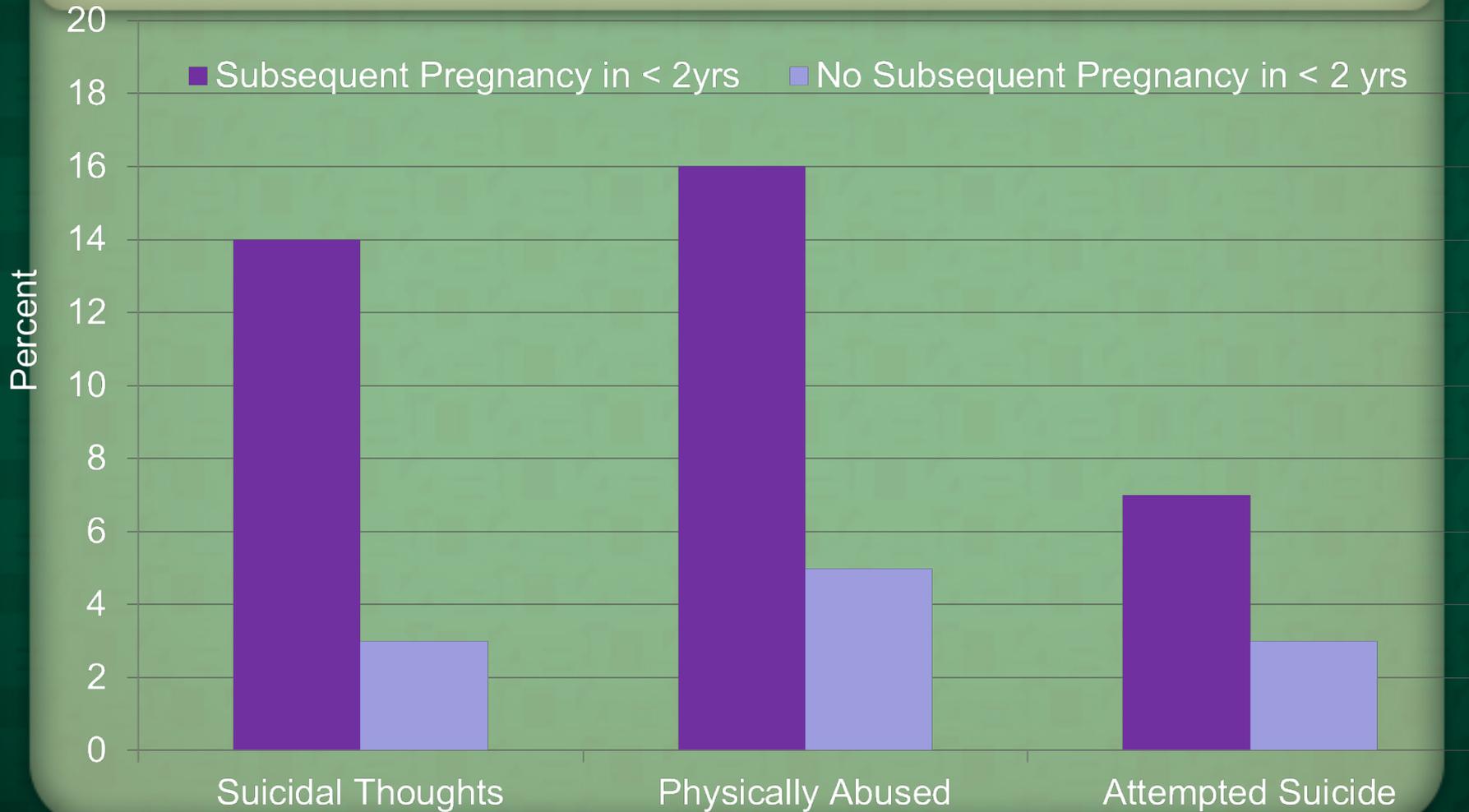
- Sadness
- Discouragement
- Feel like a failure
- No pleasure out of things usually enjoyed
- Trauma
- Rape
- Physical abuse
- Emotional abuse
- Sexual abuse
- Death of a loved one
- Suicidal thoughts
- Attempted suicide
- Desire to hurt others
- Crying often/inability to cry
- Restlessness
- Difficulty making decisions
- Tiredness/Fatigue
- Change in sleeping pattern
- Anxiety
- Change in appetite
- Anger/Irritability
- History of depression/mental health issues
- Counseling requested/suggested
- Counseling received
- Missed appointment for mental health reasons

**TAPP Study**

# Mean number of mental health notations was significantly higher for those with short inter-pregnancy intervals (<24 mos)



# Signs of severe depression and trauma exposure significantly increased rapid, repeat pregnancies (<24 mos)



# Screening for Postpartum depression



“I know what depression looks like”

“I can tell when someone is depressed”

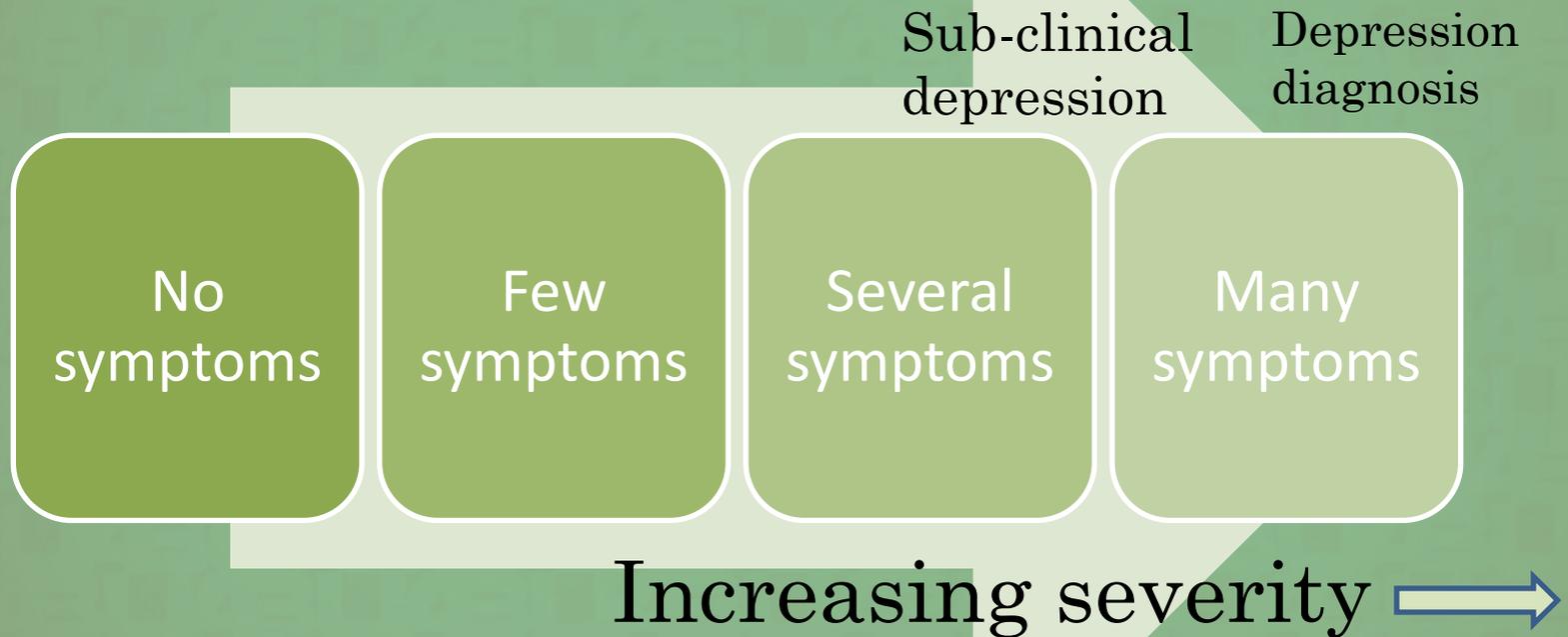
# Routine Screening

- Is *critical* to detect and treat depression early
  - Early detection
    - Can reduce symptom duration and severity
    - Reduce negative effects on infants/children
- Reduces the stigma of depression
  - Helps women feel they are not alone
- Health care providers
  - Increases comfort talking about depression and managing positive screens

# Screening versus Diagnosis

- Screening tools are not diagnostic tools
- A positive screen does not make a diagnosis
  - 25-40% of persons who screen positive for depression will be diagnosed with depression
- Women who screen positive should be referred to a qualified mental health professional for clinical evaluation and formal diagnosis

# Range of Depression Symptoms



# Edinburgh Postpartum Depression Scale

- EPDS (postpartum) or EDS (pregnancy)
  - Same questions and scoring
  - Simple to complete
  - It is a screening tool, not clinical diagnostic instrument
  - 10 questions
  - Sum responses
    - 5 items are 'reverse coded' Question #3, and #5-10
    - Normal: 0 = 0, 1 = 1, 2 = 2, 3 = 3
    - Reverse: 0 = 3, 1 = 2, 1 = 2, 3 = 0
  - Scores range from 0 to 30
    - Higher score = more severe depression symptoms

Cox et al, 1987

# Edinburgh Postnatal Depression Scale<sup>1</sup> (EPDS)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Your Date of Birth: \_\_\_\_\_

\_\_\_\_\_

Baby's Date of Birth: \_\_\_\_\_

Phone: \_\_\_\_\_

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As you are pregnant or have recently had a baby, we would like to know how you are feeling. Please check the answer that comes closest to how you have felt **IN THE PAST 7 DAYS**, not just how you feel today.

Here is an example, already completed.

I have felt happy:

- Yes, all the time
- Yes, most of the time    This would mean: "I have felt happy most of the time" during the past week.
- No, not very often    Please complete the other questions in the same way.
- No, not at all

In the past 7 days:

- |  |  |
|--|--|
| <p>1. I have been able to laugh and see the funny side of things</p> <ul style="list-style-type: none"><li><input type="checkbox"/> As much as I always could</li><li><input type="checkbox"/> Not quite so much now</li><li><input type="checkbox"/> Definitely not so much now</li><li><input type="checkbox"/> Not at all</li></ul> <p>2. I have looked forward with enjoyment to things</p> <ul style="list-style-type: none"><li><input type="checkbox"/> As much as I ever did</li><li><input type="checkbox"/> Rather less than I used to</li><li><input type="checkbox"/> Definitely less than I used to</li><li><input type="checkbox"/> Hardly at all</li></ul> <p>*3. I have blamed myself unnecessarily when things went wrong</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, most of the time</li><li><input type="checkbox"/> Yes, some of the time</li><li><input type="checkbox"/> Not very often</li><li><input type="checkbox"/> No, never</li></ul> <p>4. I have been anxious or worried for no good reason</p> <ul style="list-style-type: none"><li><input type="checkbox"/> No, not at all</li><li><input type="checkbox"/> Hardly ever</li><li><input type="checkbox"/> Yes, sometimes</li><li><input type="checkbox"/> Yes, very often</li></ul> <p>*5. I have felt scared or panicky for no very good reason</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, quite a lot</li><li><input type="checkbox"/> Yes, sometimes</li><li><input type="checkbox"/> No, not much</li><li><input type="checkbox"/> No, not at all</li></ul> | <p>*6. Things have been getting on top of me</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, most of the time I haven't been able to cope at all</li><li><input type="checkbox"/> Yes, sometimes I haven't been coping as well as usual</li><li><input type="checkbox"/> No, most of the time I have coped quite well</li><li><input type="checkbox"/> No, I have been coping as well as ever</li></ul> <p>*7. I have been so unhappy that I have had difficulty sleeping</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, most of the time</li><li><input type="checkbox"/> Yes, sometimes</li><li><input type="checkbox"/> Not very often</li><li><input type="checkbox"/> No, not at all</li></ul> <p>*8. I have felt sad or miserable</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, most of the time</li><li><input type="checkbox"/> Yes, quite often</li><li><input type="checkbox"/> Not very often</li><li><input type="checkbox"/> No, not at all</li></ul> <p>*9. I have been so unhappy that I have been crying</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, most of the time</li><li><input type="checkbox"/> Yes, quite often</li><li><input type="checkbox"/> Only occasionally</li><li><input type="checkbox"/> No, never</li></ul> <p>*10. The thought of harming myself has occurred to me</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Yes, quite often</li><li><input type="checkbox"/> Sometimes</li><li><input type="checkbox"/> Hardly ever</li><li><input type="checkbox"/> Never</li></ul> |
|--|--|

Administered/Reviewed by \_\_\_\_\_ Date \_\_\_\_\_

# Instructions for using Edinburgh

- The mother is asked to check the response that comes closest to how she has been feeling in the previous 7 days.
- All of the items must be completed
- Care should be take to avoid the possibility of the mother discussing her answers with others
  - Goal for the answers to come from the mother or pregnant woman.
- The mother should complete the scale herself, unless she has limited English or has difficulty with reading.
- Build a relationship of trust prior to conducting the screening.

# Scoring

- 1 of 4 possible responses that comes the closest to symptoms during the previous 7 days
- All 10 items must be completed
- Items are scored 0, 1, 2, 3
- Maximum score: 30
- Possible depression: 10 or greater
- Always look at item 10!
  - Warrants immediate discussion if  $>1$  (suicide risk)

# Discussing Screening Results

- “Your score indicates that you may be depressed. How does that fit with what you’ve been experiencing?”
- “Your score isn’t in the range for likely clinical depression, but it sounds like you’re struggling right now. Let’s talk about what kinds of support would feel helpful.”
- Notice especially high items and use as discussion starter
  - *“You marked...could you tell me more about that? Could you tell me about a time when you felt that way?”*
- Always check item #10 - thoughts of harming herself

## Talk Openly About Safety

- Reassure that you are asking because you want *her* to feel safe & secure
- Matter-of-fact approach
- Openers:
  - “Some women who are feeling depressed or overwhelmed have thoughts of hurting themselves. Do you ever have these kinds of thoughts?”
  - “How about your baby? Do you worry about his safety or that you might hurt him?”
  - “Tell me more about these thoughts....”
- Normalize that it is difficult to talk about
- Provide emergency resource information, even if not needed now

# Create an Action Plan

- Components
  - Referral
  - Ensure Safety
  - Social Support
  - Nutrition-Diet
  - Sleep
  - Exercise-Activity
  - Support to Family

## 3 questions commonly used to guide decision-making around possible risk for suicide:

- Does the person have a plan to commit suicide/self-harm (i.e., can the individual answer questions about what, when, where, and how)
- Does the person have means available for carrying out the plan
- Are there any factors that are keeping the person from carrying out their plan?
- **Create a clear plan to address all responses:**

## Fleshing out the Plan

- These are important for all mothers, but most especially those who do not choose to seek diagnosis and treatment (or are unable)
- You can assemble an action plan even for mothers who refuse screening, but who are suffering and struggling.
- One size does not fit all. Tailor these recommendations to what is appropriate to your mom and their family

# Making the Connection

- **Remind Her:**
  - To be the best mom she can, she needs to take care of herself.
  - She isn't "crazy, weak or to blame". PPD is real, affects hundreds of thousands of women & and is usually a combination of biological factors and stress.
  - Getting outside input or another perspective may help her find the best way to take care of herself during this difficult time.
- **Recognize that in addition to fear about treatment, it is difficult to follow through when depressed due to symptoms such as fatigue:**
  - Call to make referral from mom's home with her present
  - Or get her permission to have provider contact her directly
  - Discuss how she will get to first appointment

## Things to think about.....

- What is the scope of your role?
- Therapy versus a therapeutic relationship
  - What does this mean to you?
- What steps, safeguards, or back-ups might you put into place when questions come up or for difficult cases?

# AlabamaMentalHealth.org

http://www.alabamamentalhealth.org/ Alabama Mental Health | M...

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## AlabamaMentalHealth.org

Mental Health Resource Directory  
For Alabama



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## Mental Health Resource Directory for Alabama

AN ONLINE MENTAL HEALTH RESOURCE DIRECTORY FOR OUR COMMUNITY

**Search Now:**

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### JOIN THE DIRECTORY

If you are a mental health resource provider who would like to be included in our directory please click here:

[Join the Directory](#)

### Alabama Mental Health Resource Directory

Welcome to the website for people seeking information about mental health resources in Alabama!

MATERNAL DEPRESSION WORKSHOP, MAY 10, 2013, Mtn Brook Board of Education. For more info, go to [www.alapsych.org](http://www.alapsych.org), Calendar page.

[Managing Traumatic Stress](#): Tips for recovering from disasters and other traumatic events.

# Mental Health Resource Directory for Alabama

[www.alabamamentalhealth.org](http://www.alabamamentalhealth.org)

Crisis Center: 205-323-7777

2-1-1 Connects Alabama (or 1-888-421-1266)

Free number to dial for information about health and human service organizations in your community

## HOTLINES

Jefferson County DHR Child Abuse Hotline	(205) 423-4850
AIDS/HIV Nightline	(800) 628-9240
Alabama AIDS Hotline	(800) 228-0469
Alabama Domestic Violence Hotline	(800) 650-6522
Alcohol/Drug Info Line	(800) 662-4357
Battered Women's Hotline	(800) 650-6522
Boys Town National Hotline	(800) 448-3000
CDC National Aids Hotline (Spanish)	(800) 344-7432
Child Abuse Hotline (US)	(800) 422-4453
Childhelp USA Hotline/ National Child Abuse Hotline	(800) 422-4453
Cocaine Anonymous National Referral Line	(800) 347-8998
Crisis/Runaway Hotline	(800) 999-9999
CSAT Hotline	(800) 729-6686
Depression Awareness: National Institute of Mental Health	(800) 421-4211
Domestic Violence Hotline (AL)	(800) 650-6522
Domestic Violence Hotline (US)	(800) 799-7233
Drug/Alcohol Reporting Hotline	(800) 392-8011
Missing/Exploited Children Hotline	(800) 843-5678
National Drug Treatment Hotline	(800) 662-4357
Parent Assistance Helpline	(866) 962-3030
Agency on Aging Hotline	(800) 243-5463
STD Hotline (CDC Natl Info)	(800) 232-4636
National Substance Abuse Hotline	(800) 729-6686
Suicide Prevention Lifeline	(800) 784-2433

*WHO proposition:* **“There can be no health without mental health”**

- Mental health affects progress towards the Millennium Development Goals, including:
  - *promotion of gender equality and empowerment of women, reduction of child mortality, improvement of maternal health, and reversal of the spread of HIV/AIDS*
- Mental health awareness needs to be integrated into all aspects of health and social policy, health-system planning, and delivery of primary and secondary general health care.

# The Parenting Responsibility and Emotional Preparedness (PREP) Screening Tool

- A 3-item screen that identifies teen mothers at high risk for non-optimal parenting
- Because there are no easy-to-obtain, non-stigmatizing tools that reliably identify teen mothers who are at high risk for non-optimal parenting during pregnancy, we developed and tested the utility of the PREP, a 3-item screening tool for use during pregnancy.

Lanzi, Ramey, & Bert (2012) *Archives of Pediatrics and Adolescent Medicine*

# PREP Items

Lanzi, Ramey, & Bert (2012)

- Now that you are pregnant, are there some *new* areas in which you are accepting responsibility or *want to* become responsible in?”
- “I am uncertain about whether I can provide emotional support to my children”
- “I feel uncertain about my ability to do a good job raising my children”

# PREP Screen: No differences in age, ethnicity, income

Table 2. Demographic Comparisons of Adolescent First-Time Mothers With No PREP and With PREP Risk

Demographic	No. (%) of Mothers <sup>a</sup>		Test of Significance
	No PREP Risk (n = 164)	PREP Risk (n = 106)	
Maternal age, y			0.285 ( $\chi^2$ test)
15	16 (10.1)	10 (9.5)	
16-17	81 (50.9)	57 (54.3)	
18-19	62 (39.0)	38 (36.2)	
Maternal race/ethnicity			4.804 ( $\chi^2$ test)
Black or African American	118 (72.0)	88 (83.0)	
White or non-Hispanic	20 (12.1)	9 (8.5)	
Latina	18 (11.0)	9 (8.5)	
Other	8 (4.1)	0	
Monthly income, \$ <sup>b</sup>			6.912 ( $\chi^2$ test)
<415	20 (29.4)	17 (33.3)	
415-835	11 (16.2)	16 (31.4)	
836-2085	20 (29.4)	13 (25.5)	
$\geq$ 2086	17 (25.0)	5 (9.8)	

# But....significantly different in terms of depression, trauma, and IQ

Table 2. Demographic Comparisons of Adolescent First-Time Mothers With No PREP and With PREP Risk

Demographic	No. (%) of Mothers <sup>a</sup>		Test of Significance
	No PREP Risk (n = 164)	PREP Risk (n = 106)	
Maternal Beck Depression Inventory score during pregnancy, mean (SD)	12.36 (7.21)	14.50 (9.08)	2.30 ( <i>t</i> test) <sup>c</sup>
Maternal Beck Depression Inventory score 6 months post partum, mean (SD)	8.34 (7.39)	11.34 (8.66)	2.36 ( <i>t</i> test) <sup>d</sup>
Child Abuse Potential Inventory score during pregnancy, mean (SD)	9.81 (3.82)	10.98 (4.38)	2.34 ( <i>t</i> test) <sup>d</sup>
Child Abuse Potential Inventory score 6 months post partum, mean (SD)	9.07 (4.03)	11.31 (3.60)	5.48 ( <i>t</i> test) <sup>d</sup>
Knowledge of Infant Development Inventory during pregnancy, mean (SD)	48.06 (5.19)	46.16 (5.23)	4.23 ( <i>t</i> test) <sup>d</sup>
Adolescent mothers' report of her own childhood trauma, mean (SD)	36.10 (12.49)	40.42 (14.35)	2.03 ( <i>t</i> test) <sup>c</sup>
Adolescent mothers' WASI IQ (mean, 100; SD, 16)	90.02 (10.62)	82.93 (10.53)	8.43 ( <i>t</i> test) <sup>d</sup>

# And, how they interacted with their children over the first 18 months:

PREP Predicted significantly lower quality of home environments and higher levels of non-optimal mother-child interactions

Table 3. IT-HOME Environment and Mother-Child Interactions at 4, 8, and 18 Months Post Partum as a Function of PREP Risk in 270 Mothers

Variable	Independent <i>t</i> Test, Mean (SD)			Mean Rank (by Wilcoxon Signed-Rank Test)		
	No Risk	Risk	<i>t</i> Value	No Risk	Risk	<i>t</i> Value
<b>4 Months</b>						
IT-HOME	32.43 (5.04)	29.63 (4.84)	3.78 <sup>a</sup>	91.51	71.60	-2.59 <sup>a</sup>
IT-HOME plus SHIF	47.95 (6.61)	44.15 (6.20)	9.42 <sup>a</sup>	93.77	67.87	-3.36 <sup>a</sup>
Warmth-seeking from infant	3.60 (0.97)	3.39 (1.11)	0.97	85.97	76.65	-1.22
Sensitivity toward infant	4.01 (1.00)	3.72 (0.98)	2.38 <sup>b</sup>	88.28	72.74	-2.04 <sup>b</sup>
Contingent responsiveness to infant	4.04 (1.00)	3.75 (1.05)	2.26 <sup>b</sup>	86.31	76.07	-1.34
Physical intrusiveness with infant	4.73 (0.50)	4.63 (0.66)	0.88	83.66	80.54	-0.46
Verbal content with infant	4.86 (0.33)	4.83 (0.34)	0.18	86.12	74.92	-1.87 <sup>c</sup>
General verbalness with infant	2.80 (1.22)	2.44 (1.12)	2.47 <sup>b</sup>	87.92	73.35	-1.90 <sup>c</sup>
<b>8 Months</b>						
IT-HOME	33.51 (4.61)	29.89 (5.38)	8.99 <sup>a</sup>	80.52	54.40	-3.76 <sup>a</sup>
IT-HOME plus SHIF	48.54 (7.56)	43.90 (6.70)	9.57 <sup>a</sup>	80.56	54.35	-3.77 <sup>a</sup>
Warmth-seeking from infant	3.58 (0.94)	3.22 (0.95)	3.52 <sup>a</sup>	75.54	60.66	-2.15 <sup>b</sup>
Sensitivity toward infant	3.63 (1.10)	3.36 (0.97)	1.46 <sup>c</sup>	73.72	63.32	-1.51
Contingent responsiveness to infant	3.67 (1.12)	3.29 (1.13)	2.80 <sup>b</sup>	73.92	63.03	-1.58
Physical intrusiveness with infant	4.65 (0.54)	4.49 (0.74)	1.64 <sup>c</sup>	69.32	69.77	-0.07
Verbal content with infant	4.72 (0.46)	4.67 (0.44)	0.31	71.51	66.55	-0.77
General verbalness with infant	2.67 (1.19)	2.39 (1.01)	1.42 <sup>c</sup>	72.21	65.53	-0.97
<b>18 Months</b>						
IT-HOME	32.51 (5.63)	31.89 (4.75)	0.22	72.97	67.82	-0.73
IT-HOME plus SHIF	48.43 (7.01)	45.57 (6.54)	4.00 <sup>a</sup>	74.60	65.19	-1.33
Warmth-seeking from infant	3.51 (1.00)	3.44 (1.13)	0.09	71.04	73.63	-0.36
Sensitivity toward infant	3.19 (1.06)	3.09 (1.15)	0.17	71.44	72.94	-0.21
Contingent responsiveness to infant	3.41 (1.14)	3.28 (1.21)	0.30	72.98	70.34	-0.37
Physical intrusiveness with infant	4.49 (0.71)	4.48 (0.73)	0.02	70.71	74.19	-0.51
Verbal content with infant	4.26 (0.78)	4.02 (0.85)	1.91 <sup>b</sup>	74.38	67.95	-0.90

# Impacting their children's cognitive and socio-emotional development at 24 months

With significantly lower child outcomes at age 2 for cognitive scores and higher depressive/withdrawal symptoms and dysregulation/negative emotionality.

**Table 4. Child Outcomes at 24 Months as a Function of PREP Risk**

Measure	Mean (SD)		t Test
	No Risk	PREP Risk	
Bayley score	86.02 (13.16)	81.80 (12.67)	1.83 <sup>a</sup>
PLS-4 auditory comprehension standard score	89.59 (13.79)	89.30 (14.81)	0.01
PLS-4 expressive communication score	92.70 (13.53)	92.44 (13.91)	0.01
PLS-4 total language standard score	90.61 (14.23)	90.65 (14.80)	0.00
ITSEA aggression/defiance	0.65 (0.33)	0.70 (0.32)	0.50
ITSEA depression/withdrawal	0.20 (0.24)	0.33 (0.27)	5.95 <sup>b</sup>
ITSEA dysregulation-negative emotionality	0.69 (0.36)	0.85 (0.35)	4.47 <sup>b</sup>

Abbreviations: ITSEA, Infant-Toddler Social and Emotional Assessment; PLS-4, Preschool Language Scale 4; PREP, Parenting Responsibility and Emotional Preparedness.

<sup>a</sup> $p < .05$ .

<sup>b</sup> $p < .01$ .

# Public Health Implications

- Findings support policies for universal screening for depression at multiple stages in a family's evolution.
- Screening is particularly important for low-income populations, including prior to pregnancy (inter-pregnancy intervals) and during pregnancy.
- Although chronic and more severe depressive symptoms identify the highest risk group, early detection and treatment should be considered for all mothers – for their well-being and their children's health and their social, emotional, and cognitive development.
- Many practitioners who intersect with mothers and young children have an opportunity to address the issue.