4th Biennial
Perinatal Mental Health Conference
October 24-27, 2019
Chapel Hill, North Carolina

Program
Our vision is a world in which childbearing women, their children and families enjoy the benefits of mental health and well-being.

*Understanding Needs, Expanding Reach Through Translational Science and Personalized Care*

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CONFERENCE INFORMATION

REGISTRATION DESK HOURS:
Thursday, October 24 8:30am – 5:00pm
Friday, October 25 6:30am – 6:00pm
Saturday, October 26 6:30am – 5:00pm
Sunday, October 27 7:30am - 10:30am

SCHEDULE AT A GLANCE

THURSDAY, October 24, 2019

Pre-conference Skill-Building Workshops (Additional Fee)

Morning Workshops
9:00am to 12:00pm
Dogwood A Room
Caring for Women Using Substances – A Focus on Cannabis and Opioids during the Prenatal and Post-pregnancy Period
Margaret Howard (Chair), Hendree Jones, Connie Guille

9:00am to 12:00pm
Dogwood B Room
Trauma-Informed Care in the Perinatal Period
Cheryl Beck (Chair), Maria Muzik, Helen Kim

Afternoon Workshops
1:00pm to 5:00pm
Grumman Auditorium
Obstetric Psychopharmacology
Katherine Wisner (Chair), Crystal Clark, Catherine Stika

1:00pm to 5:00pm
Windflower Room
Introduction to Buprenorphine Assisted Treatment of Opioid Use Disorder: Special Consideration for Perinatal Women
Anupriya Gogne (Chair)

1:00pm to 5:00pm
Dogwood A Room
Perinatal Program Development and Implementation
Sonia Murdock (Chair), Shannon Erisman and Margaret Howard (Day Program), Mary Kimmel and Samantha Meltzer-Brody (Perinatal Mood and Anxiety Disorders Program/In-patient Unit & Outpatient Clinics), Lisa Segre (Listening Visits), and Simone Vigod (Virtual Care)

FRIDAY, October 25, 2019

7:00am – 8:00am
Magnolia Room
Junior Faculty Mentor-Mentee Meeting

8:00am–8:15am
Grumman Auditorium
Welcome!
Samantha Meltzer-Brody, MD, President, MONA
Katherine Wisner, MD, MS, Immediate Past President and Founder, MONA
Lisa Segre, PhD, President, Marcé International Society for Perinatal Mental Health

8:15am – 9:45am
Grumman Auditorium
Plenary Lectures
Ian Jones, MD
Back to the Future - Postpartum Psychosis: Historical Anachronism or the Future of Maternal Mental Health

Alison Stuebe, MD
Establishing the 4th Trimester
### FRIDAY, October 25, 2019 - continued

<table>
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<th>Time</th>
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<tr>
<td>9:45am - 10:15am</td>
<td>Refreshment Break</td>
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<td>10:15am – 11:45am</td>
<td>Concurrent Sessions</td>
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#### Concurrent Sessions

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<th>Concurrent 1A</th>
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<tr>
<td>Grumman Auditorium</td>
<td>Dogwood Room</td>
<td>Redbud A Room</td>
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<td>Bellflower Room</td>
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<tr>
<td>Symposium: Changing the Course of Perinatal Depression: Adoption and Scalability of Evidence-Based Preventive Interventions</td>
<td>Symposium: Implementing the National Curriculum in Reproductive Psychiatry</td>
<td>Symposium: Psychosis during Pregnancy and the Postpartum Period: From Causes to Acute and Longer-Term Treatment</td>
<td>1E1: Symposium: Integration of Substance Use Disorders Treatment in Obstetrics Care</td>
<td>Chair: Deepika Goyal Oral Presentations (5):</td>
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<tr>
<td>Huynh-Nhu Le, Ellen Poleshuck, Darius Tandon, Alicia Diebold, Jessica Johnson, Ma. Asunción Lara</td>
<td>Lauren Osborne, Lucy Hutner, Lisa Catapano</td>
<td>Lee Cohen, Marlene Freeman, Veerle Bergink, Catherine Bimdorf</td>
<td>Constance Guille, Marley Doyle, Julia Frew, Susan Karabell, Leena Mittal</td>
<td>Sleep During Pregnancy Predicts Transdiagnostic Symptoms Associated with Postpartum Depression Jessica Obeysekare</td>
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<tr>
<td>11:45am – 12:30pm</td>
<td>1E2: Symposium: Opioid Addiction: Models of Care for Moms and Babies</td>
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<td>Feasibility of Model Adaptations and Implementation of a Perinatal Psychiatric Teleconsultation Program Christina Wichman</td>
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<td>12:30pm - 1:15pm</td>
<td>Outpatient Follow-Up After Mental Health Emergency Department Visits in the Postpartum Period Lucy Barker</td>
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<td>Trillium Dining Room</td>
<td>Maternal Depression in Latinas and Child Socioemotional and Cognitive Development: A Systematic Review Rebecca Harris</td>
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<td>Unique Mental Health Needs of Transmen Nancy Selix</td>
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### 11:45am – 12:30pm

**Poster Viewing with Authors**

### 12:30pm - 1:15pm

**Lunch**

*Trillium Dining Room*
FRIDAY, October 25, 2019 - continued

<table>
<thead>
<tr>
<th>1:15pm - 2:45pm</th>
<th>Concurrent Sessions</th>
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| Concurrent 2A  | **Symposium:** "Hasta la Revolucion Siempre" - Updates from the Genetics Revolution in Maternal Mental Health  
                 Arianna Di Florio,  
                 Ian Jones,  
                 Jennifer Payne,  
                 Anna Bauer,  
                 Jerry Quintivano |
| Concurrent 2B  | **Symposium**  
                 Using Qualitative Research to Bring Visibility to Invisible Phenomena in Perinatal Mental Health  
                 Cheryl Beck,  
                 Carrie Eaton,  
                 Michele McKelvey |
| Concurrent 2C  | **Symposium**  
                 Using Functional Magnetic Resonance Imaging to Unveil Features of Perinatal Depression  
                 Sandraluz Lara-Cinisomo,  
                 James E. Swain,  
                 Jackie Gollan,  
                 Heidemarie Laurent,  
                 Pilyoung Kim |
| Concurrent 2D  | **2D1: Symposium**  
                 Keep Calm and Carry On: Management of Complex Perinatal Cases on Inpatient Medical and Psychiatric Units  
                 Madeleine Fersh,  
                 Amanda Tinkelman,  
                 Sarah Reinstein,  
                 Jessica Cosgrove,  
                 Alina Cote,  
                 Kalli Feldman  
                 **2D2: Symposium**  
                 Don't Worry Alone: Provider Discussion on the Clinical Management of Challenging Perinatal Cases  
                 Katherine Moore,  
                 Elaine Stageberg,  
                 Hannah Betcher,  
                 Amanda Benarroch |
| Concurrent 2E  | **Chair:** Crystal Clark  
                 Oral Presentations (6)  
                 - Perinatal Anxiety Symptoms in Mexican Women: Rate and Predictors  
                   Janeth Juarez Padilla  
                 - Racial/Ethnic Differences in Treatment Initiation for New Episodes of Depression during Pregnancy  
                   Lyndsay Avalalos  
                 - Application of the Developmental Origins of Health and Disease Model to Reducing Health Disparities for Black American women and Infants via Docosahexaenoic Acid (DHA)supplementation  
                   Kathryn Keenan  
                 - Discrimination Exposure and DNA Methylation in Latina Mothers  
                   Hudson Santos  
                 - Severe Postpartum Depression and Infant Bonding in Association with Traumatic Events  
                   Dalia Hernandez-Medina  
                 - Cesarean Delivery is a Risk Factor for Immediate Postpartum Depressive Symptoms  
                   Sarah Smithson |

2:45pm - 3:00pm Refreshment Break
### 3:00pm – 4:30pm

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<tr>
<td><strong>Symposium</strong> Improving Parental Psychosocial Functioning in the Neonatal Intensive Care Unit</td>
<td><strong>Workshop</strong> A Publishing Playbook: Preparation, Pitfalls, Perseverance and Pulling it Off! Katherine Wisner, Marlene Freeman</td>
<td><strong>Symposium</strong> Global Innovations in Screening and Treatment of Perinatal Depression and Anxiety Daisy Radha Singla, Richard Silver, Mwawi Ngoma, Cindy-Lee Dennis, Samantha Meltzer-Brody</td>
<td>3D1: Symposium Implementation of Perinatal Collaborative Care: Moving from Efficacy to Effectiveness Jackie Gollan, Emily Miller, Jennifer Sprague, Apama Chatterjee</td>
<td>Chair: Cheryl Beck Oral Presentations (6)</td>
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<td>Pamela Geller, Alexa Bonacquisti, Chavis Patterson, Ariana Albanese, Jennifer Barkin, Wanjiku Njoroge Victoria Grunberg</td>
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<td>3D2: Symposium Collaborative Behavioral Health Services to Optimize Outcomes for Moms and Families Camille Hoffman, Galena Rhoades, Sara Mazzoni, Leisha Andersen, Blair Hedges</td>
<td>Transcranial Direct Current Stimulation (tDCS) for Depression in Pregnancy: A Pilot Randomized Controlled Trial Simone Vigod</td>
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<td>Maternal Prescribed Opioid Analgesic Use During Pregnancy and Risk for Adverse Birth Outcomes in Offspring: A Population-based Study Ayesha Sujan</td>
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<td>The International Progress of PPD ACT, an App-based Postpartum Depression Genetic Study Jerry Guintivano</td>
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<td>Vulnerable Captivity and the Meaning of the Experience of Antepartum Bed Rest: Beyond Postpartum Gwendelyn Orozco</td>
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<td>Quantifying the Cost of Perinatal Mood and Anxiety Disorders in United States Kara Zivin</td>
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<td>Childbirth-related PTSD and Maternal Bonding impairment: Applying a Biopsychological Approach Berman Zohar</td>
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### 4:30pm – 4:45pm

Session Transition

### 4:45pm – 5:45pm

**Innovation Awards in Maternal Mental Health**

Grumman Auditorium
FRIDAY, October 25, 2019 - continued

5:45pm – 6:30pm  Plenary Lecture  
Grumman Auditorium  
Neill Epperson, MD  
The Enduring Impact of Childhood Adversity: Observations at Reproductive Transitions

6:30pm - 7:30pm  Welcome Reception at the Friday Center  
Atrium

SATURDAY, October 26, 2019

7:00am – 8:00am  Junior Faculty Mentor-Mentee Meeting  
Magnolia Room

8:00am – 9:30am  Travel Awardee Recognition  
Grumman Auditorium  
Samantha Meltzer-Brody, MD  
Plenary Lectures  
Hendree Jones, PhD  
Substance Dependence in Perinatal Women  
Krista Huybrechts, PhD  
Using Big Data to Inform Big Decisions Regarding Psychiatric Medication Use in Pregnancy

9:30am - 10:00am  Refreshment Break
### Concurrent Sessions

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#### Symposium

**The Brain, Immunity and Behavior: Implications for Perinatal Health**
Lauren Osborne, Benedetta Leuner, Mary Kimmel, Lisa Christian

**Symposium**

- **Increasing Access to Perinatal Mental Health Care Across the US: Policy, Programs & Peer Networks**
  - Nancy Byatt, Tiffany Moore Simas, Mary Kimmel, Margaret Howard

- **Dialectical Behavior Therapy for the Perinatal Period: Model Development Across Four Academic Centers**
  - Maria Muzik, Tiffany Hopkins, Katie Bresky, Natalie Burns, Sharron Hollamby, Shannon Erisman

- **4C1: Symposium Novel Psychotherapy Approaches for Perinatal Mood and Anxiety Disorders**
  - Alexa Bonacquisti, Crystal Schiller, Erin Richardson, Paul Geiger, Tiffany Hopkins, Matthew Cohen, Donald Baucom

- **4C2: Symposium We Need to Have Patience with Ourselves, We Just Had a Baby: A Qualitative Investigation of Body Image Among Women with Postpartum Depression**
  - Tamara Nelson

- **4C3: Symposium Determining Maternal Serotonin Reuptake Inhibitor Use During Pregnancy on Birth Outcomes**
  - Nina Molenaar

- **4C4: Symposium “We Need to Have Patience with Ourselves, We Just Had a Baby: A Qualitative Investigation of Body Image Among Women with Postpartum Depression**
  - Tamara Nelson

- **4C5: Symposium Maternal Childhood Maltreatment, Lifestyle Factors, and Immune Activation During Pregnancy**
  - Clare McCormack

- **4C6: Symposium Psychosocial Care for Minority Parents in the NICU: A Historical Review**
  - Alison Hartman

- **4C7: Symposium Understanding Maternal Adjustment to Pregnancy**
  - Jessica Latack

- **4C8: Symposium Outcomes of Maternal Stress as Evaluated by the Perceived Stress Scale**
  - Anne Porter

- **4C9: Symposium Improving Access to Perinatal Mental Health in Rural Communities: How to Assess Needs and Implement a Solution**
  - Mary Boyle, Leigh Cook

- **4C10: Symposium Longitudinal Remote Consultation to Support Engagement Strategies in Perinatal Collaborative Care**
  - Amritha Bhat

- **4C11: Symposium The Early Relational Health Screener: A Pilot Study of Evaluating the Impact of a Mother-Child Relational Health Intervention Delivered on an Inpatient Perinatal Psychiatry Unit**
  - Amanda Sanders
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<td><strong>Symposium</strong></td>
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<td><strong>5C1: Symposium</strong></td>
<td><strong>5D1: Symposium</strong></td>
<td><strong>Chair:</strong> Margaret Howard Oral Presentations (6)</td>
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<tr>
<td><strong>Barriers and Innovations in Implementation of Integrated Perinatal Mental Health Services to Underserved Women</strong></td>
<td><strong>From Bench to Bedside: Neurosteroids in the Treatment of Postpartum Depression -- A Review of Animal Studies, Clinical Trials and a Panel Discussion</strong></td>
<td><strong>Antidepressants in Pregnancy: Concerns and Controversies</strong></td>
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<td><strong>Severe Postpartum Mood and Anxiety Disorders Across Time and Culture: Guide for Future Research and Care</strong></td>
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<td>Iwona Juskiewicz, Catherine Monk, Ellen Tourelot, Shannon Lenze</td>
<td>Jamie Maguire, Kristina Deligiannidis, Samantha Meltzer-Brody, Connie Guille, Cynthia Epperson</td>
<td>Geetha Shivakumar, Aimee Kroll-Desrosiers, Carolyn Morrow</td>
<td>Veerle Bergink, Xiaoqin Liu, Nina Molenaar, Anna Rommel, Lindsay Standeven</td>
<td>Mary Kimmel</td>
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<td><strong>The Role of Antenatal and Postnatal Maternal Bonding in Infant Development</strong></td>
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<td>5C2: Symposium Using Technology to Prevent and Treat Perinatal Depression Sandraluz Lara-Cinisomo, Andrea Ramirez and Maria Rosales, Darius Tandon Aline Z. Barrera, Lyndsay A. Avalos</td>
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<td>Genevieve Le Bas</td>
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<td><strong>Person Centered Counselling for Maternal Depression Delivered by Non-specialists: A Meta-Analysis</strong></td>
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<td>Jennifer McCabe</td>
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<td><strong>Expanding Access to Depression Treatment in Kenya Through Automated Psychological Support</strong></td>
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<td>Eric Green</td>
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<td><strong>Development and Validation of the Practice Readiness to Evaluate and address Perinatal Depression (PREPD) Assessment</strong></td>
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<td>Grace Masters</td>
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<td><strong>National Initiatives to Build frontline Provider Capacity to Address Perinatal Mental Health and Substance Use Disorders</strong></td>
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<td>Tiffany Moore Simas</td>
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### Concurrent 6A
**Concurrent 6A**
Grumman Auditorium

**Symposium:** Lithium and Breastfeeding
**Recommendations:** Perspectives on Best Practices
Crystal Clark, Veerle Bergink, Debra Bogen, Simone Vigod

### Concurrent 6B
**Concurrent 6B**
Dogwood Room

**Symposium:** Implementation of Mom Power (MP), A Brief Attachment Based Parenting and Mental Health Intervention for Trauma Survivor Mothers and their Children Across Urban and Rural Settings
Maria Muzik, Katherine Rosenblum, Diana Morelen, Rebecca Vivrette

### Concurrent 6C
**Concurrent 6C**
Redbud A Room

**Symposium:** Philanthropy: A Partner in Advancing C.A.R.E. for Perinatal Mood and Anxiety Disorders
Nancy Byatt, Rebecca Alderfer, Stephanie Teleki, Becca Graves

### Concurrent 6D
**Concurrent 6D**
Redbud B Room

**Symposium:** Chair: Cindy-Lee Dennis
Oral Presentations (6)
- Effects of Higher Maternal Choline Levels on Prenatal Marijuana’s Impact on Offspring
  Camille Hoffman
- Women’s Reasons for Prenatal Cannabis Use and Motives and Experiences with Discontinuation
  Cynthia Battle
- Differential Effects of Critically-Timed Sleep and Light Therapy for Pregnancy vs. Postpartum Depression
  Barbara Parry
- Pharmacokinetics of Lithium During Lactation
  Maria Luisa Imaz
- Does Antenatal Benzodiazepine Use Affect Delivery Outcomes? A Systematic Review and Meta-analysis
  Sophie Grigoriadis
  Joy Moel

### Concurrent 6E
**Concurrent 6E**
Bellflower Room

**Symposium:** Chair: Lauren Osborne
Oral Presentations (6)
- Improving Perinatal Depression Outcomes with Mobile Technology
  Shannon Lenze
- The Lived Experience of Perinatal Depression and Pain during the Third Trimester of Pregnancy
  Julie Vignato
- Trauma-Informed Care in a Patient-Centered Medical Home for Young Mothers and their Babies: Implementation and Outcomes
  Bethany Ashby
- Acculturation and Changing Relationships Between Social Support, Sociocultural Stressors and Depressive Symptoms in Pregnant Women of Mexican Descent
  Kimberly D’Anna
- A Relational Approach to Treatment of Postpartum Depression and Mother-Infant Relationships in the Context of Maternal Trauma History
  Roseanne Clark
- Perinatal Mental Health in Brazil: The Feasibility of Mood Disorders Screening During Pregnancy in a High-Risk Maternity
  Fernanda Schier de Fragas
SUNDAY, October 27, 2019

8:00am – 9:30am  
**Plenary Lectures**  
*Grumman Auditorium*  
Ruby Mendenhall PhD  
*Hidden America: Centering Black Mothers’ Voices Regarding the Effects of Gun Violence on Their Mental and Physical Health*  
*Ma. Asunción Lara*  
The Influence of Social and Cultural Factors in Perinatal Depression in Mexico: Relevance for Latinas in the U.S.

9:30am - 10:00am  
Refreshment Break

10:00am – 10:45am  
**Plenary Lecture**  
*Grumman Auditorium*  
Katie Watson JD  
*Reproductive Justice and Structural Competency: Moving Medicine from Sensitivity to Advocacy*

10:45am – 11:00am  
Session Transition

11:00am – 12:30pm  
**Concurrent Sessions**

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| **Symposium**  | **Symposium**  | **Symposium**  | Chair: Barbara Parry  
*The Microbiome: At the Intersection of Mother-Infant Mental Health*  
Mary Kimmel, Tamar Gur, Liisa Hantsoo, Beatriz Penalver Bernabe  
Short- and Long-Term Consequences of Severe Postpartum Mental Disorders: Recent Epidemiologic Evidence Based on Danish Population Registers  
Trine Munk-Olsen, Xiaoqin Liu, Benedicte Johannsen, Katja Ingstrup  
Complementary Health Practices to Treat and Prevent Perinatal Mental Health Conditions  
Cynthia Battle, Patricia Kinser, Anne Porter, Camille Hoffman  
Oral Presentations (6)  
- "Who Says We Don't Belong?" A Protocol to include Postpartum Disorders as Formal Diagnoses in the DSM  
Margaret Spinelli  
- A Pilot Feasibility Study of Using App-Based Ecological Momentary Assessment and a Wearable Tracking Device to Enhance the Clinical Care and Management of Postpartum Depression  
Holly Krohn  
- Establishing Preliminary Severity Ranges for Scores on the Edinburgh Postnatal Depression Scale  
Jennifer McCabe  
- The Role of Napping and Sleep Disturbance in the Onset of Antenatal Depression: Objective vs. Subjective Findings  
Sanam (Sammy) Dhaliwal  
- Neural and Affective Effects of Reproductive Steroid Manipulation in Reproductive-Related Mood Disorders  
Crystal Schiller  
- Assessing the Specificity of Perinatal Anxiety to the Neural Correlates of Infant Face Processing  
Helena Rutherford

12:30pm  
**Closing Remarks**  
*Grumman Auditorium*  
Samantha Meltzer-Brody, MD, President, MONA  
Crystal Clark, MD, President-elect, MONA  
Lisa Segre, PhD, President, Marcé International Society for Perinatal Mental Health  
*Drawing for three FREE registrations for the Marcé 2020 International Meeting! Must be present to win!*

1:00pm  
**Conference Adjourned**
PRESIDENT
Samantha Meltzer-Brody, MD
Assad Meymandi Distinguished Professor and Chair,
Department of Psychiatry
Director, UNC Center for Women’s Mood Disorders
University of North Carolina at Chapel Hill

VICE PRESIDENT / PRESIDENT - ELECT
Crystal Clark, MD MSc
Assistant Professor of Psychiatry
Northwestern University
Feinberg School of Medicine

TREASURER
Sandra Luz Lara-Cinisomo, PhD, EdM
Assistant Professor, University of Illinios at Urbana-Champaign
College of Applied Health Sciences
Department of Kinesiology and Community Health

SECRETARY:
Deepika Goyal, PhD, MS, FNP-C
Professor of Nursing, Family Nurse Practitioner Coordinator
Interim Graduate Coordinator, The Valley Foundation School of Nursing, San Jose State University

IMMEDIATE PAST PRESIDENT
Katherine L. Wisner, MD, MS
Norman and Helen Asher Professor of Psychiatry and Behavioral Sciences and
Obstetrics and Gynecology
Director, Asher Center for the Study and Treatment of Depressive Disorders
Feinberg School of Medicine - Department of Psychiatry and Behavioral Sciences
Northwestern University

REPRESENTATIVE TO MARCE SOCIETY
Lisa S. Segre, PhD
President-elect, International Marcé Society
Associate Professor (Primary) College of Nursing
(Secondary) Department of Psychological and Brain Sciences
University of Iowa
BOARD MEMBERS

CHERYL TATANO BECK, DNSC, CNM, FAAN
Distinguished Professor, University of Connecticut, School of Nursing
Joint appointment in the Department of Obstetrics and Gynecology at the School of Medicine

CINDY-LEE DENNIS, PhD
Professor in the Lawrence S. Bloomberg Faculty of Nursing and the Faculty of Medicine
Department of Psychiatry
University of Toronto

CAMILLE HOFFMAN, MD, MSCS
Assistant Professor of Maternal Fetal Medicine
University of Colorado School of Medicine
Departments of Obstetrics & Gynecology and Psychiatry

MARGARET HOWARD, PhD
Clinical Psychologist and Professor of Psychiatry and Human Behavior (Clinical) and Medicine (Clinical)
Warren Alpert Medical School of Brown University

EMILY MILLER, MD, MPH
Assistant Professor of Obstetrics and Gynecology (Maternal Fetal Medicine) and Psychiatry and Behavioral Sciences
Northwestern University
Feinberg School of Medicine

SONIA MURDOCK
Executive Director
The Postpartum Resource Center of New York, Inc.

MICHAEL W. O’HARA, PhD
Professor and Starch Faculty Fellow
Department of Psychological and Brain Sciences
University of Iowa

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8213 Lakenheath Way
Potomac, MD 20854
301-983-6282
www.perinatalmentalhealth.com

DEBRA C. TUCKER, CMP
Executive Director
KEYNOTE AND PLENARY SPEAKERS

PLENARY SESSIONS – FRIDAY, OCTOBER 25, 2019

8:15AM – 9:00AM
BACK TO THE FUTURE - POSTPARTUM PSYCHOSIS: HISTORICAL ANACHRONISM OR THE FUTURE OF MATERNAL MENTAL HEALTH

Ian Jones, MD
Director/Clinical Professor, National Centre for Mental Health
School of Medicine
Cardiff University
Cardiff, Wales

Dr. Jones is Professor of Psychiatry at the Division of Psychological Medicine and Clinical Neurosciences at Cardiff University. He is also an Honorary Consultant Psychiatrist in Cardiff and Vale NHS Trust. His research interests relate to bipolar spectrum disorders and in particular the relationship of mood disorders to childbirth. His clinical interest is in the identification and management of women at high risk of severe postpartum episodes.

9:00AM – 9:45AM
ESTABLISHING THE 4TH TRIMESTER

Alison Stuebe, MD
Professor, Maternal-Fetal Medicine
Medical Director, Lactation Services
Associate Director, Research and Program Development, UNC Center for Maternal and Infant Health
Distinguished Scholar in Infant and Young Child Feeding, UNC Department of Maternal & Child Health, School of Public Health

Dr. Stuebe completed her Obstetrics and Gynecology residency at Brigham and Women’s Hospital and Massachusetts General Hospital in Boston. She completed fellowship training in Maternal Fetal Medicine at Brigham and Women’s, and she earned a Masters in Epidemiology from the Harvard School of Public Health. She has published more than 110 peer-reviewed articles. She is currently an Associate Professor and board-certified maternal-fetal medicine subspecialist at the University of North Carolina School of Medicine and Distinguished Scholar of Infant and Young Child Feeding at the Gillings School of Global Public Health.

In the clinical arena, she is Medical Director of Lactation Services at UNC Health Care, and she works with an interdisciplinary team of faculty and staff to enable women to achieve their infant feeding goals. Her current research focuses on the role of oxytocin in women’s health and postpartum depression and on developing models for holistic care of families during the 4th Trimester.

She is a member of the Steering Committee for Moms Rising North Carolina, the Breastfeeding Expert Work Group for the American College of Obstetricians and Gynecologists, and a board member of the Society for Maternal-Fetal Medicine.
THE ENDURING IMPACT OF CHILDHOOD ADVERSITY: OBSERVATIONS AT REPRODUCTIVE TRANSITIONS

C. Neill Epperson, MD
Robert Freedman Endowed Professor and Chair of the Department of Psychiatry
School of Medicine at the University of Colorado Anschutz Medical Campus

Dr. Epperson is the Robert Freedman Endowed Professor and Chair of the Department of Psychiatry in the School of Medicine at the University of Colorado Anschutz Medical Campus. Dr. Epperson is internationally known for her unique lifespan approach to women’s reproductive and behavioral health in both the clinical and research realms. Her work related to early life stress and its impact on risk for affective disorders during periods of hormonal change, in addition to projects relating to cognitive decline during menopause, and sex differences among smokers, have been funded by the National Cancer Institute, National Institute of Mental Health, the Office of Research on Women’s Health, and the National Institute on Drug Abuse. Her body of work has led to a greater appreciation of the impact of childhood adversity on physiologic responses during times of hormonal fluctuation as well as gonadal steroid effects on brain and behavior. Dr. Epperson’s research has been funded consistently by the National Institutes of Health for more than two decades. She is a mentor and independent investigator with more than 200 peer-reviewed publications and presentations.

Before being recruited to CU Anschutz, Dr. Epperson served as the founder and director of both the Penn Center for Women’s Behavioral Wellness and Penn PROMOTES, Research on Sex and Gender in Health at the Perelman School of Medicine at the University of Pennsylvania in Philadelphia, where she was a tenured Professor of Psychiatry, with a secondary appointment in Obstetrics and Gynecology. Dr. Epperson received her medical degree at The University of North Carolina at Chapel Hill and completed her postdoctoral and research training in psychiatry at Yale University School of Medicine, New Haven, Connecticut, where she rose to the level of associate professor before her recruitment to the University of Pennsylvania.

PLENARY SESSIONS – SATURDAY, OCTOBER 26, 2019

8:00AM – 8:45AM
SUBSTANCE DEPENDENCE IN PERINATAL WOMEN

Hendrée Jones, PhD
Professor and Executive Director, UNC Horizons Program
UNC Medical School, Department of Obstetrics & Gynecology

Dr. Jones is an internationally recognized expert in the development and examination of both behavioral and pharmacologic treatments for pregnant women and their children in risky life situations. She has received continuous National Institutes of Health funding since 1994 and has written more than 195 peer-reviewed publications. Dr. Jones has also authored two books, one on treating patients for substance use disorders and the other on comprehensive care for women who are pregnant and have substance use disorders. She also has written multiple textbook chapters on the topic of pregnancy and addiction, as well as editorial letters and non-peer-reviewed articles for clinicians.

In 2012 Dr. Jones won the Betty Ford Award from The Association for Multidisciplinary Education and Research in Substance use and Addiction (AMERSA) for her scientific contributions in advancing women’s addiction treatment. In 2018 she won the National Association of State Alcohol and Drug Abuse Directors, Inc. (NASADAD) Women’s Services Champion Award and in 2019 she won the Marian W. Fischman Lectureship Award which recognizes contributions of an outstanding woman scientist in drug abuse research. She is a consultant for the United Nations and the World Health Organization. Dr. Jones leads or is involved in projects focused on improving the lives of children, women, and families in Afghanistan, Argentina, Brazil, Chile, India, Paraguay, the Republic of Georgia, South Africa, and the United States.

UNC Horizons is a substance use disorder treatment program for pregnant and/or parenting women and their children, including those whose lives have been touched by abuse and violence. It is a program of the Department of Obstetrics and Gynecology, School of Medicine, The University of North Carolina at Chapel Hill.
8:45AM – 9:30AM
USING BIG DATA TO INFORM BIG DECISIONS REGARDING PSYCHIATRIC MEDICATION USE IN PREGNANCY

Krista Huybrechts, MS, PhD
Associate Professor of Medicine, Harvard Medical School
Epidemiologist in the Division of Pharmacoepidemiology and Pharmacoeconomics,
Brigham and Women’s Hospital

Dr. Huybrechts is an Associate Professor of Medicine at Harvard Medical School and an epidemiologist in the Division of Pharmacoepidemiology and Pharmacoeconomics at the Brigham and Women’s Hospital. She also holds an appointment as adjunct faculty at Boston University School of Public Health. Dr. Huybrechts teaches Drug Epidemiology (EP748) at Boston University School of Public Health and guest lectures in several courses at Harvard Medical School and Harvard T.H. Chan School of Public Health. She currently serves on the Board of the International Society of Pharmacoepidemiology and Therapeutic Risk Management.

Her research centers on the utilization, comparative safety and effectiveness of prescription medications in pregnant women and their offspring (www.harvardpreg.org), and on studying the outcomes of medications for mental health disorders in vulnerable populations. She also has a special interest in research methodology and innovative research applications in relation to both these fields of study.

Dr. Huybrechts graduated magna cum laude with a Master of Science degree in Economics from the University of Antwerp, Belgium where she also worked as a researcher in health economics. Prior to completing a doctoral degree in epidemiology at Boston University School of Public Health, Dr. Huybrechts held several positions in pharmacoeconomics and outcomes research, both in Europe and the US. Her research projects focused primarily on psychiatry and neurology, and covered a broad spectrum of research designs, including clinical trials, naturalistic studies, retrospective data analyses, and decision-analytic simulation models.

4:45PM – 5:30PM
PLASTICITY IN THE PARENTAL BRAIN: IMPLICATIONS FOR PERINATAL MENTAL ILLNESS AND ITS TREATMENT

Jodi L. Pawluski, PhD
Research Associate
University of Rennes, France

Dr. Pawluski is a researcher at the Research Institute for Environment and Occupational Health (Irset-Inserm UNR1085) at the University of Rennes 1, France. She obtained her Ph.D. in Neuroscience from The University of British Columbia in 2007 after obtaining a Master of Arts in Psychology from the University of Toronto in 2003. She was a postdoctoral fellow at The Child and Family Research Institute, at UBC, and continued postdoctoral training at the School for Mental Health and Neuroscience, Maastricht University, The Netherlands. From 2012-2014 she was a Research Assistant Professor in the Department of Biological Sciences at Ohio University, USA. Dr. Pawluski has been an invited speaker at many international conferences over the past 10 years and she has over 50 scientific papers in peer-reviewed journals. She has over 2000 citations (over 200 citations per year for the past four years). Dr. Pawluski is on the editorial board for Archives of Women’s Mental Health (Springer), Journal of Neuroendocrinology (Wiley) and Journal of Chemical Neuroanatomy (Elsevier). She is a Fellow of the International Behavioral Neuroscience Society and is an advocate for increasing awareness about brain changes in parenting and how they may be related to peripartum mental illness.
PLENARY SESSIONS – SUNDAY, OCTOBER 27, 2019

8:00AM – 8:45AM
HIDDEN AMERICA: CENTERING BLACK MOTHERS’ VOICES REGARDING THE EFFECTS OF GUN VIOLENCE ON THEIR MENTAL AND PHYSICAL HEALTH

Ruby Mendenhall, PhD
Associate Professor, African American Studies
Department of Sociology
University of Illinois

Dr. Mendenhall is an Associate Professor in Sociology, African American Studies, Urban and Regional Planning, and Social Work at the University of Illinois at Urbana-Champaign. She is also an affiliate of the Institute for Genomic Biology and the Institute for Computing in Humanities, Arts and Social Sciences. In 2004, Mendenhall received her Ph.D. in Human Development and Social Policy program from Northwestern University in Evanston, Illinois. For her dissertation, *Black Women in Gautreaux’s Housing Desegregation Program: The Role of Neighborhoods and Networks in Economic Independence*, she used administrative welfare and employment data, census information, and in-depth interviews to examine the long-run effects of placement neighborhood conditions/resources on economic independence.

8:45AM – 9:30AM
THE INFLUENCE OF SOCIAL AND CULTURAL FACTORS IN PERINATAL DEPRESSION IN MEXICO: RELEVANCE FOR LATINAS IN THE U.S.

Dra. Ma. Asunción Lara
National Institute of Psychiatry Ramón de la Fuente
Muniz, Mexico

Dr. Mendenhall is an Associate Professor in Sociology, African American Studies, Urban and Regional Planning, and Social Work at the University of Illinois at Urbana-Champaign. She is also an affiliate of the Institute for Genomic Biology and the Institute for Computing in Humanities, Arts and Social Sciences. In 2004, Mendenhall received her Ph.D. in Human Development and Social Policy program from Northwestern University in Evanston, Illinois. For her dissertation, *Black Women in Gautreaux’s Housing Desegregation Program: The Role of Neighborhoods and Networks in Economic Independence*, she used administrative welfare and employment data, census information, and in-depth interviews to examine the long-run effects of placement neighborhood conditions/resources on economic independence.

10:00AM – 10:45AM
REPRODUCTIVE JUSTICE AND STRUCTURAL COMPETENCY: MOVING MEDICINE FROM SENSITIVITY TO ADVOCACY

Katherine L. Watson JD
Associate Professor of Medical Social Sciences, Medical Education and Obstetrics and Gynecology
Northwestern University

Professor Katie Watson is a lawyer (New York U School of Law) who clerked in the federal judiciary and practiced public interest law before coming to Northwestern, and a bioethicist who completed fellowships in clinical medical ethics (University of Chicago Medical School MacLean Center) and medical humanities (Feinberg School of Medicine). She currently teaches law, ethics, and humanities to medical students and students in the NU masters program in bioethics and medical humanities. She has been a member of the Northwestern Memorial Hospital Ethics Committee for over a decade, she recently finished a term on the Board of Directors of the American Society for Bioethics & Humanities (ASBH), and she is a member of the Editorial Board of the AMA Journal of Ethics. Professor Watson is currently serving terms on the Board of the National Abortion Federation (NAF, the professional organization of independent abortion clinics) and on the National Medical Council of the Planned Parenthood Federation of America. In 2018 Watson published
“Scarlet A: The Ethics, Law and Politics of Ordinary Abortion (Oxford University Press) which the New York Times called "revolutionary." Professor Watson also has a background in theater. She is a playwright and an adjunct faculty member at the training center of Chicago's Second City theatre. In 2002 she created a seminar in what she calls “medical improv to improve doctor-patient communication, and in response to national recognition of her new training approach, in 2013 she began leading a yearly Train-the-Trainer workshop. She is the recipient of the medical school's Gender Equity Award, Dean's Award for Teaching Excellence, and Joost Award for Large Group lecturing.

PLENARY SESSION – FRIDAY, OCTOBER 25 – 4:45PM – 5:45PM

2020 Mom and MONA, with the generous support of Denver's Zoma Foundation, announce the Maternal Mental Health Innovation Awards.

These competitive awards will be presented annually to impactful programs that deserve recognition for leadership in supporting maternal mental health. It is time we share what works in addressing maternal mental health disorders, which impact up to one-in-five women during pregnancy and the postpartum period.

The award program seeks exemplary programs that should be lifted up as proven models for broader adoption across the country.

Innovative Awards Program goals:
- To recognize those who are supporting maternal mental health through innovative initiatives.
- To facilitate sharing innovative models in order to scale and promote change in a rapid and effective manner nationally.

Categories and Criteria of Innovation Awards in Maternal Mental Health:
- **Innovative Programs in Care** – Care models (both clinical and non-clinical) with strong outcomes for addressing maternal mental health and lend themselves to broader adoption.
- **Innovative Community Solutions** – Leadership, communication, and broad community engagement that brings focus to maternal mental health and sustainable engagement.
- **Innovation in Policy and Advocacy** – National, state or local legislative or regulatory advocacy efforts with impactful results stemming from passage and/or implementation.

About 2020 Mom

2020 Mom, founded in 2011 as the California Maternal Mental Health Collaborative, has evolved as a national organization with a mission of Closing gaps in maternal mental health care. 2020 Mom understands the complex health care system and shares widely a platform of action and tools to national, state and local stakeholders and thought leaders to drive policy change. www.2020mom.org

2019 AWARD WINNERS:

**INNOVATIVE PROGRAMS IN CARE**

**WINNER – Northwestern Medicine: A Collaborative Care Model for Perinatal Depression Support Services (COMPASS)**

Presented by Emily Miller: COMPASS is a perinatal collaborative care model that re-imagines prenatal care delivery. In COMPASS, mental health care is seamlessly integrated into the prenatal clinic setting, fostering an environment of collaboration and care delivery for the whole woman. COMPASS uses a three-pronged approach including (1) the development and implementation of a perinatal depression educational training program for Northwestern obstetric providers, (2) a clinical care program including a perinatal psychiatrist and therapist to enable collaborative mental health care within the Northwestern Obstetric practices, and (3) an evaluation of the health utilization implications of this collaborative care model. COMPASS promises to optimize perinatal mental health care across Northwestern but also to serve as a model for successful and sustainable implementation of perinatal collaborative care across academic medical centers around the country.
INNOVATIVE PROGRAMS IN CARE

WINNER – Virginia Commonwealth University’s Virginia MOMS Program

Presented by Fidelma Rigby: Virginia MOMS (Maternal Outreach and Mental Health Support) is a comprehensive maternal mental health program that was established at the Virginia Commonwealth University (VCU) in 2017, the only one of its kind in the state. The program integrates psychiatric care, social work and obstetrics care for expectant patients and new moms with complex mental health needs.

The program began as a collaboration among a maternal-fetal medicine specialist, a psychiatrist and a clinical social worker who saw a common thread of untreated mental health conditions among both expectant patients and postpartum moms. Care in the Peripartum Clinic can begin in the early stages of pregnancy. By embedding psychiatric care into the OB clinic, our patients can be treated and have the tools to maintain mental health during and after pregnancy. Mental health support in the Peripartum Clinic includes sessions with a psychiatrist, support group participation, closer-interval visits and mood surveillance. This unique clinic provides women with the support and tools they need to cope with the challenges of pregnancy and motherhood.

The establishment of this program at VCU allows for a rich clinical experience for our psychiatry and obstetric residents and provides direct access to patients with complex psychiatric issues. The residents and medical students get a collaborative experience across service lines which supports the university’s mission of cross departmental collaboration to maximize system efforts. The program allows us to follow the updates guidelines for increased care in the post-partum population.

INNOVATIVE COMMUNITY SOLUTIONS

WINNER – Appalachian Perinatal Mental Health Alliance – An MMH Community Coalition
For more details – https://www.facebook.com/tnpmha

Presented by Diana Morelen: APMHA is a non-profit organization in Northeast Tennessee. The mission of the Appalachian Perinatal Mental Health Alliance (APMHA) is to promote awareness, prevention, advocacy and treatment of perinatal and early parenting mental health issues in all communities. APMHA is a diverse group of regional organizations, professionals, advocates, and individuals who work as positive agents of change for mothers, healthcare providers, and community members in the Northeast Tennessee region and beyond. The alliance has three central aims: 1) to raise awareness of perinatal mental health in the region, 2) to decrease the stigma associated with perinatal mental health, and 3) to increase the capacity for our region to meet the needs of those with perinatal mental health concerns.

HONORABLE MENTION – Better Postpartum – Mother’s Day through Labor Day Social Media Campaign
For more details - http://www.betterpostpartum.com/

INNOVATION IN POLICY AND ADVOCACY

WINNER – Maternal Mental Health NOW – California’s Comprehensive MMH Bill Package
For more details - https://www.maternalmentalhealthnow.org/

Presented by Kelly Kay: Maternal Mental Health NOW’s mission is to remove barriers to the prevention, screening and treatment of prenatal and postpartum depression in Los Angeles County. In 2018, Maternal Mental Health NOW joined forces with 2020 Mom to co-sponsor three bills that would reduce stigma surrounding maternal mental health disorders and increase resources for screening and treatment: AB 2193, AB 3032 and AB 1893. All three bills passed and were signed into law by September 2018 - the first ever maternal mental health laws in the state of California. advocacy.

HONORABLE MENTION – UT Maternal Mental Health Collaborative (PSI chapter) Telehealth Appropriations
For more details - https://www.psiutah.org/

Award Details:
In each of three categories, first place and runner-up awardees will receive:
The first-place winner will receive $3,000 and an honorable mention winner will receive $1,000.
A representative from each of the 2019 winners received complimentary registration, hotel accommodations for three nights and travel costs for the MONA conference.
CONGRATULATIONS TO OUR TRAVEL FELLOWS!

Ariana Marie Albanese, Drexel University
Lucy Church, Barker, University of Toronto
Sara Carlini, MD, Zucker Hillside Hospital
Leigh Cook, University of Nebraska Medical Center
Grace Masters, University of Massachusetts Medical School
Janeth Juarez Padilla, University of Illinois at Urbana-Champaign
Nina Molenaar, MD, PhD, Icahn School of Medicine at Mount Sinai
Jessica Obeysekare, MD, Brown University
Andrea Ramirez Olarte, University of Illinois at Urbana-Champaign
Anna-Sophie Rommel, PhD, Icahn School of Medicine at Mount Sinai
Maria D. Rosales, Palo Alto University
Ayesha Sujan, Indiana University
Amelia Wendt, MD, University of Washington

CONTINUING EDUCATION CREDITS

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Atrium Health and University of North Carolina Department of Psychiatry.

Atrium Health designates this Live Activity for a maximum of 25 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

This Live Activity fulfills the requirement for 2.5 Continuing Education Units (CEUs), representing 25 contact hours.

After the Conference you will receive an email with a link to a survey. It’s vital that you complete the survey by the date provided otherwise you will not receive your CME certificate.

Presenters with disclosures are available at Conference Registration.
PROGRAM SCHEDULE – Pre-Conference Workshops – Thursday, October 24, 2019

**Morning Workshops**

- **9:00am to 12:00pm**
  - *Dogwood A Room*
  - **Caring for Women Using Substances – A Focus on Cannabis and Opioids during the Prenatal and Post-pregnancy Period**
  - Margaret Howard (Chair), Hendree Jones, Connie Guille

- **9:00am to 12:00pm**
  - *Dogwood B Room*
  - **Trauma-Informed Care in the Perinatal Period**
  - Cheryl Beck (Chair), Maria Muzik, Helen Kim

**Afternoon Workshops**

- **1:00pm to 5:00pm**
  - *Grumman Auditorium*
  - **Obstetric Psychopharmacology**
  - Katherine Wisner (Chair), Crystal Clark, Catherine Stika

- **1:00pm to 5:00pm**
  - *Windflower Room*
  - **Introduction to Buprenorphine Assisted Treatment of Opioid Use Disorder: Special Consideration for Perinatal Women**
  - Anupriya Gogne (Chair)

- **1:00pm to 5:00pm**
  - *Dogwood A Room*
  - **Perinatal Program Development and Implementation**
  - Sonia Murdock (Chair), Shannon Erisman and Margaret Howard (Day Program), Mary Kimmel and Samantha Meltzer-Brody (*Perinatal Mood and Anxiety Disorders Program/In-patient Unit & Outpatient Clinics*), Lisa Segre (*Listening Visits*), and Simone Vigod (*Virtual Care*)

PROGRAM SCHEDULE - Friday, October 25, 2019

- **7:00am – 8:00am**
  - *Magnolia Room*
  - **Junior Faculty Mentor-Mentee Meeting**

- **8:00am–8:15am**
  - *Grumman Auditorium*
  - **Welcome!**
  - Samantha Meltzer-Brody, MD, President, MONA
  - Katherine Wisner, MD, MS, Immediate Past President and Founder, MONA
  - Lisa Segre, PhD, President, Marcé International Society for Perinatal Mental Health

- **8:15am – 9:45am**
  - *Grumman Auditorium*
  - **Plenary Lectures**
  - Ian Jones, MD
  - *Back to the Future - Postpartum Psychosis: Historical Anachronism or the Future of Maternal Mental Health*

  - Alison Stuebe, MD
  - *Establishing the 4th Trimester*

- **9:45am - 10:15am**
  - **Refreshment Break**
## Concurrent Rooms

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<td>Symposium: Changing the Course of Perinatal Depression: Adoption and Scalability of Evidence-Based Preventive Interventions</td>
<td>Symposium: Implementing the National Curriculum in Reproductive Psychiatry</td>
<td>Symposium: Psychology during Pregnancy and the Postpartum Period: From Causes to Acute and Longer-Term Treatment</td>
<td>1E1: Symposium: Integration of Substance Use Disorders Treatment in Obstetrics Care</td>
<td>Chair: Deepika Goyal Oral Presentations</td>
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<td>1E2: Symposium: Opioid Addiction: Models of Care for Moms and Babies</td>
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**Concurrent 1A**

*Grumman Auditorium*

**Symposium:** Changing the Course of Perinatal Depression: Adoption and Scalability of Evidence-Based Preventive Interventions

**Chairs:** Huynh-Nhu Le¹, Darius Tandon²

**George Washington University¹**, **Northwestern University²**

Perinatal depression (PD) is a significant public health problem with negative consequences for maternal and infant health. However, few, particularly socially disadvantaged women receive treatment for PD. These findings underscore the need for prevention. The US Preventive Task Force (USPTF; 2019) recently recommended that “counseling interventions ... are effective in preventing PD”. The USPTF cited the Reach Out, Stand Strong, Essentials for New Mothers (ROSE) program and the Mothers and Babies Course (MBC) as two examples of preventive interventions with strong evidence. This symposium builds off the USPTF report by highlighting efforts to disseminate cognitive-behavioral and interpersonal therapy interventions, both domestically and internationally. First, Zlotnick will describe ‘lessons learnt’ from engaging clinics in the ROSE Sustainment study, an implementation trial following the ROSE intervention that uses an adaptive trial design to evaluate intervention effectiveness. Second, Tandon will present findings from a non-inferiority trial examining effectiveness of the MBC intervention delivered by mental health professionals vs. lay health workers. Third, Le will present results from a quasi-experimental study that adapted and integrated MBC in a community-based childhood program among rural women in Kenya and Tanzania. Fourth, Lara will describe the barriers and facilitators of disseminating a CBT-based preventive intervention for postpartum depression by exploring health professionals’ feasibility of adopting this intervention in their work settings in Mexico. These presentations will illuminate efforts to expand the reach of preventive interventions and inform researchers’ attempts to adapt and implement perinatal prevention programs – thereby increasing access to quality mental health care for perinatal women worldwide.

**THE ROSE SUSTAINMENT (ROSES) STUDY, THE MINIMUM NECESSARY INTERVENTION TO MAINTAIN A POSTPARTUM DEPRESSION PREVENTION PROGRAM IN PRENATAL CLINICS SERVING WOMEN ON PUBLIC ASSISTANCE**

**Caron Zlotnick¹**, **Shannon Wiltsey-Stirman²**, **Alla Sikorskii³**, **Ted Miller⁴**, **Laura Carravallah⁵**, **Tiffany A. Moore Simas⁶**, **Ellen Poleshuck⁷**, **Rebecca Weinberg⁸**, **Gwen Latendresse⁹**, & **Jennifer E. Johnson¹⁰**

**Warren Alpert Brown Medical School¹**, **National Center for PTSD²**, **Michigan State University³**, **Pacific Institute for Research and Evaluation⁴**, **Michigan State University⁵**, **University of Massachusetts Medical Center⁶**, **University of Rochester⁷**, **Allegheny Health Network⁸**, **College of Nursing University of Utah⁹**, **Michigan State University¹⁰**

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Objective: Postpartum depression (PPD) is a significant and common public health problem for women especially financially-disadvantaged women. Reach Out Stay strong, Essentials for mothers of newborns (ROSE) is an evidence based intervention that has been found to reduce cases of postpartum depression in low-income women by half. The ROSE Sustainment (ROSES) Study is an implementation trial that uses a sequential multiple assignment randomized (SMART) design to evaluate the effectiveness and cost-effectiveness of a stepwise approach to sustainment of ROSE in 90 outpatient clinics providing prenatal care to pregnant women on public assistance.

Methods: All clinics will receive enhanced implementation as usual (EIAU; initial training + tools for sustainment). If a clinic is determined to be at risk for failure to sustain (i.e., at 3, 6, 9, 12, or 15 months), that clinic will be randomized to receive either (1) no additional implementation support or (2) low-intensity coaching and feedback (LICF). If clinics receiving LICF are still at risk at subsequent assessments, they will be randomized to either (1) EIAU + LICF only, or (2) high-intensity coaching and feedback (HICF). Outcomes include (1) percent sustainment of core program elements at each time point, (2) health impact (PPD rates over time at each clinic) and reach, and (3) Cost-effectiveness of each sustainment step. Hypothesized mechanisms include sustainment of capacity to deliver core elements and engagement/ownership.

Results: Lessons learnt from implementation and scale-up of ROSE will be presented.

Conclusions: This study will advance knowledge about how to scale an evidence-based PPD prevention intervention.

Acknowledgements: This study was funded by a grant from the National Institute of Mental Health (NIMH; R01 MH114883, PIs Johnson and Zlotnick)

EFFECTIVENESS OF PARAPROFESSIONAL HOME VISITORS IN DELIVERING A PERINATAL DEPRESSION PREVENTIVE INTERVENTION
Darius Tandon PhD, Alicia Diebold MSW, Jessica Johnson MPH, Melissa Segovia MS, Jackie K. Gollan PhD
Northwestern University Feinberg School of Medicine
Objective: Mothers and Babies (MBC) is a preventive intervention rooted in cognitive behavior therapy and attachment theory with the goal of improving maternal mental health during, and after, pregnancy. Previous research has shown that MBC is effective when delivered by mental health professionals (MHP). A current study aims to compare the effectiveness between MHPs and paraprofessional home visitors in delivering MBC. This presentation examines facilitator fidelity and participant acceptability to showcase the effectiveness of paraprofessionals in delivering MBC.

Methods: MBC was delivered in a group setting throughout seven states to 557 pregnant women (322 receiving MB by paraprofessionals, 235 by MHPs) in a cluster-randomized controlled trial. Women were ≥16 years old and spoke English or Spanish. Randomly selected audio-recorded group sessions were assessed for fidelity, specifically rated on adherence and competency. Semi-structured interviews were conducted with 88 participants, transcribed, and analyzed using NVIVO software. Participant satisfaction forms were completed after each session.

Results: Overall, paraprofessionals had higher (79% v. 74%) average adherence scores than MHPs, while their scores on individual competency items were slightly lower overall. Qualitative analysis showed that participants found intervention materials and group format to be acceptable and appropriate, with little to no difference between study arms. Participants reported sessions were “very enjoyable” with very slight difference between study arms (94.8% for paraprofessionals v. 95.1% for MHPs).

Conclusions: There is promise for the scalability of paraprofessionals delivering mental health interventions such as MBC, specifically with pregnant women. This would increase access to preventive interventions for at-risk populations.

Acknowledgements: Research reported in this presentation was funded through a Patient-Centered Outcomes Research Institute (PCORI) Award (AD-1507-31473).
ADAPTING GROUP CBT TO PREVENT PERINATAL DEPRESSION AND ANXIETY IN RURAL KENYA AND TANZANIA
Huynh-Nhu Le¹, John Hembling², Maureen Kapiyo², Elena McEwan², Elias Nyanza³
Ola Jahanpour³ & Shannon Senefeld²
George Washington University¹, Catholic Relief Services², Catholic University of Health and Allied Sciences³

Objective: Perinatal depression is estimated to be two-to-three times higher in low- and middle-income countries versus high-income countries and is associated with impaired parenting and early childhood development. We describe the adaptation and evaluation of the Mothers and Babies Course (MBC), a cognitive behavioral intervention that teaches women mood regulation skills to decrease perinatal depression that was integrated into a community-based child development intervention (ECD) in rural Tanzania and Kenya.

Methods: Using a quasi-experimental non-equivalent control group design, data from 873 (Kenya: n=413; Tanzania: n=460) pregnant women or mothers of children aged ≤18 months at baseline (Kenya/Tanzania - intervention: n=191/223; comparison: n=222/237) were collected at baseline and at 6 and 12 months post-intervention. The main outcomes for maternal mental health included depression and anxiety using the Hopkins Symptoms Checklist.

Results: In Tanzania, the intervention group had a lower incidence of depression and anxiety than the control group at 12 months post-intervention, respectively (depression: 2.7% vs. 16.8%; anxiety: 8.1% vs. 27.3%, ps <.05). In Kenya, the intervention and comparison groups did not differ in the incidence of depression (17.6% vs. 19.4%) nor anxiety (26.7% vs. 27.8%), respectively.

Conclusions: Different research infrastructures and support in Kenya and Tanzania may explain the mixed findings in depression and anxiety. Results in Tanzania suggests the potential of integrating a mental health intervention into a community-based behavior change project to prevent perinatal depression and anxiety.

Acknowledgements: Catholic Relief Services

Concurrent 1B
Dogwood Room

Symposium:
Implementing the National Curriculum in Reproductive Psychiatry
Lauren M. Osborne, Chair
Johns Hopkins University School of Medicine
This workshop will update the audience to the work of the National Task Force on Women’s Reproductive Mental Health (NTF), which, in collaboration with MONA, has been working for the past 6 years to collect information about the current state of residency education in reproductive psychiatry, to propose new training standards, and to create a standardized educational experience for learners in reproductive psychiatry.

Four presenters will summarize the work of the NTF, unveil our fully open website (being publicly launched for the first time at MONA), use interactive methods to provide a curricular experience for participants and obtain feedback, and introduce the new “five-hour essentials” portion of our curriculum.

SUMMARY OF WORK TO DATE ON THE NATIONAL CURRICULUM IN REPRODUCTIVE PSYCHIATRY
Sarah Nagle-Yang
Case Western Reserve University

Objective: To summarize the work of the National Task Force for Women’s Reproductive Mental Health (NTF).

Methods: The Task Force has published a commentary and two national surveys characterizing the current state of residency and fellowship training in reproductive psychiatry. At workshops at meetings of the American Association of Directors of Psychiatry Residency Training (AAFPRT) (4 times), the Perinatal Mental Health Society (twice), the Academy of Consult-Liaison Psychiatry (once), as well as international venues, the NTF has collaborated with psychiatry educators and perinatal experts on the content and process of a national curriculum on reproductive psychiatry.
Results: At the time of the surveys, only 59% of programs included any required teaching in reproductive psychiatry, and when didactic time was required, most programs allotted 5 or fewer hours across all four years. Primary barriers to increasing exposure are lack of time and lack of faculty experts. Previous workshops have identified that a free, interactive, case-based online format is a feasible model for implementing a new didactic curriculum.

Conclusions: The education of psychiatrists about reproductive mental health has lagged behind advances in research, public policy, and innovations in clinical care. There is a clear need both to increase expertise of graduating psychiatrists and to promote the development of future content experts. A national curriculum that is delivered in an accessible and engaging format would eliminate many of the barriers faced by educators and support efforts to expand this content into all residency programs.

Acknowledgments: The NCRP is funded by the American Board of Psychiatry and Neurology, Faculty Innovation in Education Award.

LAUNCH OF THE NCRP WEBSITE
Lauren M. Osborne
Johns Hopkins University

Objective: To introduce the audience to the newly launched website of the National Curriculum in Reproductive Psychiatry (NCRP) and solicit audience feedback

Methods: Using Poll Everywhere interactive classroom software, the presenter will solicit feedback from the audience on our website, which has been in development at prior meetings and is now fully available to the public. The presenter will cover self-study materials, classroom materials, and continuing medical education materials across fifteen content areas in reproductive psychiatry, including premenstrual dysphoric disorder, perimenopause, and numerous areas of perinatal health, including depression and bipolar disorder. Information will be collected from audience survey on the curriculum content, design of materials, and degree of usability by programs lacking content or expertise.

Results: Opinions collected from audience members will be presented. Data from the audience will include feedback on visual design and appropriateness of content; appropriateness of learning objectives; ease of use by different classes of self-directed learners (including residents, fellows, and practicing physicians); and appropriateness of level and content of assessments prepared for continuing medication education.

Conclusions: Audience feedback on the website can be used to enhance the content and implementation of the National Curriculum, thereby making the curriculum more broadly accessible to programs across the country.

Acknowledgments: The NCRP is funded by the American Board of Psychiatry and Neurology, Faculty Innovation in Education Award.

INTRODUCTION TO A CLASSROOM DIDACTIC EXPERIENCE
Lucy Hutner
Washington Square Practice

Objective: To solicit audience feedback on interactive and classroom-based materials of the NTF Curriculum and further develop a reproductive mental health curriculum that includes online interactive modules as shaped by reproductive mental health providers in attendance of national conference.

Methods: The presenter will display to the audience interactive classroom and clinic-based materials for the perinatal obsessive-compulsive disorder module of the National Curriculum, and the audience will work in large and small groups to experience the curriculum and provide feedback.

Results: The audience will experience a curriculum module (in abbreviated form) as a trainee would experience it. Data collected from the audience will include feedback on visual design, clarity and ease of use of module content, appropriateness of content presented for learning objectives, barriers to implementation of online interactive modules for different practice and academic settings, usability of modules with or without on-site facilitator expertise, degree of interaction between facilitator and students.

Conclusions: In devising an accessible national curriculum for reproductive psychiatry, an online interactive clinical and classroom-based module system is a possible mechanism to disseminate this
curriculum more broadly; however, such a system is not without challenges to implementation and development. Including audience responses from those in attendance at the MONA Conference allows for the integration of feedback from perinatal mental health professionals into the development of this online interactive curriculum.

**Acknowledgments:** The NCRP is funded by the American Board of Psychiatry and Neurology, Faculty Innovation in Education Award.

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**THE NCRP ESSENTIALS VERSION**

Lisa Catapano  
George Washington University

**Objective:** To introduce the audience to the pilot version of a condensed five-hour module, the “NCRP Essentials”

**Methods:** Presenter will display to the audience the pilot version of our five-hour essentials curriculum and will solicit audience feedback using Poll Everywhere software. Presenter will also solicit audience feedback about potential additional “tracks” within the NCRP.

**Results:** The audience will learn the content of this condensed module, designed to be used by programs that have little time to devote to the teaching of reproductive psychiatry. Feedback solicited from the audience will inform the final version, both in terms of content and in terms of design and delivery. The audience will comment on additional potential “tracks,” such as an expanded 10-hour version of the essentials; an OB-GYN learner track; and a consult-liaison psychiatry learner track. Feedback from the audience will also inform our efforts of dissemination, as we rely on the experts attending the meeting to help us to “get the word out” about the NCRP.

**Conclusions:** The pilot version of the NCRP Essentials Curriculum module of the National Curriculum will be improved by audience feedback. Our plans for dissemination of the NCRP will also be improved by audience feedback.

**Acknowledgments:** The NCRP is funded by the American Board of Psychiatry and Neurology, Faculty Innovation in Education Award.

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**EVALUATING THE ADOPTION OF SALUD MENTAL DE MAMÁS Y BEBÉS IN WORK SETTINGS IN MEXICO**

Ma. Asunción Lara, Erica Medina, Eunice Ruiz  
Ramon de la Fuente Muñiz National Institute of Psychiatry, Mexico

**Objective:** Many evidence-based interventions to prevent postpartum depression (PPD) are not transferred to the community, since this requires a process including 1) *translation*, in which manuals and training courses are designed, 2) *dissemination*, involving the delivery of training courses, and 3) *adoption* in everyday practice. *Salud Mental de Mamás y Bebés* (SMMB), a multicomponent cognitive behaviorally based preventive intervention, is the only rigorously evaluated and found to be effective in reducing PPD in Mexico (Lara et al. 2010). The purpose of this presentation is to describe the process of adopting the SMMB by health professionals who received an eight-week online training of the intervention.

**Method:** Participants (N=34) included psychologists (79.4%), physicians (11.8%) and nurses (8.8%); 76.5% of respondents were affiliated with health institutions. Following training in 2016-2018, participants completed an online survey assessing feasibility of adopting the SMMB in their work settings.

**Results:** Participants considered the online training course adequate regarding the intervention content (100%), skills development (93.9%) and attitudes (100%) for implementing the intervention. The majority of participants (75%) applied SMMB in health institutions, and 25% in private practice; 75% and 25% adopted SMMB in individual and group modality, respectively. The main barrier to adoption of the SMMB was lack of sensitivity to maternal mental health issues in health institutions.

**Conclusions:** Participants adopted the SMMB with varying levels of fidelity. Challenges and facilitators of this adoption differed by institution and individual professions. For dissemination of preventive interventions of PPD to occur, structural and individual-level barriers must be addressed.
Concurrent 1C
Redbud A Room

Symposium

Psychosis during Pregnancy and the Postpartum Period: From Causes to Acute and Longer-Term Treatment

Lee S. Cohen, MD and Marlene P. Freeman, MD

The Ammon-Pinizzotto Center for Women’s Mental Health, Massachusetts General Hospital, Harvard Medical School
Boston, MA

While the last decade has brought greatly needed enhanced awareness of the spectrum of issues relevant to perinatal mood and anxiety disorders, understanding of the phenomenology, appropriate and safe treatment of psychotic symptoms during pregnancy and the postpartum period, and models of follow-up care for those postpartum women with psychotic illness remains incomplete. This aim of this symposium is to highlight current understanding across these domains by highlighting both gaps in our scientific understanding of perinatal psychotic symptoms as well as strides in defining the most appropriate evidence-based treatment for psychosis during and after pregnancy. Dr. Cohen will describe a recent initiative launched to both better understand the phenomenology and genetic underpinning of postpartum psychosis (Massachusetts General Hospital Postpartum Psychosis Project (MGHP3) and the opportunities for establishing a more global approach to gathering data on puerperal psychotic illness given the low prevalence of the disorder. Dr. Marlene Freeman will provide an update on the reproductive safety data of second-generation atypical antipsychotics from the MGH National Pregnancy Registry. Dr Veerle Bergink will present an update on evidence-based guidelines for management of both acute puerperal psychosis as well as steps which may prevent recurrence of the illness. Lastly, the presentation by Dr. Catherine Birndorf will provide a perspective of the opportunities and challenges of establishing a community-based model of care for managing women with severe postpartum psychiatric disorder when accompanied by their babies using an enriched multi-disciplinary approach in a non-hospital setting.

ESTABLISHMENT OF THE MASSACHUSETTS GENERAL HOSPITAL POSTPARTUM PSYCHOSIS PROJECT (MGHP3)

Lee S. Cohen, MD

Director, The Ammon-Pinizzotto Center for Women’s Mental Health, Massachusetts General Hospital, Harvard Medical School, Boston, MA

Objective: Postpartum psychosis (PP) is a severe and relatively rare disorder, occurring in 1-2 per 1000 women and most often relatively shortly after delivery. The primary aims of MGHP3 are 1) to describe the phenomenology of PP and 2) to identify clinical and genomic predictors of PP.

Methods: Subjects are women ages 18 and older who have experienced a psychotic episode within 6 months of a live birth, stillbirth, or intrauterine fetal demise occurring within the past 10 years. Phenotypic description is achieved by phone interview using a structured questionnaire to gather information regarding: demographics, medical and psychiatric history, and psychiatric symptoms before the postpartum period, during the episode of PP, and since the postpartum episode. Psychosis history is determined using the DSM-5 Mini International Neuropsychiatric Interview for Psychotic Disorder Studies. DNA is collected using mailed saliva collection kits and samples are processed for genome-wide analysis and genotype quality control.

Results: Since the start-date of October 16, 2018 (https://womensmentalhealth.org/posts/mghp3-announcement/), participants have been enrolled with increasing recruitment pace, and a system of DNA sample procurement has been established. A spectrum of recruitment avenues are utilized to reach eligible women, including: The Massachusetts General Hospital Center for Women’s Mental Health (CWMH) clinic and website (https://womensmentalhealth.org; www.mghp3.org/), and several novel digital partnerships with advocacy groups and parenthood resource centers, provider networks, mental health forums, and targeted social media outreach.

Conclusions: MGHP3 represents an initiative with significant rigor and specificity aimed at better understanding the potential genetic underpinning of postpartum psychosis as well as the distinct phenomenology associated with this dramatic postpartum clinical presentation.
Acknowledgments: MGHP3 is supported by the Jeanne and Gerhard Andlinger Innovation Research Fund, Massachusetts General Hospital.

THE NATIONAL PREGNANCY REGISTRY FOR PSYCHIATRIC MEDICATIONS: EFFECTS OF EXPOSURE TO ATYPICAL ANTIPSYCHOTICS ON RISK FOR MAJOR MALFORMATIONS
Marlene P. Freeman, MD
Associate Director, The Ammon-Pinizzotto Center for Women’s Mental Health, Massachusetts General Hospital, Harvard Medical School, Boston, MA

Objective: The National Pregnancy Registry for Psychiatric Medications (NPRPM) is a systematic prospective pharmacovigilance program used to assess the reproductive safety of psychiatric medications. These data pertain to atypical antipsychotics.

Methods: Data are prospectively collected during pregnancy and postpartum and confirmed with medical records. The exposed group is comprised of women who have taken $\geq$1 atypical antipsychotics during pregnancy; the controls are women with psychiatric disorders who have not taken atypicals during pregnancy. Presence of a major malformation is abstracted from medical records. Identified cases are adjudicated by a dysmorphologist blinded to drug exposure.

Results: As of January 2019, N=1491 enrolled, (N=749 in exposure group; N=742 controls). N=1028 women were eligible for inclusion in the analysis. Of 546 live births in the exposure group, 16 had confirmed major malformations; 7 major malformations (4 confirmed; 5 pending final adjudication) in the 482 live births of the control group. Updated risk estimates are pending. For context, in 2018, the absolute risk of major malformations was 3.24% among infants exposed to an atypical and 1.51% among unexposed infants. The estimated risk ratio for major malformations was OR= 2.14 (n=494 exposed, n=464 unexposed, 95% CI: 0.89-5.16). At the direction of the scientific advisory board, by October 2019 we will be able to present updated data pertaining to atypicals as a group and the individual atypicals that are represented in adequate numbers.

Conclusions: New risk estimates will be forthcoming in 2019, and will include data pertaining to individual atypical antipsychotic medications.

TREATMENT CONSIDERATIONS IN THE MANAGEMENT OF PSYCHOTIC ILLNESS DURING PREGNANCY AND THE POSTPARTUM PERIOD
Veerle Bergink, MD, PhD
Director, Women’s Mental Health institute
Professor, Department of Psychiatry and Department of Obstetrics, Gynecology and Reproductive Science, Icahn School of Medicine at Mount Sinai, New York

Objective: 1) Quantification of relapse risk during pregnancy and postpartum in women with a history of mania or (postpartum) psychosis. 2) Protective effects of lithium and antipsychotics in the perinatal period. 3) Treatment of postpartum psychosis and long-term follow-up.

Methods: 1) A meta-analysis on relapse risk in all public medical electronic databases. 2) A clinical cohort study of 793 women with bipolar I disorder. These women had 402 pregnancies resulting in a live childbirth, 125 pregnancies ended in a miscarriage and 44 pregnancies in abortion. 3) A systematic literature search was conducted in all public medical electronic databases, adhering to the PRISMA and MOOSE guidelines.

Results: 1) The relapse risk during pregnancy cannot be quantified given the heterogeneity of the data and we will therefore discuss the evidence. Relapse risk postpartum: 4,023 patients were included in the quantitative analyses. The overall postpartum relapse risk was 35% (95% CI=29, 41). 2) Clinical cohort study: analyses are ongoing. We will present risk and resilience factors for relapse and relapse percentages with and without medication during pregnancy, after live childbirth, abortion and miscarriage. 3) We included 645 first-onset postpartum psychosis patients with a follow up of 7 to 25 year in a quantitative analysis. Of these women, 43% (279/645) did not experience subsequent severe episodes outside the postpartum period.

Conclusions: Medication is highly protective for women with mania and psychosis in history but timing matters.
PARTIAL HOSPITALIZATION FOR POSTPARTUM WOMEN WITH SERIOUS PUERPERAL ILLNESS: THE MOTHERHOOD CENTER EXPERIENCE - FROM CONCEPT TO VIABILITY
Catherine Birndorf, MD
Clinical Associate Professor of Psychiatry, Weill Cornell Medical Center – New York Presbyterian Hospital
Medical Director, The Motherhood Center, New York, NY

Objective: Mother-baby units are the standard of care for moderate to severe postpartum psychiatric disorders in many countries but are a rarity in the United States. We sought to provide a novel ambulatory therapeutic setting for pregnant and new mothers (and their babies in on-site therapeutic nursery) with perinatal mood and anxiety disorders (PMADs), as well as OCD, PTSD and postpartum psychosis (without imminent danger) to increase intensive day treatment options in the United States. In providing a treatment setting that addresses both the psychiatric needs of mothers and the needs of their babies, The Motherhood Center (TMC) aims to treat mothers' psychiatric symptoms while also addressing areas of difficulty in mother-baby bonding and attachment. The therapeutic nursery also supports patients in developing confidence as mothers and increasing access to care by reducing lack of childcare as a barrier to treatment.

Methods: Each patient admitted to TMC is given a standard psychiatric evaluation with collection of demographics and an EPDS upon admission and discharge. A patient satisfaction survey is also administered upon discharge. Patients in the partial hospitalization program participate in five psychotherapy groups per day, including process groups, skills groups, dyadic groups, and expressive therapies. Patients also engage in individual and family therapy and meet with a psychopharmacologist regularly.

Results/Implications: Approximately 200 patients have been treated since TMC’s opening in March 2017 with a range of diagnoses with a substantial proportion of women suffering from considerable psychiatric comorbidity. Changes in scores across treatment at TMS from admission to discharge will be presented.

Conclusions: Mother-baby day hospitals can mitigate suffering associated with puerperal illness and offer a feasible and acceptable treatment setting for perinatal women with serious psychiatric illness.

Acknowledgements: The Motherhood Center is a mission-driven, for-profit (investor funded) treatment center in New York City. No pharmaceutical entities support TMC.

Concurrent 1D
Redbud B Room

1E1: Symposium:
Integration of Substance Use Disorders Treatment in Obstetrics Care
Constance Guille1, Marley Doyle2, Julia Frew3, Susan Karabell4, Leena Mittal5
1Medical University of South Carolina, 2University of Nebraska Medical Center, 3Geisel School of Medicine at Dartmouth/Dartmouth-Hitchcock Medical Center, 4Cornell University, 5Massachusetts General Hospital Harvard Medical School

The prevalence of perinatal substance use is increasing and associated with significant maternal, fetal, and newborn morbidity and mortality.1,2 Early identification of pregnant women with substance use disorders and the provision of evidence-based care is vital to improving the health and well-being of mothers, their infants and children,3 but significant gaps in screening, identification and treatment of maternal substance use disorders exist.4 The integration of substance use disorders screening and treatment into obstetrics care has the potential to improve early detection of substance use and facilitate evidence-based treatment as well as provide treatment in a less stigmatizing setting, reduce fragmentation of care and facilitate collaboration in patient care across specialties.

The overall objectives of this symposium are to: 1) review the evidence-base that supports the integration of addiction services in obstetrics care; 2) describe four different and successful integrated models of care in diverse geographic regions of the United States; 3) discuss the practical implementation of these models; and 4) describe the preliminary maternal and newborn outcomes of women taking part in these programs.

References
1. Substance Abuse and Mental Health Services Administration. 2018b. Key substance use and mental health indicators in the United States: results from the 2017 National Survey on Drug Use and Health (HHS Publication No. SMA 18-
SUBSTANCE USE AND RETENTION IN TREATMENT AMONG WOMEN RECEIVING ADDICTION SERVICES IN PERSON COMPARED TO TELEMEDICINE IN OBSTETRIC PRACTICES

Constance Guille, M.D., Medical University of South Carolina

Objective: Telemedicine is one approach to integrating addiction services in obstetrics practices. The objective of this study is to compare maternal outcomes among women receiving addiction treatment in obstetrics practices in person (IP) compared to telemedicine (TM).

Methods: Consecutive cases of pregnant women with Opioid Use Disorder presenting for prenatal care in an obstetric practice with addiction services provided IP [n=54] or via telemedicine TM [n=44] were included in this study. Propensity score weighting was used to compare rates of retention in treatment and perinatal drug use between groups.

Results: At 6-8 weeks postpartum, 85.37% [35/41] of individuals in the TM group and 91.67% [44/48] of women in the IP were retained in treatment. After propensity score weighting and doubly robust estimation, no differences were found between groups, with an average bootstrapped treatment effect of -0.122 (95% Bias Corrected Confidence Limits -0.323, 0.044; p=0.17). In the TM group, 14.63% [6/41] of individuals had a positive UDS during pregnancy vs. 22.92% [11/48] of those in the IP group. After propensity score weighting and doubly robust estimation, no differences were found between groups, with an average bootstrapped treatment effect of -0.075 (95% Bias Corrected Confidence Limits -0.216, 0.076; p=0.34).

Conclusions: Rates of retention in treatment and substance use appear to be similar in women receiving addiction services via TM compared to IP. The use of telemedicine may be one way to increase access to specialty providers and support the integration of prenatal and addiction care for pregnant women with opioid use disorders.

Acknowledgements: National Institute on Drug Abuse [NIDA1K23DA039318-01] and Duke Endowment [6563-SP]

INTEGRATION AND “REVERSE INTEGRATION” OF SUBSTANCE USE DISORDER TREATMENT AND MATERNITY CARE IN NEW HAMPSHIRE.

Julia Frew, M.D., Geisel School of Medicine at Dartmouth/Dartmouth-Hitchcock Medical Center

Objective: Perinatal women have been identified as a priority population in opioid treatment initiatives. Integrated treatment programs are thought to reduce barriers to treatment, increase coordination of care, and improve outcomes for mothers and children. Our rural academic health system has responded to the opioid crisis by developing both a “reverse integrated” program offering comprehensive women’s health, substance use, psychiatric, and supportive services in an addiction treatment clinic as well as offering integrated MAT in maternity care settings around the state.

Methods: We will present data from patients enrolled in our comprehensive “reverse-integrated” Moms in Recovery program over the past 6 years as well as from implementation of our integrated MAT in maternity care program.

Results: Successful integrated treatment for pregnant women with substance use disorders can be provided in a variety of settings. In the Moms in Recovery program, only 9.66% of meconium or umbilical cord samples were positive for non-prescribed substances other than THC, while 19.33% were positive for THC and 71% were negative for all non-prescribed substances. Median postpartum retention in treatment is 16 months in our “reverse integrated” setting, while some maternity-care based programs may encourage women to transition to other treatment programs after the first several months postpartum.

Conclusions: Both traditional integrated programs and “reverse integrated” programs hold promise for increasing access to high quality substance use disorder treatment for pregnant women. Integrated treatment programs based in maternity care settings may need to pay particular attention to facilitating transitions of care if they elect.
not to provide ongoing care for postpartum women.


MISSING METHAMPHETAMINES: DEVELOPING A NEW SUBSTANCE USE SCREENING TOOL FOR USE IN AN INTEGRATED OBSTETRICS CLINIC

Marley Doyle, M.D.
University of Nebraska Medical Center

Objective: In many Midwestern and Western states, methamphetamine is the most commonly used illicit substance. The American College of Obstetrics and Gynecology (ACOG) recommends universal screening for opioid use disorder, but we found that these guidelines missed a significant portion of women with substance use disorders. None of the current validated perinatal substance use screening tools included methamphetamine use. Our objective was to develop a comprehensive screening tool to identify women with perinatal methamphetamine use and implement the tool in our integrated obstetrics clinic.

Methods: We met with physicians, midwives, and social workers to determine the current drug screening practices. We also met with risk management and examined hospital policies and state laws on mandated reporting of perinatal substance use. We determined that there was a wide variation of screening practices at our institution and developed a screening tool, The Nebraska Substance Use Disorders Screen. We implemented the screen in the Reproductive Psychiatry clinic and Obstetrics clinic. We then developed a referral process for addictions treatment.

Results: There is now a standardized screening tool for all perinatal women that includes the most commonly used substances in our region. As a result, a new hospital drug policy was drafted which resulted in more women being referred to treatment.

Conclusion: Validated screening tools for perinatal substance use disorders do not include methamphetamine. The Nebraska Substance Use Screen was developed to better identify women with substance use disorders.

USING A PSYCHIATRY ACCESS PROGRAM TO EXPAND PROVIDER CAPACITY TO ADDRESS PERINATAL SUBSTANCE USE: LESSONS LEARNED FROM MCPAP FOR MOMS

Leena Mittal, MD FACLP
Brigham and Women’s Hospital, Harvard Medical School

Objective: To grow the capacity of obstetric and substance use treatment providers to address substance use disorders (SUD) in perinatal women using the existing infrastructure of the Massachusetts Child Psychiatry Access Program (MCPAP) for Moms.

Methods: MCPAP for Moms was founded with a mission to build providers’ capacity to address mental health through:(1) specialized trainings and toolkits for psychiatric and substance use comorbidity in perinatal patients; (2) access to rapid psychiatric consultation; and (3) referral to mental health treatment resources. Services to help providers address SUD were expanded through the development of presentation materials, specialized additions to the existing provider toolkit, internal capacity building for psychiatric consultants, engaging a program manager to improve dissemination to SUD treatment providers. Program utilization data are recorded in the MCPAP Live database. These data will be pooled to assess utilization of the program for perinatal SUD prior to and after the expansion efforts.

Results: In FY 2019, the proportion of consultations involving opioid use disorder 7%, Cannabis Use disorder 3%, Cocaine use disorder 2%, and alcohol use disorder was 2%. We will report on the number of trainings, utilization data for diagnoses involving SUD and utilization by provider type after the implementation of the expanded program.

Conclusions: MCPAP for Moms is utilized by providers to improve the care of mental health needs for perinatal women. Implementation of capacity building efforts and dissemination to women’s health and SUD treatment providers will enhance the utilization of MCPAP for Moms for SUD alongside other mental health conditions.

Acknowledgements: MCPAP for Moms is funded by the Massachusetts Department of Mental Health
Opioid Addiction: Models of Care for Moms and Babies
Margaret Howard, PhD
Brown University and Women & Infants Hospital of Rhode Island

Introduction: The prevalence of opioid addiction has grown exponentially in less than a decade and constitutes a public health crisis. The number of women identified as having an opioid use disorder at the time of delivery quadrupled between 1994 and 2014 and the rates continue to increase. Pregnancy does not confer protection from opioid addiction and both mothers and their offspring require sensitive, safe, evidence-based, and non-judgmental care. This symposium will describe three models of care from the perspective of a primary care physician, a perinatal psychiatrist, and a neonatologist who cares for the tiniest of those afflicted.

INTEGRATED PERINATAL AND SUBSTANCE USE CARE TO REDUCE MATERNAL MORTALITY IN AN OPIOID EPIDEMIC
Kaylin A Klie, MD, MA, FASAM
University of Colorado Department of Family Medicine

Objective: Accidental substance overdose has emerged as a key driver of maternal mortality in the US during the current opioid epidemic. Understanding the concept of addiction through a biopsychosocial lens helps inform treatment models that are effective for women with opioid use disorder in the perinatal period. This presentation will highlight the epidemiology of substance use in the perinatal period, and discuss addiction within the context of prevailing frameworks such as the chronic disease model, the learning model, and the environmental adaptation model. The positive impact of access to low-barrier, integrated perinatal medical care and substance use treatment in improving maternal and neonatal outcomes will also be discussed.

Methods: A model of integrated care that includes perinatal medical care, medication-assisted treatment, psychiatric care, intensive outpatient treatment, and trauma-focused therapy was developed in a medical clinic setting. This model was adapted to a prison setting, allowing women to enter into treatment during incarceration and continue in care upon release.

Results: Comprehensive, integrated care for peripartum women with substance use disorder, including medication-assisted treatment, not only improves maternal and neonatal outcomes, but can reduce recidivism to incarceration, and improve maternal mortality rates due to accidental substance overdose.

Conclusions: Helping women to access perinatal medical care and substance use treatment in an integrated setting must be a consideration in efforts to reduce maternal mortality rates in the US.

MEDICATION ASSISTED TREATMENT FOR OPIOID USE DISORDER IN THE PERINATAL PATIENT
Anupriya Gogne MD
Brown University and Women & Infants Hospital of Rhode Island

Objective: Opioid use disorder during pregnancy has been rising at alarmingly high rates in the last two decades, coincident with an epidemic of prescription opioid misuse. Untreated opioid use disorder during pregnancy is associated with several adverse maternal and fetal outcomes. In this symposium, we discuss the implementation of Moms MATTER (Medication Assisted Treatment to Enhance Recovery), a unique model of care for perinatal women suffering from opioid use disorder.

Methods: We describe elements of Moms MATTER- an office based setting for stabilization of pregnant and postpartum women with opioid use disorder, using pharmacological interventions specifically buprenorphine, as well as treatment of comorbid psychiatric illness, coordination with obstetrical and obstetric-medicine services, psychosocial support and case management services.

Results: MAT (Medication Assisted Treatment) is a clinically effective intervention which significantly reduced the need for inpatient detoxification for pregnant women. The Moms MATTER treatment approach optimized treatment adherence. Tailoring interventions including case management, to fit the unique needs of each patient, was feasible, acceptable, and enhanced positive outcomes.

Conclusions: The ultimate goal of MAT is full recovery, including the ability to live a self-directed life. Modifying treatment interventions to fit the needs of the perinatal population improves maternal and fetal outcomes as well as rates of reunification of the mother-baby dyad.
FAMILY CENTERED CARE CAN REDUCE LENGTHS OF STAY AND TREATMENT IN INFANTS WITH NEONATAL ABSTINENCE SYNDROME

Adam J. Czynski DO
Associate Professor of Pediatrics, Warren Alpert Medical School of Brown University and Women & Infants Hospital of Rhode Island

Objective: The sharp increase in opioid use has led to an increase in Neonatal Abstinence Syndrome (NAS). Care models for NAS vary by state and region. Women & Infants’ Hospital of Rhode Island implemented a Family Centered Care model (FCCM) that maximizes parental involvement and non-pharmacologic care and we evaluated our FCCM on length of stay (LOS) and length of treatment (LOT) in babies with NAS.

Methods: Evaluating the effect of FCCM we compared 2 patient cohorts with the primary objective of reduced LOS. The first patient cohort included all infants treated for NAS 1 year prior to our FCCM. The second cohort included all infants treated for NAS in the first year of FCCM. The primary metric was LOS and the secondary metric was LOT. LOS and LOT were analyzed using generalized linear models with a Poisson distribution.

Results: Infants treated in our FCCM had reduced LOS and LOT. Our data showed a reduction in LOS from 21.9 days to 16.5 days (P =.002, 95% CI -8.74, -2.04) and reduction in LOT from 18.2 to 10.8 (P <.001, 95% CI -10.37, -4.5), with the implementation of family centered care.

Conclusions: The use of FCCM and focus on non-pharmacologic bundles can reduce lengths of hospitalization and lengths of treatment in infants with NAS.

Concurrent 1E
Bellflower Room - Oral Presentations (5) - Chair: Deepika Goyal

• SLEEP DURING PREGNANCY PREDICTS TRANSDIAGNOSTIC SYMPTOMS ASSOCIATED WITH POSTPARTUM DEPRESSION

Jessica L. Obeysekare1, Zachary L. Cohen3, Meredith E. Coles4, Teri B. Pearlstein1,2,5, Carmen Monzon1,5, E. Ellen Flynn1,5, Katherine M. Sharkey1,2,6
1Department of Psychiatry and Human Behavior, 2Department of Medicine, Alpert Medical School of Brown University, 3Department of Psychiatry, University of North Carolina at Chapel Hill, 4Department of Psychology, Binghamton University (SUNY), 5The Women’s Medicine Collaborative, Lifespan, 6Sleep for Science Research Laboratory

Introduction: Later sleep, circadian timing, and circadian preference predict untoward outcomes across multiple domains including mood disorders, substance use, impulse control, and cognitive function. Perinatal women experience sleep disturbances that may promote circadian and sleep delay. We examined whether sleep timing during third trimester of pregnancy predicted postpartum symptoms of mania, depression, obsessive-compulsive disorder (OCD), and of emotional reactivity on an International Affective Pictures System (IAPS) task.

Methods: Fifty-one women with a previous, but not active, episode of unipolar or bipolar depression, had symptoms evaluated and sleep recorded with wrist actigraphy at 33 weeks’ gestation and 2, 6, and 16 weeks’ postpartum. Circadian phase was measured in a subset of 45 women using salivary dim light melatonin onset (DLMO).

Results: We divided the sample into “early” and “late” sleep groups using average sleep onset time at 33 weeks’ gestation, defined by the median-split time of 11:27pm. The “late” group reported significantly more manic and depressive symptoms at postpartum week 2. Longer phase angle between DLMO and sleep onset at 33 weeks was associated with more manic symptoms at postpartum week 2 and more obsessive-compulsive symptoms at week 6. Later sleep timing in 3rd trimester was associated with less arousal and blunted responses to IAPS images rated at 3rd trimester, but not at the postpartum time points.

Conclusion: Delayed sleep timing in this sample of at-risk women was associated with more symptoms of mania, depression, and OCD in new mothers. Sleep timing may be a modifiable risk factor for postpartum depression.

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The authors declare no conflicts of interest.
• FEASIBILITY OF MODEL ADAPTATIONS AND IMPLEMENTATION OF A PERINATAL PSYCHIATRIC TELECONSULTATION PROGRAM
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¹Department of Psychiatry and Behavioral Medicine, Medical College of Wisconsin, ²College of Nursing, University of Wisconsin-Milwaukee

Objective: Given the critical shortage of perinatal psychiatrists, combined with the prevalence of psychiatric conditions in the perinatal period, teleconsultation may help to maximize the efficiency of psychiatrists to reach this patient population. The Periscope Project is a Wisconsin-based program offering three core services including real-time provider-to-provider teleconsultation, community resource information, and provider education. This paper describes model adaptations and implementation of a perinatal psychiatric teleconsultation program and the first 18 months of program data.

Method: Enrollment, encounter, satisfaction and encounter effectiveness in building provider capacity data were collected.

Results: Four hundred eight-five providers enrolled and 268 unique providers accessed services at least once. There were 594 encounters with 85% of encounters resulting in a provider-to-provider teleconsultation. Mean call-back time from the psychiatrist was 6.8 minutes (median = 4 minutes). Over half of utilizing providers practiced in obstetrical settings, and 15% were psychiatrists. Provider satisfaction with the service was 100%.

Conclusions: The utilization and satisfaction with The Periscope Project suggest that the perinatal psychiatry access program models can vary in structure and process and experience similar utilization rates. Model adaptations are feasible and demonstrate the teleconsultation service is acceptable, efficient and has potential to improve the population’s health over time.

Acknowledgements: The authors received funding for this project from Wisconsin Department of Health Services and United Health Foundation.

• OUTPATIENT FOLLOW-UP AFTER MENTAL HEALTH EMERGENCY DEPARTMENT VISITS IN THE POSTPARTUM PERIOD
Lucy Church Barker¹,²,³, Susan Bronskill¹,²,³, Hilary K Brown¹,²,³, Paul Kurdyak¹,³,⁴, Simone N Vigod¹,²,³
¹University of Toronto, ²Women’s College Hospital, ³ICES, ⁴Centre for Addiction and Mental Health

Objective: Psychiatric disorders are among the leading reasons for postpartum emergency department (ED) visits, yet it is unknown what mental health (MH) care women receive after leaving the ED. This study aimed to describe outpatient MH service use following postpartum MH ED visits.

Methods: This retrospective cohort study used ICES health administrative data to identify all Ontario (Canada) women who had a MH ED visit (International Classification of Diseases, ICD-10-CA codes F06-99, X60-84, Y10-19, Y28) within 1 year postpartum and were discharged from the ED. The primary outcome was ≥1 outpatient MH visit (family physician or psychiatrist) within 30 days of ED discharge (modified health systems indicator). Proportion of women with this outcome were described in relation to the primary diagnosis and presence of deliberate self-harm (DSH) at the index visit.

Results: Of the 8153 women discharged from ED, 3675 (45.1%) had ≥1 outpatient MH visit within 30 days. Outpatient visits occurred for 1140 (41.5%) women with anxiety disorders (n=2744), 1363 (60.1%) women with depression (n=2267), 323 (28.4%) women with substance use disorders (n=1137), 497 (41.1%) women with trauma/stressor disorders (n=1207), 149 (72.7%) women with serious mental illness (includes bipolar and schizophrenia, n=205), 85 (39.0%) women with other MH diagnoses (n=218), and 145 (33.1%) women with DSH (n=428, not mutually exclusive with other categories).

Conclusions: Among postpartum women demonstrating a need for MH care by presenting to the ED, under half received timely follow-up care, demonstrating serious gaps. Further research on barriers and facilitators to post-ED MH care is warranted.

Acknowledgements: This study is funded by a Norris Scholar Award, Department of Psychiatry, University of Toronto.

• MATERNAL DEPRESSION IN LATINAS AND CHILD SOCIOEMOTIONAL AND COGNITIVE DEVELOPMENT: A SYSTEMATIC REVIEW
Rebeca A Harris, Hudson P Santos J
University of North Carolina at Chapel Hill

Objective: Although substantial research exists on the debilitating effects of maternal depression on child development, little is known about Latina mothers with depression and their young children within the broader context of sociocultural and economic stressors. During the foundational years (prenatal through early childhood periods) for neuroplasticity,
what is the relationship between maternal depression in Latina mothers and their children's socioemotional and cognitive outcomes?

**Methods:** We searched electronic databases PubMed, CINAHL, and PsycINFO in this systematic review. Based on pre-determined criteria, we identified 56 studies and included 18 in the final sample. After extracting data, we assessed study quality with the National Heart, Lung, and Blood Institute Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies.

**Results:** From the final sample, we found inverse correlations between maternal depression and child socioemotional and cognitive outcomes; furthermore, we found evidence of a moderating and mediating role of maternal depression between contextual stressors and child outcomes. Children of U.S.-born Latina mothers had poorer developmental outcomes than children of foreign-born Latina mothers across socioemotional domains and throughout early developmental windows.

**Conclusions:** Future research must examine underlying mechanisms for the potential intergenerational decline of young Latino children's socioemotional outcomes. Policies should support mental health of Latina mothers as early as the prenatal period.

**UNIQUE MENTAL HEALTH NEEDS OF TRANSMEN**

Nancy W. Selix  
*Nursing and Health Professions, University of San Francisco*

**Introduction:** Transmen are individuals whose gender identity does not conform with gender assigned at birth. Because many transmen retain their natal reproductive organs, they may choose pregnancy and parenthood. The unique mental health needs of transmen prior to conception, during pregnancy, and as parents have not been addressed. This presentation will provide details on meeting these needs.

**Methods:** A thorough review of the literature was conducted to glean published research and case studies on mental health needs of transmen.

**Results:** Published research on mental health of perinatal transmen is limited in scope, but findings indicate that this emerging population has specialized needs revolving around cultural humility, intersectionality of minority stress, interpersonal violence, substance use disorder, depression and anxiety, and discrimination from society in general and healthcare providers.

**Conclusions:** Addressing the mental and cultural health needs of perinatal transmen provides support for role transition during conception, pregnancy, and parenting. Providing this specialized care facilitates successful role transition and reduces the untoward effects of untreated depression, anxiety, and minority stress for transmen, their partners, infants, and children.

**Acknowledgement:** The author does not have any financial or product disclosures.
**Concurrent Sessions**

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**Concurrent 2A**

**Grumman Auditorium**

**Symposium:** "Hasta la Revolucion Siempre" - Updates from the Genetics Revolution in Maternal Mental Health

**Ian R Jones**

*Cardiff University*

Molecular genetics has been successfully used to provide new, robust, replicable insight into the aetiology of psychiatric disorders and has revolutionised the conceptualization of many traits. This symposium will provide the audience with the latest updates on the genetic revolution in perinatal mental health.

**GENETIC RISK SCORES AND POSTPARTUM PSYCHIATRIC DISORDERS IN A DANISH POPULATION-BASED COHORT**

Anna E. Bauer, Xiaoxin Liu, Enda M. Byrne, Patrick F. Sullivan, Naomi R. Wray, Esben Agerbo, Mette Nyegaard, Jakob Grove, Katherine L. Musliner, Katja G. Ingstrup, Benedicte M.W. Johannsen, Merete L. Maegbaek, Yunpeng Wang, Merete Nordentoft, Ole Mors, Anders D. Berglum, Thomas Werge, David M. Hougaard, Preben Bo Mortensen, Trine Munk-Olsen, Samantha Meltzer-Brody

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Objective: Postpartum psychiatric disorders are heritable, but how genetic liability varies by other risk factors is unknown. We aimed to 1) estimate associations of genetic risk scores (GRS) for major depression (MD), bipolar disorder (BD), and schizophrenia (SCZ) with postpartum psychiatric disorders, 2) examine differences by prior psychiatric history, and 3) compare genetic and familial risk of postpartum psychiatric disorders.

Methods: We conducted a nested case-control study from Danish population-based registers of women in the iPSYCH2012 cohort who had given birth before December 31, 2015 (n=8,850). Cases were women with a diagnosed psychiatric disorder or filled psychotropic prescription within one year after delivery (n=5,829 cases, 3,021 controls). Association analyses were conducted between GRS calculated from Psychiatric Genomics Consortium discovery meta-analyses for MD, BD, and SCZ and postpartum psychiatric disorder case-control status.

Results: Parental psychiatric history was associated with postpartum psychiatric disorders among women with previous psychiatric history (OR, 1.14; 95% CI 1.02 – 1.28) but not without psychiatric history (OR, 1.08; 95% CI: 0.81 – 1.43). GRS for MD was associated with an increased risk of postpartum psychiatric disorders in both women with (OR, 1.44; 95% CI: 1.19 – 1.74) and without (OR, 1.88; 95% CI: 1.26 – 2.81) personal psychiatric history. GRS for BD and SCZ were not associated with postpartum psychiatric disorders in our sample.

Conclusions: Genetic liability for major depression was associated with postpartum psychiatric disorders, suggesting GRS can provide additional information about risk not encompassed solely in simple measures of family history.

Acknowledgements: NIMH 1R01MH104468, iPSYCH R155-2014-1724, DFF-5053-00156B.

GENETIC DISSECTION OF POSTPARTUM PSYCHOSIS
Arianna Di Florio (1,2), Veerle Bergink (3), Karen Crawford (1), Katherine Gordon-Smith (4), Lisa Jones (4), Nick Craddock (1), Ian Jones (1).
1. Cardiff University
2. University of North Carolina at Chapel Hill
3. Icahn School of Medicine at Mount Sinai
4. University of Worcester

Introduction: The aetiology of postpartum psychosis and its relationship with bipolar disorder are not fully understood.

Methods: Polygenic risk scores for schizophrenia, bipolar disorder, major depression and sleep traits were generated and compared in 502 women with postpartum psychosis, 1341 with bipolar disorder without postpartum psychosis and 5714 controls.

Results: Polygenic scores for bipolar disorder and sleep traits were similar across all diagnostic groups, elevated compared to controls. Polygenic risk scores for major depression and schizophrenia, however, differentiated women first onset postpartum psychosis (N=203) from those with bipolar disorder. Women with postpartum psychosis in the context of a pre-existing bipolar illness had similar genetic risk profiles to those with bipolar disorder without perinatal episodes.

Conclusion: There are significant differences in polygenic risk profiles between first onset postpartum psychosis and bipolar disorder and between first onset postpartum psychosis and postpartum psychosis in the context of a pre-existing bipolar illness.
Acknowledgments: NARSAD Young Investigator Award to ADF, Wellcome Trust (078901) and the Stanley Medical Research Institute (6045240–5500000100).

APPLYING GENETIC RISK SCORES TO AN ETHNICALLY DIVERSE SAMPLE OF POSTPARTUM WOMEN
Jerry Guintivano1, Patrick Sullivan1,2, David Rubinow1, Samantha Meltzer-Brody1
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2Department of Genetics, University of North Carolina at Chapel Hill

Background and Aims: Postpartum depression (PPD) is a perinatal form of major depressive disorder (MDD) and affects approximately 1 in 7 women (prevalence 10-15%). The genetic contribution to PPD etiology is not well understood, particularly how genetic predisposition to other psychiatric disorders contributes to risk for PPD.

Methodology: A total of 1,464 women (535 cases and 929 controls) were recruited at six weeks postpartum from obstetrical clinics in North Carolina. PPD status was determined using the MINI-plus (v6). Psychiatric history was extracted from medical records. Biological samples were also taken for genotyping using Illumina Multi-Ethnic Genotyping Array. We used summary statistics from the Psychiatric Genomics Consortium (PGC) to create genetic risk scores in our cohort to estimate the relationship between risk for various psychiatric disorders (e.g. MDD, bipolar disorder, anxiety, schizophrenia) and PPD.

Results: This population is racially diverse (68% Black, 13% Latina, 18% European), which requires special considerations when using summary statistics generated on individuals of mostly European ancestry. Analyses are currently underway. We will present our approach to estimating genetic risk scores in our diverse population of women and the ability of genetic risk scores to predict various symptom domains of PPD.

Conclusion: These results may provide empirical genetic evidence for important shared genetic etiology between PPD and other psychiatric disorders. Only by understanding of the interplay between genetic and other risk factors for PPD can we develop diagnostic categories informed by biology, identify individuals at risk before the illness emerges, and offer effective and individualize treatment options.

GENETIC ASSOCIATION STUDY OF ESTROGEN RECEPTOR ALPHA (ESR1) AND POSTPARTUM DEPRESSION (PPD)
Henri M. Garrison-Desany, John P. Kelly, Peter P. Zandi, Jennifer L. Payne
Johns Hopkins School of Medicine

Objective: Previous research has demonstrated that PPD has a genetic basis. Two studies identified ESR1 polymorphisms were associated with PPD, but were nonsignificant after correction for multiple testing. We sought to replicate this work in a sample of women followed prospectively through pregnancy and postpartum.

Methods: 247 pregnant women were evaluated during pregnancy and at 2 weeks, 6 weeks, and 3 months postpartum. An Edinburgh Postnatal Rating Scale (EPDS) score of >12 identified significant depression. Single nucleotide polymorphism (SNP) genotyping was performed at rs2077647 in ESR1.

Results: 18% of the sample developed PPD within six weeks postpartum and 22% within 3 months postpartum Overall, the ESR1 polymorphism was not significantly associated with the development of PPD (p=0.23). However, women who were homozygous for the minor allele of the polymorphism were less likely to develop PPD (OR=0.28, p=0.03) when PPD began close to delivery (within 6 weeks) but not when onset was within 3 months. Similarly, when PPD was defined as no depression during pregnancy and onset occurred within 6 weeks postpartum, homozygosity for the minor allele was associated with a decreased risk of PPD (OR=0.06, p=0.03). There was no significant association when onset began within 3 months postpartum (OR=0.32, p=0.09).

Conclusions: Timing of onset of PPD appears to play an important role in interpreting genetic association studies of PPD. Homozygosity of the minor allele of the studied ESR1 polymorphism may be protective against the development of PPD in the immediate postpartum period.

Acknowledgements: Funding Sources: K23 MH074799, R01MH112704, R01MH104262
EXPERIENCES OF RECOVERED ANOREXIC MOTHERS FEEDING THEIR CHILDREN.
Carrie Morgan Eaton, PhD, MSN, RNC-OB, C-EFM, CHSE
University of Connecticut

Objective: An estimated 2.4% of women of childbearing age have met criteria for anorexia nervosa or bulimia nervosa in their lifetime. A history of an eating disorder can influence all facets of pregnancy, childbirth, and child feeding practices. The research question investigated was “What are the experiences of mothers recovered from anorexia nervosa feeding their children?”

Methods: Sixteen women participated in in-depth interviews in this descriptive phenomenological study. Colazzi’s method was used in analyzing the data obtained from the interviews to uncover themes.

Results: Mothers reflected on their own interplay of genes and environment in expressing their fear of transmitting an eating disorder to their offspring. Mothers revealed a myriad of emotions surrounding pregnancy and birth. The result was a sense of freedom and commitment to nourishing a growing baby during pregnancy contrasted with fear of stigma from healthcare providers and anxiety over the loss of control of an ever-expanding body. They experienced a conflicted need to compensate for years of restrictive eating by nourishing their children whether it was through overfeeding, portion control, lack of structure, or health choices. For mothers with a history of anorexia nervosa, feeding children is a complicated experience wrought with remnants of eating disorder thoughts and behaviors. Mothers reflected deeply on their own recovery journey sharing details that are often left unheard.

Conclusions: The results of this study can inform other mothers they are not alone. In addition, healthcare providers can focus on the results of this study to open the door to screening and support in the prenatal and postpartum period to start the conversation about the potential impact a history of an eating disorder can have on maternal attachment and child feeding.

THE OTHER MOTHER: A NARRATIVE ANALYSIS OF THE POSTPARTUM EXPERIENCE OF NONBIRTH LESBIAN MOTHERS
Michele M. McKelvey, PhD, RN
Central Connecticut State University

Objective: The Institute of Medicine (IOM) indicated a need for studies on lesbian health including fertility/infertility and reproductive health. The IOM recognized that qualitative research is particularly valuable in studying this population. The perspective of nonbirth lesbian mothers has been virtually absent in the literature. The research question investigated was “What is the metastory of nonbiological lesbian mothers’ experiences during the first year postpartum?”

Methods: In this narrative analysis, 10 lesbian mothers were interviewed and shared their unique stories of their first year of motherhood. Riessman’s structural approach to thematic analysis was the data analysis method used.

Results: The metastory of the postpartum experiences of nonbirth lesbian mothers revealed 6 themes including the following: At the mercy of health care providers, Breastfeeding is the major difference between us, Defined by who I am not, Fighting for every piece of motherhood: The world can take them away, What’s in a name?, and Epilogue: The new normal.

Conclusion: This narrative analysis aligns with the recommendations of the IOM. The findings from this study can lead to more culturally sensitive care of lesbian mothers and their families.
THE ANNIVERSARY OF BIRTH TRAUMA: A METAPHOR ANALYSIS
Cheryl Tatano Beck, DNSc, CNM, FAAN
University of Connecticut

Objective: In clinical practice, metaphors can be windows into how our patients are experiencing their physical or mental illness. The research question investigated was “What metaphors do women use to describe their experiences of the anniversary of their traumatic birth?”

Method: In this secondary qualitative analysis, the existing dataset from a phenomenological study of the anniversary of birth trauma was reanalyzed. Metaphor identification procedure (MIP) was the method used to identify the metaphors.

Results: Eight metaphors provided a rich source of insight into women’s yearly struggles. These metaphors characterized the anniversary of traumatic birth as a great pretender, a lottery, a trigger, a clock watcher, a giant rubber band, a guilt trip, a sea of sadness, and bottled up anger.

Conclusion: Being attentive to metaphors, mothers can provide a unique approach to helping identify women who are struggling at anniversary time. Only once identified can women be referred for any necessary follow-up care. Metaphors have the capability to enhance mothers’ communication with clinicians that is not captured by medical terminology.

AN INTRODUCTION TO ATLAS TI: QUALITATIVE DATA ANALYSIS SOFTWARE
Carrie Morgan Eaton, PhD, MSN, RNC-OB, C-EFM, CHSE
University of Connecticut

Objective: Qualitative research entails an emerging and iterative process that can be strengthened utilizing computer-aided data analysis software (CAQDAS). Atlas.ti is a powerful CAQDAS program used to build complex codes, test relationships, and handle large volumes of data. The objective of this presentation is to explore the use of CAQDAS utilizing an example of a descriptive phenomenological study. The research question investigated was “What are the experiences of mothers recovered from anorexia nervosa feeding their children?”

Method: In this descriptive phenomenological analysis (Colaizzi, 1978), the initial pilot study (n = 3) employed manual pencil and paper methods. The pilot study was carried out as a full scale research project (n = 16) including the initial three participants. For the full research study, Atlas.ti served as the data management platform for all transcripts, research documents, notes, and quotations.

Results: From the 16 transcriptions uploaded into Atlas.ti, significant statements were extracted, highlighted, and coded. Simultaneously, formulated meanings were documented to create cluster themes. The themes were continually collapsed leaving six core themes representing an exhaustive description of the experiences of mothers recovered from anorexia nervosa and its impact on maternal-child feeding.

Conclusion: While many qualitative researchers the iterative process of analyzing data via manual pencil and paper methods, CAQDAS is a powerful tool that supports data integration, organization, and process documentation. This presentation will consider the possibilities, limitations, and challenges of undertaking qualitative data analysis while utilizing examples from a descriptive phenomenological research study analyzed in Atlas.ti.

Concurrent 2C
Redbud A Room

Symposium
Using Functional Magnetic Resonance Imaging to Unveil Features of Perinatal Depression
Sandraluz Lara-Cinisomo, PhD
University of Illinois at Urbana-Champaign

Objective: Perinatal depression, minor or major depression that occurs during pregnancy or in the first postpartum year, is a leading complication among women of childbearing age. This debilitating disorder wields its effects on mother and infant. Clinicians and researchers are feverishly working to unveil features of this disorder to identify treatments that are efficacious and acceptable. One innovative strategy includes the use of functional
neuroimaging, which has already yielded valuable information. However, there is still much to learn. The objective of this symposium to present findings from five cutting-edge studies designed to clarify features of perinatal depression that can lead to innovative treatments.

**Methods:** Each of the five studies use functional magnetic resonance imaging (fMRI). The first is a feasibility study on pain perception in postpartum women with and without depression. The second study examined maternal behavioral neurocircuitry response in postpartum women receiving buprenorphine to treat opioid use disorder compared to healthy controls. The third study used computational modeling and fMRI to identify decision-making to test how they predict anhedonia level with a learning therapy. The fourth study examined maternal affective symptoms (e.g., depression and anxiety) and neural response to infant emotion cues. The last investigation explored whether higher psychological distress and multiple environmental risks are associated with maternal neural responses to her infant's cry.

**Results:** All findings will help unveil important neural features of perinatal depression.

**Conclusions:** Findings from this symposium will help inform potential interventions and advance our understanding of the features of perinatal depression.

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**ASSESSING PAIN PERCEPTION IN WOMEN WITH AND WITHOUT POSTPARTUM DEPRESSION USING FMRI**

Sandra Luz Lara-Cinisomo, PhD, Tanitoluwa Akinbode, BA, Ryan Larsen, PhD, Brad Sutton, PhD, and Hillary Schwarb, PhD

*University of Illinois at Urbana-Champaign*

**Objective:** Postpartum depression (PPD) is one of the most common complication post-delivery. Postpartum pain is also common, affecting 30-77% of women. Postpartum depression and pain can have negative implications for mother and infant, including reduced breastfeeding duration and compromised mother-infant bonding. Despite the high prevalence of postpartum depression and pain, few studies have examined associations between PPD and pain perception using subjective and objective data. Evidence from brain imaging studies have shown that women with PPD exhibit significantly reduced activation of key brain regions. However, prior brain imaging studies have not examined neural correlates of pain in women with PPD. Furthermore, prior studies have not used subjective and objective measures of pain that allow for a better understanding of how women with PPD process pain versus non-PPD women. The objective of this study is to determine the feasibility of conducting a pain study using Magnetic Resonance Imaging (MRI) with postpartum women with and without depression.

**Methods:** Women 0 to 6 months postpartum complete two visits. The first includes a psychological assessment and claustrophobia test. In the second visit, women are exposed to an MRI-safe cold pain device and verbally report subjective pain perception using visual analog scales (0 to 100) while objective pain responses are collected via brain images via functional-MRI.

**Results:** Ten women have completed the study. Results from the feasibility study will be reported.

**Conclusions:** This presentation will inform attendees about the feasibility of conducting an innovative pain study with healthy and depressed postpartum women.

**Acknowledgements:** University of Illinois at Urbana-Champaign Office of the Vice Chancellor Research Board Grant and University of Illinois at Urbana-Champaign Beckman Institute’s Intelligent Systems working group Social and Emotional Dimensions of Well-Being.

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**OPIOIDS AND BRAIN ADAPTATIONS IN THE EARLY POSTPARTUM WOMEN**

James E. Swain, S. Shaun Ho

*Department of Psychiatry, SUNY – Stony Brook, NY, USA*

**Objective:** Effects of opioids in opioid use disorder (OUD) or buprenorphine treatment (BT) of OUD to prevent withdrawal and miscarriage - are not well studied. Opioids affect increasing millions of women facing personal and transgenerational risks. We studied Maternal Behavior Neurocircuit (MBN) adaptation in early postpartum according to BT treatment, mood, and parenting stress.

**Methods:** We studied 41 mothers in two early postpartum time-points: T1 (1 month PP) and T2 (4 months PP) - receiving BT for OUD (n=7; 4-20 mg daily), as compared to Matched Controls (MC, n=7 according to Beck Depression Index) and a group of healthy controls (HC, n=27). Parenting Stress Index (PSI) and Parental Bonding Questionnaire (PBQ) were assessed. Functional neuroimaging involved *baby cry* and *resting state functional connectivity* were analyzed in SPM 8.
**Results:** For Own vs. Other’s Baby-Cry, BT > HC for PAG and hypothalamus; hypothalamus responses related to parenting stress. Both differential functional connectivity in Own vs. Other’s Baby-Cry and rsFC between the PAG and hypothalamus were associated with PSI. BT > MC for PAG-dependent rs-FC with hypothalamus, amygdala and insula at T1 - not at T2. The “rejection/pathological anger” subscale of PBQ at T1 correlated with T1-to-T2 increases in PAG-dependent rs-FC with the hypothalamus and amygdala, which in turn were associated with the same subscale at T2.

**Conclusions:** BT increases MBN responses and rs-FC in caregiving MBN. However, BT also increases defensive MCN activity and interferes with reciprocal inhibition between caregiving and defense neurocircuits. BT may benefit and harm MCN.

**Acknowledgements:** Stony Brook University Department of Psychiatry.

**IDENTIFYING NEURAL AND BEHAVIORAL FEATURES OF DISRUPTED DECISION-MAKING IN ANHEDONIA**

Gollan, J.,¹ Thorsten K.,² Abitante, G.,³ DeArcangelis, J.,¹ Huys, Q.J.M. ³

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² Department of Neurology, Northwestern University, Feinberg School of Medicine
³ UCL Max Planck Centre for Computational Psychiatry and Ageing Research, University College London, Camden and Islington NHS Foundation Trust

**Objectives:** To identify neural and behavioral features of decision-making in depression, and test how they predict anhedonia level with a learning therapy.

**Methods:** Computational modeling and neuroimaging during an orthogonalized go/no-go task was conducted (Guitart-Masip et al., 2012b). We used functional magnetic imaging (BOLD signals) of brain regions of two neurobehavioral processes of learning: (1) Pavlovian bias, i.e., substantia nigra/ventral tegmental areas (SN/VTA), and (2) instrumental learning, i.e., inferior frontal gyrus (IFG). Adults (n=13) were enrolled, with scores > 24 on the Inventory of Depressive Symptomatology, Self-Report (IDS-SR)(Rush et al., 1986) and depression on the Mini-International Neuropsychiatric Interview (MINI 7.0.2)(Sheehan et al., 1998).

**Analyses:** Subject-specific parameter estimates were submitted to ANOVA with repeated measures factors for action (go/no-go) x valence (win/lose) using voxel-wise analyses. Bonferroni corrections were used. We used Statistical Parametric Mapping (SPM12, http://www.fil.ion.ucl.ac.uk/spm) and MATLAB 7.14 (R2012a). Bayesian model comparisons were used to test computational models.

**Results:** A main effect of action and an interaction between action and valence, along with a computational model emerged. Neuroimaging analyses showed a main effect of action (go > no-go) in the striatum and SN/VTA (p < 0.01); and, a main effect of action (no-go > go) in the IFG (p < 0.01). Task behavior correlated with anhedonia (p = 0.03); the model showed a trend (p = 0.08). Task responses, the model, and fMRI responses at baseline predicted reduced anhedonia after nine weeks of learning therapy.

**Conclusions:** Neurobehavioral features of reinforcement learning predict level of anhedonia with learning therapy.

**Acknowledgement:** Funded by the Ken and Ruth Davee Award for Innovative Investigations in Affective Disorders (Gollan, PI).

**GETTING INSIDE POSTPARTUM DEPRESSION: MATERNAL AFFECTIVE SYMPTOMS AND NEURAL RESPONSE TO INFANT EMOTION CUES**

Heidemarie Laurent, Megan Finnegan

University of Illinois at Urbana-Champaign

**Objective:** Previous research suggests depression-related differences in the way mothers’ brains respond to their infant’s emotion cues but has not fully distinguished the source of effects. We examined whether there are differences in maternal neural response to her infant’s emotion attributable to postpartum depression specifically, as opposed to a more general internalizing phenotype based on prior diagnoses and/or concurrent anxiety.

**Methods:** Twenty-five mothers were assessed at 3, 6, 12, and 18-months postpartum. A clinical interview at the first assessment tapped past and current depression/anxiety diagnoses, and self-report depression and anxiety scales at each assessment tapped current symptom severity. At 3mo, infants were
videorecorded during tasks eliciting positive (peekaboo) and negative (arm restraint) emotion, and videos were presented during functional neuroimaging.

Continuous symptom scores and past/current depression and anxiety diagnoses were entered as predictors of maternal BOLD response to positive>negative own infant emotion videos in separate models, and cluster-level correction ($p<.05$ FWE) determined significant activation differences in the whole brain.

**Results:** Postpartum depressive symptoms predicted hyporesponse to infant positive>negative emotion in several cortical regions (especially prefrontal), but these differences were better explained by anxiety symptoms. There were no unique effects of prior depression.

**Conclusions:** It appears maternal postnatal anxiety is particularly associated with diminished brain response to infant positive compared to negative emotion, which may help to explain perpetuation of symptoms during this time and impacts on the mother-infant relationship. Future research should address behavioral correlates and possible changes across the perinatal period to better guide screening and intervention approaches.

**Acknowledgments:** This work was supported by the Society for Research in Child Development Victoria Levin Award "Early Calibration of Stress Systems: Defining Family Influences and Health Outcomes" awarded to Heidemarie Laurent and by the University of Oregon College of Arts and Sciences.

**EXPOSURE TO ENVIRONMENTAL AND PSYCHOLOGICAL STRESS AND NEURAL RESPONSE TO OWN INFANT AMONG MOTHERS**

**Objective:** Exposure to chronic stress presents challenges in adaptation to motherhood. In the current study, we examined whether experiencing higher psychological distress and multiple environmental risks could be associated with the neural responses to infant cry and adaptation to motherhood.

**Methods:** 56 first-time new mothers participated in the study during 0-9 postpartum months. Environmental risk included stressful life events and three physical home environment stressors. Psychological risk included perceived stress, depressive mood and anxious mood. The cumulative index of the risk exposure was calculated using the dichotomous variables of the ten risks. The Infant Cry fMRI task included own baby and control cry stimuli and control sounds. Analysis of Functional Neuroimages software (AFNI) was used for fMRI analysis.

**Results:** Higher cumulative risk scores were associated with less positive perception of parenting, $r(54)=-0.28$, $p<0.05$, and higher parenting stress, $r(54)=0.44$, $p<0.001$. For neuroimaging data, the three-way interaction of cumulative risk X sound (cry vs noise) X condition (own infant vs control infant) revealed a significant cluster (Figure 1). Right cuneus (BA18; $x, y, z=11, -73, 14, k=439$) also included left cuneus, bilateral lingual gyrus, and right posterior cingulate.

**Conclusions:** Higher exposure to environmental and psychological stress represent an unpredictable environment. Thus, the elevated neural responses specifically to own infant’s cry may reflect mothers’ increased sensitivity to own infants’ distress cues. However, the elevated sensitivity to the distress cues may come with a price as the mothers exposed to high risk also report more difficulties in adjusting to motherhood.

**Acknowledgements:** This work was supported by the National Institute of Health [R01HD090068; R21HD078797; R21DA046556] and NARSAD Independent Investigator Grant.

Figure 1. Right cuneus showing the positive associations between cumulative risk and the neural responses to own infant vs. control infant cry sounds.
MANAGEMENT OF CATATONIA DURING LABOR
Madeleine E. Fersh, MD, Alina Cote, MD
Northwell Health-Long Island Jewish Medical Center, New Hyde Park, NY

Introduction: Catatonia is a neuropsychiatric syndrome characterized by motor and behavioral signs that can manifest due to neurologic, psychiatric, and/or general medical conditions. Studies found the prevalence of catatonia to be 5%-18% on inpatient psychiatric units and 1.6%-1.8% on psychiatry consultation-liaison services. When catatonia occurs during pregnancy, swift recognition and treatment is necessary for the safety of the pregnant woman and the fetus.

Methods: We present a 28 year old G1P0 woman without known psychiatric or medical history who was admitted to the hospital at full-term following membrane rupture. Psychiatry was consulted immediately when the obstetrics team found the patient unresponsive and not following commands. She had mild tachycardia, with vitals and laboratory studies otherwise unremarkable. On exam, she displayed withdrawal, mutism, immobility/stupor, and staring, without noted rigidity or catalepsy.

Results: The patient received lorazepam 1mg IV twice, after which she spoke one-word answers. The following morning, the patient was alert and had a safe forceps-assisted vaginal delivery, receiving lorazepam 3mg IV total in divided doses throughout delivery. She continued to display flat affect and reported delusion of another baby still inside her. When she was medically cleared, she was transferred to an inpatient psychiatric unit for further stabilization.

Conclusions: Although literature exists on peripartum catatonia, to our knowledge, this is the first reported case of catatonia during active labor. This case highlights the importance of rapid recognition and treatment of catatonia, with the goal of the mother’s active participation for a safe delivery.

MANAGEMENT OF CATATONIA IN THE IMMEDIATE POSTPARTUM PERIOD
Sarah Reinstein MD, Kalli Feldman PhD
Northwell Health, Zucker Hillside Hospital, New Hyde Park, NY

Introduction: Catatonia is an acute and serious condition which requires appropriate treatment for an optimal outcome. Due to its complexity and often multisystem effects, catatonic patients are best treated with a multidisciplinary approach. The need for this integrated treatment of catatonia is heightened during the postpartum period.

Methods: We present a case of treatment of catatonia during the postpartum period. A 28-year-old G1P0 woman without prior psychiatric or medical history was transferred from labor and delivery to the inpatient unit. The patient had displayed new onset catatonic symptoms during the delivery of a full-term healthy baby.

Results: Upon arrival to the unit, the patient was continued on lorazepam 1mg tid and was started on Sertraline which was titrated up to 200mg daily. Given a persistent flat affect with concern for negative psychotic symptoms, patient was also started on Olanzapine which was titrated up to 5mg daily and 10mg at bedtime. Over the course of the hospitalization, patient both pumped as well as directly breastfed during baby visits. Primary team provided extensive psychoeducation to both patient and family about the patient’s diagnosis and the importance of engaging in psychiatric treatment. Upon discharge, the patient was referred to the perinatal outpatient clinic for further treatment.

Conclusions: This case discusses the challenges of treating catatonia during the postpartum period. It highlights the importance of multidisciplinary treatment for the woman, her infant and her family. This case also explores challenges faced in considering the role of trauma, cognitive functioning, and potential cultural factors.
A CASE OF LITHIUM-RESPONSIVE PSYCHOSIS PRESENTING DURING PREGNANCY
Jessica Cosgrove, DO; Amanda Tinkelman, MD
Northwell Health, Zucker Hillside Hospital, New Hyde Park, NY

Objective: There are very few case reports of new-onset psychosis during pregnancy. Here we present a case of a 41-year-old G4P0030 woman with new-onset psychosis at 32 weeks gestation to illustrate medical work-up and provide treatment recommendations.

Methods: A literature review and medical records were used to prioritize information for this case report. The case discusses a 41-year-old G4P0030 woman at 32 weeks gestation following IVF with donor egg who presented with new-onset psychotic symptoms with presentation resembling postpartum psychosis. The patient’s psychotic symptoms did not diminish despite multiple antipsychotic trials during her psychiatric admission. Throughout her hospitalization the patient and her family refused treatment with Lithium. A full medical work-up was unremarkable and the patient delivered at term via C-section. While the patient showed some improvement after delivery, she continued to display psychotic symptoms requiring partial hospitalization and frequent follow-up. The patient was eventually agreeable to Lithium and had full resolution of her symptoms within two weeks.

Results: This patient’s new-onset psychotic symptoms during pregnancy did not abate until she was trialed on Lithium.

Conclusions: A full medical work-up is important in patients with new-onset psychosis during pregnancy. Lithium may be the treatment of choice in patients presenting with new-onset psychotic symptoms during pregnancy who do not respond to antipsychotic treatment.

A CASE OF PERIPARTUM CLOZAPINE TREATMENT FOR BIPOLAR DISORDER
Amanda Tinkelman, MD
Northwell Health, Zucker Hillside Hospital, New Hyde Park, NY

Introduction: Bipolar disorder carries specific risks during the perinatal period, including risk of a mood episode, higher rates of induction and caesarian delivery, higher rates of preterm birth, and an increased risk of postpartum psychosis. Clozapine is a medication typically utilized in treatment-resistant psychotic disorders, which had been labeled “category B” under the previous FDA pregnancy classification system. Due to the risk of agranulocytosis and related monitoring guidelines, along with other side effects, it is not commonly used during the peripartum period.

Methods: We present a 34-year-old G0 woman presenting initially for preconception planning, with a diagnosis of Bipolar Disorder, stable on Clozapine and Depakote. We describe her treatment course through multiple pregnancies, including her ongoing maintenance on clozapine as her main therapeutic agent. We describe some specific considerations around peripartum management on clozapine related to this case, including an elevated risk for gestational diabetes.

Results: The patient was transitioned to clozapine monotherapy primarily, with PRN benzodiazepines. She suffered multiple losses, eventually giving birth to a healthy baby boy.

Conclusions: This case aims to describe various challenges around managing clozapine treatment through the peripartum period and highlights the need for coordinated care amongst the patient’s care team, including psychiatry, psychology and obstetrics.

2D2: Symposium
Don’t Worry Alone: Provider Discussion on the Clinical Management of Challenging Peri-partum Cases
Chair: Katherine Moore, MD
Mayo Clinic

Introduction: While perinatal mood and anxiety disorders are common, treatment decisions are often not straightforward and providers may struggle to feel confident with treatment recommendations. As “the last therapeutic orphan,” treatment of the pregnant and post-partum patient often requires decisions based on a limited or conflicting evidence base and the need to weigh multiple reasonable treatment options. In this provider

discussion group, we will provide in-depth case presentations of several challenging clinical perinatal mood disorder cases. A group-based discussion will be conducted about evidence-based psychotherapy (e.g., Mindfulness-Based Cognitive and Behavior Therapy) and pharmacotherapy treatment options. In-depth discussion on a complex interplay of balancing benefits, risks, alternatives, patient preference, and available information in the scientific literature, among other discussion points will be conducted to analyze a wide range of treatment approaches appropriate for each case. We will foster an interactive time together in this session using audience response technology, experiential exercises (e.g., modeling and role play), and lively discussion! No provider should have to worry alone – come to this session to hone your treatment decision-making process for complex and challenging perinatal psychiatric cases.

Our symposium will be a lively, interactive, and educational session that will reach audience members at all levels – from trainees learning from these complex cases to more senior members of the audience having the opportunity to share their clinical decision making.

Presenter #1:
Elaine Stageberg, MD, MHA
Mayo Clinic

Presenter #2:
Ajeng Puspitasari, Ph.D.
Mayo Clinic

Presenter #3:
Hannah Betcher, MD
Mayo Clinic

Presenter #4:
Amanda Benarroch, MD
Mayo Clinic

Concurrent 2E
Bellflower Room - Oral Presentations (6) - Chair: Crystal Clark

• PERINATAL ANXIETY SYMPTOMS IN MEXICAN WOMEN: RATE AND PREDICTORS
Janeth Juarez Padilla¹, Ma. Asuncion Lara², Laura Navarrete², Sandraluz Lara-Cinisomo¹
¹Community Health, University of Illinois at Urbana-Champaign, ²Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz
Objective: Perinatal anxiety symptoms (PAS) are observed on both sides of the US-Mexico border. PAS can have negative implications (e.g., premature delivery and compromised mother-infant bonding). Yet, there is limited research in Mexico. The objective of this study is to determine the prevalence of PAS and identify psychosocial predictors in a sample of perinatal women in Mexico.

Methods: This secondary analysis is based on longitudinal data from 234 Mexican women who participated in a perinatal depression that included a measure of anxiety. Participants were recruited from two prenatal clinics in Mexico City. Women were >20 years old, in their third trimester of gestation, and did not present manic symptoms. Bivariate and multiple logistic regressions were conducted with stepwise procedures.

Results: Twenty-one percent of prenatal and 17% postpartum women reported PAS. Stressful life events and low social support were predictive of prenatal anxiety. Low social support, stressful life events, and lower educational attainment were significantly associated with postpartum anxiety. Adherence to the traditional female role (TFR) was only predictive in pregnancy.

Conclusions: Rates of PAS were like international samples. A history of stressful life events and lower social support were predictive at both waves. Strengthening social networks may buffer the effects of stressors and reduce PAS. Adherence to the TFR was only a predictor in gestation. Social pressure during pregnancy may explain this temporal effect. Future studies in the Mexico and the US should assess adherence to TFR to clarify its role as a predictor of PAS in Mexican women.

Acknowledgements: The general investigation was supported by the Consejo Nacional de Ciencia y Tecnología (CONACYT, México. CB-2009-01 133923) and the present study by the MHRT Latino Mental Health Research Training Program at the University of Southern California.
• RACIAL/ETHNIC DIFFERENCES IN TREATMENT INITIATION FOR NEW EPISODES OF DEPRESSION DURING PREGNANCY
Lyndsay A. Avalos¹, Nerissa Nance¹, Esti Iturralde¹, Sylvia E. Badon¹, Charles Quesenberry¹, Stacy Sterling¹, De-Kun Li²
Tracy Flanagan²
¹Division of Research, Kaiser Permanente Northern California, ²The Permanente Medical Group, Regional Offices, Kaiser Permanente Northern California

Objective: This study assessed racial/ethnic differences in treatment initiation for prenatal depression in a healthcare system with universal perinatal depression screening.

Methods: Kaiser Permanente Northern California (KPNC) members entering prenatal care between January 1, 2012 and May 31, 2017 who had a new depression diagnosis during pregnancy were identified from KPNC’s electronic health records (EHR). Treatment initiation was defined as an antidepressant medication dispensing or at least one psychotherapy visit within 90 days after diagnosis. Race/ethnicity (White, Black, Hispanic, Asian, and Other), depression severity (Patient Health Questionnaire (PHQ-9) scores) and other covariates were extracted from the EHR. Modified Poisson regression was conducted to estimate the risk of initiating treatment.

Results: 16,713 women (13% of pregnancies) were identified with a new episode of depression during pregnancy and 5,413 (32%) initiated treatment (35% of Whites, 30% of Blacks, 31% of Hispanics, 26% of Asians and 30% of Other). Preliminary analyses suggest Black (Relative Risk (RR):0.75, 95%CI:0.68,0.83), Hispanic (RR:0.81, 95%CI:0.76,0.86), Asian (RR:0.73, 95%CI:0.66,0.80), and women of Other race/ethnicities (RR:0.79, 95%CI:0.69,0.91) were significantly less likely to initiate treatment compared to White women after adjusting for depression severity and other potential covariates. Differences also emerged by type of treatment initiated.

Conclusions: Findings suggest suboptimal levels of treatment initiation for prenatal depression and differences associated with race/ethnicity despite implementation of KPNC’s universal perinatal depression screening program designed to enhance care for perinatal depression in obstetric clinics. Future research is needed to identify barriers to treatment initiation which may also aid in reducing racial/ethnic disparities.

Acknowledgements: This work was supported by Kaiser Permanente Community Benefits Health Policy and Disparities Research Grant and K01MH103444 awarded to Lyndsay Avalos by the National Institutes of Mental Health.

• APPLICATION OF THE DEVELOPMENTAL ORIGINS OF HEALTH AND DISEASE MODEL TO REDUCING HEALTH DISPARITIES FOR BLACK AMERICAN WOMEN AND INFANTS VIA DOCOSAHEXAENOIC ACID (DHA)SUPPLEMENTATION
Kathryn Keenan¹, Alison E Hipwell²
¹Psychiatry, University of Chicago, ²Psychiatry, University of Pittsburgh

Introduction: Consistent with the prenatal programming hypothesis, we are testing the effect of DHA supplementation on stress regulation during pregnancy and neurodevelopment in the offspring in a sample of African American women living in urban, low-income environments.

Methods: We present data from two independent samples. In the first, 64 pregnant African American women were enrolled at 16-21 weeks of gestation, in the second, which is ongoing, 100 women have been enrolled at 10-16 weeks gestation. In both studies, participants were randomized to either 450 mg/day of DHA (22:6n-3) or placebo. Measures of perceived stress, negative life events, and cortisol response to the Trier Social Stress Test were collected repeatedly during pregnancy. Infant birth outcomes, cognitive development, and stress reactivity were also measured.

Results: Women in the DHA supplementation group reported lower levels of perceived stress (F [3,47] = 5.06, p = .029) and had a more modulated response to the stressor (F [1.78, 83.85] = 6.24, p = .004). Infants of mothers who received DHA supplementation had higher birth weight (F [2,40] = 6.09, p = .018), and had a more modulated cortisol response to a laboratory stressor (F [1,32] = 5.36, p = .018) than infants of mothers receiving placebo.

Conclusions: DHA levels are associated with stress sensitivity and reactivity in pregnant women, as well as birth outcomes and infant neurodevelopment, DHA supplementation may be a method for attenuating the effects of maternal stress during late pregnancy and improving the uterine environment with regard to fetal exposure to glucocorticoids.
• DISCRIMINATION EXPOSURE AND DNA METHYLATION IN LATINA MOTHERS

Hudson Santos¹, Benjamin Nephew², Christopher Murgatroyd³
¹University of North Carolina at Chapel Hill, ²UMass Medical School, Worcester Polytechnic Institute, ³Manchester Metropolitan University

Objective: Latina mothers, who have the highest fertility rate among all ethnic groups in the US, have often reported discrimination. The biological effects of this discrimination are unknown. In this study, we assess associations between perceived discrimination and DNA methylation in genes related to stress and emotion regulation - glucocorticoid receptor (NR3C1), glucocorticoid binding protein (FKBP5), brain-derived neurotrophic factor (BDNF) and oxytocin receptor (OXTR).

Methods: Our sample is Latinas (n = 150), mean age of 27.6 years, who attended visits at 24-32 weeks gestation (T1) and at 4-6 weeks postpartum (T2). Blood was collected at T1, and the Everyday Discrimination Scale (EDS) was administered at T1 and T2. Methylation was determined by bisulphate treatment of DNA and candidate-gene regions analyzed using pyrosequencing. Associations between EDS and DNA methylation were assessed via Poisson regression, adjusting for covariates and multiple testing comparisons.

Results: Among the significant associations found between EDS and methylation, at T1 and T2, we found negative associations between EDS and NR3C1, FKBP5 and NR3C1 (RR = 0.81, 0.87, 0.77; p = < 0.001, < 0.001, 0.04, respectively). At T1, we found positive associations between EDS and BDNF (RR = 1.12, p = 0.01), and at T2, between EDS and OXTR (RR = 1.04, p = < 0.001).

Conclusions: Our study suggests that discrimination-related stress is linked to expression of stress and emotion-regulatory genes through DNA epigenetic modifications. This biological underpinning is likely to contribute to health disparities in mothers and their children.

• SEVERE POSTPARTUM DEPRESSION AND INFANT BONDING IN ASSOCIATION WITH TRAUMATIC EVENTS

Dalia Hernandez-Medina¹, Benjamen Gangewere², Sarah Homitsky³, Suzanne Kodya⁴, Rebecca Weinberg³
¹Obstetrics and Gynecology, Allegheny Health Network, ²Medical Education, ³Womens Behavioral Health, ⁴Psychiatry, Western Pennsylvania Hospital

Objective: Current PTSD symptoms have been identified in the literature as factors that adversely impact the transition to parenting. Little research has been done on the impact of traumatic childbirth on mother-infant bonding. The aim of this study was to determine if a history of traumatic childbirth impacted change in mother-infant bonding scores among women admitted to a Mother-Baby Intensive Outpatient Program (IOP).

Methods: The sample included 58 mothers admitted to a Mother-Baby IOP. The authors retrospectively reviewed changes in mean pre and post treatment scores on the Postpartum Bonding Questionnaire (Brockington, 2006) among women with and without a history of birth trauma using paired sample t-test.

Results: There were significant reductions in mean PBQ scores from the beginning to the end of treatment (p < 0.001). However, when the data is separated by history of traumatic childbirth (N=10, 17.2%), differences between these groups emerged. Women without a history of birth trauma experienced significant reductions in PBQ scores (p < 0.001) from admission to discharge in the IOP program, suggesting that IOP helped improve bonding with their infant while women who reported a history of birth trauma did not (p=0.202). Interestingly, a history of childhood trauma (N=29, 50%) did not impact change in PBQ scores.

Conclusion: These results suggest that different interventions may be needed to address problematic bonding in women with a reported history of birth trauma. Factors that may be contributing to these differences such as current PTSD symptoms and role of childhood trauma should be explored.

• CESAREAN DELIVERY IS A RISK FACTOR FOR IMMEDIATE POSTPARTUM DEPRESSIVE SYMPTOMS

Sarah Smithson¹,³, James Mirocha², Robert Massaro⁴, Robert Graebe³, Eynav Accortt²
¹Maternal Fetal Medicine, Cedars Sinai Medical Center, ²Cedars Sinai Medical Center, ³Obstetrics and Gynecology, Monmouth Medical Center, ⁴Monmouth Medical Center

Objective: Depression is one of the most common complications of pregnancy. Route of delivery has been implicated as a risk factor for postpartum depression (PPD). Previous studies have rarely focused on the immediate postpartum period (0-4 days in the hospital). Our objective was to determine whether women who
underwent Cesarean delivery were more likely to screen positive for PPD risk in the immediate postpartum period.

**Methods:** This cohort study was conducted at a community medical center using delivery and demographic data for deliveries between 8/2015-1/2016. Women were screened in the hospital for PPD risk using the Edinburgh Postnatal Depression Scale (EPDS). Logistic regression, adjusting for maternal age, BMI, race* and religion, was performed to evaluate the association between delivery type and PPD risk (EPDS ≥10).

**Results:** A total of 1858 women (56% Jewish) had complete data for present analyses. Overall 83 women (4.5%) screened positive for mild PPD risk (EPDS ≥8) and 37 women (2.0%) screened positive for moderate PPD risk (EPDS ≥10). Logistic regression results showed that Cesarean delivery was significantly associated with mild PPD risk (OR=3.04, 95% CI 2.00–4.60), which remained significant after adjusting for age and religion (OR 1.75, 95% CI 1.20–2.87, p=0.03).*

**Conclusion:** Cesarean delivery may be an independent risk factor for mild PPD symptoms in the immediate postpartum period. This cohort had low rates of PPD risk compared to epidemiological rates particularly in the Jewish women. However, in our sample, Cesarean delivery was significantly associated with EPDS ≥10 in the univariate model.

* Abstract previously presented at SMFM annual conference. Additional data is newly available which will allow us to adjust for BMI and race as well as identify the indication for Cesarean delivery. These new analyses will be reflected in the October 2019 poster/presentation.

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**Concurrent 3A Grumman Auditorium**

**Symposium**

**Improving Parental Psychosocial Functioning in the Neonatal Intensive Care Unit**

Co-Chairs: Pamela A. Geller, PhD1,2 & Alexa Bonacquisti, PhD3

1 Department of Psychology, Drexel University, Philadelphia, PA
2 Department of Ob/Gyn, Drexel University College of Medicine, Philadelphia, PA
3 Department of Counseling Psychology, Holy Family University, Philadelphia, PA

An infant’s admission to a Neonatal Intensive Care Unit (NICU) is associated with increased psychological stress and adverse mental health outcomes for parents, including higher risk for postpartum mood and anxiety disorders in mothers. Therefore, enhancing psychosocial functioning among NICU parents is an important goal, and
identification of specific variables that support psychosocial functioning is critical. Moreover, there is a substantial need to improve screening and identification of NICU parents who are at risk for both acute and long-term negative psychological outcomes. This symposium will present four novel projects that seek to identify and address the unmet psychological needs of NICU parents through empirical investigation. The first presentation will describe a study of maternal psychosocial functioning in the NICU to identify and capitalize on potentially modifiable variables during the NICU stay. The second presentation will discuss maternal postpartum self-efficacy and describe efforts to develop a measure to be used in a variety of settings, including the NICU. The third presentation will report on an investigation of resources and stress among NICU parents with implications for post-discharge concerns. Lastly, the fourth presentation will discuss the development and implementation of a psychosocial screening protocol in the NICU. Together, these projects highlight important variables with regard to psychological functioning in the NICU. In addition, they describe innovative methods for improving well-being among NICU parents, such as identifying new treatment targets, developing new measures, better understanding long-term family outcomes, and initiating universal screening. This symposium will offer unique perspectives on the NICU experience and discuss parental psychosocial outcomes using a variety of methods.

EXPLORING MATERNAL ATTITUDES, ADJUSTMENT, AND SOCIAL SUPPORT AMONG MOTHERS OF INFANTS IN THE NEONATAL INTENSIVE CARE UNIT
Alexa Bonacquisti, PhD1, Pamela A. Geller, PhD2,3, Chavis A. Patterson, PhD4,5
1Department of Counseling Psychology, Holy Family University, Philadelphia, PA
2Department of Psychology, Drexel University, Philadelphia, PA
3Department of Ob/Gyn, Drexel University College of Medicine, Philadelphia, PA
4Division of Neonatology, The Children’s Hospital of Philadelphia, Philadelphia, PA
5Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

Objective: A growing body of research suggests that an infants’ admission to a neonatal intensive care unit (NICU) is associated with adverse maternal mental health outcomes. Maternal attitudes, adjustment to motherhood, and social support may be important modifiable factors that could improve quality of life and well-being among NICU mothers. The current study examined the relationships among maternal attitudes, adjustment to motherhood, social support, and psychological functioning in NICU mothers.

Methods: One hundred twenty-seven women were recruited from NICUs at three hospitals in the Philadelphia area and completed self-report measures while in the NICU. Descriptive analyses were conducted on the main variables, and a series of bivariate correlations and linear regression analyses were used to evaluate the primary study aims.

Results: Descriptive statistics indicated that NICU mothers had diverse attitudes towards motherhood, specifically regarding body image, somatic symptoms, romantic relationships, sex, and their baby. In general, they perceived high levels of social support, which varied based upon psychological and reproductive characteristics. Statistically significant findings revealed that maternal attitudes, adjustment, and perceived social support variables were negatively correlated with anxiety, stress, and depressive symptoms.

Conclusions: This study demonstrates that certain maternal variables are related to psychological functioning among NICU mothers, such as maternal attitudes, adjustment, and social support. Determining how to bolster these variables as a protective mechanism for mothers during the stressful NICU experience is an important future direction. This study suggests that developing and implementing unique programs and interventions that target these variables in the NICU setting may benefit mothers, families, and infants.

IN THEIR OWN WORDS: DEVELOPMENT OF A PATIENT-DERIVED MEASURE OF MATERNAL POSTPARTUM SELF-EFFICACY
Ariana Albanese, BA1, Pamela A. Geller, PhD1,2, Jennifer Barkin, MS, PhD3
1Department of Psychology, Drexel University, Philadelphia, PA
2Department of Ob/Gyn, Drexel University College of Medicine, Philadelphia, PA
3Mercer University School of Medicine, Macon, GA 32107

Objective: Parental self-efficacy (PSE), a parent’s belief about their ability to parent well, has been repeatedly identified as key to positive outcomes beginning in infancy. It is of particular relevance to new
mothers given their intensive caretaking role, and the strong link between PSE and important outcomes including postpartum depression. Additionally, research suggests that mothers of NICU infants may experience unique PSE-related challenges. However, the study of PSE is limited by: inadequate measurement tools, little consultation with parents during measure creation, and the frequent practice of reductively equating PSE with confidence in performing particular tasks. To address these gaps, we are developing a questionnaire measuring maternal postpartum PSE at the domain-general level (i.e., not specifying particular tasks), by conducting structured interviews with mothers concerning PSE in established domains of maternal functioning.

**Methods:** Structured interviews with mothers will be thematically coded. Codes will be translated into items for a new questionnaire that will be subsequently checked by a panel of experts to ensure completeness and finally tested for psychometric performance.

**Results:** Preliminary interview themes will be presented.

**Conclusions:** This new measure has the potential to play a key role in the study of PSE in two important ways. First, as the only tool measuring domain-general PSE to be built from actual parent interviews, this work provides the field with a content-valid and patient-centered questionnaire. Second, the cognitive processes revealed could play a crucial role in the development of therapeutic approaches centrally aimed at strengthening PSE in the clinically high-yield postpartum population.

**RESOURCES AND STRESS AMONG NICU PARENTS: THE ROLE OF PERCEIVED FAMILY BURDEN**

Victoria A. Grunberg, M.S.¹, Pamela A. Geller, Ph.D.¹,², & Chavis A. Patterson, Ph.D.³,⁴

¹Department of Psychology, Drexel University, Philadelphia, PA
²Department of Ob/Gyn, Drexel University College of Medicine, Philadelphia, PA
³Division of Neonatology, The Children’s Hospital of Philadelphia, Philadelphia, PA
⁴Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

**Objective:** Up to 15% of parents in the U.S. will have an infant spend time in a neonatal intensive care unit (NICU) each year. While an infant’s hospitalization is stressful, the associated burden of care and availability of resources may be key for understanding parental stress. The current study sought to identify families who may be at increased risk for negative psychosocial sequelae years following their child’s NICU hospitalization.

**Methods:** Parents (N = 199) whose children were discharged 6 months – 3 years prior to study participation, and cohabitating with their partner and child were recruited via internet. Parents reported infant characteristics, stress (Parenting Stress Index, Short Form; Abidin, 1995), family resources (Family Resource Scale, Revised; Van Horn et al., 2001), and perceived family burden (Impact on Family Scale Revised; Stein & Jessop, 2003).

**Results:** Parental stress was associated with fewer family resources (i.e., basic needs, money, time), r = -.39, p < .0001. However, stress did not differ as a function of education or income. Interestingly, perceived family burden (e.g., child’s health puts a strain on family) mediated the relationship between family resources and parental stress, b = -.115, 95% CI [-.228, -.038]).

**Conclusions:** Perceived family resources, as opposed to education or income, was associated with greater stress and family burden. Notably, family burden helps to explain the relationship between resources and parental stress. Findings highlight that parents who report a high burden of care for infant should be targeted for psychosocial support and treatment during and following child’s hospitalization.

**SCREENING IN THE NICU: CARING FOR THE CAREGIVERS**

Chavis A. Patterson, PhD¹,², Pamela A. Geller, PhD³,⁴, Casey Hoffman, PhD¹, Wanjiku Njoroge, MD¹

¹Division of Neonatology, The Children’s Hospital of Philadelphia, Philadelphia, PA
²Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA
³Department of Psychology, Drexel University, Philadelphia, PA
⁴Department of Ob/Gyn, Drexel University College of Medicine, Philadelphia, PA

**Objective:** Screening for depression, anxiety and post-traumatic stress is indicated in the literature and by significant levels of stress reported in caregivers who have an infant in the NICU. Identifying an appropriate screening tool is central to providing evidence-based treatments aimed at those with the
highest risk of developing more severe symptoms. This presentation aims to assess the feasibility of standardizing and formalizing a screening and referral process.

**Methods:** Applying the Pediatric Psychosocial Preventative Health Model (PPPHM) as a theoretical framework, parents are screened one week after their baby’s NICU admission. Appropriate support is determined by their scores on the Impact of Events Scale–Revised, Center for Epidemiologic Studies Depression Scale–Revised, and Clinical Global Impressions Scale. When positive, a staff person follows up for further assessment.

**Results/Outcomes:**
- Universally assess the emotional state of caregivers who have a baby in the NICU
- Create a systematic pathway to triage caregivers to supports that correspond to the intensity of their distress
- Provide services in a timely manner
- Enhance caregiver understanding of their mental health risk by providing educational materials
- Reassess caregiver functioning at timed intervals spanning prenatal, postnatal, neonatal, and follow-up care

**Conclusions:** Universal screening will ensure that caregivers who may have not come to the attention of the NICU team will be identified, assessed, and connected with services. The creation of the screening program will also bridge the gap between caregiver mental health screening programs that currently exist in our prenatal Special Delivery Unit and post-discharge Follow-up Clinic.

Concurrent 3B
*Dogwood Room*

**Workshop**

**A Publishing Playbook: Preparation, Pitfalls, Perseverance and Pulling it Off!**

Katherine L. Wisner, MD, MS; Feinberg School of Medicine, Northwestern University
Marlene P. Freeman, MD; Massachusetts General Hospital, Harvard Medical School

**Introduction:** In this interactive session, Drs. Wisner and Freeman will provide a summary of key points based on their experience as the Editor-in-Chief of the Journal of Clinical Psychiatry (Dr. Freeman) and on the editorial boards of the American Journal of Psychiatry and JAMA Psychiatry (Dr. Wisner).

**Methods:** Drs. Freeman and Wisner will share their advice and experience with the submission process. Each will present for 15 minutes; the last 30 minutes will be questions and discussion from participants.

**Results:** Dr. Wisner will focus on activities prior to submission: 1) From idea to final draft—tips for literature reviews, organizing sections of the paper; 2) Authorship assignments; 3) Examples of grammatical annoyances; 4) Strategies for Avoiding “I am stuck…..”; 4) Final draft, now what?, 5) What journal to target, costs of submission, and avoiding predatory journals; 6) Cover letter composition, 7) Reviewer input. Dr. Freeman will cover the process of engagement with the journal, focusing on what occurs after submission: 1) Overview of the review process; 2) Do editors use the reviewers you suggest? 3) How editors utilize reviews and make decisions, 4) Responding to the feedback from the reviews; 5) It is accepted! She will also discuss citizenship in the community of authors and reviewers and why peer review is essential to our field and ultimately to patients.

**Conclusion:** At the conclusion of the workshop, we anticipate that the attendee will appreciate the elements of the manuscript publication process and gain tools to manage it.

Concurrent 3C
*Redbud A Room*

**Symposium**

**Global Innovations in Screening and Treatment of Perinatal Depression and Anxiety**

Chair: Samantha Meltzer-Brody
University of North Carolina

**Introduction:** Perinatal depression is the leading cause of disability of women worldwide¹, affecting 10 to 15% of mothers in high-income countries and up to 20% of women in low- and middle-income countries. Although given less attention than depression, 15 to 20% of women develop anxiety symptoms, with up to 10% experiencing both. Psychological treatments, including cognitive, behavioral and interpersonal therapies, are effective in targeting
perinatal depression and anxiety, and are preferred by women over pharmacological treatment. However, significant barriers to effective screening and treatment exist in both developing and developed countries. Limited financial resources directed toward mental health and a paucity trained professionals who can deliver psychological care both contribute to this burden. Thus, there is a need for effective and scalable innovations to improve screening and treatment of perinatal depression and anxiety. This symposium will focus on four presentations from around the globe to highlight relevant innovations designed to improve access and care for perinatal depression and anxiety.

LISTENING FOR THE SIGNAL – CAN COMPUTERIZED ADAPTIVE TESTING FOR PERINATAL MOOD DISORDERS OVERCOME BARRIERS TO SCREENING AND BE THE FIRST STEP TOWARD PREVENTION?

Richard Silver, Jo Kim, and Laura LaPorte.1,2
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2University of Chicago, Chicago, Illinois, USA

Objective: Preemptive treatment for patients with risk factors for depression (recently suggested by USPSTF) could be an effective prevention strategy. When compared to fixed item surveys, we evaluated computerized adaptive testing for mental health (CAT-MH™) delivered by smartphone to identify women at risk for depression, anxiety, and mania.

Methods: CAT-MH™ relies on Item Response Theory in which a question is given and the answer is used to compute an estimate of severity followed by selection/administration of the next most discriminating item. Quantitative scoring and categorization (subclinical/mild, moderate, and severe) are provided. We studied CAT-MH™ using in-person administration to calibrate for perinatal women followed by smartphone delivery to measure feasibility and acceptability among 629 women.

Results: Only 1/66 depression and 1/69 anxiety questions (pertaining to fatigue and sleep) failed to discriminate. Convergent validity between CAT-MH™ and EPDS was high for depression and anxiety (r = 0.82, 0.79) but lower for mania/hypomania (0.31). Study rate of MDD was 13%, with 2% in the moderate or severe range (scores of 65 or greater on a 100 point scale), versus 11% with mild/subclinical scores. 67% completed screening without additional text prompting and 67% thought it was easy.

Conclusions: Smartphone-delivered CAT-MH™ is feasible, appears acceptable and identifies subclinical cases. A prospective intervention trial comparing historical depression risk factors versus CAT-MH™ selection of subclinical cases seems warranted. Our current implementation goals are to deliver CAT-MH™ at least four times per patient (2nd and 3rd trimesters, 1½ and 3 months postpartum) to 5000 women delivered annually.

PERCEPTIONS OF PERINATAL DEPRESSION AND TREATMENT NEEDS: A QUALITATIVE STUDY TO INFORM ADAPTATION OF THE THINKING HEALTHY PROGRAMME – PEER DELIVERED (THPP) FOR PERINATAL DEPRESSION IN MALAWI

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Objective: The aim of this study was to explore the perceptions of perinatal women and key maternal care health workers about perinatal depression and the health service needs required to inform adaptation of the Thinking Healthy Programme – Peer Delivered (THPP), a psychosocial intervention for perinatal depression.

Methods: We used a qualitative descriptive exploratory design and conducted in-depth interviews with 22 women who screened positive for depression using the Edinburgh Postnatal Depression Scale (EPDS) at antenatal and postnatal clinics in one rural and one urban health care setting in Lilongwe District, Malawi. We also conducted 10 key informant interviews with maternal care health workers. Interviews were transcribed, translated and analyzed using content analysis approach.

Results: Perinatal depression was recognized as a common mental health problem that affected functioning of women in the perinatal period. Financial difficulties, relationship problems, traumatic
events and fear of birth outcomes were identified as causes of depression. All study participants acknowledged the need for support and an intervention that will address the identified challenges. Additionally, they viewed strengthening the health delivery system as crucial to effectively address their needs and gaps identified in the system.

**Conclusions:** The results of this study support plans to develop a family focused intervention for perinatal depression in Malawi addressing relationship, psychosocial and economic issues. It also highlights the importance of strengthening the health delivery system especially at primary care level where the majority of women access care in Malawi and across Sub-Saharan Africa.

**A RANDOMIZED CONTROLLED TRIAL OF NURSE-DELIVERED INTERPERSONAL PSYCHOTHERAPY ACROSS CANADA**

Cindy-Lee Dennis, PhD; cindylee.dennis@utoronto.ca

Faculty of Nursing, University of Toronto; Lee Ka Shing, St. Michael’s Hospital

**Objective:** A nation-wide randomized controlled trial was conducted to examine the effectiveness of nurse-delivered telephone Interpersonal Psychotherapy (IPT) for postpartum depression treatment.

**Methods:** Postpartum women with major depression (SCID) from 36 Canadian public health regions in both rural and urban settings were randomly assigned to 12-weekly, nurse-delivered telephone-IPT sessions or standard locally available care. The primary outcome was the proportion of women clinically depressed 12 weeks post-randomization, with blinded intent-to-treat analysis. Secondary outcomes examined comorbid anxiety, self-reported attachment, and partner relationship quality.

**Results:** Comparing nurse-delivered telephone-IPT vs. locally available care at 12 weeks (N=241), 10.6% of women in the IPT group and 35% of those in the control group remained depressed (OR=0.22, 95% CI=0.10-0.46), with the IPT arm 4.5 times less likely to be clinically depressed (SCID); 21.2% v. 51% of women in the control group had an EPDS score >12 (OR=0.26, 95% CI=0.14-0.48), and attachment avoidance decreased more with IPT than controls (P=0.02). Significant differences favored the IPT group for comorbid anxiety and partner relationship quality at all time points, with no differences in health service or antidepressant use. None of the IPT responders relapsed. Between group SCID differences were sustained at 24 weeks, but not at 36 weeks.

**Conclusions:** Compared to standard local care, nurse-delivered telephone-IPT significantly improved postpartum depression, anxiety and partner relationship quality at 12 weeks post-randomization, with sustained between group differences in depressive symptoms, anxiety and partner-relationship quality at 36 weeks.

**SCALING UP PSYCHOLOGICAL TREATMENTS FOR PERINATAL POPULATIONS: THE USE OF NON-SPECIALISTS AND TELEMEDICINE IN A RANDOMIZED CONTROLLED TRIAL**

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Department of Psychiatry, Sinai Health System and University of Toronto

**Objectives:** The aim of this study is to test the choice of delivery mode and provider, implementing a brief, evidence-based, psychological treatment of behavioral activation (BA) for perinatal depressive and anxiety symptoms. Specifically, we will examine whether this brief BA is as effective when delivered via telemedicine vs. in person (Aim 1), and by non-specialist providers (NSPs; nurses) vs. specialists (primarily psychiatrists, psychologists and social workers (Aim 2).

**Method:** The study will conduct a pragmatic, multicenter randomized non-inferiority trial among perinatal women (N=1368), with an EPDS>9, across Toronto, Canada, Chapel Hill, North Carolina, and Chicago, Illinois. Eligible participants will be recruited from health centers and all women will receive the same, 6-8 session BA intervention. NSPs and specialists will be recruited from the local context, trained by clinical leads and then selected based on competency scores to implement the treatment.

**Results:** We will present an overview of the trial, the brief BA intervention and relevant training and supervision protocols.

**Discussion:** The current study has the potential to answer the question of whether trained NSPs can deliver BA for perinatal depression and anxiety as effectively via telemedicine as mental health specialists and in-person conditions. Addressing these aims has the potential to improve the accessibility,
sustainability, and scalability of evidence-based psychological treatments for perinatal depression and anxiety worldwide.

Concurrent 3D
Redbud B Room

3D1: Symposium

Implementation of Perinatal Collaborative Care: Moving from Efficacy to Effectiveness

Jackie K Gollan, PhD 1,2 and Emily S Miller, MD MPH 2,1

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2 Department of Obstetrics and Gynecology, Northwestern University Feinberg School of Medicine, 675 North St Clair Street, Suite 14-200, Chicago, IL, 60611 USA

Abstract: Collaborative care is a health systems approach to optimizing mental health care with robust data to support its efficacy. However, implementation trials have yielded variable results, as adherence to the core principles of collaborative care can be challenging outside of the strict protocols associated with randomized trials. Identifying ways to optimize the efficacy of pharmacologic and psychologic treatments for women with perinatal mental health conditions is a major target for clinicians seeking to reduce the burden of disease. While treatments work for most patients, many women do not engage in, or respond to, the clinical care. This symposium focuses on innovative methods that optimize the collaboration between mental health and OB/GYN clinicians towards improving perinatal mental health. We will present the COMPASS program, a perinatal collaborative care program at Northwestern Memorial Hospital in Chicago. Dr. Miller will describe the Collaborative Care Model for Perinatal Depression Support Services (COMPASS) operating at Northwestern Medicine in Chicago. Dr. Sprague will describe clinical algorithms that optimize pharmacotherapy, and Dr. Gollan will present research from COMPASS on algorithms that optimize learning therapies. Dr. Hannah Betcher will present case studies to showcase practical use of the collaborative care model. Finally, Dr. Crystal Clark will serve as discussant. The goal of this program will be to offer innovative suggestions that help attendees to strengthen their collaborative approaches to improve maternal health across the perinatal phase.

FROM EFFICACY TO EFFECTIVENESS: THE COMPASS PROGRAM

Emily S Miller, MD MPH, 2,1 Hannah Betcher, MD, 1 Jennifer Sprague, MD, 1 Rachel Ostrov, LCSW, 1 Rebekah Jensen, LCSW, 2 Jacqueline Gollan, PhD 1,2

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Objective: The objectives of this talk are to familiarize the audience with collaborative care, the efficacy data surrounding collaborative care, and the importance of fidelity to the system during implementation.

Methods: Data supporting the efficacy of collaborative care within primary care will be reviewed, followed by presentation of the heterogeneity of outcome data surrounding implementation. We will review the two randomized trials of perinatal collaborative care and gaps in the literature surrounding implementation. Finally, implementation data from Northwestern’s collaborative care program, COMPASS, will be presented and strategies to optimize effectiveness will be discussed.

Results: Over 80 randomized controlled trials have supported the effectiveness of collaborative care when implemented within a primary care setting. However, implementation studies have demonstrated that efficacy may not translate to effectiveness. Data on effective strategies to achieve successful implementation and adherence to the collaborative care core principles that are tied to clinical improvements will be discussed using data derived from COMPASS, including results from the over 1000 women referred for treatment and management since programmatic inception (January 2017).

Conclusions: Identified areas of infidelity to the collaborative care model linked to inadequate effectiveness data are adherence to population-based management and achieving treatment to target. Innovative ideas on opportunities to improve adherence, including billing opportunities in collaborative
care to support a care manager, clinical algorithms to support stepped care, and development of a registry may translate efficacy to effectiveness.

**OB/GYN COLLABORATIVE CARE: CLINICAL TREATMENT ALGORITHMS FOR PSYCHOTROPIC MEDICATIONS AND PSYCHIATRIC CONSULTATION.**

Jennifer Sprague, MD, Hannah Betcher, MD, Jacqueline Gollan, PhD, Rebekah Jensen, LCSW; Rachel Ostrow, LCSW, Jody D. Ciolino PhD, Katelyn B. Zumpf, MS, Emily S Miller, MD, MPH. 1

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**Objective:** The aim of this talk is to help mental health clinicians understand how the COMPASS team uses clinical treatment algorithms to guide psychiatric consultations and psychotropic medications.

**Methods:** OB/GYN patients with perinatal mental health concerns are referred by their OB/GYN clinicians, advanced practice providers, and midwives to the COMPASS coordinator. Data-driven assessments and intake interviews by the case coordinator determine the next steps of care, including a referral to a COMPASS therapist or a perinatal psychiatrist. The collaborative care team consists of an OB/GYN physician, a psychiatrist, a psychologist/clinical liaison, two perinatal mental health psychiatric fellows, two masters level clinical social workers (a therapist and a care coordinator). Led by the care coordinator, this team meets weekly to review patient status to implement clinical treatment plans to increase patient response to treatment.

**Results:** Across nineteen months (1/31/17-3/21/2019), 1036 patients were referred, of which 72% (n=748) opted to enroll in COMPASS. For depressive and anxiety disorders and single drug interventions, the psychiatrist may provide medication recommendations to OB/GYN provider. Then, the OB/GYN follows a consensus protocol for medication titrations. For more complex patients, the psychiatrist will treat until the woman’s mental illness is stabilized. When a case becomes more complex, the psychiatrists will take a more active prescribing approach for mood stabilizers, benzodiazepines, stimulants and antipsychotics. In addition to referrals, the collaborative care team improves upon willingness and comfort of OB/GYN’s to prescribe antidepressants, mainly selective serotonin reuptake inhibitors (SSRIs).

**Conclusions:** Implications of these algorithms may improve patient outcomes.

**DEVELOPING CLINICAL ALGORITHMS FOR LEARNING THERAPIES IN AN OB/GYN COLLABORATIVE CARE PROGRAM.**

Jackie K Gollan, PhD, Rebekah Jensen, LCSW; Rachel Ostrow, LCSW, Jennifer Sprague, MD, Hannah Betcher, MD, Jody D Ciolino, PhD, Katelyn B Zumpf, MS, Emily S Miller, MD, MPH. 1

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**Objective:** This talk will present data on the severity and course of depressive symptoms during the perinatal phase for women who received learning therapy with or without medications in the NMG COMPASS Program. This will be used to develop clinical algorithms that help clinicians to ascertain probabilities of response to learning therapy in the context of a collaborative care model.

**Methods:** Participants diagnosed with mood symptoms during pregnancy were evaluated prospectively across the first year of postpartum completing the Patient Health Questionnaire (PHQ-9). Analyses will use a semi-parametric, group-based mixture model to separate distinct longitudinal patterns of symptoms of depression towards identifying probabilities of response.
Results: Among referred patients, PHQ-9 scores at the time of referrals reflected mild severity of depression, ranging from a mean of 8.6 (SD 5.7, N=122) for patients referred to therapy and a mean of 9.7 (SD=6.4, N=58) for medications and therapy.

Conclusions: Implications for diagnostic screening and treatment will be discussed.

PRACTICAL APPLICATION OF PERINATAL COLLABORATIVE CARE
Hannah Betcher, MD, Jennifer Sprague, MD, Rebekah Jensen LCSW, Rachel Ostrov, LCSW, Jacqueline Gollan, PhD, Emily S Miller, MD, MPH.
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Objective: The objective of this talk is to utilize case-based examples to demonstrate the implementation of the collaborative care model in the perinatal setting.

Methods: We will discuss the process of collaborative care through case-based examples of common perinatal psychiatric conditions and will also review clinically complex scenarios. We give examples of providing recommendations to OB/GYN providers via algorithm as well as through in-person consultation, brief psychiatric interventions, outside referrals for challenging therapeutic needs, and the care of more severely psychiatrically ill patients within a collaborative setting.

Results: The majority of perinatal mental health concerns can be managed by a team approach and require brief psychiatrist input paired with appropriate tracking and stepped recommendations with the ability to adjust the level of care to match the clinical need. Collaborative care is also beneficial for the management of challenging social and psychiatric scenarios.

Conclusions: Collaborative care is an effective model for the care of both common and complex perinatal mental health cases.

3D2: Symposium
Collaborative Behavioral Health Services to Optimize Outcomes for Moms and Families
Chair: Camille Hoffman, MD
University of Colorado
The objective of this symposium is to present examples of collaborative work with behavioral health services to optimize outcomes for moms and families. One presentation outlines the genesis of a healthy relationship and communication curriculum to pregnant and postpartum moms. A second presentation will outline the early stages of integrating behavioral health services into a University based obstetrics clinic. A third presentation will show results of an expanded behavioral health screen, supported by a community grant, from an obstetrics clinic with integrated behavioral health. A fourth presentation will outline a community program in which pediatricians work with new moms in a group setting to improve bonding and infant care.

MOTHERWISE: IMPLEMENTATION AND PRELIMINARY EVIDENCE OF EFFECTIVENESS OF A PERINATAL HEALTHY RELATIONSHIP EDUCATION PROGRAM
Galena Rhoades, Ph.D., University of Denver
Sara Mazzoni, M.D., MPH University of Alabama at Birmingham
Jennifer Hyer, M.D., Denver Health, University of Colorado
Rachel Peña, M.S., Denver Health
Objective: Pregnancy is associated with heightened risk for domestic violence, relationship problems, family instability, and mood disorders. MotherWise is a new community-based program dedicated to reducing these risks with an evidence-based group curriculum about healthy relationships (Within My Reach) and concurrent case management. This presentation focuses on program implementation and preliminary evidence of effectiveness.
Methods: A randomized controlled trial using medical records and 1- and 2½ year follow ups is underway to test whether MotherWise reduces perinatal depression, relationship conflict, and domestic violence and improves birth and child outcomes (N = 953). Pre- and post-program data are also collected.

Results: Since opening in 2016, 1,119 women have enrolled in MotherWise. They represent a diverse and at-risk population: 36% are monolingual Spanish-speaking, 67% are Latina/Hispanic, 14% are African-American, 47% report being down or depressed, 11% are involved with Child Protective Services for the pregnancy, 43% report the pregnancy was unintended, and 25% report recent domestic violence. Attendance is high: 87% receive at least one service and, of those, 80% graduate from the program by attending 5 of 6 classes. Feedback is positive: 99% report they are more effective parents after attending MotherWise and 99% report they know how to handle conflict better. Further, pre to post-program analyses indicate significant improvements in communication and 15% report they ended a relationship that was physically abusive as a result of the program.

Conclusions: MotherWise reaches the intended population and preliminary evidence suggests that it shows promise in reducing social risks for women during pregnancy.

Acknowledgements: This project is funded by the Administration for Children and Families, (Office of Family Assistance), Mathematica Policy and Research, the Fahs-Beck Fund for Research and Experimentation, and the University of Denver.

CREATION OF AN INTEGRATED CARE MODEL USING THE BUSINESS CASE
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Blair Hedges, CRNP, University of Alabama at Birmingham
Galena Rhoades, Ph.D., University of Denver
Jennifer Hyer, M.D., Denver Health, University of Colorado

Objective: The University of Alabama at Birmingham (UAB) began universal screening for depressive symptoms during pregnancy and noted a higher than national average rate of positive screens. We therefore aimed to create a patient-centered model to care for these women as well as those with serious mental illness during pregnancy.

Methods: A business case was made to hospital administration. Given the association of perinatal mood disorders on poor obstetrical outcomes, such as preterm birth and low birthweight, and substance use during pregnancy with its own concomitant poor obstetrical outcomes, the argument was made that providing adequate psychiatric care to women with depressive symptoms and other mental illnesses during pregnancy could reduce neonatal intensive care unit (NICU) admissions and therefore costs. One week stay for one infant in the NICU costs the hospital the equivalent of 20% of a psychiatric nurse practitioner’s annual salary.

Results: Hospital administration heard the business case and agreed to place a psychiatric nurse practitioner (NP) in the obstetric clinic with the highest rate of positive depressive symptom screens for one half-day per week. This clinic cares for approximately 2,000 women annually: 60% insured by Medicaid, 30% uninsured, 47% African-American and 33% Hispanic. During her first year, the NP saw 81 unique patients. Over 50% returned for multiple visits. The most common mental illness seen is depression followed by bipolar disorder, then posttraumatic stress disorder and schizophrenia. Patients report satisfaction with the ability to seek psychiatric care in their obstetric clinic.

Conclusions: There is a business case for an integrated model of perinatal psychiatric care that is acceptable to both patients and staff that can be used to create a patient-centered care model.

ASSOCIATION OF POSITIVE INDIVIDUAL ACE QUESTIONS AND EPDS AT OBSTETRIC INTAKE VISIT
Presenting Author’s Name (underlined), Other author’s names:
Jennifer S. Hyer, MD Denver Health
Claire Ulrickson MPH, Denver Health
KC Lomonaco PsyD, Denver Health
Alison Tinker MSN, CNM
Camille Hoffman, MD, University of Colorado

Objective: We know that Perinatal Mood and Anxiety Disorders (PMAD) can negatively impact a pregnancy. A positive Adverse Childhood Experiences Screen (ACE) is known to be associated with PMAD.
In the hopes of identifying additional women who could benefit from early mental health intervention, this study aims to establish if there is a relationship between individual questions on the ACE questionnaire and positive EPDS scores.

**Methods:** All women undergoing obstetric care at Denver Health Women’s Care Clinic from September 2016 through October 2018 were eligible for this study. 206 women voluntarily completed an EPDS screening and 203 also completed an ACE questionnaire at their obstetric intake visit. Using Chi-Squared analysis, we compared EPDS scores and ACE scores and response to individual ACE questions with a significance threshold set at \( p < 0.005 \).

**Results:**
A total of 32 women (15.53%) had a positive EPDS (≥10) score and 32 women (15.76%) had a positive ACE score (≥4) at their obstetric intake visit. A positive ACE score was significantly associated with a positive EPDS score (\( p < 0.0001 \)). Additionally, for four ACE questions a “yes” endorsement was significantly associated with a positive EPDS: Question 1 (verbal abuse) (\( p = 0.002 \)), Question 3 (sexual abuse) (\( p = 0.0008 \)), Question 4 (felt unloved) (\( p < 0.0001 \)), and Question 9 (Family history of mental illness) (\( p = 0.0004 \)).

**Conclusions:** Endorsement of individual ACE questions is associated with a positive EPDS score at obstetric intake visit. Limiting the ACE cutoff to a positive screen of 4 or more may miss patients who could benefit from early behavioral health intervention.

**Acknowledgements:** The authors acknowledge the Zoma Foundation and Denver Health Foundation for funding support.

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**PILOT STUDY OF BABYWONDER: A PROGRAM ON INFANT DEVELOPMENT FOR MOTHERS WITH NEWBORN**

Leisha Andersen, M.D., M.P.H., *MotherWise*
Rachel Peña, M.S., *MotherWise, Denver Health*
Galena Rhoades, Ph.D., *University of Denver*
Melanie Meyer, P.A., *MotherWise*
Marie Whiteside, M.D., *MotherWise*

**Objective:** The goals of this project were to 1) establish new mother-infant parenting education groups and 2) collect pilot data on implementation and mothers’ satisfaction with these groups.

**Methods:** To develop programming content, MotherWise staff, two pediatricians, and a physician’s assistant with expertise in newborn care reviewed existing curricula, current MotherWise program materials, and new information developed by the pediatric providers. Incorporating selected components from sources including the Partners In Parenting Education (PIPE) curriculum, the BabyWonder curriculum was created and piloted to mothers and their babies (≤3 months of age).

**Results:** Over 9 months, MotherWise served 33 mother/baby dyads through five BabyWonder series. Sessions convened for 2 hours weekly and series ranged in length from 3-6 weeks. Transportation, childcare for older children, and meals were provided for each session. Case management was also offered to enrolled mothers. About half (48%) of participants attended ≥80% of their series. Feedback from mothers was positive, with 100% recommending BabyWonder to other mothers. Qualitative data suggested that participants appreciated the opportunity to: ask questions about infants, learn how to communicate with their babies, and meet other mothers at a similar parenting stage. Mothers reported exiting BabyWonder with new parenting skills including ways to: remain calm themselves, soothe and comfort their babies, and establish routines and sleep schedules.

**Conclusions:** This pilot suggests that mothers enjoyed attending groups on infant care, development, and parenting and found the information useful. As a next step, a more rigorous evaluation will be conducted to examine the program’s effectiveness.

**Acknowledgements:** This project was funded by the Buell Foundation.
TRANSCRANIAL DIRECT CURRENT STIMULATION (tDCS) FOR DEPRESSION IN PREGNANCY: A PILOT RANDOMIZED CONTROLLED TRIAL
Simone N Vigod1,2, Kellie E Murphy2,3, Cindy-Lee Dennis2,4, Tim F Oberlander5, Joel G Ray2,4, Zafiris J Daskalakis2,6, Daniel M Blumberger2,6
1 Women's College Hospital and Research Institute, 2 University of Toronto, 3 Sinai Health System, 4 Li Ka Shing Knowledge Translation Institute, St. Michael's Hospital, 5 BC Children's Hospital Research Institute, University of British Columbia, 6 Temerty Centre for Therapeutic Brain Intervention and Campbell Family Research Institute, Centre for Addiction and Mental Health
Objective: Depression in pregnancy negatively affects maternal-child health. When untreated or undertreated, it is the strongest risk factor for postpartum depression, a condition linked to chronic maternal depression and adverse child developmental outcomes. Transcranial direct current stimulation (tDCS), a localized non-invasive brain stimulation treatment that represents an alternative to medication treatment, has not been evaluated for depression in pregnancy. We conducted a pilot randomized controlled trial (RCT) for depression in pregnancy.

Methods: In Ontario, Canada, we enrolled adult pregnant women with major depression, 14-32 weeks gestation, who had declined antidepressant medication. Participants were randomly assigned 1:1 to tDCS or sham-control. Active tDCS comprised 30-minute sessions of 2 mAmp direct current delivered to the dorsolateral prefrontal cortex, 5 days per week, for 3 weeks. Sham was administered similarly, but with current turned off after 30 seconds. Main outcomes were feasibility, acceptability, and protocol adherence. Maternal Montgomery Asperg Depression Rating Scale (MADRS) was measured post-treatment and at 4 and 12 weeks postpartum.

Results: Twenty women were randomized; 16 completed treatment and provided final endpoint data for a total of 124 tDCS and 122 sham sessions. Views of treatment were positive with no serious adverse events. Post-treatment mean MADRS scores were 11.8 for tDCS and 15.4 for sham. At 4 weeks postpartum, the remission rate was 75.0% for tDCS versus 12.5% for sham.

Conclusions: Results support proceeding to a definitive RCT to evaluate tDCS for antenatal depression and are encouraging with respect to the potential use of tDCS in this under-treated population.

MATERNAL PRESCRIBED OPIOID ANALGESIC USE DURING PREGNANCY AND RISK FOR ADVERSE BIRTH OUTCOMES IN OFFSPRING: A POPULATION-BASED STUDY
Ayesha C. Sujan,1 Patrick D. Quinn,1 Martin E. Rickert,1 Kelsey K. Wiggs,1 Paul Lichtenstein,2 Henrik Larsson,2,3 Catarina Almqvist,2 A. Sara Öberg,2,4 and Brian M. D’Onofrio1,2
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Objective: Observed associations between maternal use of prescribed opioid analgesic (POA) medications during pregnancy and adverse offspring birth outcomes could be due to causal effects or confounding by indication or other patient characteristics. Therefore, we tested the role of confounding in associations between prenatal POA exposure and preterm birth (PTB) and small for gestational age (SGA) using multiple epidemiological designs.

Methods: Using a cohort of 620,458 Swedish offspring born 2006 to 2013 and multiple methods that accounted for both measured and unmeasured confounding factors, we estimated associations with maternal POA prescriptions anytime during pregnancy, in a single trimester (proxy for short-term exposure), and in multiple trimesters (proxy for persistent exposure).

Results: Offspring exposed to POAs anytime during pregnancy were at increased PTB risk compared to unexposed offspring (OR=1.38, 95% CI:1.31-1.45). However, associations were attenuated when we compared POA-exposed offspring to acetaminophen-exposed offspring (OR=1.18, 95% CI:1.07-1.30), offspring of women with before-pregnancy-only POA prescriptions (OR=1.05, 95% CI:0.96-1.14), and unexposed siblings (OR=0.99, 95% CI:0.85-1.14). Single-versus-multiple-trimester analyses showed a similar pattern of results.

Across all models, POA exposure anytime during pregnancy was not associated with SGA. However, multiple-
trimester exposure was associated with increased SGA risk compared to unexposed offspring (OR_{multiple-trimester}=1.30, 95% CI:1.08-1.55). Nonetheless, the association with multiple-trimester exposure was attenuated when we adjusted for measured covariates and used alternative comparison groups (e.g., sibling comparison OR=1.16, 95% CI:0.58-2.32).

Conclusions: Results suggest observed associations are largely due to confounding, although small independent associations, particularly for persistent POA use, could not be ruled out.

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THE INTERNATIONAL PROGRESS OF PPD ACT, AN APP-BASED POSTPARTUM DEPRESSION GENETIC STUDY
Jerry Guintivano, PhD1 and Simone Vigod, MD, MSc, FRCPCH2
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Objective: Postpartum depression (PPD) is one of the most frequent complications of childbirth (prevalence 10-15%). PPD is suited to genetic investigation as it is more homogenous than major depression outside of the perinatal period (i.e. women of childbearing age exposed to similar biopsychosocial stressor). Therefore, we developed a mobile app (PPD ACT) to recruit women with a lifetime history of PPD to sufficiently power genome wide association studies.

Methods: PPD ACT has two basic components: participant screening for PPD and collection of DNA from cases. Women download the app, complete basic eligibility, and are presented with informed consent. Participants are screened for PPD using the EPDS lifetime version. Lifetime EPDS threshold for case status was ≥ 13. Cases are invited to participate in DNA collection and sent a spit kit via post.

Results: PPD ACT was released on March 21, 2016 in the US and April 27, 2017 in Canada. In the US, the three years post-launch has had 12,366 participants complete phenotyping, with 8,533 PPD cases (3,496 samples biobanked). The mean EPDS score for US cases was 22 (SD: 3.7). In Canada, the one year post-launch has had 717 participants complete phenotyping, with 460 cases (282 samples biobanked). The mean EPDS score for Canadian cases was 22 (SD: 3.8).

Conclusions: PPD ACT is the first mobile health application for a psychiatric genetics study, screening and collecting samples directly from participants. The incredible response obtained is contributing significantly to the first genome-wide association study for PPD, which is currently underway.

VULNERABLE CAPTIVITY AND THE MEANING OF THE EXPERIENCE OF ANTEPARTUM BED REST: BEYOND POSTPARTUM
Gwendelyn S Orozco
College of Graduate Nursing, Western University of Health Sciences

Objective: The purpose of this study is to explain the meaning of the Antepartum Bed Rest (APBR) experience in
mothers who are more than six weeks postpartum. Research confirms that antepartum bed rest (APBR) has a negative emotional and physiological impact on mothers during the antepartum hospital stay and up to six weeks into the postpartum period. The current state of the science provides inadequate articulation of the meaning of the APBR experience for mothers who are more than six-weeks postpartum. 

**Methods:** A purposeful sampling of 15 mothers who had the experience of antepartum bed rest and have surpassed the six-week postpartum period was used in this study. Data consisted of one on one semi-structured interviews using open ended questions which were recorded and transcribed verbatim. The transcribed interviews were analyzed with Van Manen’s Thematic Six Step and Three Method Approach. 

**Results:** The results of this study discovered seven themes, two subthemes, and one overarching theme. The themes are Altered Relationships with sub themes of Altered Relationship Strengthening and Altered Relationship Weakening, Stigma, Guilt, with a subtheme of Imposed Guilt, Debilitating Core Strength, Bonding Detachment, Abandonment, and Disruptive Memories. The overarching theme Vulnerable Captivity evolved. Each theme is defined in the context of the experience of APBR.

**Conclusion:** Findings from this study contribute to closing the gap in knowledge and informs nursing practice that will allow continuation of care past the postpartum six-week period. This research study helps warrant that Perinatal Mental Health Training include this currently excluded population.

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**QUANTIFYING THE COST OF PERINATAL MOOD AND ANXIETY DISORDERS IN UNITED STATES**

Kara Zivin\(^1\), Dara Lee Luca\(^1\), Caroline Margiotta\(^1\), Colleen Staatz\(^1\), Nellie Garlow\(^1\), Anna Christensen\(^1\)  
\(^1\)Mathematica Policy Research, \(^2\)University of Michigan, \(^3\)Department of Veterans Affairs

**Objective:** Perinatal mood and anxiety disorders (PMAD)—defined as mood and anxiety disorders during pregnancy and the year following birth—are common, yet they often go undiagnosed and untreated. We sought to estimate the economic burden of untreated PMAD among 2017 births in the United States.

**Methods:** Informed by 4 meetings with our 17 member advisory group, we developed a mathematical model based on a cost-of-illness approach to estimate the impacts of exposure to untreated PMAD on mother and child from conception to five years postpartum for the 2017 birth cohort. We conducted a literature review to identify PMAD prevalence in the United States, effects associated with exposure to untreated PMAD, and associated costs and baseline rates of each outcome.

**Results:** We estimated PMAD to cost $14.2 billion for the 2017 birth cohort from conception to five years postpartum. The average cost per affected mother-child dyad was approximately $32,000. Mothers incurred 60% of the costs; children incurred 40%. For mothers, the largest costs come from productivity losses ($4.7 billion), maternal health expenditures ($2.9 billion), and obstetric-specific health expenditures ($699 million). For children, the preterm births ($3.3 billion), child behavioral and developmental disorders ($1.6 billion), and child injury ($306 million). More than half of these costs ($7.5 billion) occur during the first year, and are associated with pregnancy and birth complications.

**Conclusion:** The US economic burden of PMAD is high. Efforts to lower the prevalence of untreated PMAD could lead to substantial economic savings for employers, insurers, the government, and society.

**Acknowledgements:** Mathematica Policy Research developed the cost model with support from the California Health Care Foundation, the Zoma Foundation, and the Perigee Fund.

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**CHILDBIRTH-RELATED PTSD AND MATERNAL BONDING IMPAIRMENT: APPLYING A BIOPSYCHOLOGICAL APPROACH**

Sharon Dekel\(^1\), Zohar Berman\(^1\), Lisa Shin\(^1\), Roger Pitman\(^1\), Scott Orr\(^1\), Anjali Kaimal\(^1\), Helena Rutherford\(^3\), and Linda Mayes\(^3\)  
\(^1\)Harvard Medical School, \(^2\)Massachusetts General Hospital, \(^3\)Yale Medical School

**Objective:** Accumulating data suggest that new mothers may exhibit a posttraumatic stress response resulting from parturition and its attendant circumstances. Some may go on to suffer from childbirth-related posttraumatic stress disorder (CB-PTSD), which may pose a threat to maternal bonding. Currently, CB-PTSD is conceptualized in psychological terms; biological studies are lacking.

**Methods:** We adopted a biopsychological approach to study CB-PTSD and maternal bonding. To this end, we
studied (1) a community sample of pregnant women prospectively and assessed them in the immediate and early postpartum period; and (2) a sample of women at risk for CB-PTSD. We used physiological and observational tools, psychometrics, and fMRI.

Results. Acute peritraumatic stress response to childbirth predicted CB-PTSD symptoms. CB-PTSD severity was associated with subjective and observed maternal bonding impairment. When assessing mother’s arousal during mental imagery of her personal childbirth event, subjects with probable CB-PTSD showed heightened physiological reactivity as seen in individuals with PTSD following combat exposure etc. Physiological reactivity to childbirth reminders, which unfortunately often included the infant itself, was strongly associated with maternal bonding impairment. Finally, we will describe possible alterations in brain areas underlying maternal bonding in CB-PTSD.

Conclusions. Our findings offer strong support to the specificity of CB-PTSD to the causal childbirth event, which appears to leave the same bodily scares as exposure to war in a significant minority of women. Impaired maternal bonding associated with CB-PTSD and its abnormal neural and physiological reactivity may serve as a mechanism for the nongenomic transmission of disease to the offspring.

Acknowledgments. Research reported in this presentation was supported by NICHD of the National Institutes of Health under award number R21HD090396 (Dekel) and MGH Psychiatry Department fund.
### Concurrent 4A
**Grumman Auditorium**

**Symposium**
**The Brain, Immunity and Behavior: Implications for Perinatal Health**

**Lauren M. Osborne, Chair**

*Johns Hopkins University School of Medicine*

This symposium will present the latest science about the psychoneuroimmunology of pregnancy and the postpartum. Data from human as well as animal models will be presented, with biological mediators ranging from proinflammatory cytokines, the gut microbiome, and microglial activation.

#### MICROGLIA AND MOTHERHOOD: EMERGING EVIDENCE FOR IMMUNE ALTERATIONS IN THE PREGNANT AND POSTPARTUM BRAIN

**Benedetta Leuner**

*The Ohio State University*

**Objective:** Pregnancy and the postpartum period are characterized by dramatic alterations in the peripheral immune system that are known to be important for a successful pregnancy, fetal growth and development, and for maternal health. The brain is also highly populated with immune cells, called microglia, but few studies have considered how the central immune system may be impacted during the peripartum period and the extent to which central immune factors play a role in peripartum mental illness.

**Methods:** We investigated the central immune system (microglia, cytokines) of female rats across the peripartum period and in a gestational stress model of postpartum depression.

**Results:** Our results show peripartum reductions in microglial number and increases in potentially neuroprotective cytokines indicative of an inflammatory-resistant state. Further, we show that gestational stress disrupts the peripartum neuroimmune environment resulting in increased microglia immunostaining, elevated pro-inflammatory cytokine gene expression, as well as increased expression of several phagocytic genes highly expressed by microglia. Further, this neuroimmune profile occurs in association with depressive-like behavior and compromised neuroplasticity suggesting that one way...
HOST IMMUNITY, THE MICROBIOME, AND PERINATAL MOOD AND ANXIETY

Beatriz Penalver Bernabe, PhD; Hannah Rackers MPH; Shannon Dowty, MPH; Lisa Tussing-Humphreys, PhD, MS, RD; Lacey Wisslead-Pezley, MS, RDN, LDN; Samantha Meltzer-Brody MD MPH; Rebecca Knickmeyer PhD; Pauline Maki PhD; Jack Gilbert PhD; Mary Kimmel MD

University of North Carolina-Chapel Hill, University of Illinois at Chicago, and University of California San Diego

Objective: Communication between the host immune system and the microbiota may be important to elevated anxiety, particularly in the perinatal period. We sought to examine this communication in two cohorts of women from different geographic regions and with different characteristics.

Methods: In two cohorts, blood and fecal samples have been collected and analyzed from the first, second, and third trimesters. One of the cohorts also followed women into the postpartum period. 16S sequencing was used to analyze microbial composition. A panel of cytokines was analyzed from peripheral blood samples. Self-assessment of symptoms included the Generalized Anxiety Disorder-7 (GAD-7) for anxiety and the Perceived Stress Scale (PSS) for stress.

Results: The two cohorts, one of 61 women and another of 39 women, differed by geography, education level, and racial diversity. Average BMI and age were similar between the two cohorts. In both groups, cytokines including IL-4 (p=0.008) and TNF-alpha (p=0.01) were negatively associated with elevated anxiety in the first trimester. IL-4 was also negatively associated with elevated stress. During the postpartum period, IL-21 was positively associated with anxiety and stress (p=0.003). Correlations of microbial composition in relation to immune factors findings will also be presented.

Conclusions: This work lays a foundation for collaboration developing larger datasets to begin to understand not only the changes in the immune system across the perinatal period in relation to anxiety and stress, but also to develop profiles that, combined with the microbial composition, may improve objective identification of those with elevated stress and anxiety.

MATERNAL SLEEP, DEPRESSIVE SYMPTOMS, AND RISK FOR SPONTANEOUS EARLY BIRTH: IMPLICATIONS FOR RACIAL DISPARITIES IN BIRTH OUTCOMES

Lisa Christian, Shannon Webber, Shannon L. Gillespie, & Kyle Porter

The Ohio State University

Objective: Delivery prior to full term (<39 weeks gestation) affects 37% of births in the US, including nearly 400,000 preterm births (<37 weeks) and >1,000,000 early term births (37-38 weeks). Approximately 70% of cases are spontaneous - without medically indicated cause. Remarkably unpredictable, the two strongest risk factors are prior history of shortened gestation and African American race. Elucidation of modifiable behavioral factors would have considerable clinical impact.

Methods: We examined the combined role of depressive symptoms and poor sleep in risk for spontaneous shortened gestation among 317 women (135 Black, 182 White) who completed the Center for Epidemiologic Studies-Depression Scale and Pittsburgh Sleep Quality Index in mid-pregnancy.

Results: African Americans had 2.35 times higher odds of spontaneous shortened gestation compared to Whites (odds ratio 95% CI=1.34, 4.11). Logistic regression adjusting for race, income, BMI, and maternal age demonstrated that women with only elevated depressive symptoms (CES-D≥16) or poor sleep (PSQI≥9) did not have increased risk (p=0.23 and 0.89, respectively). However, women with both risk factors exhibited 3.15 times higher odds of shortened gestation compared to those with neither risk factor (p = 0.01). In addition, African Americans were more likely to experience both risk factors than Whites (15.6% versus 6.6%).

Conclusions: Additive effects of poor sleep and depressive symptoms are associated with higher risk for spontaneous shortened gestation among those with both risk factors. Racial disparities in rates of
comorbid exposure corresponded with disparities in shortened gestation. Intervention efforts should consider the interactive effects of these commonly co-morbid exposures.

**IMMUNE DYSREGULATION AND ANTENATAL MOOD SYMPTOMS**

Lauren M. Osborne, Joshua Betz, Gayane Yenokyan, Jennifer L. Payne  
*Johns Hopkins University*

**Objective:** We sought to examine associations between inflammatory markers and mood symptoms across pregnancy and postpartum in women with and without preexisting psychiatric illness.

**Methods:** Sixty-four women were assessed at second and third trimesters and six weeks postpartum (T2, T3, and W6). Depressive symptoms were measured with the Edinburgh Postnatal Depression Scale (EPDS). Cytokines and chemokines were analyzed by multiplex (Meso Scale Discovery immunoassay).

**Results:** Average age of participants was 33 and 76% were Caucasian. Ninety-five percent of subjects were euthymic at study entry (mean EPDS 5.47), with 70% taking psychiatric medications. Inflammatory markers displayed differing patterns for women with and without mood disorders (HX and NOHX), though these differences did not achieve statistical significance in our small sample. For each clinically significant (3-point) rise in EPDS, at T3, eotaxin increased 20% in HX and decreased 20% in NOHX women; VEGF showed no change in HX and a 25% decrease in NOHX; and IL-4 showed no change in HX and decreased 20% in NOHX. At W6, IL-6 increased 10% and IL-4 showed no change for HX, while both cytokines decreased 20% for NOHX. MIP-1A and IP-10 showed the opposite pattern, with a 5% decrease for HX and 5% and 15% increases, respectively, in NOHX.

**Conclusions:** Our results, while preliminary, indicate that patterns of change across the peripartum in cytokines may differ according to mood disorder history. Further studies with a larger sample size and more targeted immune analyses will be need to determine the significance of these differences.
**Objective:** Perinatal mental health and substance use disorders are widespread and undertreated. This presentation aims to describe how legislative advocacy and governmental programming have resulted in an innovative, low-cost, scalable, population-based program being disseminated nationwide to help providers address the mental health needs of pregnant and postpartum women.

**Methods:** Multidisciplinary efforts through the Massachusetts’ Governor’s postpartum depression commission led to state funding for the Massachusetts Child Psychiatry Access Program for Moms (MCPAP for Moms, 2014). MCPAP for Moms builds providers’ capacity through: 1) trainings and toolkits; 2) telephonic perinatal psychiatric consultation; and, 3) resource and referrals linkages. MCPAP for Moms led to legislation (H.R.3235), consolidated into the 21st Century Cures Act, that was signed into law and resulted in $5,000,000 in the FY 18-19 federal budget for states to establish similar Perinatal Psychiatry Access Programs (PPAP) through HRSA-administered grants (HRSA-18-101).

**Results:** In the first 4.5 years, MCPAP for Moms has enrolled 73% of obstetric practices covering >80% of the state’s deliveries and has served over 6000 women. In October 2018, seven states (Florida, Kansas, Louisiana, Montana, North Carolina, Rhode Island, Vermont), were awarded $650,000 each from HRSA to establish their own PPAP. In addition, Washington, Wisconsin, and Michigan have also started programs, resulting in 11 states now having or developing PPAP. Programs share and have unique components from MCPAP for Moms.

**Conclusions:** State to federal advocacy has catalyzed nationwide state-PPAP to address the public health crisis of perinatal mental health and substance use disorders.

**Acknowledgments:** MCPAP for Moms is funded by the Massachusetts Department of Mental Health.

**SUPPORTING FRONTLINE PROVIDERS: DEVELOPMENT OF A CONSULTATION LINE AND TELEPSYCHIATRY CLINIC TO SUPPORT RURAL MEDICAL HOMES IN IDENTIFICATION AND TREATMENT OF PERINATAL BEHAVIORAL HEALTH DISORDERS**

**Authors:** Mary Kimmel, MD, University of North Carolina at Chapel Hill, Chapel Hill, NC; Hannah Rackers, MPH, University of North Carolina at Chapel Hill, Chapel Hill, NC; Gary Maslow, MD, Duke University, Durham, NC; Nicole Heilbron, PhD, Duke University, Durham, NC; Rebecca Moore-Patterson, North Carolina NC Department of Health and Human Services, Raleigh, NC

**Objective:** NC Maternal Mental Health MATTERS (Making Access to Treatment, Evaluation, Resources, and Screening Better) aims to improve treatment and strengthen primary care providers’ self-efficacy as frontline providers for management of behavioral health disorders in pregnant and postpartum women. In this presentation, we will provide an overview of the program structure, challenges to implementation and keys to success.

**Methods:** The program will provide trainings to providers along with a screening toolkit; a consultation line for providers to receive one-on-one, case specific discussions with a perinatal mental health specialist; and a perinatal telepsychiatry clinic to serve women who need additional assessment and do not have access to adequate local resources. MATTERS will also provide specialized care coordination to connect practices with local community resources. Medicaid data and liaising with practices will provide information about resources and gaps in service as well as for on-going assessment of the interventions.

**Results:** The process for analyzing Medicaid data, surveying practice and provider self-efficacy, and in identifying local resources will be presented. Outreach has begun to 70 identified obstetric, family, pediatric and behavioral health practices and met with enthusiasm due reported paucity of local resources. The process for development of evidence-based consultation and assessment in partnership with Duke’s North Carolina Pediatric Access Line and through the telepsychiatry clinic will be presented.

**Conclusions:** Partnership between the state and two large academic medical systems has allowed capitalization on preexisting expertise in perinatal and child mental health along with ability to connect with provider networks and community resources.

**Acknowledgements:** NC Maternal Mental Health MATTERS funded by HRSA through the Safeguarding Two Lives: Expanding
THE RHODE ISLAND MOMSPRN PROGRAM: A PARTNERSHIP DESIGNED TO ENSURE STATE-WIDE PERINATAL BEHAVIORAL AND SUBSTANCE USE DISORDERS DETECTION AND REFERRAL.
Margaret Howard, PhD, Brown University and Women & Infants Hospital, Cynthia L. Battle, PhD, Brown University and Butler Hospital, Zobeida Diaz, MD, Brown University and Women & Infants Hospital, Neha Hudepohl, MD, Brown University and Women & Infants Hospital.
Objective: MomsPRN is a partnership between the Rhode Island Department of Health and the Center for Women's Behavioral Health at Women & Infants Hospital which promotes screening, referral, and treatment for all perinatal women in the state who suffer from psychiatric or substance use disorders. In this presentation we describe the design, implementation, and current status of MomsPRN.
Methods: MomsPRN is modeled, in part, after a successful similar Rhode Island program, PediPRN which provides child psychiatry consultation to pediatricians via telepsychiatry. During the 2019 launch, MomsPRN staff will meet with obstetric, pediatric, general psychiatry, and family medicine practices across the state to provide education regarding perinatal psychiatric and substance use disorders, guidance in screening and detection, and instructions for accessing the MomsPRN phone line, which provides medication consultation and tailored referrals for psychotherapy and other resources for perinatal women.
Results: MomsPRN staff will develop and refine a comprehensive database of perinatal mental health specialists and resources throughout the state, with critical details provided (e.g., insurances accepted, languages spoken). The frequency and types of calls received will be presented along with the challenges of launching such a program within a context of an established perinatal mental health center to which providers are accustomed to referring their patients.
Conclusions: Our experience launching MomsPRN will provide one example of how a statewide program can enhance awareness, detection, referral and treatment by perinatal mental health non-specialists who care for pregnant and postpartum women and their infants.
Acknowledgements: MomsPRN is funded by HRSA.

THE LIFELINE4MOMS NETWORK: UNIFYING PERINATAL PSYCHIATRY ACCESS PROGRAMS TO ENHANCE QUALITY AND IMPACT
Kathleen Biebel, PhD, Massachusetts Rehabilitation Commission, Melissa Maslin, MEd, Grace Masters, MPH, Sharina Person, PhD, Dane Netherton, PhD, Josh Rumbut, Jeroan Allison, MD, MS, Tiffany Moore Simas, MD, MPH, MEd, University of Massachusetts Medical School, Nancy Byatt, DO, MS, MBA, University of Massachusetts Medical School.
Objective: To describe: 1) a newly developed peer network of Perinatal Psychiatry Access Programs across the United States and, 2) our approach to quality improvement and program evaluation across programs.
Methods: We have formed the Lifeline4Moms Network of programs and stakeholders to share best practices, quality improvements, experiences, and case examples. To harmonize and standardize outcome measures across programs and lay the groundwork for program evaluation and quality improvement across programs, we are working with programs to develop benchmarking and customized queries. Other activities include two in-person summits per year, monthly virtual meetings, and individual calls with states.
Results: In the first 2 months, we have conducted 2 virtual meetings with approximately 30 attendees from 10 programs throughout the US. We also conducted 9 calls with individual programs to discuss programs participation in the Network. Programs are enthusiastic about shared learning on several topics, including program design (e.g., the various program elements being implemented by each program), implementation (provider outreach, clinical issues), evaluation, and long-term program sustainability and advocacy. Barriers to network participation include time constraints and competing demands and facilitators include funding for programs to participate and opportunities to leverage existing resources.
Conclusions: Our initial participation and feedback suggest that the Lifeline4Moms Network may be feasible way to: 1) facilitate prompt and successful implementation of Perinatal Psychiatry Access Programs in other states and health care systems and, 2) catalyze rapid and widespread sharing of data, methods, and resources by working with investigators, stakeholders, and learners.
**Acknowledgements:** This project is funded by the Perigee Fund.

**Concurrent 4C**

**Redbud A Room**

**4C1: Symposium**

**Dialectical Behavior Therapy for the Perinatal Period: Model Development Across Four Academic Centers**

Maria Muzik, MD, MS (Chair)

*University of Michigan, Department of Psychiatry-Michigan Medicine*

Dialectical behavior therapy (DBT) is a treatment for pervasive emotional dysregulation, mood symptoms and associated sequela. The perinatal period with its biological and psychosocial changes represents a special time in a woman’s life with unique challenges impacting mood regulation and frustration tolerance, interpersonal relationships and support networks, and presents also a time of possible parenting challenge. The Perinatal Dialectical Behavior Therapy group model is an adaption of Marsha Linehan's DBT group model and is designed specifically for pregnant and postpartum women. With a focus on emotion regulation and coping skills that promote mothers’ mental health, peer support, parenting competence, and parent-child relationships, the Perinatal DBT group ultimately seeks to prevent recurrence of mental health episodes in mothers and the intergenerational transmission of risk and trauma to their children. This symposium will bring together presenters from four academic centers—Universities of North Carolina, Michigan and Adelaide, and Brown University — that have been all working on a perinatal adaptation of the original DBT group model. These 4 centers will each present their model as well as initial feasibility, acceptability and effectiveness data.

**PERINATAL DBT MODEL AT UNC**

Tiffany A. Hopkins, PH.D., Paul Geiger, Ph.D.,

*University of North Carolina at Chapel Hill*

**Objective:** Dialectical behavior therapy (DBT) is a treatment for pervasive emotional dysregulation and affective/anxiety disorders during the perinatal period. This project outlines an adaptation of DBT for perinatal women (pregnant, postpartum, undergoing IVF, recovering from miscarriage/stillbirth). The primary aim is to outline program development, model, barriers, and population-specific concerns and adaptations to inform implementation of similar programs. A secondary aim is to evaluate the effectiveness of this model of DBT for symptom reduction, bonding facilitation, and skill development.

**Methods:** Program development processes (identification, implementation, and adaptation) are reviewed. Baseline patient information (e.g., hospitalizations, previous suicide attempts) was gathered via chart review and self-report. Patients completed a range of symptom and skill-focused measures at baseline, between each module, and at termination. Barriers to attendance were assessed via self-report.

**Results:** A qualitative description of program development procedures will be offered. Quantitative data collection is ongoing, precluding current analysis of results. Preliminary data for analysis will be available within the coming months; research in associated populations suggest that DBT will result in reduction of symptoms and increased skills acquisition.

**Conclusions:** DBT, currently understudied in perinatal women, has the potential to improve lives of perinatal women and their children via reduction of suicidality and inpatient hospitalization, enhanced mother-infant bonding, and improvement in quality of life via skills acquisition. The present project will provide a program model for DBT in perinatal women, preliminary program evaluation data, and recommendations for program development.

**PERINATAL DBT MODEL AT UM**

Katie Bresky, LMSW; Natalie Burns, LMSW; Maria Muzik, MD, MS

*University of Michigan*

**Objective:** Adapted DBT programs/groups have been well documented but little has been published on such groups in the perinatal period. We hypothesized that a DBT group intervention for high-risk mothers
would provide accessible, supportive, and sensitive treatment unique to the needs of women struggling with mood symptoms during perinatal period.

**Methods:** A perinatal DBT group consisting of four modules (each module lasting 4 weeks) was offered to 37 perinatal women (age range 20-46 years) with emotional dysregulation delivered by trained DBT therapists. The four modules included mindfulness, emotional regulation, distress tolerance and interpersonal effectiveness adapted to the specific demands of parenting infants and small children. Group size for each module ranged from 8 to 14 pregnant or postpartum women. Outcome measures were collected before and after each module by electronic survey.

**Results:** Participants experienced significant decrease in anxiety and depression, and increased in social support. Participants showed improvements in emotion regulation over the course of treatment associated with increased skills use. Participants also reported increased sense of competency in coping with stressful life situations, increased knowledge of skills to address mood regulation, stress management, self-care and communication, as well as an increased sense of social support.

**Conclusions:** DBT can be successfully delivered to perinatal women in a group setting and leads to reduced distress, increased confidence and ability to regulate emotion. Recommendations for continuing this model of service delivery are made. Further research is needed.

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**PERINATAL DBT MODEL FROM ADELAIDE AUSTRALIA**
Sharron Hollamby BSW (presenter) Anne E. Saved Williams, MBBS, Dip Psychotherapy; Chris Yelland M Psychol (Clin) MAPS; Maria Wigley RN, RM, Grad dip MHSc

**Objective:** As an inpatient psychiatric mother and baby unit, we were faced with a difficult to treat population of women with Borderline Personality Disorder who presented in a dysregulated state with an infant under 3 years. A program combining dialectical behavioral therapy with infant development and parental capacity building was developed.

**Methods:** The program was offered to 45 women with infants under 3 years of age who were identified clinically as meeting the criteria for borderline personality disorder or having significant traits of this disorder. The program consisted of a 26-week group for the women and their infants. Outcomes measured included maternal mood and anxiety, BPD functioning, parenting sense of competence, parental reflective functioning and caregiver-infant interaction (CARE index).

**Results:** 29 women were offered and began the group program. 21 (72%) completed the program and complete pre and post measures were collected for 20 dyads. Statistically significant improvements were noted in maternal mood and in Parental Reflective Functioning particularly for pre-mentalizing and increased curiosity in mental states. Also significant reduction in anxiety and BPD symptomatology were observed. Most importantly, 15 dyads demonstrated significant changes on the CARE Index.

**Conclusions:** The results have given hope that this new program has merit in this population and that with continued investment and further refinements we can offer another way to offer to support to women with BPD to improve their relationships with their infants and lessen their distress and BPD symptoms.

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**PERINATAL DBT MODEL AT BROWN UNIVERSITY**
Shannon M. Erisman, Ph.D.  
*Women and Infants Hospital, Brown University*

**Objective:** Despite important advances in the field of perinatal mental health, research regarding the most effective treatment modalities to manage perinatal mood and anxiety disorders (PMADs) while also attending to mother-baby attachment is still in its infancy.

Psychotherapeutic treatment in the Day Hospital program (Women and Infants Hospital, Brown University) originally consisted of Interpersonal Therapy (IPT), along with cognitive behavioral therapy (CBT) principles and education about infant development. As our conceptualization broadened from a focus on postpartum depression to the inclusion of a wider range of psychopathology in the perinatal period, the treatment model also evolved. The prevalence of symptoms of emotion dysregulation, interpersonal relationship disturbances, and difficulties tolerating distress in our perinatal population
prompted the adoption of dialectical behavior therapy (DBT), given its evidence base in treating these symptoms. While aspects of IPT and CBT have been retained, the dominant theoretical orientation in the program is DBT, modified for a perinatal population (pDBT). This includes application of skills for healthy mom-baby attachment.

**Methods:** The process by which we analyzed existing needs of the program, identified DBT as an important contribution to the treatment of perinatal mood and anxiety disorders, modified DBT to accommodate a perinatal population (including mom-baby attachment).

**Results:** We present implementation data of our DBT curriculum.

**Conclusions:** There is significant potential benefit of perinatal DBT for the treatment of PMADs, particularly for acute symptoms. Limitations and future directions will be addressed.

### 4C2: Symposium

**Novel Psychotherapy Approaches for Perinatal Mood and Anxiety Disorders**

**Chair:** Alexa Bonacquisti, PhD  
Holy Family University, Philadelphia, PA  
**Discussant:** Crystal E. Schiller, PhD  
University of North Carolina-Chapel Hill School of Medicine, Chapel Hill, NC

Accumulating evidence indicates that perinatal mood and anxiety disorders (PMADs) are relatively common and are associated with significant morbidity and mortality for childbearing women. Approximately 10–25% of perinatal women will experience substantial mood or anxiety symptoms; when untreated, these symptoms may result in adverse outcomes for mothers, children, and families. Growing recognition of this problem has propelled the exploration of evidence-based psychotherapy approaches to effectively address perinatal psychiatric distress. Although empirical support exists for several psychotherapy approaches, these approaches are limited in generalizability and scope, underscoring the need to develop and examine novel and innovative psychotherapy approaches for treating PMADs. Acceptance and commitment therapy (ACT) and dialectical behavior therapy (DBT) are third-wave behavioral therapies that are effective for a variety of psychiatric conditions. These approaches may be uniquely suited to address PMADs, along with other innovative methods such as the inclusion of partners and families to facilitate treatment gains. This symposium will present four novel psychotherapy approaches to address PMADs. The first two presentations will describe the examination of ACT as a treatment for perinatal women through discussion of ACT process variables and implementation in both inpatient and outpatient settings. The third presentation will introduce a study of a full model DBT program tailored for perinatal women. Lastly, the fourth presentation will describe the investigation of skills-based psychotherapy for partners of women hospitalized for PMADs. Together, these approaches represent novel and innovative possibilities and new areas of empirical investigation, with the shared goal of improving women’s functioning in the perinatal period and beyond.

### EXAMINING ACT PROCESS VARIABLES AND TREATMENT PREFERENCES AMONG POSTPARTUM WOMEN

**Alexa Bonacquisti, PhD**, Matthew J. Cohen, PhD², & Crystal E. Schiller, PhD²  
Holy Family University, Philadelphia, PA¹  
University of North Carolina-Chapel Hill School of Medicine, Chapel Hill, NC²

**Objective:** Postpartum mood and anxiety disorders are unique in their presentation and appear in a context that may be well-suited to an Acceptance and Commitment Therapy (ACT) approach. However, the use of ACT with postpartum women remains understudied. We developed an ACT-based group intervention at the Perinatal Psychiatry Inpatient Unit at the University of North Carolina at Chapel Hill. This inpatient group appears anecdotally effective in clinical practice, and additional research is warranted. The purpose of this study is to examine ACT process variables and psychological functioning in postpartum women with mood and anxiety disorders. The study also evaluates acceptability, feasibility, and barriers to accessing mental health care in the postpartum period to inform future work outside of the inpatient setting.

**Methods:** Postpartum women are enrolled via online social media recruitment. They complete an electronic survey assessing their reproductive history, current psychological functioning, and a range of ACT process variables, such as experiential avoidance, mindfulness, and cognitive fusion. They also
indicate perceived barriers to mental health care during the postpartum period and preferences regarding delivery of treatment.

**Results:** Quantitative data collection will commence in April 2019. Results to be presented will include the relationship between women’s psychological functioning and ACT processes, as well as descriptive data on women’s reported barriers and preferences regarding psychological treatment in the postpartum period.

**Conclusions:** ACT has shown promise as a novel, innovative intervention for postpartum women. This study furthers the empirical investigation of ACT as an evidence-based treatment for postpartum mood and anxiety disorders.

**FEASIBILITY & ACCEPTABILITY OF AN ACT/DBT SKILLS GROUP FOR PERINATAL DEPRESSION**

Erin Richardson, MSN, PMHNP¹, Matthew J. Cohen, PhD¹, Alexa Bonacquisti, PhD², & Crystal E. Schiller, PhD¹

*University of North Carolina-Chapel Hill School of Medicine, Chapel Hill, NC¹
Holy Family University, Philadelphia, PA²*

**Objective:** Current psychotherapies for perinatal depression (PND) show modest efficacy rates for mildly symptomatic women. Effective psychotherapies for women with moderate-severe symptoms and comorbid disorders are needed. Acceptance and Commitment Therapy (ACT) and Dialectical Behavioral Therapy (DBT) have shown promise, but have not been evaluated for PND treatment. The purpose of this study was to assess the feasibility and acceptability of an outpatient ACT/DBT skills group for PND.

**Methods:** We enrolled 4 perinatal women engaged in individual psychotherapy at the UNC Women’s Mood Disorders Clinic in a 6-session outpatient skills group on behavioral activation, mindfulness, defusion, values, self-compassion, distress tolerance, interpersonal effectiveness, and integration of skills. Participants completed the Inventory of Depression and Anxiety Symptoms (IDAS) pre- and post-treatment. Each session, participants completed a brief survey on helpfulness, relevance, and current mood.

**Results:** Mean helpfulness was 4.2 (SD = 0.81) and mean relevance was 4.2 (SD = 0.89) on a 5-point scale. On average, participants completed 5 sessions (SD = 0.81). Preliminary efficacy testing using 1-tailed paired t-tests suggest statistically significant increases in well-being (t = -5.4, p < 0.006) and positive affect (t = -2.7, p < 0.038), and a decrease in negative affect (t = 3.6, p < 0.019).

**Conclusions:** Preliminary data suggest that an outpatient ACT/DBT skills group for PND is both feasible and acceptable. Results further suggest the intervention has potential to improve well-being and positive affectivity, and decrease negative affectivity, for women with PND, supporting future investigation of the clinical utility and efficacy of adjunctive skills training in PND.

**EXPLORING THE SALIENCE OF DBT PRINCIPLES DURING THE PERINATAL PERIOD**

Paul J. Geiger, PhD & Tiffany Hopkins, PhD

*University of North Carolina-Chapel Hill School of Medicine, Chapel Hill, NC*

**Objective:** The perinatal period is a stressful time in women’s lives, marked by significant biopsychosocial changes with elevated risk for affective disorders, including depression and anxiety. Contributing factors exacerbating perinatal affective distress include emotion dysregulation, interpersonal conflict, and family/societal expectations. Dialectical behavior therapy (DBT) teaches skills directly applicable to these problems, including: emotion regulation, interpersonal effectiveness, and mindfulness. However, DBT has not been tailored specifically for difficulties during the perinatal period. The purpose of this study is to identify common maladaptive behaviors in order to identify and tailor DBT skills for perinatal mental health.

**Methods:** Perinatal patients enroll in a full model DBT program, consisting of individual therapy and skills group on a weekly basis. Target behaviors are measured at baseline and upon completion of each module with questionnaires, including: difficulties in emotion regulation scale (DERS), interpersonal effective ways of coping checklist (WCCL-IE), distress tolerance scale (DTS), dispositional mindfulness (FFMQ), and the postpartum bonding questionnaire (PBQ).

**Results:** Quantitative data collection is ongoing. Anecdotal evidence suggests unique target thoughts/behaviors to the perinatal period including: guilt associated with self-care, employing distress
tolerance skills while caring for an infant, and self-criticism stemming from stereotypes of motherhood propagated by society via social media.

**Conclusions:** DBT skills are likely effective and can be tailored for perinatal populations, with specific emphasis on reducing guilt and shame, employing skills while parenting, and using mindfulness skills to challenge assumptions about motherhood.

**THE DEVELOPMENT AND EVALUATION OF AN INTERVENTION FOR PARTNERS OF WOMEN HOSPITALIZED FOR PERINATAL DISTRESS**

Matthew J. Cohen, PhD,1 Donald H. Baucom, PhD,2 & Crystal E. Schiller, PhD1

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University of North Carolina-Chapel Hill, Chapel Hill, NC2

**Objective:** When women experience acute emotional distress in the perinatal period and safety concerns emerge, inpatient hospitalization may be indicated. Although hospitalization tends to result in improved immediate safety outcomes, many women return to home environments that lack emotional and instrumental support, factors that portend relapse. Both during and after hospitalization, interpersonal and environmental factors can significantly help or hinder patient progress. Integrating partners into treatment has been shown to improve individual and relational outcomes across psychopathology. The objective of this investigation was to address perinatal mood disorders through a dyadic lens.

**Methods:** In this feasibility study, 20 male partners of women hospitalized for perinatal distress were recruited to participate in a single, 90-minute intervention designed to improve partner understanding and support behaviors through teaching active listening, as well as other positive communication skills.

**Results:** Qualitative feedback from partners suggests that the intervention was acceptable and the high recruitment rates demonstrate strong feasibility. In terms of clinical outcomes, partners reported significant gains at follow-up in the context of their support self-efficacy, and patients reported significantly improved depression and anxiety symptoms. Patients also reported that they were significantly more satisfied with the support that their partners were providing, although the frequency of partner support behaviors was unchanged.

**Conclusions:** These findings suggest that this intervention may serve to enhance the recovery of women hospitalized for perinatal distress and that a larger randomized control trial is indicated to establish the efficacy of the intervention.

Concurrent 4D
*Redbud B Room* - Oral Presentations (5) - Chair: Michael O’Hara

**DOSE-EFFECT OF MATERNAL SEROTONIN REUPTAKE INHIBITOR USE DURING PREGNANCY ON BIRTH OUTCOMES**

Nina Molenaar

*Psychiatry, Icahn School of Medicine at Mount Sinai*

**Objective:** There is substantial concern about the possible effects of in utero antidepressant exposure on the unborn child and previous studies have found associations with adverse birth outcomes such as birth weight. Our objective was to determine whether there is a dose-effect of maternal serotonin reuptake inhibitor during pregnancy on birth outcomes.

**Methods:** Women below 16 weeks of gestation, who were using a serotonin reuptake inhibitor, were eligible for participation in this nation-wide prospective observational cohort study (n=145). Exposure was defined as serotonin reuptake inhibitor standardized dose at 36 weeks of gestation and mean serotonin reuptake inhibitor standardized dose over total pregnancy. Multivariable linear and logistic regression were used to examine the associations with birth weight, gestational age at birth and being small for gestational age.

**Results:** Maternal serotonin reuptake inhibitor standardized dose at 36 weeks of gestation showed a significant association with birth weight (adjusted $\beta = -176.8, 95\% CI: -296.3; -57.2$, $p$-value < 0.01) as did mean serotonin reuptake inhibitor standardized dose during total pregnancy (adjusted $\beta = -184.8, 95\% CI: -319.0$;
50.6, p-value < 0.01). No significant associations between maternal serotonin reuptake inhibitor dose and gestational age or being small for gestational age were observed.

Conclusions: A significant dose-effect of maternal serotonin reuptake inhibitor use during pregnancy on birth weight was present, while no significant dose-effect on gestational age or being small for gestational age was observed. This finding indicates the importance of careful dosing of serotonin reuptake inhibitor use during pregnancy and the need for further investigation of causality.

Acknowledgements: This work was supported by a grant from the Netherlands Organization for Health Research and Development (ZonMw, 836021011).

• "WE NEED TO HAVE PATIENCE WITH OURSELVES, WE JUST HAD A BABY: A QUALITATIVE INVESTIGATION OF BODY IMAGE AMONG WOMEN WITH POSTPARTUM DEPRESSION
Tamara Nelson1,2, Jennifer Ramirez3,4, Brie L. Scott5, Cynthia L. Battle1,2,5
1Alpert Medical School of Brown University, 2Butler Hospital, 3Baylor College of Medicine, 4Texas Children's Hospital, 5Women & Infants' Hospital of Rhode Island
Objective: Body image may play a role in a woman’s postpartum mood. However, the nature of this association is unclear, in particular for overweight/obese women with clinical levels of depression. In this study, we examined body image among women in treatment for postpartum depression (PPD) who are overweight or obese, asking: (1) How do women with PPD perceive their body during the perinatal period; (2) What specific factors contribute to these perceptions?
Methods: We conducted qualitative interviews with thirteen women (M age = 28.46, SD = 6.41) with PPD and a pre-pregnancy BMI in the overweight or obese range. Participants were asked about body image concerns during the perinatal period, and to provide three words to describe their body. Using a contextualist lens, we explored perceptions of body image using content and thematic analysis.
Results: Most women (84.5%) held a positive or mixed body image prenatally. However, post-pregnancy, the majority of participants held negative body image perceptions (77%). Most women used negative or neutral words to describe their body. Four preliminary themes were identified: (1) acceptability of prenatal weight gain; (2) my body was able to produce life; (3) letting oneself go; and (4) difficulty bouncing back postpartum. Contextual factors included unrealistic societal expectations, psychological and interpersonal distress, and bodily changes.
Conclusions: Our findings emphasize the importance of examining body image perceptions among women with PPD. Clinical and research implications will be presented.
Acknowledgements: Resident Research Grant Award (PI: Ramirez), Alpert Medical School of Brown University Clinical Psychology Training Consortium.

• PRENATAL DISCRIMINATION AND RACISM PREDICT POSTPARTUM MOOD IN AN URBAN SAMPLE OF YOUNG MOTHERS
Alison E Hipwell1, Irene Tung1, Ashley Myers1, Kate Keenan2
1Psychiatry, University of Pittsburgh, 2University of Chicago
Introduction: Lifetime experiences of discrimination and racism are associated with adverse health and may contribute to inequities across generations. However, little is known about the extent to which such experiences during pregnancy impact postpartum mental health, and for whom. We examined associations between prenatal discrimination and racism and postpartum mood, and the moderating effects of preconception psychosocial context in a high-risk sample.
Methods: Data were drawn from the population-based Pittsburgh Girls Study (PGS, N=2450); a 19-year study of psychopathology development beginning in childhood. By 2018, 626 participants had become mothers between ages 12 and 26 years (75% black or multiracial, 25% white). Measures assessed severity of prenatal and postpartum depression and anxiety, perceived discrimination and racism during pregnancy, and contextual risk (e.g. peer victimization, neighborhood violence) and protective (e.g., ethnic identity, positive life expectancies) factors prior to pregnancy.
Results: Linear regression models revealed significant main effects of prenatal discrimination on both postnatal depression and anxiety after accounting for prenatal mood and other covariates. Results also showed that the effects of racism on postnatal depression were exacerbated for women experiencing more
life stress prior to pregnancy, whereas higher levels of ethnic identity buffered the negative impact of racism on postnatal anxiety.

**Conclusion**: Whereas prenatal discrimination increases risk for postpartum depression and anxiety, preconception psychosocial factors moderate the effects of prenatal racism and could therefore increase the specificity of prevention efforts. We will extend these results by examining the mediating role of prenatal stress response with preliminary data from our ECHO-funded study.

**Acknowledgements**: This work was supported by grants funded through the National Institute of Health (OD023244), the National Institute of Mental Health (MH071790, MH056630) and Eunice Kennedy Shriver Institute of Child Health and Human Development (HD067185). Irene Tung was supported by a training grant from the National Institute on Alcohol Abuse and Alcoholism (T32AA00745).

- **MATERNAL CHILDBOOD MALTREATMENT, LIFESTYLE FACTORS, AND IMMUNE ACTIVATION DURING PREGNANCY**
  Clare McCormack¹, Vincenzo Lauriola², Marisa Spann³, Tianshu Feng³, Anika Mitchell⁴, Frances Champagne⁵, Catherine Monk²,⁴
  ¹Center for Science and Society, ²Department of Psychiatry, ³Department of Biostatistics, Mailman School of Public Health, ⁴Department of Obstetrics and Gynecology, Columbia University, ⁵Department of Psychology, University of Texas

  **Objective**: Despite being posited as a mechanism by which trauma effects transmit across generations, associations between childhood adversity and perinatal immune activation has only been examined in a few studies. Furthermore, there is a gap in understanding of whether lifestyle factors in adulthood alter such associations. Our objective was to examine associations between childhood maltreatment (CM) and immune activation during pregnancy, and whether these associations are moderated by psychosocial and lifestyle factors.

  **Methods**: Healthy pregnant women (n=187) completed interviews about psychosocial factors, including CM using the Childhood Trauma Questionnaire (CTQ), and dietary recall. Interleukin-6 (IL-6) was assayed from blood samples. Linear regression models examined associations and interactions between CM, diet, mood, BMI, social support, and IL-6.

  **Results**: Neither IL-6 at T2 nor T3 was correlated with CM. The interaction between CM and depression was not significant in T2 or T3. Diet quality in T2 was associated with IL-6 in T2 ($\beta=0.01, p=0.02$). The interaction between diet quality and childhood maltreatment on IL-6 in T2 was also significant ($\beta=-0.01, p=0.01$): women with exposure to CM showed a negative association between diet and IL-6 in T2.

  **Conclusions**: Contrary to expectations, history of CM was not associated with IL-6 in T2 or T3 of pregnancy, independently or in interaction with depression. This may be due to the high-functioning sample. Higher quality diet was associated with reduced inflammation for those with CM history. Further investigation of this could inform interventions targeting modifiable risk factors limiting intergenerational transmission of adversity.

  **Acknowledgments**: Supported by NIMH 1R01MH092580-01A1.

- **PSYCHOSOCIAL CARE FOR MINORITY PARENTS IN THE NICU: A HISTORICAL REVIEW**
  Alison R Hartman¹, Ariana Albanese¹, Gabrielle Russo¹, Bettina Tranquelle¹, Austin LaRocca¹, Chavis Patterson², Pamela Geller¹
  ¹Drexel University, ²Children’s Hospital of Philadelphia

  **Objective**: This review examines the historical evolution of research and clinical emphasis on psychosocial concerns of minority parents within the NICU. The scope of NICU care, once focused solely on the infant’s health, has widened to include the psychosocial wellbeing of parents. Recent research includes examinations of and targeted interventions for minority parents.

  **Methods**: A literature search was conducted utilizing PubMed, PSYCHINFO, CINAHL, and JSTOR. Included articles discussed distress, mental health, or wellbeing of minority parents with a neonate in intensive care. Minority is defined as belonging to an underrepresented racial, ethnic, or religious group.
**Results:** Prior to the 2000s, virtually no research addressed the needs of racial/ethnic minority parents in the NICU. Since then, researchers in the United States have focused on assessing and mitigating distress and improving the NICU experience for Latinx, Asian, and Black parents. Much research has identified minority NICU mothers as at an increased risk for psychosocial sequelae when compared to White peers. Interventions have aimed to increase staff-to-parent communication in low literacy/non-English speaking populations. Research focused on religious minority groups has revealed a lack of cultural literacy by NICU staff members. A growing body of literature has examined the protective role of religion and spirituality against poor mental health and grief outcomes in NICU parents, as well as the important role of religion in parental coping. **Conclusions:** The focus on minority groups in the NICU has shifted dramatically in recent decades as theoretical developments such as “culturally congruent care” have come to the forefront of Western healthcare systems.

**Concurrent 4E**

**Bellflower Room - Oral Presentations (S)** - Chair: Jennifer Barkin

**UNDERSTANDING MATERNAL ADJUSTMENT TO PREGNANCY**

Jessica A. Latack, Ph.D., Alison D. Hermann, M.D. New York Presbyterian Hospital/Weill Cornell Medical Center; Susan Ayers, Ph.D., City, University of London

**Objective:** The psychological experience of pregnancy is an important factor in maternal-fetal attachment during pregnancy, and maternal-infant attachment after birth (Dubber, Reck, Müller, & Gawlik, 2015). Quality of maternal-infant attachment is crucial (Bowlby, 1969), and is a well-established predictor of offspring psychopathology, as well as language, cognitive, and biological development over the course of the lifespan (Parfitt & Ayers, 2012). Similarly, there is a well-documented relationship between maternal perinatal mood and anxiety disorders, (which may correlate with psychological adjustment to pregnancy) and psychopathology in offspring, including attachment disorders, mood and anxiety disorders, and ADHD (Ben-Shlomo, Scharf, Miller, & Mathews, 2016; Capron et al., 2015). However, how women psychologically adjust to pregnancy has not been widely examined and may be an important mechanism through which psychopathology is transmitted from one generation to the next. The aim of the current study is to better understand and characterize psychological adjustment to pregnancy as an important first step in understanding and predicting difficulties with bonding and maternal mental health in the postpartum.

**Methods:** Women’s qualitative experiences of pregnancy and the postpartum were explored among women from the Sussex Journey to Parenthood Study (United Kingdom), a longitudinal study designed to examine the psychological transition to parenthood from pregnancy to the postpartum among first-time parents. Women’s qualitative experiences of pregnancy, parenting, and mental health were measured using the Birmingham Interview of Maternal Mental Health (BIMMH, 5th ed.; Brockington, Chandra et al., 2006). This semistructured clinical interview assesses pre- and postnatal mental health disorders as well as the social and psychological experiences of pregnancy, birth, and becoming a parent. Interview data from 46, English-speaking women, expecting their first child were transcribed and examined for relevant psychological themes. Qualitative template analysis was conducted using NVivo 12 software.

**Results:** Common themes arose in multiple domains, including 1. Bodily Fusion vs. Separation, 2. Bodily Plasticity, 3. Bodily Control, 4. Bodily Pride and Satisfaction, 5. Fear of Bodily Injury or Death. Additional themes also emerged from the interview data, and will be commented upon further. It appears that psychological changes during pregnancy are clearly identifiable, and may be related to the biological changes involved in each stage of pregnancy and the postpartum.

**Conclusions:** Understanding the normative and atypical psychological changes which occur during the transition to motherhood is vital for supporting maternal and infant mental health. By understanding and recognizing common psychological themes which may be particularly important and common during pregnancy and the postpartum, we have the ability to more effectively support our patients in successfully navigating this transition.
PRESENTATION CANCELED BY AIAUTHOR - MATERNAL PREGNANCY-RELATED DISTRESS AND SENSITIVE CAREGIVING DURING THE TRANSITION TO MOTHERHOOD

Pamela Scorza1, Emily Merz1, Marisa Span1, Emily Steinberg2, Tianshu Feng1, Seonjoo Lee1, Elizabeth Werner1, Bradley Peterson3, Catherine Monk1

1 Obstetrics & Gynecology, Columbia University, 2 Fordham University, 3 University of Southern California

Objective: Higher parental stress has repeatedly been associated with reduced parental sensitivity during parent-child interactions. However, few studies examine prenatal distress as a predictor of postnatal caregiving sensitivity, particularly in disadvantaged populations. The goals of this study were to assess in a high-risk sample of adolescent mothers whether specific aspects of pregnancy-related distress are associated with postnatal maternal caregiving sensitivity, and whether maternal childhood trauma is associated with pregnancy-related distress.

Methods: Healthy, nulliparous pregnant adolescents (N = 244; 90% Latina) reported on their pregnancy-related distress and childhood trauma. Videotaped observations of mother-child interactions during free play at 14 months postpartum (n = 75) were coded for maternal warmth and contingent responsiveness. Confirmatory factor analysis assessed a three-factor model of pregnancy-related distress, with a priori hypothesized factors including worry about social and economic context, worry about baby health, and worry about physical symptoms associated with pregnancy. Associations between childhood trauma, prenatal distress factors, and caregiving sensitivity were tested.

Results: Greater maternal worry about social and economic context and about physical symptoms of pregnancy were each significantly associated with reduced maternal warmth but not contingent responsiveness. Maternal childhood trauma was significantly associated with higher levels of all three types of pregnancy-related distress. These results portray a finer-grained picture of prenatal distress and encourage further studies on how this trans-diagnostic construct is related to caregiving sensitivity and early child outcomes in at-risk mother-infant dyads. These findings can inform translational intervention research, helping to pinpoint specific intervention components that improve early mother-child relationships for at-risk dyads.

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Author Declaration: The authors declare no conflicts of interest.

OUTCOMES OF MATERNAL STRESS AS EVALUATED BY THE PERCEIVED STRESS SCALE

Anne Porter1, Sharon Hunter2, Zach Johnson2, Robert Freedman2, M. Camille Hoffman1

1 Obstetrics and Gynecology Division of Maternal-Fetal Medicine, 2 Psychiatry, University of Colorado

Objective: Stress during pregnancy, in particular during the first and second trimesters, leads to adverse pregnancy outcomes (APOs), including preterm birth and small for gestational age neonates. It is also highly correlated with perinatal depression, another risk factor for APOs. The Perceived Stress Scale (PSS) is common among various psychological and physiologic measures of stress. However, as stress is complex, data on the association of various stress measures with APOs has been inconsistent. It can therefore be difficult to identify patients that may benefit from stress-reduction interventions. The objective of this study was evaluate the association between an elevated second trimester PSS with adverse perinatal outcomes as well as other measures of stress.

Methods: Women were enrolled from perinatal clinics at a safety net hospital in Denver, Colorado at <16 weeks gestation and followed prospectively through delivery. Measures of stress included: the PSS, the Center for Epidemiologic Studies Depression Scale (CESD), and the State-Trait Anxiety Inventory (STAI), completed at 16, 22, 28, 34 and 40 weeks gestation. Physiologic measures of stress included hair corticosteroid concentrations representative of 1st, 2nd, and 3rd trimester total corticosteroid production and both maternal and fetal heart rate variability (HRV) measures were recorded at 28-32 weeks gestation in a sub-set of participants. Maternal sociodemographic data and birth data were also collected.

Results: Of 221 participants, the average PSS at 16 weeks was 23 ± 8, range 4-52. The PSS at 16 weeks was negatively correlated with: birthweight (r=-0.21, p=0.001), and gestational age at birth (r=-0.17, p=0.007) and positively correlated with: trait anxiety (r=0.59, p<0.0001) and both state anxiety (r=0.67, p<0.0001), and maternal depressive symptoms at 16 weeks (r=0.72, p<0.0001). No significant correlations were found...
between the PSS and maternal hair corticosteroids or maternal HRV measures. No correlation was noted between hair corticosteroids and HRV measures and APOs.

**Conclusions:** The PSS is an important tool for assessing stress during pregnancy with elevated scores associated with adverse outcomes. It may be used to identify patients at higher risk of such outcomes in whom interventions to alleviate stress may be beneficial.

- **IMPROVING ACCESS TO PERINATAL MENTAL HEALTH IN RURAL COMMUNITIES: HOW TO ASSESS NEEDS AND IMPLEMENT A SOLUTION**
  Marley Doyle, M.D., Sharon Hammer, M.D., Leigh Cook, APRN
  *University of Nebraska Medical Center (UNMC)*

  **Objective:** Approximately 10-15% of women experience perinatal mood and anxiety disorders. Guidelines recommend screening at least once during the perinatal period, yet only 20-25% of women who screen positive receive treatment. Limited access to perinatal mental health services is a likely factor contributing to the treatment cascade with rural communities are at particular risk. Several evidence-based access models exist, but we wanted to evaluate which best fit our state’s unique needs. The aim of our study was to identify a reproducible approach to complete a needs assessment and implement an access model for perinatal mental health in rural communities.

  **Methods:** We completed a literature search in PubMed, PsychINFO and Google Scholar to identify any studies examining maternal behavioral health services in rural settings. We performed a state workforce analysis using data from the Department of Health and Human Services and Behavioral Health Education Center of Nebraska to identify which counties had the highest number of births and compared this to the number of behavioral health providers. We then identified and surveyed three obstetric clinics in rural areas to determine their preferences.

  **Results:** In Nebraska, 88 out of 93 counties are considered mental health provider shortage areas, and 32 have no behavioral health provider. In rural communities, primary care providers and obstetricians deliver all mental health care. When assessed, providers preferred live consultation or telehealth consultation over other access models.

  **Conclusions:** Women in rural communities have limited access to behavioral health services and often have no access to perinatal mental health. A telepsychiatry consultation model was the preferred method of receiving specialty care according to obstetric providers.

- **LONGITUDINAL REMOTE CONSULTATION TO SUPPORT ENGAGEMENT STRATEGIES IN PERINATAL COLLABORATIVE CARE**
  Amritha Bhat, Ian Bennett, Amy Bauer, Jurgen Unutzer
  *Psychiatry and Behavioral Sciences, University of Washington*

  **Objective:** Collaborative Care (CC) is an integrated mental health treatment that improves perinatal depression outcomes. (1, 2) Within CC, engagement (frequency of contact between the Care Manager (CM) and the patient) is associated with improved depression outcomes. (3) We explore engagement strategies utilized by CMs.

  **Methods:** This is a mixed methods analysis of data from a trial comparing Longitudinal Remote Consultation (LRC) to standard implementation. In LRC a CC expert joins the systematic case review (SCR) between psychiatric consultant and CM. We used data from LRC feedback forms for a thematic content analysis of discussions of engagement strategies.

  **Results:** Thirty nine LRC-SCR sessions from five clinics showed that 81.6% (40/49) discussions surrounded the process of engagement (e.g. registry use, phone use). While most engagement strategies discussed (36/49; 73.5%) are applicable to all populations (e.g. motivational interviewing techniques), strategies specific to the perinatal population included increased outreach in the postpartum period, warm connection with CM at baby’s well child visit (WCV), and greater utilization of phone and texting closer to expected date of delivery (EDD).

  **Conclusions:** The perinatal context may lead to engagement barriers but there are also strategies that can be deployed within CC that are unique to this population. The patient registry is a critical tool in helping CMs manage their time as they engage a high risk population. Specific perinatal healthcare encounters such as EDD
and WCV were leveraged. Future research should explore LRC as a means of supporting the use of patient engagement strategies and association with patient outcomes.

**Funding:** NIMH 108548; PI Bennett (NCT02976025)

**References:**

- **THE EARLY RELATIONAL HEALTH SCREENER: A PILOT STUDY OF EVALUATING THE IMPACT OF A MOTHER-CHILD RELATIONAL HEALTH INTERVENTION DELIVERED ON AN INPATIENT PERINATAL PSYCHIATRY UNIT**

  Amanda B. Sanders¹, Erin Richardson¹, Maria Muzik², Katherine Rosenblum², Mary Claire Kimmel¹

  ¹Psychiatry, University of North Carolina, ²Psychiatry, University of Michigan

  **Objective:** Perinatal mood and anxiety disorders (PMAD) can have negative effects on the mother–child relationship, leading to child emotional, cognitive, and behavioral development problems. Assessment and development of interventions, particularly with severe PMAD, have been limited and require more research.

  **Methods:** Women admitted to University of North Carolina’s Perinatal Psychiatry Inpatient Unit (PPIU) fill out the self-assessment Postpartum Bonding Questionnaire (PBQ) at admission and those scores have been analyzed with descriptive statistics. UNC’s IRB have approved a study of the Early Relational Health Screener (ERHS), a brief observed play interaction between mother and child with a standard set of toys, on the PPIU. Women-child pairs are randomized to verbal-only or verbal plus video feedback of the ERHS, administered at admission and discharge. Clinicians, mothers and nursing complete questionnaires about the dyadic relationship at each assessment to compare to the ERHS’s formalized assessment. Mothers additionally complete a questionnaire about their perception and acceptability of the ERHS.

  **Results:** From December 2017 to March 2019, women admitted to the unit demonstrated impaired bonding with their child as evidenced by a mean score of 14.4 (N=49) on the Impaired Bonding subscale of the PBQ, where scores greater than 12 raise concerns. ERHS results will be completed late summer as women on the unit complete the intervention.

  **Conclusions:** Women admitted to the unit subjectively have impaired bonding with their child. This study will determine the feasibility and acceptability of performing the ERHS as a tool for formalized identification and intervention for the mother-child relationships.

**Schedule:**

- **11:30am – 12:15pm**  
  Poster Viewing with Authors

- **12:15pm - 1:00pm**  
  Lunch
### Concurrent Sessions

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| Symposium **Barriers and Innovations in Implementation of Integrated Perinatal Mental Health Services to Underserved Women** | Symposium **From Bench to Bedside: Neurosteroids in the Treatment of Postpartum Depression – A Review of Animal Studies, Clinical Trials and a Panel Discussion** | 5C1: Symposium **Clinical and Research Advances in Maternal Mental Health of Women Veterans** | 5D1: Symposium **Antidepressants in Pregnancy: Concerns and Controversies** | Chair: Margaret Howard

**Chair:**

**Concurrent 5A**

**Grumman Auditorium**

**Symposium**

**Barriers and Innovations in Implementation of Integrated Perinatal Mental Health Services to Underserved Women**

**Chairs:** Ellen Poleshuck,¹ & Catherine Monk²

1. University of Rochester Medical Center; 2. Columbia University

**Objective**

Integrating mental health services into the delivery of obstetrical care is widely accepted as optimal. Yet most practices continue to be unable to incorporate integrated care models and most perinatal women continue to fail to receive treatment for their mental health needs. The purpose of this symposium is to identify common barriers that contribute to poor engagement of perinatal women in integrated care, and to present innovative approaches to improving reach by targeting engagement, retention, and outcomes, especially among women with socioeconomic disadvantage.

**Methods**

The first two speakers will describe their studies on financial sustainability and real-life practice implementation of depression screening among perinatal women. The second two speakers will describe their studies on engagement and retention strategies, and on the comparative effectiveness of a community health worker intervention and a facilitated referral intervention.

**Results**

Practical barriers to implementation of integrated perinatal mental health services identified by Dr. Monk’s group included insurance billing and lack of financially sustainable models. Unmet needs identified by Dr. Tourtelot’s group included lack of provider education, insufficient infrastructure, and competing clinical demands. Dr. Lenze and colleagues’ work suggests that strategies for engagement and retention need to be personalized to different clinics as well as to different patients. Dr. Poleshuck’s team found that both community health workers and facilitated referral were associated with improved outcomes.

**Conclusions**

While there are substantial barriers to implementing integrated models of care, some of these barriers can be mitigated by improving personalization via clinical- and patient-level interventions.

**SUSTAINABILITY OF INTEGRATED MENTAL HEALTH AND OBSTETRIC CARE PROGRAMS: A COMMENTARY ON THE CURRENT LANDSCAPE**

Adam Sands, BA, and Catherine Monk, PhD

*Columbia University, New York, NY*

**Objective:**

Untreated perinatal depression is associated with a range of negative outcomes for both mothers and children, but women inconsistently receive mental health care, even when insured. Integrating primary and mental health care has been shown to improve both access to treatment and
depression outcomes, and evidence suggests obstetric care similarly benefits from integration. We reviewed the literature to assess the potential for long-term sustainability of integrated mental health (IMH) and obstetric care.

**Methods:** A review of the literature was conducted according to PRISMA guidelines for original research on IMH interventions in outpatient obstetric care settings that included discussion of costs and/or funding mechanisms. This review was supplemented by a description of the challenges encountered by an IMH program at a major US medical center.

**Results:** Few recent studies of IMH interventions in obstetric care have included a discussion of costs and financing. Most interventions appear to rely on grant or institutional support, rather than traditional payer reimbursement. Illustrative of this issue, an IMH program at a large US medical center has faced challenges including many referred patients having to utilize out of network care, and a lack of reimbursement for care management activities.

**Conclusions:** Despite evidence that poor mental health raises long-term medical costs and that IMH programs can be cost-effective, current reimbursement structures make financial sustainability challenging. Several primary care IMH programs have achieved sustainability, but transferring this success to obstetric settings will require increased engagement with insurance companies and other stakeholders to promote alternative payment models.

**POSITIVE DEPRESSION SCREEN AT THE FIRST PRENATAL VISIT: WHAT REALLY HAPPENS NEXT?**

Ellen Tourtelot MD,1 Jasmine Davis MS,1 Nicole Trabold PhD,2 Ellen Poleshuck PhD1,3

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2. College of Health Sciences and Technology, Rochester Institute of Technology
3. Department of Psychiatry, University of Rochester

**Introduction:** Universal depression screening during pregnancy is recommended, yet limited training and guidance exists to respond to a positive screen. Our aim was to evaluate how providers in a busy urban practice with universal depression screening documented their responses to a positive screen and to explore patient expectations and attitudes towards a positive screen.

**Methods:** We conducted semi-structured interviews of 20 pregnant women within 10 days of a positive depression screen or self-harm ideation on the Edinburgh Perinatal Depression Scale and reviewed medical record documentation. Qualitative data were entered into a meta-matrix and cross-case analysis was used to reduce the data and determine prominent patterns and themes.

**Results:** Ninety percent of participants reported discussing their mood with their provider and 90% had documentation of a discussion by their provider. Forty four percent who endorsed thoughts of self-harm had documentation of a discussion regarding their response. Ninety percent were recommended for psychotherapy and successful linkage to psychotherapy occurred for 39%. Overall 50% of participants had treatment for mood. Most participants appreciated their provider acknowledging and discussing their mood and offering help. Seventy five percent of participants wanted and expected follow up of their mood, and 40% had discussion of mood documented at the second prenatal visit. Discussion was not dependent on seeing the same provider.

**Conclusion:** Obstetric providers need more education and support on how to follow up with a positive depression screen. A dedicated person to help providers with assessments, phone outreach and coordination of referrals may improve linkage to care.

**Acknowledgements:** This research was funded by a pilot grant from the University of Rochester Department of Obstetrics and Gynecology.

**INTERVENTIONS FOR WOMEN’S HEALTH PATIENTS WITH DEPRESSION AND UNMET SOCIAL NEEDS: RESULTS FROM THE ROSE COMPARATIVE EFFECTIVENESS TRIAL**

Ellen Poleshuck, PhD;1,2 Marsha Wittink, MD, MBE;1,3 Hugh Crean, PhD;4 Iwona Juskiewicz, MD, MPH;1 Elaine Bell, LPN;1 Amy Harrington, MD;2 Catherine Cerulli, JD, PhD1,5

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Introduction: Despite increasing recognition that unmet social needs must be addressed along with depression in women's health patients, limited guidance exists. We aimed to evaluate two interventions: Enhanced Screening and Referral (ESR), a screening intervention with facilitated referral and follow-up calls, and Personalized Support for Progress (PSP), a community health worker (CHW) intervention tailored to women's priorities.

Methods: Women ≥ 18 years were screened for elevated depressive symptoms in three women's health clinics serving primarily Medicaid-eligible patients. Women were randomized to ESR or PSP, and pre- and post-intervention assessments were conducted. Primary outcomes were satisfaction, depression, and quality of life (QOL). The role of pregnancy status as a potential moderator and subgroup differences were also explored.

Results: A total of 235 women were randomized; 54% identified as African American, 19% as White, and 15% as Latina. Mean age was 30 years; 77% reported annual incomes below US $20,000/year; and 30% were pregnant at enrollment. Women in both arms found the interventions satisfactory and improved for depression (p < .001); there were no differences by pregnancy status. There were no differences between groups for the primary outcomes. Subgroups reporting greater improvement in QOL in PSP compared to ESR included participants with baseline anxiety (p = 0.05), lack of access to depression treatment (p = 0.02), pain (p = 0.04), and intimate partner violence (p = 0.02).

Conclusions: Clinics serving women with depression and unmet social needs may find benefit from offering PSP or ESR. Distinguishing how best to use these interventions in practice is a next step.

Acknowledgements: This research was supported by Patient Centered Outcomes Research Institute Program Award (AD-12-4261). All statements in this abstract, including its findings and conclusions, are solely those of the authors and do not necessarily represent the views of the Patient-Centered Outcomes Research Institute, its Board of Governors or Methodology Committee. The research also was supported by the University of Rochester CTSA award number UL1 TR000042 from the National Center for Advancing Translational Sciences of the National Institutes of Health. The content does not necessarily represent the official views of the National Institutes of Health.

SUCCEESSES AND CHALLENGES ENGAGING PREGNANT WOMEN WITH LOW-INCOMES INTO MENTAL HEALTH CARE: FINDINGS FROM CLINICAL TRIALS AND CLINICAL PRACTICE

Shannon Lenze, PhD, Tara Tinnin, MSW, and Cynthia Rogers, MD
Washington University in St. Louis School of Medicine

Objective: Engaging women into psychiatric or psychosocial treatment during pregnancy has been a significant challenge, despite increased awareness of the importance of perinatal mood and anxiety disorders. The goal of this presentation will be to compare and contrast engagement strategies we have implemented for both research and clinical programs in an OB-Gyn clinic serving majority African American women with low-incomes.

Methods: The Mommy-Baby Study randomized pregnant women meeting criteria for depressive disorders to enhanced treatment as usual (ETAU) or brief interpersonal psychotherapy (IPT-Dyad) up to 12 months postpartum. The Perinatal Behavioral Health Service (PBHS) was initiated in the same OB-Gyn clinic after completion of this clinical trial. PBHS provides comprehensive screening and referrals to psychotherapy (co-located or separate clinic) or psychiatry (separate clinic).

Results: Thirty-four percent of referred, eligible women enrolled into the study. Depression scores significantly decreased in both groups with over 90% retention in the study during pregnancy. High rates of attrition (30-40%) occurred during the postpartum follow-up. Similar patterns in PBHS treatment occurred: 20-36% attended initial appointments during pregnancy with substantial subsequent drop-out. Recent changes in PBHS’s referral policy, therapy availability/location, and cancellation policies have shown dramatic improvements in initial engagement into treatment with up to 73% of women initiating treatment; though with continued drop-out (60% attend <3 appointments).

Conclusions: Flexibly delivered, co-located mental health care can improve engagement into treatment. Maintaining engagement into care continues to be a challenge, especially during the postpartum period. More research is needed to improve treatment initiation and maintenance.
**Acknowledgements:** Support for this project was provided by the National Institutes of Health grant # NIMH K23 MH090245 (Lenze, PI) and the Washington University School of Medicine Department of Psychiatry Center for Brain Research in Mood Disorders (Lenze), and the Missouri Foundation for Health.

Concurrent 5B  
**Dogwood Room**  
Symposium  
**From Bench to Bedside: Neurosteroids in the Treatment of Postpartum Depression-- A Review of Animal Studies, Clinical Trials and a Panel Discussion**  
Jamie Macuire, PhD, *Tuft University, Boston, Massachusetts*  
Kristina Deligiannidis, MD, *Zucker Hillside and Northwell Health, New York*  
Samantha Meltzer-Brody, MD, *The University of North Carolina at Chapel Hill*  
Connie Guille, MD, *The Medical University of South Carolina, Charleston, South Carolina*  
C. Neill Epperson, MD, *The University of Colorado, Denver, Colorado*  

**Overall Abstract:** This symposium will focus on a bench to bedside discussion of neurosteroids in the treatment of postpartum depression that begins with laboratory pre-clinical work and ends with a panel discussion about a new FDA approved medication for postpartum depression.  
**Speaker 1** will review preclinical research that examines GABAergic regulation of the HPA axis and how this science can be applied to develop novel pharmacologic treatments.  
**Speaker 2** will discuss work demonstrating that abnormalities in functional connectivity (FC) and dysregulation of neuroactive steroidogenesis and/or their interaction with GABA are implicated in perinatal depression (PND). She will also discuss how this mechanism is relevant in the development of novel therapies and discuss the conduct of clinical trials including a new oral agent for postpartum depression.  
**Speaker 3** will review integrated clinical trial data on brexanolone, a positive allosteric modulator of GABA-A that was recently approved by the FDA as the first pharmacologic treatment specifically for postpartum depression.  
**Panel Discussion:** The final session of this symposium is a panel discussion of risks and benefits associated with administration of brexanolone in clinical practice. The goal is to have a thoughtful and informed discussion about the risks, benefits and logistical considerations for administration of brexanolone as well as the steps needed to ensure compliance with the FDA mandated safety program. The panel will discuss the issues around planning for use of brexanolone (Zulresso) as a treatment tool. *This symposium will be conducted without any pharmaceutical representatives present in the audience to ensure an unbiased discussion.*

**PRECLINICAL STUDIES IMPLICATE HPA AXIS DYSREGULATION IN THE UNDERLYING NEUROBIOLOGY OF POSTPARTUM DEPRESSION**  
Jamie Macuire  
*Tufts University School of Medicine, Neuroscience Department, Boston, MA USA*  

**Objective:** The association between altered stress hormone levels in postpartum depression (PPD) in clinical studies has been inconclusive. To better understand the role of the hypothalamic-pituitary-adrenal (HPA) axis in PPD, our laboratory has employed preclinical PPD models.  

**Methods:** We examined HPA axis function throughout the peripartum period in two mouse models exhibiting abnormal postpartum behaviors, including depression-like behaviors restricted to the postpartum period and deficits in maternal care. We also utilized these models to examine the therapeutic effects of a novel, synthetic neurosteroid developed by SAGE Therapeutics, SGE-516.  

**Results:** Increased stress-induced elevations in corticosterone levels during the peripartum period was observed in both preclinical PPD models. DREADDs were utilized to inappropriately activate the HPA axis during the postpartum period which was sufficient to induce abnormal postpartum behaviors. Conversely, inhibiting inappropriate activation of the HPA axis in preclinical PPD models improved maternal care and decreased depression-like behaviors. Treatment with SGE-516, was effective at decreasing depression-like behaviors and improving maternal care in these preclinical PPD mouse models; whereas, the benzodiazepine, clobazam, was ineffective.  

**Conclusions:** The only commonality between these two unique preclinical models of PPD is the inability to suppress the stress-induced activation of the HPA axis during the peripartum period, providing direct
evidence for HPA axis dysregulation in the underlying neurobiology of PPD. Treatment with SGE-516 decreased postpartum depression-like behaviors and improved maternal care in two independent preclinical models of PPD, validating the use of these preclinical models in testing the therapeutic potential of novel treatments for PPD.

Acknowledgements: This work was supported in part by a Sponsored Research Agreement with SAGE Therapeutics.

NETWORK CONNECTIVITY, NEUROACTIVE STEROIDS AND GABA IN THE PATHOPHYSIOLOGY AND TREATMENT OF PERINATAL DEPRESSION: RESULTS FROM NIH-FUNDED STUDIES AND FROM A PHASE 3, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF ORAL SAGE-217

Kristina M. Deligiannidis1,2,3,4, Christina L. Fales2, Aimee R. Kroll-Desrosiers5, Scott A. Shaffer6, Constance M. Moore4

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Background: Abnormalities in functional connectivity (FC) and dysregulation of neuroactive steroidogenesis and/or their interaction with GABA are implicated in perinatal depression (PND). Recently novel therapeutics in this area have been examined in PND. We examined the relationships between neuroactive steroids (NAS), GABA and FC in PND. We separately collaborated with Sage Therapeutics to conduct the first double-blind, placebo-controlled trial of oral SAGE-217, a NAS analog, in PND.

Methods: NIH studies: Prospective studies evaluated 109 perinatal women. Serial mood/anxiety ratings and phlebotomy were completed across 5 visits. Healthy comparison women (HCW, n=28) and women with PND (n=25) completed an fMRI/spectroscopy scan. NAS were analyzed by mass spectrometry. Clinical trial: 151 women with severe PND were randomized 1:1 to receive SAGE-217 30mg or placebo capsules for 14 days, with follow-up through Day 45.

Results: NIH studies: NAS concentrations differed in HCW vs. PND. An area of the default mode network (DMN) had greater FC with the rest of the network in PND (p=0.002) and was correlated to HAM-D (r=+0.661, p=0.001). Plasma ALLO was positively correlated with DMN connectivity in PND (r=+0.794, p=0.000). Clinical trial: Differences in HAMD-17 score reductions by SAGE-217 vs. placebo were observed on Day 3 (-12.5 vs. -9.8; p=0.0255) and maintained through four-week follow-up (-19.2 vs. -15.1; p=0.0027).

Conclusions: Altered DMN FC in PND was related to plasma ALLO and depression severity. SAGE-217 administration was associated with sustained reduction in depressive symptoms.

Acknowledgments: NIH-studies: 5K23MH097794 and UL1TR000161 (Deligiannidis); Clinical trial: Sage Therapeutics provided funding to the Feinstein Institute for Medical Research to conduct the clinical trial of SAGE-217.

EFFICACY AND SAFETY ANALYSES FROM DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED TRIALS OF THE GABAa RECEPTOR MODULATOR BREXANOLONE IN POSTPARTUM DEPRESSION

Presenter: Samantha Meltzer-Brody, MD, MPH (Department of Psychiatry, Campus Box # 7160, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27599

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1 University of North Carolina School of Medicine, Chapel Hill, NC
2 Sage Therapeutics, Cambridge, MA
3 Atlanta Center for Medical Research, Atlanta, GA
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Background: Postpartum depression (PPD) is common and confers substantial morbidity. We assessed brexanolone injection, a positive allosteric modulator of γ-aminobutyric-acid type A (GABAA) receptors, for the treatment of moderate to severe postpartum depression.

Methods: Data from three pivotal studies (Studies A, B and C) in women aged 18-45 years, ≤6 months postpartum, with PPD by 17-item HAM-D were pooled for analysis. Subjects were randomized 1:1 to receive PBO or brexanolone 90 μg/kg/hour (BRX90) in Studies A and C. In Study B, randomization was 1:1:1 to PBO, BRX90, or 60 μg/kg/hour (BRX60). Study drug was administered as a 60-hour infusion. The HAM-D was the efficacy assessment measure.

Results: Subjects had a 60-hour infusion: BRX90, N=102; BRX60, N=38; and PBO, N=107. Analysis of pooled results showed significantly larger mean reductions from baseline in HAM-D total scores with BRX90 (-17.0; p<0.001) and BRX60 (-19.1; p<0.001) versus PBO (-12.8) at Hour 60. The significant reductions from baseline in HAM-D with BRX were maintained through Day 30 (BRX90 -16.9, p=0.021; BRX60 -19.0, p=0.003; PBO -14.3). At Hour 60, BRX90 and BRX60 groups had statistically significant higher rates of HAM-D responders (≥50% reduction in total score) than PBO (BRX90 p=0.0003; BRX60 p=0.0007). BRX was generally well tolerated relative to PBO. Most common adverse events for BRX included headache, dizziness, and somnolence.

Conclusions: Brexanolone injection for PPD resulted in significant and clinically meaningful reductions in HAM-D total score at 60 h compared with placebo, with rapid onset of action and durable treatment response throughout the study period.

Funding Source: Sponsored Research Agreement with Sage Therapeutics

Panel Discussion: Kristina Deligiannidis, C. Neill Epperson, Connie Guille, Samantha Meltzer-Brody

CONSIDERATIONS AROUND BREXANOLONE (ZULRESSO) AS A TREATMENT TOOL FOR POSTPARTUM DEPRESSION: A PANEL DISCUSSION FOCUSED ON SHARING EXPERIENCE OF PARTICIPATING IN CLINICAL TRIALS AND REVIEWING THE BENEFITS AND RISKS ASSOCIATED WITH OFFERING THIS NEW TREATMENT IN CLINICAL PRACTICE

Chair of Panel Discussion: C. Neill Epperson

Objective: On March 19, 2019, the U.S. Food and Drug Administration (FDA) approved brexanolone (Zulresso) injection for the treatment of postpartum depression (PPD). Brexanolone is an allosteric modulator of both synaptic and extra-synaptic GABAA receptors. The GABA pathway may play a key role in PPD. As a new treatment modality, most clinicians will not have had experience with administration of brexanolone. There is a great need for sharing of experience from those clinicians that participated in the clinical trials and a thoughtful panel discussion of the benefits and risks of this new treatment.

Methods: Four investigators that participated in the clinical trials will share experience in the administration of brexanolone. We will discuss the FDA requirement that brexanolone be administered under a Risk Evaluation and Mitigation Strategy (REMS) in a medically supervised setting that provides monitoring to mitigate the risk of serious harm resulting from excessive sedation and sudden loss of consciousness during the brexanolone infusion.

Results: The goal is to have a thoughtful and informed discussion about the risks, benefits and strategies for administration of brexanolone as well as the steps needed to ensure compliance with the REMS program. The panel will discuss the issues around planning for use of brexanolone (Zulresso) as a treatment tool.

Conclusions: At the end of this discussion, participants will have an increased understanding of the clinical and logistical aspects for administration of brexanolone that meet FDA requirements. This panel will be conducted without pharmaceutical representatives present in the audience to ensure an unbiased discussion.
Concurrent 5C
Redbud A Room

5C1: Symposium
Clinical and Research Advances in Maternal Mental Health of Women Veterans
Chair(s) Name (underlined)
Geetha Shivakumar, MD, MSCS
VA North Texas Health Care System and UT Southwestern Medical Center
Aimee Kroll-Desrosiers, PhD
University of Massachusetts Medical School
Carolyn Morrow, MD
VA North Texas Health Care System

Overall Objective: Women Veterans constitute 8% of the Veteran population in US military services and they are projected to reach 11% by the year 2020. Women aged 18 to 44 years are the fastest growing demographic of new Veterans Affairs (VA) health care users. This significant increase in women Veterans of childbearing age engaging in care at the Veterans Health Administration (VHA) has led to reevaluating their clinical needs, especially around reproductive health such as pregnancy and postpartum care. The overall objective of this symposium is to identify areas of clinical need in the management of major psychiatric conditions during the perinatal period for women Veterans and highlight studies that are currently underway to advance our knowledge toward improving maternal mental health outcomes within the VHA system.

CURRENT KNOWLEDGE AND COMPLEXITIES OF CLINICAL MANAGEMENT OF MAJOR PSYCHIATRIC CONDITIONS IN PREGNANT AND POSTPARTUM WOMEN VETERANS
Geetha Shivakumar, MD, MSCS
VA North Texas Health Care System and UT Southwestern Medical Center

Treatment of mental health conditions in women Veterans is not considered comprehensive without adequate examination of the impact of reproductive events across the life span, such as their menstrual cycle, pregnancy and postpartum period, and menopausal transition. Psychiatric conditions during pregnancy and postpartum in the general population have been linked to numerous negative consequences in health of mother and her off-spring. The fundamental question that needs to be answered is whether perinatal psychiatric diagnoses of PTSD and major depression have a differential impact for women veterans. If so, how and why these issues are different? The overarching aim of this clinical presentation is to discuss emerging clinical issues in managing common psychiatric conditions such as PTSD and major depression during pregnancy and postpartum period in the VA health care system and, secondly, to propose a conceptual framework and practical steps to managing these complex issues. Information to be gained in this area has immediate clinical application in the overall management of major psychiatric conditions in women veterans during pregnancy and postpartum, identifies critical gaps for further research and has implications for policy-making decisions.

DEPRESSION SYMPTOMS AND MENTAL HEALTH CARE UTILIZATION IN A SAMPLE OF PREGNANT VETERANS RECEIVING VETERANS HEALTH ADMINISTRATION CARE
Aimee Kroll-Desrosiers, PhD
University of Massachusetts Medical School

OBJECTIVES: Depression is the most commonly diagnosed medical condition among women veterans ages 18-44; however, depression during pregnancy has not been well-studied in this population. Our objective was to understand the rates and correlates of depression, as well as mental health care engagement at the Veterans Health Administration (VHA), in a sample of pregnant veterans.

METHODS: Pregnant veterans (n=501) were recruited from 15 VHA sites. Sociodemographic, military, pregnancy related factors, and the Edinburgh Postnatal Depression Scale (EPDS) were collected. Healthcare utilization data were obtained from electronic medical records. We used multivariable logistic regression to examine factors associated with an EPDS score suggestive of clinically significant depressive symptoms (>=10).
RESULTS: EPDS >=10 were calculated for 28% of our sample (n=142). Our final model indicated that employment and partner support during pregnancy decreased odds of an EPDS >=10 by 60%. Past diagnoses of anxiety, past antidepressant use, and active duty service resulted in increased odds of an EPDS >=10. Of the women with an EPDS >=10, 70% had 1 or more VHA mental health visits or antidepressant prescriptions during pregnancy. However, women with a history of depression were more likely to receive this care.

CONCLUSIONS: Depression symptomology prevalence in our sample was greater than estimates in the general pregnant population. Pregnant women veterans without a history of depression may be less likely to receive care for depression during pregnancy. However, the majority of our symptomatic veterans had some mental health care during pregnancy, suggesting readily available mental health care for pregnant veterans.

Acknowledgements: This material is based on work supported by the Department of Veterans Affairs, Veterans Health Administration, Office of Research and Development (HSR&D IIR13-81). All authors had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. The views expressed in this article are those of the authors and do not reflect the position or policy of the Department of Veterans Affairs or the United States Government.

RELATIONSHIP BETWEEN PRE-PREGNANCY SYMPTOM(S) TO PREGNANCY AND POSTPARTUM MENTAL HEALTH
Carolyn Morrow, MD
Staff Psychiatrist, VA North Texas Health Care System

OBJECTIVE: Very little is known about impact of pre-pregnancy health for female veterans during their pregnancy and the postpartum period. The overarching aim of this study is to evaluate the pre-pregnancy symptom severity to pregnancy and postpartum mental health.

METHODS: This is an ongoing retrospective chart review of subjects completed a national study COMFORT study between February 2016 and December 2018. Data were collected on demographics, clinical diagnoses (using ICD 9 ad 10 codes), treatment history, and service utilization.

RESULTS: The mean age of the sample (n=23) was 32 and they were of predominantly (52%) of Caucasian race. Seventy percent of sample was married, and the clear majority held either part-time or full-time jobs. Thirteen percent of sample had service-connected disability. Nearly 70% of women had at least one psychiatric condition throughout the perinatal period with major depression as the most prevalent (40%) condition. Women experienced mild clinical symptoms and symptoms did not change across different periods \(F (2, 20) = 1.161, p>0.05\).

CONCLUSIONS: This preliminary study of VA maternity care at Dallas VA showed that most women had at least one documented psychiatric condition and were clinically symptomatic during the pregnancy and postpartum period. Treatment utilization varied from pre-pregnancy to pregnancy and postpartum with higher number mental health visits occurring prior to pregnancy than during and after pregnancy.

BRIDGING THE GAP FOR PERINATAL VETERANS: CARE BY MENTAL HEALTH PROVIDERS AT THE VETERANS HEALTH ADMINISTRATION
Aimee Kroll-Desrosiers, PhD
University of Massachusetts Medical School

OBJECTIVES: Pregnant women veterans receive maternity care from community obstetricians but continue to receive mental health care within the Veterans Health Administration (VHA). Our objective was to explore the experiences of VHA mental health providers with pregnant and postpartum veterans.

METHODS: Mental health providers (n=33) were identified at 14 VHA facilities across the US. Semi-structured interviews were conducted over the phone to learn about provider experiences with perinatal women veterans and their perceptions of depression screening and mental health treatment management for pregnant and postpartum veterans receiving mental health care within the VHA system.

RESULTS: Providers identified absence of screening protocols and referral procedures and variability in risk/benefit conversations surrounding psychotropic medication use as important areas of weakness for VHA mental health care during the perinatal period. Care coordination within facilities, primarily through
Primary Care-Mental Health Integration (PC-MHI) teams, was identified as a main facilitator to promoting better mental health care for perinatal veterans.

**CONCLUSIONS:** Mental health providers caring for veterans during the perinatal period identified several areas where care could be improved, notably in screening and referral processes.

5C2: Symposium

**Using Technology to Prevent and Treat Perinatal Depression**

Sandra Luz Lara-Cinisomo, PhD

*University of Illinois at Urbana-Champaign*

**Objective:** Perinatal depression affects one in eight women in the general population. While this disorder is detectable and treatable, most women go undiagnosed and without intervention. Smartphones, tablets and web-based media have created opportunities for increasing diagnoses and treatment of depression, including in perinatal women. The objective of this symposium is to present findings from four studies that demonstrate promising results using technology to prevent and treat perinatal depression in English- and Spanish-speaking women.

**Methods:** The first study conducted a systematic review to determine the mode of technology used to prevent and treat perinatal depression in African-American and Latina women, who have elevated risk of this disorder due to complex psychosocial stressors. The second study assessed the feasibility of a self-guided, mobile health mindfulness intervention to reduce depressive symptoms in perinatal women. The third investigation used text messaging with low-income, Spanish-speaking postpartum women to reduce depression and anxiety symptoms. The fourth study evaluated the feasibility of enhancing an evidence-based intervention using text messaging.

**Results:** Feasibility was demonstrated across all four studies, with telephone-based interventions as the most commonly used mode of technology. The results also suggest that language preference and income are not barriers to using technology to prevent and treat perinatal depression.

**Conclusions:** The affordability and accessibility of smartphones has created unmatched opportunities to meet the mental health needs of mothers from diverse backgrounds, making the treatment of depression more feasible than ever. This symposium will highlight elements of technology-based interventions that show promise.

**EXPLORING MODES OF TECHNOLOGY USED IN PREVENTING AND TREATING PERINATAL DEPRESSION AND ANXIETY IN LATINA AND AFRICAN-AMERICAN WOMEN**

Andrea Ramirez, BS1, Maria Rosales, MA2, Ailinna A. Barrera, PhD2, Sandra Luz Lara-Cinisomo, PhD1

1 *University of Illinois at Urbana-Champaign, College of Applied Health Sciences, Department of Kinesiology and Community Health*
2 *Palo Alto University*

**Objective:** Latina and African-American women have elevated risk of perinatal depression and anxiety due to high exposure to psychosocial stress. While mental health disparities persist, the digital divide has significantly closed in recent years. African-American and Latinas use smartphones and tablets at similar rates, making technology-based interventions feasible with these populations. However, it is unclear which modes of technology are being used to prevent and treat perinatal depression and anxiety in these women. This study aims to address this gap in the literature.

**Methods:** This systematic review used PubMed, CINAHL, PsycINFO, PsycARTICLES, Academic Search Ultimate (EBSCO), and Social Services Abstracts to identify English and Spanish language peer-reviewed articles that use technology (e.g., smartphones, phone, web-based, etc.) to prevent and/or treat depression and/or anxiety in Latina and/or African-American women. To be eligible for inclusion, studies must have had at least 50% Latina and/or African-American samples. The review was conducted between November 2018 and March 2019, with no set publication start date.

**Results:** Eight of 59 studies were included in the systematic review. Samples ranged 9 to 111 adolescent and adult women. Most studies included African-American women; two studies focused exclusively on Latinas. The most common mode of technology were phone-based apps (5 of 8), followed by web-based interventions (2 of 8), and phone conversations (1 of 8). All studies addressed depressive symptoms or depression; none tackled anxiety. Findings demonstrate the acceptability and feasibility of these technologies.

**Conclusions:** Phone-based applications are a promising tool with Latinas and African-American women with perinatal depression.
mHEALTH MINDFULNESS INTERVENTION FOR WOMEN WITH PERINATAL DEPRESSION: A PILOT STUDY WITHIN AN INTEGRATED HEALTH CARE SYSTEM

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Objective: Mindfulness-based interventions have been shown to reduce depressive symptoms in pregnant women, however no previous studies have investigated the effectiveness of self-paced mobile-delivered mindfulness interventions. We conducted a pilot study to test the feasibility of a mobile health (mHealth) mindfulness intervention for women with perinatal depression.

Methods: Single-arm trial within Kaiser Permanente Northern California (KPNC). Participants were identified through KPNC’s universal perinatal depression screening program. Inclusion criteria: PHQ-8 score ≥10, English speaking, <28 weeks gestation or <6 months postpartum, and no regular mindfulness or meditation practice. Participants were asked to follow a self-guided, 6-week mindfulness meditation using a mobile app, Headspace™, for 10-20 minutes/day. Patient-reported outcomes were obtained before and after the intervention.

Results: To date, 23 prenatal and 18 postnatal women completed the study. Women with prenatal depression had significant improvements in depressive symptoms (PHQ-8, change in score -4.0, p<0.01), perceived stress (-4.3, p<0.01) and mindfulness (+2.7, p<0.01) comparing before and after the intervention. Women with postnatal depression had significant improvements in depressive symptoms (-4.4, p<0.01), perceived stress (-6.6, p<0.01), sleep disturbance (-2.4, p=0.02), social support (+0.3, p=0.03) and mindfulness (+3.0, p<0.01). Over half of participants practiced mindfulness at least 50% of the 6-week mindfulness program using the app (>21 days).

Qualitative interviews indicate that women appreciate the convenience of the intervention and ability to engage from anywhere without having to attend classes or arranging childcare.

Conclusions: Our study demonstrates the feasibility and acceptability of an mHealth mindfulness intervention for women with perinatal depression. Efficacy trial is warranted.

Acknowledgements: This study was funded by Kaiser Permanente Northern California Community Benefits and Dr. Avalos’s time was supported by National Institute of Mental Health (grant K01MH103444).

DIGITAL TOOLS TO PREVENT DEPRESSION AMONG SPANISH-SPEAKING PERINATAL WOMEN: ONE MODEL TO WORK WITH AND WITHIN COMMUNITY-BASED CLINICS

Alinne Z. Barrera, PhD, Natalie Oropeza, MA, and Shannon Coxon, BS
Palo Alto University

Objective: Perinatal women are interested in using technology to access maternal mental health resources and interventions. Few short-message services (SMS) programs, however, have been designed for and tested among perinatal women, especially Spanish-speaking and Latinx women. This presentation builds on prior work conducted by the first author on the digital adaptation (Internet and SMS) of the Mothers and Babies Course (MB) for Spanish-speaking perinatal women. A community partnership to test the SMS version of the MB, BabyText program, as an adjunct to prenatal healthcare among low-income, Spanish-speaking perinatal women will be presented. It is expected that greater engagement in the BabyText program will result in lower rates of depression and anxiety symptoms during the postpartum.

Methods: Recruitment began in January 2019. Spanish-speaking perinatal women were invited to attend the BabyText program in-person meetings and to receive the SMS components that deliver the core principles of the MB program. Follow-up assessments are planned for 4, 8, and 12 weeks post-intervention.

Results: To date, 12 Spanish-speaking perinatal women have been recruited. Engagement with the BabyText program will be described and changes in depression and anxiety symptoms will be analyzed. The integration of the BabyText program in a community-based clinic will be discussed with an emphasis on the lessons learned when conducting community-based research using digital tools. Thus far, clinic staff support has been positive.

Conclusions: This study has the potential to demonstrate that a low-cost, simple technologies intervention is a viable option to reduce maternal mental healthcare gaps among Spanish-speaking and Latinx perinatal women.

ENHANCING THE PREVENTION OF PERINATAL DEPRESSION IN HOME VISITING USING TEXT-BASED INTERVENTION REINFORCEMENTS

Darius Tandon, PhD¹, Jaime Hamil, MPH¹, and Alinne Z. Barrera, PhD²
Northwestern University¹, Palo Alto University²

Objective: Mothers and Babies (MB) is a perinatal depression prevention intervention that has demonstrated effectiveness in preventing onset and worsening of depression. Prior MB trials suggest variability in clients’
completion of personal projects between sessions and changes in mechanistic outcomes. A NIMH study funded the creation of text message enhancements to MB aimed at influencing personal project completion and mechanistic outcomes. We present on the feasibility and acceptability of this text message enhancement.

**Methods:** Low-income pregnant women from ten home visiting (HV) programs were recruited to receive either MB (n=29) or MB with text messaging (MB-TXT; n=33). Beck Depression Inventory (BDI) and MB Skill Questionnaire were administered at baseline and 6 months post enrollment. Feasibility and acceptability assessments were conducted after each MB session and measured text message response rate, understanding of text messages, and usefulness of text messages.

**Results:** Greater decreases in depressive symptoms were found among MB-TXT recipients (10.3 baseline, 4.9 6-mo. FU) compared to women receiving MB only (9.8 baseline, 7.7 6-mo.). MB-TXT recipients responded to an average of 5.2 messages (total possible=12) and reported using most core MB skills every day or most days in the past month (range 53.6-78.5%). Acceptability assessments indicated that text messages were rated as useful to very useful (range=50-76.4%) and understandable to totally understandable (range=55-94.1%) by those who received and rated the messages.

**Conclusions:** Preliminary data demonstrate greater reduction in depressive symptoms among women receiving text messages and acceptability of messages, although there was variability in clients’ response to text messages.

**Acknowledgements:** This work was funded by the National Institute on Minority Health & Health Disparities (PI: Tandon, R21MD011320)

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**Concurrent 5D**

**Redbud B Room**

**5D1: Symposium**

**Antidepressants in Pregnancy: Concerns and Controversies**

Chair: Veerle Bergink, MD, PhD  
Professor, Department of Psychiatry  
Department of Obstetrics, Gynecology and Reproductive Science  
Icahn School of Medicine at Mount Sinai

**Introduction:** Over the past two decades, there has been an increase in scientific research demonstrating the significant effects of perinatal depression on peripartum morbidity and mortality for both mother and infant. Appropriate prevention and treatment of perinatal depression is therefore of utmost importance. In the US 10 % of fertile women are using antidepressants but half of these women will stop prior to or after conception. Without established and scientifically-based guidelines for treatment, providing our patients with a balanced discussion of the risks of remaining on medications during pregnancy versus the risks of discontinuation, the best treatment options remain elusive.

In this symposium the following four authors will present new data on topics relating to this critical area of research in an effort to foster discussion, challenge preconceived notions, and catalyze questions for ongoing research. Xiaoqin Liu will describe the prevalence and indications of various antidepressant medication prescribed among pregnant women in a large cohort from Denmark. Nina Molenaar will present data from a recent RCT randomizing women to continuation with antidepressants or discontinuation with AD and switch to CBT. Anna Rommel will present a systematic review on the long-term neurodevelopmental, mental and physical health outcomes of children exposed to antidepressants in pregnancy. Lindsay Standeven will propose that antidepressant medications are not being prescribed at sufficient levels to reduce symptoms of depression leaving mothers vulnerable to exposure of drug and illness.

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**TREATMENT INDICATIONS FOR ANTIDEPRESSANTS PRESCRIBED TO PREGNANT WOMEN IN DENMARK**

Xiaoqin Liu MD, PhD
National Center for Register-based Research, Aarhus University, Denmark

**Objective:** Antidepressants are commonly prescribed to treat conditions other than depression. The mainstay of pharmacological treatment for non-psychotic mental disorders in the perinatal period is antidepressants, however no study has investigated indications for antidepressant prescriptions during pregnancy. We conducted a population-based study to examine the treatment indications of antidepressant prescriptions redeemed by pregnant women.

**Methods:** We identified 662,605 pregnancies resulted in live birth during 2006–2016 from the population-based Danish Medical Birth Registry. We linked them to the Danish National Prescription Registry,1 and obtained information on Anatomical Therapeutic Chemical (ATC) Classification codes, leaving 32,541 (79.0%) prescriptions associated with 11,604 pregnancies in the analyses.
During pregnancy, overall 78.5% of antidepressants were prescribed for depression, 14.0% for anxiety disorders, and 6.0% for insomnia. The most commonly prescribed antidepressants were SSRIs (78.6%), followed by SRNIs (16.5%), TCAs (4.8%), and MAOIs (<0.1%). For depression treatment, the most frequently prescribed antidepressants were citalopram (30.7%), sertraline (22.6%), fluoxetine (18.1%), venlafaxine (12.2%), and escitalopram (4.8%).

Conclusion: Non-depressive indications accounted for around 20% of antidepressant prescriptions among pregnant women in Denmark in contrast to the general population where almost half of the antidepressant prescriptions are prescribed for conditions other than depression indicating that antidepressant prescription during pregnancy is as a suitable proxy for a depression diagnosis. Our findings suggest more conservative prescription patterns in pregnancy, possibly due to concerns regarding psychotropic drug use during this vulnerable period.

DISCONTINUATION OF ANTIDEPRESSANTS WITH PREVENTIVE COGNITIVE THERAPY DURING PREGNANCY: RESULTS FROM A RANDOMIZED CONTROLLED TRIAL
Nina Molenaar MD, PhD
Icahn School of Medicine at Mount Sinai

Objective: The extent to which discontinuation of antidepressants increases a pregnant woman’s risk of relapse is unknown, as evidence in this field is sparse and conflicting. To date not a single study has investigated the preventive effect of non-pharmacologic treatments after antidepressant discontinuation during pregnancy. Our objective was to investigate the effectiveness of cognitive therapy after antidepressant discontinuation compared to continuation during pregnancy in a randomized controlled trial (RCT).

Methods: Women less than 16 weeks pregnant with a history of depression, currently remitted and with use of an antidepressant for at least four months prior to inclusion were randomized in a 1:1 allocation ratio to either discontinuation of antidepressants with preventive cognitive therapy or continuation of antidepressants and care as usual. Mood assessments repeatedly took place until three months postpartum to assess relapse and symptom severity.

Results: A total of 44 participants were randomized. Six women (13.6%) experienced a recurrence of depression during study follow-up; three in the continuation arm (15%) and three in the discontinuation arm (12.5%, p-value=0.58). Treatment allocation did not have any significant effect on the longitudinal development of mood symptoms.

Conclusion: We found no evidence that gradual discontinuation of antidepressants during pregnancy with an added preventive cognitive therapy is inferior to antidepressant maintenance treatment. Clearly these findings need to be replicated in a larger trial. We will discuss these findings in light of very recent discontinuation trials outside the perinatal period.

EFFECTS OF INTRA-UTERINE EXPOSURE TO ANTIDEPRESSANTS ON THE CHILD BEYOND THE AGE OF FOUR
Anna Rommel, PhD
Icahn School of Medicine at Mount Sinai

Objective: Reviews reporting on child outcomes following in-uterus exposure to antidepressants have focused on short-term outcomes, mostly in infancy. However, more recently, several individual studies have reported on adverse outcomes beyond infancy, including intellectual disability at age eight years and psychiatric disorders over a 17-year follow-up. Our objective was to systematically review the literature examining the long-term effects of in-uterine exposure to antidepressants on child outcomes after and including age four years.

Methods: A systematic review was conducted searching Embase, Medline Ovid, Web of Science, Cochrane Central and Google scholar in November 2018 for terms describing antidepressants, the pregnant population, and developmental outcome measures. All original research articles were eligible for inclusion.

Results: A total of 36 studies, examining neurodevelopment, mental and physical health, were included. No association between antidepressant exposure and intelligence quotient was found (five studies). Five of the nine studies on autism spectrum disorders (ASD) showed a positive association between antidepressant exposure and increased risk for ASD (RRs: 1.40-2.58), while four found no association. Of the eight studies examining the relationship between antidepressant exposure and attention-deficit/hyperactivity disorder, four demonstrated a positive association (RRs: 1.2-1.66) while four showed no association. Four studies investigating physical outcomes (asthma, childhood cancer and BMI) following antidepressant exposure only found conflicting outcomes for BMI.
Conclusions: Studies on the long-term outcomes following in-utero antidepressant exposure are inconsistent and often subject to substantial bias. Future research should aim for methodologically sound studies with longer follow-up durations, larger prospective sample sizes and clinically meaningful comparison groups.

MEDICATIONS FOR PERINATAL DEPRESSION: EVIDENCE FOR UNDER TREATMENT.
Lindsay R. Standeven MD, Jennifer L. Payne MD, Meeta Pangtey MBBS, MPH Bridget Sundel BS and Lauren M. Osborne, MD
Women’s Mood Disorders Center, Department of Psychiatry, Johns Hopkins University School of Medicine, Baltimore, Maryland

Objective: Some women with a history of depression remain or become ill in the perinatal period despite pharmacological treatment, perhaps indicating undertreatment. We hypothesized that depressed women in the perinatal period would not receive indicated medication dose adjustments.

Methods: Data were obtained from two naturalistic cohort studies of women with and without mood disorders (N=296) followed through pregnancy and postpartum; only women with mood disorders (N=229) were included in this analysis. Depressive symptoms were measured with the Edinburgh Postnatal Depression Scale (EPDS). Data analysis included descriptive statistics and chi-square tests.

Results: Seventy-six percent of participants were Caucasian. Primary mood diagnosis was major depressive disorder (81%). Twenty-nine percent (N= 67) had depressive symptoms (defined as EPDS > 13, hereafter “depression”) during pregnancy and 20% (N=45) in the postpartum; of those depressed postpartum, 60% (N=26) were also depressed in pregnancy. About half of the study participants (N=115) were taking psychotropic medications at least one time point during the study. Among participants taking medications, 45 (40%) became depressed in pregnancy and 27 (23%) in the postpartum. Depressed participants were no more likely to have a dose adjustment than women who were not depressed (p=.11 during pregnancy and p=.14 during postpartum by Chi square tests).

Conclusions: Fewer than half of depressed subjects took psychotropic medications, and less than a quarter of those received indicated dose adjustments. Undertreatment of depression leaves the pregnancy vulnerable to the effects of both medications and ongoing illness as well as the risks associated with postpartum depression.

Acknowledgments: NIH K23 MH074799 (PI-Payne).

Concurrent 5E
Bellflower Room - Oral Presentations (6) - Chair: Margaret Howard

- SEVERE POSTPARTUM MOOD AND ANXIETY DISORDERS ACROSS TIME AND CULTURE: GUIDE FOR FUTURE RESEARCH AND CARE
Mary Kimmel, MD,1 Harish Thippeswamy, MD, PhD 2
1 University of North Carolina School of Medicine, Chapel Hill, NC 2 National Institute of Mental Health and Neuro Sciences (NIMHANS), Bengaluru, India

Introduction: The definitions of severe postpartum mood and anxiety disorders such as postpartum psychosis have varied depending on the time and culture. This variation stems from complexity in defining what is normal versus abnormal which depends so highly on culture and environment. This symposium will compare and contrast severe postpartum mood and anxiety disorders based on cultural and environmental considerations. We will first provide a historical look at puerperal psychosis as found in the records of a mental hospital in North Carolina from 1856 to 2012. The role of spirituality will be examined from research of those with severe perinatal mood and anxiety disorders to understand how spirituality impacts perceptions of illness and what role spirituality and religion play in treatment. Next, aspects of factors associated with impaired mother-infant bonding for severe postpartum mental illness will be presented from a Mother-Baby Unit in India. Finally, characterization of patients from a perinatal psychiatry inpatient unit in North Carolina will be used to discuss how new multidimensional approaches can lead to better understanding of the spectrum of abnormal and normal functioning which can then be used to improve diagnosis and development of comprehensive treatment arms. We hope to spur discussion about how diagnosis and treatments are impacted by culture and environment and may be improved by inclusion of cultural and environmental factors. By the end of the symposium, participants will have a better understanding of the spectrum of severe postpartum anxiety and depressive disorders and identify future directions for diagnosis and treatment.

- THE ROLE OF ANTENATAL AND POSTNATAL MATERNAL BONING IN INFANT DEVELOPMENT
Genevieve Aimee Le Bas1,2, George Youssef1,3, Jacqui Macdonald1,2, Sam Teague1, Ingrid Honan3, Jennifer McIntosh1,2, Sarah Khor3, Larissa Rossen3, Craig Olsson1,2, Delyse Hutchinson1,2,3
Objective: The purpose of this study was to use prospective perinatal data from an Australian pregnancy cohort study to examine the extent to which mother-to-infant bonding in the perinatal period predicts infant developmental outcomes.

Methods: 1,397 mothers completed a comprehensive perinatal assessment which included maternal bonding questionnaires at each trimester, and 8 weeks and 12 months postpartum. Infant development (cognitive, language, motor, social-emotional, and general adaptive behaviour) and temperament were assessed at 12 months via the Bayley Scales of Infant and Toddler Development.

Results: Mother-to-infant bonding was found to predict indicators of infant social-affective development, including social-emotional, behavioural and temperamental outcomes. Effect sizes were small, increasing over the perinatal period (β (range) = .07-.27). There was little evidence of an association between bonding and infant cognitive, language, and motor development (β (range) = .06-.07).

Conclusions: Findings suggest that a mother's perception of her felt emotional connection to her infant plays a role in predicting infant social-affective development; however, prediction may not extend to other domains of development during infancy.

Acknowledgements: The research was funded by an Australian National Health and Medical Research Council (NHMRC) Project Grant #GNT630517 for $2,196,179, and was financially supported by the National Drug and Alcohol Research Centre, University of New South Wales, Australia.

• PERSON CENTERED COUNSELLING FOR MATERNAL DEPRESSION DELIVERED BY NON-SPECIALISTS: A META-ANALYSIS

Jennifer McCabe, University of Iowa

Objective: Several studies demonstrate support for Listening Visits (LV), a counseling approach delivered by non-specialists, as a treatment for maternal depression. Recently, the National Institute of Clinical Excellence removed LV from their list of evidence-based treatments for postpartum depression, resulting in skepticism toward the adequacy of the committee's synthesis of results. The present study is the first to utilize meta-analytic techniques to estimate the true effect of LV for mothers with depression symptoms.

Methods: We performed a comprehensive literature review to identify all published randomized controlled trials of LV. Two independent coders reviewed all eligible abstracts and determined final list of studies meeting inclusion criteria. Three independent coders extracted data to be included in the final meta-analysis. An overall effect size estimate was obtained by correcting observed estimates in the literature for sampling error, attenuation due to dichotomization, and unreliability of measures. Moderator analyses were conducted to examine variability among observed effect sizes.

Results: Our initial search yielded 2712 abstracts, of which, 8 met inclusion criteria for the current study. We have completed extraction of data from these 8 studies and are in the preliminary stages of data analysis. Meta-analytic procedures and moderator analyses will be completed by Summer 2019.

Discussion: The promise of treatments delivered by non-specialists is substantial, yet significant controversy surrounds this approach. Based on the first systematic review of all randomized controlled trials of LV, the results of this study will provide the first quantified estimates of true effects achieved by non-specialists using this approach.

• EXPANDING ACCESS TO DEPRESSION TREATMENT IN KENYA THROUGH AUTOMATED PSYCHOLOGICAL SUPPORT

Eric P Green1, Nicholas Pearson2, Sathy Rajasekharan2, Michiel Rauws3, Angela Joerin3, Edith Kwobah4, Christine Musyimi5, Chaya Bhat1, Rachel M Jones2, Yihuan Lai1

1 Duke Global Health Institute, Duke University, 2 Jacaranda Health, 3 X2AI, 4 Moi Teaching and Referral Hospital, 5 Africa Mental Health Research and Training Foundation

Objective: Although effective interventions exist for common mental disorders that occur during pregnancy and the postpartum period, most cases in low- and middle-income countries go untreated because of a lack of trained professionals. Task-sharing models could expand access to treatment, but there are barriers to scale-up. We are addressing this gap by adapting and testing an existing intervention for automated delivery in Kenya via a mobile phone.

Methods: We adapted a lay health worker-delivered perinatal depression intervention called Thinking Healthy for remote delivery via text message using an artificial intelligence system called Zuri. We completed an initial round of formative testing of this new intervention (Healthy Moms) with 10 women from a private maternity hospital.
We then revised the intervention and began recruiting pregnant women and new mothers from nearby public hospitals to take part in a single-case experimental design study. Currently, patients complete a brief, automated screening via text message to determine eligibility and then rate their mood every 3 days. We will use system logs, in-depth interviews, and mood ratings to study engagement with the intervention, feasibility, acceptability, and response to treatment.

**Results:** Women who participated in the formative round of testing reported that the prototype was easy to use and engaging, but further adaptations to the format were indicated. Preliminary results from the single case experiment will be available September 2019.

**Conclusions:** Automated psychological support appears to be a promising model, even for low-income settings.

**Registered Report:** DERR1-10.2196/11800

**Acknowledgements:** Duke Global Health Institute

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**DEVELOPMENT AND VALIDATION OF THE PRACTICE READINESS TO EVALUATE AND ADDRESS PERINATAL DEPRESSION (PREPD) ASSESSMENT**

Grace Masters¹, Linda Brenckle¹, Padma Sankaran¹, Tiffany Moore Simas¹,², Lucille Cox¹, Sharina Person¹, Jeroan Allison¹, Douglas Ziedonis¹, Nancy Byatt¹,²

¹UMass Medical School, ²UMass Memorial Health Care, ³University of California San Diego

**Objective:** Perinatal depression is the most common pregnancy complication and universal screening is recommended. The Practice Readiness to Evaluate and address Perinatal Depression (PREPD) assessment was developed to evaluate an obstetric practice’s readiness for behavioral health intervention implementation. Objectives are to: (1) describe the PREPD; (2) evaluate assessment validity; and, (3) describe associated practice, provider, and patient characteristics by readiness level.

**Methods:** PREPD evaluates four components, each scored to a 16-point maximum: (1) Environmental Scan (10% of PREPD); (2) Depression Detection, Assessment, and Treatment Questionnaire (30%); (3) Depression-related Policies Questionnaire (10%); and (4) Chart Abstraction (50%). Chart Abstraction included six sub-components (Depression detection, Assessment, Treatment, Follow-up, Care transfer, and Bipolar detection). Each of the 4 main component is weighted by their PREPD proportion and summed to create an overall score. Summary and component scores were calculated. Preliminary PREPD validity testing was conducted.

**Results:** Average overall PREPD score was 7.3, ranging 4.8-9.9. Wide ranges existed in PREPD scores between practices, the four individual components, and sub-components. The Environmental Scan averaged 2.0 (range 0-5.2); Detection, Assessment, and Treatment averaged 8.3 (range 3.0-11.5); Chart Abstraction averaged 7.2 (range 5.1-9.6); and, Depression-related Policies averaged 10.4 (range 7.5-15).

**Conclusions:** These data suggest wide baseline variation in readiness for implementing behavioral health interventions; most practices were minimally prepared. The PREPD quantifies the extent to which individual obstetric practices are ready to implement interventions for perinatal depression and provides a method to monitor changes over time with clear benchmarks to help guide practices in better integrating depression care into their workflow.
bipolar disorder prior to prescribing psychopharmacotherapy. ACOG has subsequently established an Expert Work Group to promote the integration of maternal mental health into the delivery of perinatal care. Furthermore, ACOG is actively engaged in their rigorous processes of continuing review and development of needed documents, that will guide fellows in addressing mood and anxiety disorders and relevant pharmacotherapy, and substance use disorders, for pregnant and lactating women.

**Conclusions:** Women have historically experienced many barriers to PMH detection and treatment as providers were lacking recommendations to address it, in addition to guidance and training on how - that is no longer the case. Consensus exists amongst major professional societies that elevates expected standards of care for obstetric providers in addressing perinatal mental health.

### 2:30pm – 3:00pm Refreshment Break

### 3:00pm – 4:30pm Concurrent Sessions

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Concurrent 6A

**Grumman Auditorium**

**Symposium: Lithium and Breastfeeding Recommendations: Perspectives on Best Practices**

Crystal T. Clark¹, Veerle Bergink³,⁴, Debra L. Bogen⁵, Simone Vigod⁶,⁷

¹ Psychiatry, ² Obstetrics and Gynecology, Northwestern Feinberg School of Medicine, ³ Psychiatry, Mount Sinai Health System, ⁴ Obstetrics, Gynecology, and Reproductive Science, Mount Sinai, ⁵ Pediatrics, University of Pittsburgh, ⁶ Psychiatry, ⁷ Institute for Health Policy, Management and Evaluation, University of Toronto

**Abstract:** Recommendations on whether lithium should be continued while breastfeeding is controversial and clinical practice varies. The choice to maintain lithium therapy among mothers who choose to breastfeed is supported by the American Academy of Pediatrics and LactMed, and the American College of Obstetricians and Gynecologists, but some experts advise against breastfeeding due to the risk of adverse neonatal outcomes and the risk for mood episode recurrence related to sleep disturbance associated with breastfeeding. While pharmacotherapies including lamotrigine and atypical antipsychotics (e.g., olanzapine, aripiprazole, risperidone) are also indicated for the maintenance treatment of Bipolar Disorder, lithium remains the gold standard. Lithium is highly effective for relapse prevention postpartum and there is less evidence for the efficacy of antipsychotics. Interpretation of the available evidenced-based data on infant lithium exposure through breast milk can be used to personalize care to the individual woman. In this symposium we will present opposing perspectives on the continuation of lithium while breastfeeding from perinatal experts according to evidenced-based data. Support for lithium use while breastfeeding will be presented by Dr. Clark who will describe objective data on the exposure of lithium in breastfed infants and Dr. Bogen who will present information on the benefits of breast milk compared to formula in the context of lithium exposure. Dr. Bergink and Dr. Vigod will present an opposing perspective including a review of alternative pharmacologic therapies during lactation by Dr. Vigod. Dr. Emily Miller will serve as the discussant. The goal of this program will be to facilitate a meaningful discussion led by perinatal psychiatry experts on whether the risks of lithium exposure through breastmilk outweigh the benefits of breastfeeding and present practical clinical approaches supported by evidence.
WHY BREAST ISN’T BEST: RISKS OF INFANT EXPOSURE TO LITHIUM THROUGH BREAST MILK AND MATERNAL RISK OF RELAPSE.
Veerle Bergink, MD, PhD
1
1Department of Psychiatry, Mount Sinai, NY
2Department of Obstetrics, Gynecology, and Reproductive Science, Mount Sinai, NY
Objective: The objective of this talk is to describe maternal and infant risks associated with breastfeeding.
Methods: We reviewed all cases of neonatal lithium exposure through breastfeeding. Moreover, we did a systematic review and meta-analysis of maternal relapse risk in the postpartum period.
Results: Neonatal outcomes: Lithium exposure through breastmilk was generally well tolerated by the infants in this study although one infant developed elevated levels of TSH which, normalized after the mother discontinued lithium treatment. Three other infants showed transient elevations in blood urea nitrogen and creatinine levels. In summary, there is a lack of sufficient information on infant lithium levels and the consequences of lithium exposure through breast milk. Due to the lack of information and the possible nephrotoxic effects of lithium in infants, in combination with the vulnerability of the developing neonatal kidneys and the risk of dehydration associated with the neonatal period, breastfeeding while on lithium treatment is discouraged in many national guidelines and individual centers worldwide.
Maternal outcomes: patients with bipolar disorder have an overall postpartum relapse risk of 37% (95%CI=29,45) (25 studies, 5,105 deliveries, 3,495 patients). Sleep loss is a major risk factor for relapse. Bottle feeding enables mothers to sleep through the night during this ultra-high-risk period.
Conclusions: Although more data is required to characterize the effects of lithium exposure to the infant through breastmilk, the potential risks to both mother and child outweigh the benefits of breastfeeding.

OBJECTIVE MEASURES OF LITHIUM EXPOSURE IN BREASTMILK: WHAT IS THE ASSOCIATION BETWEEN EXPOSURE AND RISK?
Crystal T. Clark, MD, MSc,1,2 Rebecca L. Newmark,3 Debra L. Bogen, MD4, Katherine L. Wisner, MD, MS,1,2 Marianna Isaac, MD, Jody C. Ciolino, PhD6
1Department of Psychiatry and Behavioral Sciences, Northwestern University Feinberg School of Medicine, 676 North St Clair Street, Suite 1000, Chicago, IL, USA
2Department of Obstetrics and Gynecology, Northwestern University Feinberg School of Medicine, 675 North St Clair Street, Suite 14-200, Chicago, IL, USA
3University of San Francisco, San Francisco, CA, USA
4Department of Pediatrics, University of Pittsburgh, Pittsburgh, PA, USA
5Northwestern University, Chicago, IL, USA
6Department of Preventive Medicine, Northwestern University Feinberg School of Medicine, 680 N Lake Shore Drive, Suite 1400, Chicago, IL, USA
Objective: The objective of this talk is to present support for the continuation of lithium while breastfeeding founded on data from a systematic review of lithium exposure in breastfed infants and related infant risk.
Methods: A systematic review of databases including PubMed MEDLINE, Embase, PsycINFO, Web of Science, Scopus, and Cochrane CENTRAL Register of Controlled Trials Databases were searched for articles on lithium which includes at least one maternal serum/plasma and/or breast milk concentration and one infant serum/plasma concentration.
Results: Twelve case reports/case series met inclusion criteria out of 441 articles found and 230 that were reviewed. Infant serum lithium concentrations averaged 34% of maternal serum concentration and 54% of the breast milk lithium concentration. Adverse effects were reported in 9.4% of exposed infants. Milk-to-maternal serum concentration and relative-to-infant dose were not associated with poor outcomes.
Conclusions: Data are limited on the exposure and associated safety of lithium continuation while breastfeeding. Reports of poor outcomes were difficult to differentiate from concomitant medications, infant health, and in utero exposure to lithium. Degree of exposure does not have a direct correlation with risk and available data does not suggest contraindication of lithium while breastfeeding.

SAFETY PROFILE OF ALTERNATIVES PHARMACOTHERAPIES TO LITHIUM FOR THE LACTATING MOTHER
Simone Vigod, MD, MSc
1Department of Psychiatry and Institute for Health Policy, Management and Evaluation, University of Toronto
Objective: The objective of this talk is to review the lactation safety of pharmacotherapies indicated for the acute...
treatment, prevention and maintenance phases of Bipolar Disorder.

**Methods:** A review of the available data on the safety profile of pharmacotherapies in lactating mothers including antiepileptics (e.g., lamotrigine, carbamazepine) and atypical antipsychotics (e.g., olanzapine, aripiprazole, risperidone) will be discussed. Examples of clinical scenarios and approaches to risk-benefit assessment will be presented.

**Results:** Lamotrigine and carbamazepine have rarely been associated with reports of adverse effects in infants exposed to these therapies through breast milk. While more research is required, preliminary data suggests that atypical antipsychotics such as olanzapine confer a low risk to the breastfed infant.

**Conclusions:** The choice to continue drug therapy during lactation is complex and the provider must consider the risks of adverse effects on the infant while maximizing pharmacologic treatment for the individual woman who chooses to breastfeed.

**BREASTFEEDING AND LITHIUM CONTINUATION: RISKS, BENEFITS, AND WHEN TO SUPPLEMENT WITH FORMULA**

Debra L. Bogen, MD

1 *Department of Pediatrics, University of Pittsburgh, Pittsburgh, PA, USA*

**Objective:** The aim of this talk is to inform clinicians on the risks of not breastfeeding versus breastfeeding for mothers that continue lithium.

**Methods:** The data on acute and long-term benefits of breastfeeding will be discussed and compared to the risks of not breastfeeding and feeding infant formula with consideration for women who continue lithium pharmacotherapy. Examples of the best circumstances for the use of formula will be explained. Recommendations for monitoring will be provided.

**Results:** Breast milk provides many immunological and anti-inflammatory among many other health benefits that support the breastfeeding with the continuation of pharmacotherapy, particularly lithium. Infants who are formula fed are deprived of the health benefits of breast milk and mothers who do not breastfeed an increased risk of cardiovascular disease, breast cancer, and ovarian cancer.

**Conclusions:** In most cases, the benefits of breast milk outweigh the risks medication exposure.

Concurrent 68

*Dogwood Room*

**Symposium:**

**Implementation of Mom Power (MP), A Brief Attachment Based Parenting and Mental Health Intervention for Trauma Survivor Mothers and their Children Across Urban and Rural Settings**

Maria Muzik, MD, MS & Katherine Lisa Rosenblum, PhD (Chairs)

*University of Michigan, Department of Psychiatry-Michigan Medicine*

Mom Power (MP) is a 13 session (3 individual and 10 group) manualized, attachment-based intervention for perinatal mothers (pregnant and postpartum) with histories of trauma or abuse (in childhood or adulthood) who may also present with depression, anxiety, PTSD and/or high levels of distress, all of which may interfere with sensitive, responsive parenting. Intervention targets are treatment engagement, enhancement of sensitive and nurturing parenting, reduction of mothers’ psychopathology, promotion of balanced, positive attributions towards the child and parenting, and facilitation of self-care and access to ongoing care. Mom Power is rooted in attachment theory and trauma-informed care framework, and utilizes skills-based concepts from CBT, DBT and MI. The model was developed at the University of Michigan in collaboration with mothers and other community stakeholders through an iterative collaborative process. Prior research confirms the efficacy and impact of the Mom Power approach, including a community-based randomized controlled trial, indicating that mothers who complete Mom Power report decreased symptoms of depression and posttraumatic stress, increased feelings of competence in parenting, and increased ability to identify and respond to their children’s emotional needs. Over the past years the Mom Power model had been disseminated to other University and community partners and implemented with fidelity. In this symposium, we aim to introduce the Mom Power model and to introduce its implementation in two urban (Cleveland, Baltimore) and one rural (Tennessee) communities.

**MOM POWER: A MULTI-FAMILY INTERVENTION FOR TRAUMA SURVIVOR MOTHERS AND THEIR YOUNG CHILDREN AIMED TO SUPPORT MENTAL HEALTH AND PARENTING**

Maria Muzik1, Katherine Lisa Rosenblum1, Melissa Schuster 2, Julie Ribaudo3

1 *Department of Psychiatry, 2 Department of Social Work, 3 School of Social Work, all University of Michigan, USA*
Objective: We have developed a 13-session attachment-based intervention for trauma-survivor perinatal mothers and their young children and conducted a RCT to test effectiveness of the model.

Methods: Participants (N = 122) were high-risk mothers (e.g., interpersonal trauma histories, mental health problems, poverty) and their young children (age <6 years), randomized either to Mom Power (treatment condition, n=68), or weekly mailings of parenting information (control condition, n=54). In this study, the 13-session intervention was delivered by community clinicians trained to fidelity. Mothers (≥ 15-years-old, English-speaking and with children under the age of 6 years) completed pre and post-intervention measures on mental health (depression, PTSD) and parenting (parenting stress questionnaire, Working Model of the Child Interview WMCI). The WMCI was coded by blind coders for representational categories (balanced/non-balanced) and Parenting Reflectivity. On a subset (treatment condition, n=15; control condition n=17) we conducted fMRI brain scans before and after the intervention period to study neural circuitry associated with treatment response.

Results: Mental health symptoms and self-rated parenting stress significantly decreased for the MP condition compared to control group. The proportion of women with balanced (secure) representations increased in the MP group but not in the control group. Parenting Reflectivity increased significantly for mothers in the MP group with no change in the control condition. We found MP effects on brain activation related to reductions in self-rated parenting stress.

Conclusions: The MP group intervention is an effective and feasible intervention for trauma-survivor mothers who suffer from depression, PTSD, and challenges in parenting and reflective capacity.

Acknowledgements: Funding: Michigan Department of Health and Human Services, 2008-2012

BUILDING RESILIENT PARENTS AND CHILDREN: MP CLEVELAND

Sarah Nagle-Yang, MD, Alissa Huth-Bocks PhD, Jaina Amin MD, Sarah Lytle MD, Mary Gabriel MD

University Hospitals Cleveland Medical Center, Case Western Reserve University

Objective: The objective of this study was to measure the effectiveness of Mom Power implemented in urban Cleveland, primarily within community mental health settings.

Methods: Mothers enrolled in Mom Power participated in pre- and post-intervention assessments. Mothers completed established self-report measures of maternal mental health, parenting stress, child emotional and behavioral problems and perceptions of connectedness to social supports.

Results: 92 women completed a pre-intervention assessment and 57 women completed both pre- and post-intervention assessments. Participating mothers were diverse and generally disadvantaged, e.g., 97% were receiving Medicaid. Most (84%) were receiving other mental health treatment at the time of enrollment. Mothers reported an average of 5 adverse childhood experiences and 60% reported past intimate partner violence. Paired samples t-tests revealed that mothers who completed Mom Power had significantly (p<.05) less generalized anxiety, post-traumatic stress symptoms and stress related to difficult parent-child interactions from pre- to post-intervention. They also trended (p<.10) toward having less depression symptoms and lower overall parenting stress. Those who completed Mom Power had more knowledge about child rearing and trended toward having increased general social support following the intervention.

Conclusions: These findings are in line with the primary goals of Mom Power and are consistent with existing evidence for the effectiveness of this intervention for very high-risk, traumatized mothers and their young children.

IMPLEMENTATION AND EFFECTIVENESS OF MP IN THE APPALACHIAN REGION OF TENNESSEE: NEONATAL ABSTINENCE SYNDROME, TRAUMA, AND RESILIENCE

Diana Morelen PhD, Meg Clingensmith BS, Rebecca Otwell-Dove BS

East Tennessee State University

Objective: The objective in the present study is to determine whether it is feasible to implement MP within this cultural region and whether MP is effective with the mothers in this region where poverty, substance misuse, neonatal abstinence syndrome (NAS), trauma, and mental health problems are higher than the national average.

Methods: The present study aims to (1) assess the feasibility of training rural, Appalachian community-based providers (n = 28) in the MP model, recruiting and retaining high risk mothers, and implementing MP groups with community-based partners; and to (2) Assess effectiveness via a pre-post design with mothers of young children (n = 33 dyads) attending MP groups in the community.

Results: Of families served in TN thus far, 60% had DCS involvement, 50% were in substance abuse treatment, 68% endorsed ≤ 4 ACEs, 77% had clinically significant depression or anxiety, and 100% were below the federal poverty
level. Regarding effectiveness, following completion of the current group, we will present pre-/post- differences in maternal symptoms and behavior.

**Conclusions:** Results indicate that it is feasible to implement MP in an Appalachian region of TN. Unique challenges of working with mothers in recovery will be discussed.

**Acknowledgements:** Funding: East Tennessee State University RDC Major Grant

**ADAPTING MP FOR URBAN MOTHERS WITH SUBSTANCE USE HISTORIES AND THEIR YOUNG CHILDREN: LESSONS LEARNED FROM MP BALTIMORE**

*Rebecca Vivrette PhD, Mercedes Hightower, LCSW-C, Lisa Andrews LGSW, Brijan Fellows LCSW-C*

*University of Maryland School of Medicine*

**Objective:** The aim of the current study was to adapt and implement a pilot MP program with high-risk urban women and their children age 0-5 who reported a history of substance use, to determine its acceptability, feasibility, and preliminary effectiveness in this unique population.

**Methods:** Mothers with at least one child age 0-5 were recruited from addictions, adult psychiatry, early childhood mental health, and obstetrics clinics to participate in the adapted MP intervention. Measures of maternal depression, anxiety, trauma history, parenting stress, resilience, and child emotional-behavioral symptoms were collected pre-post. Mothers also completed a semi-structured interview to provide feedback on the acceptability, cultural relevance, and utility of the adapted MP curriculum to address their needs.

**Results:** Several adaptations were implemented, including specific discussion of race, racism, and power differential in the therapeutic context; cultural norms for parenting approaches in the context of ongoing safety threats in the community; and inclusion of videos and visual material representing racially and ethnically diverse urban families. Recruitment and model implementation are ongoing, but the vast majority of participants included African American mothers with marijuana use histories. Results on maternal-child pre-post changes in symptoms and functioning and on implementation feedback will be presented.

**Conclusions:** Approaches to parenting are inherently connected to historical racism, trauma, and safety. The MP curriculum can be adapted for diverse populations, including mothers living in high-risk contexts with substance use histories. Directions for future multi-site studies and robust analyses will be discussed.

**Acknowledgements:** Funding: University of Maryland Baltimore

**Concurrent 6C**

*Redbud A Room*

**Symposium**

**Philanthropy: A Partner in Advancing C.A.R.E. for Perinatal Mood and Anxiety Disorders**

*Nancy Byatt, DO, MS, MBA, FACLP*

*Medical Director, MCPAP for Moms*

*Executive Director, LifeLine4Moms*

*Director, Women’s Mental Health Division in the Department of Psychiatry*

*Associate Professor of Psychiatry, Obstetrics & Gynecology, and Population & Quantitative Health Sciences*

*UMass Memorial Medical Center/UMass Medical School*

The symposium, Philanthropy: A Partner in Advancing C.A.R.E. (Clinical, Advocacy, Research and Education) for Perinatal Mood and Anxiety Disorders (PMADs), will be a non-traditional research presentation and discussion with the MONA conference participants. The medical consensus is clear; PMADs are common and harmful to women and children. Despite this, the majority of women with PMADs go undiagnosed and untreated. The objectives of this symposium are to: 1) Present the perinatal depression care pathway and examples of remaining gaps; 2) Share insights from portfolios in states funded by three dedicated philanthropic partners in perinatal mental health who are committed to seeding innovative, practical approaches to support the care pathway; 3) elicit attendees’ opinions and experiences of gaps in the field and ideas for scalable solutions for these and other philanthropies to consider. The 90-minute symposium will include four interactive, 15-minute presentations and 30 minutes of discussion and dialogue. Dr. Byatt will moderate the symposium to elucidate how philanthropy has impacted the field of perinatal mental health to date and interview the three philanthropies represented on this panel to illuminate their strategies and solicit input from the MONA participants on what the field needs most now.
PERINATAL DEPRESSION CARE PATHWAY FOR OBSTETRIC SETTINGS: ADVANCING C.A.R.E. IN THE FIELD OF PERINATAL MENTAL HEALTH
Nancy Byatt, DO, MS, MBA, FACLP
Medical Director, MCPAP for Moms
Executive Director, Lifeline4Moms
Director, Women’s Mental Health Division in the Department of Psychiatry
Associate Professor of Psychiatry, Obstetrics & Gynecology, and Population & Quantitative Health Sciences
UMass Memorial Medical Center/UMass Medical School
As a researcher, clinician, and perinatal mental health leader, Nancy Byatt is well-versed in the state of the perinatal mental health field; recent advancements, challenges, and opportunities. Nancy is an expert voice in the field and is currently leading national initiatives that aim to build resources and infrastructure across the country to expand access to care for perinatal mood and anxiety disorders.

Objective: This presentation will describe the depression care pathway and provide a scaffold on which to frame the challenges encountered, and the opportunities that exist for, addressing perinatal mood and anxiety disorders.

Methods: To review evidence-based approaches, a literature search was conducted for studies that examine interventions aimed to help address depression in obstetric settings. Seven steps required for successful treatment of perinatal depression in obstetric settings were examined: (1) screening, (2) assessment, (3) triage and referral, (4) treatment access, (5) treatment initiation, (6) symptom monitoring; and (7) adaptation of treatment based on measurement until symptoms. Four other primary outcomes of interest were also examined: (1) depression improvement (2) maternal and child health, (3) health care utilization, and (4) cost.

Results: The literature search yielded twenty-three studies. Most interventions (n=10) did not address all the steps and none reported all the stated outcomes of interest. Included in less than half of the interventions (n=7), symptom monitoring, and measurement-based care had the least focus of all the intervention components. Fewer than half of the studies (n=8) assessed the extent to which the intervention improved depression outcomes. A minority of the studies assessed maternal and child outcomes, health utilization or cost.

Conclusions: Comprehensive interventions that address each step on the care pathway are needed to support high-quality, evidence-based, effective and scalable treatments for PMADs. Despite recent attention being brought to, and significant progress in the field to address perinatal mood and anxiety disorders, gaps in care persist.

ABSTRACT OF THE ZOMA FOUNDATION: OUR APPROACH TO C.A.R.E. FOR MMH
Rebecca Alderfer, Senior Program Consultant,
ZOMA Foundation (www.zomalab.com).
Objective: The Zoma Foundation’s goal within the Colorado perinatal mental health focus area is that: All expectant and new moms have their mental health and wellness needs prioritized and attended to during pregnancy and early parenting.

Methods: The ZOMA Foundation in Colorado focuses on early childhood development (ECD) in service to the goal that all children in the five-county metro Denver area have the emotional and cognitive conditions necessary to succeed in life by age 5. The Foundation’s work in the state of Colorado has an emphasis on a 5-county, metro-Denver region. Within ECD, we narrow to the following areas:
2. Parent Supports – Providing opportunities to parents to be well informed about their child’s development, and encouraged to access relevant, affordable services to support their families.

To achieve this goal, the Zoma Foundation is partnering with health systems, policy leaders, universities, government agencies, non-profits, for-profit companies, insurers and employers to achieve increased accountability, quality, and consistency to support a robust standard of perinatal mental health care.

Results: The ZOMA Foundation funds a broad range of projects and organizations in Colorado and nationally to enhance the attention and care for PMADS. We have funded in this focus since 2008. Examples of investments include partnering with major birthing hospitals in the Denver region to redesign maternity care to emphasize perinatal mental health, supporting the National Committee on Quality Assurance to develop improved perinatal depression measures for HEDIS, guiding a leadership collaborative and framework for perinatal mental health across Colorado, augmenting the number and type of advocates working to enhance perinatal mental health, and creating a data dashboard and baseline to collect and disseminate data on Colorado’s progress against shared objectives. The Zoma Foundation’s total investment to date in PMAD-specific work exceeds $5M.
Conclusions: The ZOMA Foundation is a Colorado-based philanthropy that supports perinatal mental health in Colorado and also promotes transformative national policies, institutions, and tools that support shared objectives.

ABSTRACT OF THE CALIFORNIA HEALTHCARE FOUNDATION: PORTFOLIO IN PERSPECTIVE
Stephanie Teleki, Ph.D., Director, Learning & Impact
California Health Care Foundation. (www.chcf.org)
Objective To improve perinatal mental health in California by increasing screening and ensuring that those who need treatment receive it.
Methods: The California Health Care Foundation (CHCF) is dedicated to advancing meaningful, measurable improvements in the way the health care delivery system provides care to the people of California, particularly those with low incomes and those whose needs are not well served by the status quo. CHCF works to ensure that people have access to the care they need, when they need it, at a price they can afford. One of CHCF’s 3 key goals is promoting high-value care. Within this goal, CHCF works to improve quality and cost in several areas, including maternity care and specifically perinatal mental health. CHCF is working with partners to lay the foundation for improved perinatal mental health and explore innovative, practical solutions for delivering appropriate care to California’s mothers and expectant mothers in need. To date, we have been funding work to advance a general understanding of the field, quality measurement, and delivery system interventions. For more details, please see: https://www.chcf.org/project/improving-treatment-of-maternal-mental-health/
Results: CHCF is actively engaged now in funding a variety of projects that are at various stages of completion. To date, CHCF has funded 4 background/landscape projects that include a focus on PMAD such as the Listening to Mothers Survey in California and the California Maternal Mental Health Task Force convenings; 4 projects that focus on delivery system solutions such as use of eConsult between reproductive and general psychiatrists and exploration of remote, longitudinal consultation in community clinics; and 1 that supports quality measurement via the development of HEDIS measures for perinatal depression. CHCF’s total investment to date in PMAD-specific work is $1.2M. For more details see: https://www.chcf.org/project/improving-treatment-of-maternal-mental-health/
Conclusions: CHCF is a California-focused philanthropy that, among several goals, aims to improve perinatal mental health in the state by supporting work that advances knowledge about and approaches to improving care.

ABSTRACT OF THE PERIGEE FOUNDATION:
Becca Graves, Executive Director
Perigee Fund. (www.perigeefund.org)
Objective: To support the attuned, positive, and safe early relationships that are foundational to very young children’s emotional and physical health and academic and social success.
Methods: Perigee Fund works to strengthen perinatal mental health by working with partners to build field and care provider capacity, develop culturally-specific models of care, strengthen national networks of practice and policy leaders, and advocate for increased resources.
Results: Perigee Fund is currently contributing to efforts that connect care provider and community resources to increase access to perinatal psychiatry and beginning to work with different networks and systems to strengthen perinatal mental health through changes in policy and practice. In Perigee Fund’s first year of operations, we have invested $1.0M in operating or project capacity through 4 grants.
Conclusions: Perigee Fund is a philanthropy focused nationally and in Washington state, investing in efforts that aim to promote social and emotional development, healthy parent-child relationships, and parent wellbeing.

Concurrent 6D
Redbud B Room - Oral Presentations (6) - Chair: Cindy-Lee Dennis

• EFFECTS OF HIGHER MATERNAL CHOLINE LEVELS ON PRENATAL MARIJUANA’S IMPACT ON OFFSPRING
M. Camille Hoffman, MD, MSCS; Sharon K. Hunter, PhD; Angelo D’Alessandro, PhD; Kathleen Noonan, MSW; Anna Wyrwa, RN, MS; Robert Freedman, MD
University of Colorado School of Medicine, Aurora, Colorado
Objective: Marijuana (MJ) use in pregnancy is increasing. Research shows adverse effects on fetal development and the child’s subsequent cognition and behavior. Choline targets acetylcholine receptors on fetal cerebro-cortical inhibitory neurons whose
development is impeded by cannabis. The objective of this study was to assess whether higher maternal choline levels mitigate adverse effects of MJ use during gestation.

**Methods:** Self-report of MJ use and urine toxicology were obtained during pregnancy as part of a study of the effects of stressors during pregnancy. Choline levels were measured at 16 weeks gestation. Planned outcomes were fetal development of cerebral inhibition (1 month of age) and subsequent attention and related behavior (1 year of age). Mothers were informed about dietary choline and other nutrients. All women were strongly advised by research and clinical personnel to cease all substance use.

**Results:** 162 women brought their newborns in for study. Of these, 40% of mothers reported using MJ at conception. Women who stopped before 10 weeks had children who were similar to children whose mothers had never used. Continued use at ≥10 weeks gestation by 15% of the mothers was associated with decreased development of cerebral inhibition at 1 month (d’ = 0.55, P < 0.05) and poorer self-regulation at 1 year of age (d’ = 0.79, P < 0.05). These effects were ameliorated in women with higher gestational levels of choline at 1 month (r = -0.50, P = 0.011) and 1 year of age (r = 0.54, P = 0.013). Higher maternal choline levels also correlated with improved duration of attention, cuddliness and bonding with parents.

**Conclusion:** Marijuana use ≥10 weeks gestation adversely affects fetal brain development and subsequent behavioral self-regulation, a precursor to more serious attention and social problems. These effects were mitigated by stopping MJ use at <10 weeks gestation. Higher maternal choline levels also mitigated MJ's adverse effects on the fetus. Dietary changes, including supplements, can raise choline levels and potentially ameliorate adverse exposures on fetal brain development.

**Acknowledgements:** The study was supported by the Institute for Children’s Mental Disorders, the Anschutz Foundation, and the National Institutes of Health NIH/NCATS UL1 TR0010 (all authors) and NICHD K12HD001271-11 (Dr. Hoffman).

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**WOMEN'S REASONS FOR PRENATAL CANNABIS USE AND MOTIVES AND EXPERIENCES WITH DISCONTINUATION**

Cynthia L. Battle PhD, Jane Metrik, Ph.D., Samantha Ernst, BS, Rita Rossi, MA, Ana Abrantes, Ph.D.

1Alpert Medical School of Brown University
2Butler Hospital
3Women & Infant's Hospital of Rhode Island

**Objective:** Prenatal cannabis use has increased substantially. Although rising rates of prenatal use have been documented, little is known regarding reasons why women use cannabis during pregnancy. In addition, among women who discontinue cannabis use prenatally, little is known regarding women’s motives for, and process of, cannabis discontinuation.

**Methods:** In this ongoing study, we assess pregnant women regarding self-reported cannabis use prior to and during pregnancy, as well as reasons for use. A subset who discontinued cannabis during pregnancy participated in a qualitative interview regarding their motivation for and process of discontinuation. Participants included pregnant women seeking enrollment in clinical trials testing prenatal wellness interventions.

**Results:** To date, 239 pregnant women were screened, and of these, 59 (25%) reported regular pre-pregnancy cannabis use. Though many discontinued when they became pregnant, 34% of users (8.4% of all women screened) reported continued use throughout pregnancy. Women who used during pregnancy reported they were treating symptoms including anxiety, nausea, pain, appetite disturbance, and depression; however, 25% of prenatal users also endorsed social/recreational use. A preliminary analysis of qualitative comments, among women who discontinued use, revealed that the process of cannabis cessation is often promoted by concerns regarding fetal safety; while some women were able to discontinue use easily, others experienced ongoing difficulty and urges to use.

**Conclusions:** Anxiety, nausea and pain were the most common reasons during pregnancy. Further research is needed to more fully elucidate reasons for prenatal cannabis use, as well as risk perceptions, and intention and motives for discontinuation.

**Acknowledgments:** Data from this study were collected as part of NIH grant (R01HD81868) award to Dr. Battle, and NIH grant (R01NR014540) awarded Drs. Battle and Salisbury.

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**DIFFERENTIAL EFFECTS OF CRITICALLY-TIMED SLEEP AND LIGHT THERAPY FOR PREGNANCY VS. POSTPARTUM DEPRESSION**

Barbara L. Parry1, Charles J Meliska1, Diane L Sorenson1, L. Fernando Martinez1, Ana M. Lopez1, Sharron E. Dawes2, Richard L. Hauger1, Daniel F. Kripke1

1Psychiatry, University of California, San Diego, 2University of California, San Diego

**Objective:** To test the hypothesis that combined wake therapy and light treatment improves depressed mood in pregnant vs. postpartum women by differentially altering melatonin and sleep timing.

**Methods:** Initially 78 women, 35 pregnant (20 normal controls-NC; 15 depressed participants-DP with a major depressive episode-MDE) and 43 postpartum (24 NCs; 19 DP), were randomized to a parallel trial of 1-night of early wake therapy-EWT (sleep 3-7am) + 6-weeks of evening (PM) bright white light-BWL (Litebook Advantage) administered for 60 min starting 90 min...
before habitual sleep time, vs. 1-night of late-wake therapy—LWT (sleep 9pm-1am) + 6-weeks of morning (AM) BWL administered for 60 min within 30 min of habitual wake time. Blinded clinicians assessed mood weekly by the Structured Interview Guide for the Hamilton Rating Scale for Depression with Atypical Depression Supplement (SIGH-ADS), and participants completed the Horne-Ostberg Morningness-Eveningness questionnaire (MEQ), and collected 2 overnight urine samples for 6-sulphatoxy melatonin (6-SMT).

**Results:** Pregnant DP mood improved more after EWT+PM BWL (p=.016 MEQ covariate); in Postpartum DP it improved more @ LWT+AM BWL (p=.019), and was equally efficacious after 1, 2 or 6 weeks of treatment (p > .089). In postpartum DP, phase-advance in 6-SMT offset and acrophase was greater after LWT+AM BWL (p < .05), and correlated with the magnitude of mood improvement (p = .003).

**Conclusions:** Mood improved more after 2 weeks of EWT + PM BWL in Pregnant DP, and more after LWT + AM BWL in Postpartum DP, which correlated with the magnitude of phase-advance in 6-SMT.

**Funding/Disclosures:** NIH R01 HD076476

**PHARMACOKINETICS OF LITHIUM DURING LACTATION**

Maria Luisa Imaz1, Mercè Torra2, Dolors Soy3, Cristina Soler4, Lluisa Garcia-Esteve1, Rocío Martín-Santos5

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**Objective:** Lithium is an effective first-line treatment for bipolar disorder in the perinatal period. Historically women have been instructed to avoid breastfeeding while taking lithium due to the high variability of the transfer into breastmilk and the possible risk of lithium toxicity in the nursing infants. The aim of the study was to evaluate the pharmacokinetics of lithium at delivery and during lactation.

**Methods:** The Unit of Perinatal Mental Health Clinic-Barcelona, recruited and prospectively followed eleven women with bipolar disorder treated with lithium monotherapy during late pregnancy who elected exclusive breastfeeding. Study variables: socio-demographic, psychopharmacologic treatment, neonatal and child outcomes. Lithium plasma concentrations were collected intrapartum [maternal blood (MB), umbilical cord (UC)] and simultaneously in mother-infant pairs during lactation. Lithium plasma concentrations were determined by means of an AVL 9180 electrolyte analyzer based on the ion-selective electrode (ISE) measurement principle. Detection limit was 0.10 mEq/L.

**Results:** Lithium equilibrates across the placenta [mean (SD) UC/MB ratio 1.12 (0.10)]. The infant plasma to-maternal plasma lithium concentration (I/P) ratio decreased by the time from 1.12 (delivery) to 0.28 (delivery + 45.90 days). At seven weeks after birth, the infant plasma lithium concentrations ranged from 0.10-0.20mEq/L. No signs of lithium toxicity or other clinical adverse events were observed in the breastfeed infants.

**Conclusion:** In our case series lithium crosses the placenta completely and the concentrations in infant plasma decreased across time. We did not observe signs of lithium toxicity or other clinical adverse effects in the breastfeed infants. Our current suggestion is to monitor both clinical and lithium concentration in mother-infant dyads at delivery, and at 2, 7-10, 30 and 60 days postpartum only if clinical concerns arise.

**Acknowledgement:** The study was supported by the Generalitat de Catalunya/Support a les activitats del Grups de Recerca: SGR2017/1798.

**DOES ANTENATAL BENZODIAZEPINE USE AFFECT DELIVERY OUTCOMES? A SYSTEMATIC REVIEW AND META-ANALYSIS**

Sophie Grigoriadis1, Lisa Graves2, Miki Peer3, Lana Lana Mamishavili3, Myuri Ruthirakuhan3, Parco Chan3, Mirna Hennawy3, Supriya Parikh3, Simone Vigod4, Cindylee Dennis5, Meir Steiner6, Cara Brown3, Amy Cheung3, Hiltrud Dawson7, Neil Rector3, Melanie Guenette8, Margaret Richter3

1 Psychiatry, Sunnybrook Health Sciences Centre/University of Toronto, 2 Department of Family and Community Medicine, Western Michigan University Homer Stryker MD School of Medicine, 3 Sunnybrook Health Sciences Centre, 4 Womens College Hospital/University of Toronto, 5 University of Toronto, 6 McMaster University, 7 Health Nexus, 8 St. Michael’s Hospital

**Objective:** The effects of antenatal benzodiazepines exposure on delivery outcomes remains incomplete and this paper quantifies the effects on delivery outcomes.

**Methods** Data sources: Medline, PsycINFO, CINAHL, Embase, and the Cochrane Library were searched to June 30 2018 using controlled vocabulary and keywords.

**Study Selection:** English-language cohort studies comparing antenatal benzodiazepine exposure to an unexposed group on
delivery outcome were eligible. 23,909 records were screened, 56 studies were assessed for eligibility, and 14 studies were included. Data Extraction: Quality was assessed and data extracted by two independent reviewers. Random effects meta-analysis was used to pool estimates and effect of potential effect (i.e., study quality, timing of exposure).

**Results:** Antenatal benzodiazepine exposure was significantly associated with an increased risk for six outcomes initially: spontaneous abortion (Pooled OR=1.86; 95%, CI, 1.43-2.42), preterm birth (1.96; 1.25-3.08), low birth weight (2.24; 1.41-3.88), low Apgar score at 5-minutes (2.19; 1.94-2.47), NICU admission (2.61; 1.64-4.14), and induced abortion (2.04; 1.23-3.40). There was significant heterogeneity between studies for most outcomes without consistent moderators. Birth weight, gestational age and small for gestational age did not show significant associations although after adjusting for publication bias, gestational age and small for gestational age became significant, totaling 8/9 significant outcomes.

**Conclusions:** Antenatal benzodiazepine exposure is associated with increased risk for several adverse perinatal outcomes. Limitations include significant heterogeneity; influence of confounders cannot be dismissed. Despite this, NICU admission does appear clinically relevant; statistically significant adverse outcomes appear consistent with the antidepressant literature and must be balanced against untreated illness.

**Funding Support:** This study was funded by The Canadian Institutes of Health Research (CIHR) (Ottawa ON, Canada), FRN 141002.

**REPRODUCTIVE PSYCHIATRY IN U.S. ACADEMIC MEDICAL CENTERS: A SURVEY OF CURRENT PRACTICES & NEEDS**

Joy Moel¹, Brianna Ward¹, Fatemah Shabbir¹, Stacey Pawlak¹

¹Department of Psychiatry, University of Iowa

**Objective:** Reproductive Psychiatry is a rapidly growing subspecialty area and most of the clinical service, training, and research are conducted in academic medical centers. As the field continues to grow, it is important to better understand current practices and needs so the treatment and study of psychiatric illness during reproductive transitions can be improved.

**Methods:** Specialty clinics in reproductive psychiatry were identified from a list of U.S. academic medical centers and directors were contacted to complete a survey either electronically or by phone. The survey was also sent to the Marcé Society for Perinatal Mental Health listserv to identify any additional clinics.

**Results:** Data has been collected from 34 sites to date and results will be presented in graphic and narrative form, including a U.S. map with clinic locations. Less than one-third of U.S. academic medical centers have a reproductive psychiatry specialty clinic. Most clinics focus primarily on perinatal mood and anxiety disorders, offer didactic and elective clinical training for psychiatry residents, and conduct research. Increased psychotherapy providers, childcare services, and inpatient mother-baby hospitalization programs were the most commonly identified needs.

**Conclusions:** While the number of specialty clinics and the range of training and research in reproductive psychiatry have expanded over the last three decades, significant needs remain. Based on these findings, recommendations for improvement and barriers to implementation will be discussed.

Concurrent 6E
Bellflower Room - Oral Presentations (6) - Chair: Lauren Osborne

**IMPROVING PERINATAL DEPRESSION OUTCOMES WITH MOBILE TECHNOLOGY**

Shannon N Lenze , Alex Ramsey

*Psychiatry, Washington University School of Medicine*

**Objective:** Perinatal depression is often unrecognized and untreated. Mobile health technologies have great potential to overcome barriers to screening and intervention. There is little guidance on how best to implement these technologies in Ob-Gyn clinic settings. The goal of this study was to examine feasibility, acceptability and preliminary outcomes of a two-way digital health technology to repeatedly deliver a text-based depression screen.

**Methods:** Using mixed-methods to assess implementation outcomes, we conducted focus groups with patients recruited from the OB-Gyn clinic (n=8) and administered surveys with OB clinic providers (n=25) and patients (n=100). Next, 129 patients enrolled to pilot test use of the technology. Patients received prompts via text to complete an Edinburgh Postnatal Depression Scale (EPDS) at enrollment, 24 weeks gestation, and 34 weeks gestation. A brief satisfaction survey was collected at completion. Demographic information, obstetrical outcomes, and medical record documentation of depression screening were also collected.

**Results:** Despite initial skepticism among patients and providers about using text messages for depression screening, eighty-nine percent of enrolled patients complete at least one EPDS and 74% completed all 3 screens. Twenty-four percent of
screens were above the clinic established threshold ($\geq 10$). We will present patterns of screening engagement and response as well as comparisons to medical record data and estimates of treatment engagement.

**Conclusions:** Screening for depression during pregnancy using mobile health technology is feasible and acceptable in high risk OB clinics serving a vulnerable population. More research is needed to determine feasibility and cost of implementation.

**Acknowledgements:** This study was funded by the Barnes-Jewish Hospital Foundation and Washington University Institute of Clinical and Translational Sciences.

- **The Lived Experience of Perinatal Depression and Pain during the Third Trimester of Pregnancy**
  Julie Vignato, Cheryl Beck, Virginia Conley, Michaela Inman, Micayla Patsais, Lisa Segre

  **Objective:** Depression, as high as 18.4%, and pain, ranging from 55-78%, are both prevalent during pregnancy. Depression and pain may occur together during the third trimester of pregnancy at rates of 31%. In the general adult population, untreated pain is linked to worsening depression outcomes. During pregnancy, untreated pain and depression may contribute to poor maternal newborn outcomes. This study is one of the first to describe the lived experience of depression and pain during pregnancy to truly understand the phenomena to promote effective screenings and treatments.

  **Methods:** A descriptive retrospective phenomenological study was conducted. Postpartum women were recruited from a previous cross-sectional study of pregnant women in their third trimester which evaluated the relationship between, pain, depression, and quality of life. Women experiencing severe depression/pain ($n=7$) and mild to moderate depression/pain participated ($n=15$) in the current study. Using the online qualitative interview methodology of Beck, women were asked to type their responses into an online secure research website. Women were asked to clarify their written responses and then later asked to comment on the researchers’ findings using Colaizzi’s strategy of descriptive phenomenological analysis.

  **Results:** In the mild to moderate depression/pain group, untreated pain was described as leading to depression. In the severe depression group, women described depression feeling like pain. Themes of feeling stigmatized and being minimized by medical providers and close social supports emerged. Neither group reported experiencing more than partial pain relief.

  **Conclusions:** Effective screening and treatment of both pain and depression during pregnancy may be needed.

- **TRAUMA-INFORMED CARE IN A PATIENT-CENTERED MEDICAL HOME FOR YOUNG MOTHERS AND THEIR BABIES: IMPLEMENTATION AND OUTCOMES**
  Bethany D. Ashby, Amelia C. Ehmer, Stephen M. Scott, MD, MPH

  **University of Colorado School of Medicine**

  **Objective:** Adolescent mothers experience higher rates of trauma and abuse and increased risks for mental health disorders, as compared to adolescent girls who are not mothers, making them a particularly vulnerable population and contributing to them feeling less supported their medical provider. Women with a history of childhood abuse face increased rates of obstetric complications; their infants are at increased risk for low birth weight, developmental and intellectual delays, and behavioral problems. Trauma-informed care has become widespread in mental health settings, but has not been as commonly applied to other settings, such as Patient-Centered Medical Homes (PCMH). This project explores the impact of trauma-informed care on pregnancy and birth outcomes in a PCMH for adolescent mothers and their babies.

  **Methods:** The Colorado Adolescent Maternity Program (CAMP) is an obstetric and pediatric medical home for pregnant and parenting adolescent girls and their children. Given the prevalence of trauma histories among adolescent mothers reported in the literature, programmatic and operational changes to clinical care were made using SAMHSA’s six key principles of a trauma-informed approach. Pregnancy and birth outcomes from 861 pregnant adolescents were evaluated pre- and post-implementation of trauma-informed care.

  **Results:** Data showed that nearly 30% of participants reported a history of trauma. Following the inclusion of trauma-informed principles, patients had significantly higher rates of attendance at prenatal appointments ($p < 0.001$) and significantly lower rates of low birthweight babies ($p = 0.02$). African African-American mothers demonstrated the most significant decline in poor birth outcomes (15.5% to 8.3%).

  **Conclusions:** Future programmatic changes and long-term assessment outcomes of this trauma-informed approach in a PCMH are discussed. Birth outcomes among African-American pregnant adolescents may particularly benefit from such services.

- **ACCULTURATION AND CHANGING RELATIONSHIPS BETWEEN SOCIAL SUPPORT, SOCIOCULTURAL STRESSORS AND DEPRESSIVE SYMPTOMS IN PREGNANT WOMEN OF MEXICAN DESCENT**
  Kimberly D’Anna, Junue Hernandez

  **California State University San Marcos, Psychology, California State University San Marcos**
Objective: Pregnant Mexican women experience high levels of depression and stress that vary by acculturation. Social support often buffers the adverse effects of stress, but as Mexican-Americans become acculturated, they often need a larger network to combat mental health symptoms. Whether this phenomenon occurs in the perinatal period and which source (family, friend, medical providers) is protective against the effects of acculturation on prenatal mental health is not clear.

Methods: Participants (n=181) were recruited early in pregnancy. Social support was assessed with measures of both general and pregnancy-related social support from various sources along with sociocultural measures (acculturation via Mexican and Anglo Orientation, acculturative stress, perceived discrimination), general perceived stress and depressive symptoms. Qualitative interviews were conducted to determine relevant stressors.

Results: Mexican Orientation was associated with more persons living in the home (r(179)=.023, p<0.05) and greater satisfaction with support from providers ( r(179) =.179, p <.05). Anglo Orientation was associated with more nearby friends (r(179)=.135, p<0.05) and greater satisfaction with material aid ( r(179) =.379, p <.05). Neither acculturative stress nor discrimination were related to social support; however, more relatives nearby buffered the adverse effects of acculturative stress (R²=0.349, B=-0.006, SE=0.002, t=-2.983, p=0.003) and discrimination (R²=0.325, B=-.192, SE=0.083, t=-2.299, p=0.023) on prenatal depressive symptoms. More satisfaction with providers was also associated with less depressive symptoms. Qualitative data supported these findings.

Conclusions: Results highlight medical providers as a salient support during pregnancy and expansion of social support beyond household members as important modifiable resources for perinatal mental health.

A RELATIONAL APPROACH TO TREATMENT OF POSTPARTUM DEPRESSION AND MOTHER-INFANT RELATIONSHIPS IN THE CONTEXT OF MATERNAL TRAUMA HISTORY
Roseanne Clark, Jen Perfetti
Psychiatry, UW School of Medicine and Public Health

Objective: Depression prevalence rates of 34-50% have been found for mothers living in poverty, the population served by federally funded Home Visiting Programs. An NIMH funded RCT established equivalence between the Mother-Infant Therapy Group (M-ITG) and IPT in amelioration of depressive symptoms, recovery and recurrence rates. M-ITG delivered in Home Visiting programs integrates a focus on mothers’ early attachment relationships, trauma and mindfulness practices. M-ITG also offers professional development to Home Visitors to support capacity to address PPD and early relationships.

Methods: Twenty-five mothers and infants in five counties and one tribal reservation were assessed pre and post completion of the 15-week M-ITG as was a matched services-as-usual comparison group. Measures: Depressive symptoms - BDI/EPDS, Parental Stress-PSI, Trauma History-ACES interview, Mother-Infant Relationship- Parent-Child Early Relational Assessment. Home Visitors completed self-report scales of knowledge and skills in addressing PPD and mother-infant relationships. Mothers participated in attachment and trauma focused group therapy, mindfulness and lovingkindness meditation practices, and mother-infant psychotherapy.

Results: Significant decreases in mothers’ depressive symptoms pre/post group have been found relative to the SAU comparison group (BDI mean score reduction 9.73 vs. 2.83, p<.05; EPDS mean score reduction 6.11 vs. 3.50, p<.05). Significant increases in the Home Visitors’ knowledge related to postpartum depression (pre=4.14/ post=5.78, t=12.26, p< .01), infant mental health (pre=4.71/ post=6.62, t=5.43, p< .01), and development of skills in supporting mother-infant relationships (pre=4.38/post=5.79, t=9.95, p<.01).

Conclusions: Results suggest a trauma focused and relational approach to PPD, combined with mindfulness practices, can reduce depressive symptoms and benefit mother-infant relationships.

Acknowledgements: This study was supported by the State of Wisconsin Department of Children and Families and the University of Wisconsin Institute for Clinical and Translational Research.

PERINATAL MENTAL HEALTH IN BRAZIL: THE FEASIBILITY OF MOOD DISORDERS SCREENING DURING PREGNANCY IN A HIGH-RISK MATERNITY
Fernanda Schier de Fraga¹, Narcizo Leopoldo Eduardo da Cunha Sobieray¹, Dirceu Zorzetto Filho², Eduardo Jonson Serman¹, Gabriel Henrique Oliveira Garcia², Pedro Henrique Pereira Alvim², Adelyne Mayara Tavares da Silva Sequinel³, Beatriz Souza Lima Wan-Dali³, Vivian Ferreira do Amaral¹
¹Gynecology and Obstetrics, ²Psychiatry, ³Medical Student, Federal University of Paraná Clinics Hospital

Objective: Depression can affect 25.8% of women during pregnancy in low-income countries. Referring these patients to specialists in Brazil’s public health system is difficult, and many remain underdiagnosed and undertreated. Testing the efficacy of mood disorders scales in high-risk pregnancies could demonstrate the impact of screening in identification of maternal-fetal morbidity.
Methods: Women between 18-24 weeks of gestational age who underwent prenatal care in a high-risk maternity hospital in Southern Brazil answered three questionnaires: "Gestational Profile", "Edinburgh Postpartum Depression Scale" (cut off≥13) and "Simplified Mood Disorders Questionnaire" (positive when ≥7 “yes” answers). SCID-5® was applied by a “blinded” psychiatrist and the final diagnose was obtained.

Results: Predisposition to depressive episode (EPDS≥13) was 19.51% of 41 patients and 17.07% were diagnosed with Major Depression by SCID-5®. MDQ was positive in 16 patients and the prevalence of Bipolar Disorder was 19.51%. The sensitivity of EDPS was 75%, specificity 93.94% and accuracy 90.24%. MDQ sensitivity was 87.50%, specificity 72.73% and accuracy 75.61%.

Conclusion: EPDS and MDQ are feasible scales for mood disorders screening since they have a high sensitivity. Obstetricians should be aware of their important role in the inclusion of mental health as part of prenatal consults since they are the first professionals to assist these patients. A multidisciplinary outpatient clinic of perinatal mental health for Brazilian women could improve the diagnostic pattern, follow-up and ensure greater adherence to the treatment.

4:30pm – 4:45pm Session Transition

4:45pm – 5:30pm Plenary Lecture
Jodi Pawluski, PhD
Plasticity in the Parental Brain: Implications for Perinatal Mental Illness and Its Treatment

6:30pm Conference Dinner – Southern Style BBQ & Blue Grass Band at Carolina Inn (additional ticket purchase)

SUNDAY, October 27, 2019

8:00am – 9:30am Plenary Lectures
Grumman Auditorium
Ruby Mendenhall PhD
Hidden America: Centering Black Mothers’ Voices Regarding the Effects of Gun Violence on Their Mental and Physical Health
Ma. Asunción Lara
The Influence of Social and Cultural Factors in Perinatal Depression in Mexico: Relevance for Latinas in the U.S.

9:30am - 10:00am Refreshment Break

10:00am – 10:45am Plenary Lecture
Grumman Auditorium
Katie Watson JD
Reproductive Justice and Structural Competency: Moving Medicine from Sensitivity to Advocacy

10:45am – 11:00am Session Transition

11:00am – 12:30pm Concurrent Sessions

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The Microbiome: At the Intersection of Mother-Infant Mental Health

Chair: Mary Kimmel, MD, University of North Carolina School of Medicine, Chapel Hill, NC

Introduction: Our ability to study the microbes such as the bacteria that live within and around us has expanded exponentially. There is growing evidence that the microbes and their functions are part of a microbiota-brain axis. The diversity of the microbiota and the function of the microbes are important components in how we interact with the environment, how we manage stress, and in the development of depression and anxiety. There is growing evidence that the microbiota-brain axis is particularly important during the perinatal period and beyond for maternal and child mental health. This symposium will include four presentations each highlighting different aspects of research of the microbiota-brain axis and mother-infant mental health.

Animal model work will be presented that exhibits the underlying biology of the host immune system-microbe interactions in relation to stress response of mother and offspring. Human behavioral laboratory research will be presented that shows how the microbiota associates with the stress response and in relation to factors such as nutrition and history of childhood adversity. A study showing how research of the microbiota in relation to perinatal depression can be done in clinical settings. Finally another study enriched for patients with past psychiatric history of anxiety and/or depression will be presented to show how microbial metabolites may provide additional information about the microbiota-brain axis. By the end of the symposium, participants will have an overview of current microbiota-brain axis research in relation to mother-child mental health and a view of future directions to improve mother-child mental health.

Prenatal Stress Leads to Inflammation-Dependent Serotonergic Dysfunction in the Intrauterine Environment in Mice

Helen Chen1,2 Adrienne Antonson3, PhD, Therese Rajasekara3, Tamar L. Gur, MD, PhD1,2,3,4,5
1. The Ohio State University College of Medicine Department of Neuroscience 2. The Ohio State University College of Medicine Medical Scientist Training Program 3. Institute for Behavioral Medicine Research 4. The Ohio State University Department of Obstetrics and Gynecology 5. The Ohio State University Department of Psychiatry and Behavioral Health

Objective: Studies demonstrate that exposure to stress prenatal stress can have negative consequences on neurodevelopment and has been linked with psychiatric disorders in the offspring. In this study we address the contribution of maternal stress in utero on inflammation and serotonergic (5HT) function.

Methods: Pregnant C57/BL6 females were assigned to stress or non-stressed control group. The stressed group was restrained between embryonic day (E) 10-E16. Placentas and amniotic fluid were collected from a cohort of pregnant females at E17.5. RT-PCR and multiplex ELISA was used to examine inflammation levels and 5HT-related gene expression.

Results: Prenatal stress leads to increased levels of the chemokine CCL2, as well as IL-6, and IL1β (P<0.05) in placenta and fetal brain. The increase in inflammation was reversed in CCL2 knockout (KO) mice. An alteration in 5HT metabolism in WT mice was reversed in CCL2 KO mice.

Conclusion: Utilizing prenatal stress in a rodent model we have established a link between inflammation and serotonergic function in utero, which may contribute to alterations in adult behaviors and contribute to psychiatric illness. Furthermore, we demonstrate that inflammation is upstream of serotonergic dysfunction, supporting targeting inflammation as a therapeutic modality.

The Microbiota-Brain Axis and Inflammation During Pregnancy: Effects of Adverse Childhood Experiences and Omega-3 Fatty Acids

Liisa Hantsoo, Ph.D.1, Brendan McGeehan, M.S.1, Michal Elovitz, M.D.2, Charlene Compher, Ph.D.3, Ceylan Tanes, Ph.D.4, Gary Wu, M.D.4, C. Neill Epperson, M.D.5
1. The University of Pennsylvania Perelman School of Medicine, Department of Psychiatry
2. The University of Pennsylvania Perelman School of Medicine, Maternal & Child Health Research Center, Department of Obstetrics & Gynecology
3. The University of Pennsylvania School of Nursing, Department of Biobehavioral Health Sciences
4. Children’s Hospital of Philadelphia, Division of Gastroenterology, Hepatology, and Nutrition
5. University of Colorado Anschutz Medical Campus, Department of Psychiatry

Objective: Adverse childhood experiences (ACEs) program a dysregulated neuroimmune response to stress in adulthood, but ACE impact on the gut microbiome is unknown. This study assessed associations among ACE, the gut microbiome, diet, and cytokine response to stress in pregnancy.

Methods: Healthy pregnant women completed the Adverse Childhood Experiences Questionnaire (ACE-Q) and provided a stool sample at 20-26 weeks gestation; DNA was isolated, 16S sequencing was performed. Three 24-hour food recalls assessed dietary intake. A subset of women completed the Trier Social Stress Test (TSST) at 22-34 weeks gestation; plasma interleukin-6 (IL-6), -1β (IL-1β), C-reactive protein (CRP), and tumor necrosis factor α (TNF-α) were measured at four timepoints to calculate area under the curve (AUC). Mixed models assessed relationships between gut microbiota, ACE, omega-3 fatty acids, and cytokine AUCs; false discovery rate (fdr) adjusted p-value (q)<0.05 was considered significant.

Results: Forty-eight women completed the ACE-Q and provided stool; 19 completed the TSST. Women reporting 2 or more ACEs (high ACE) had greater differential abundance of gut Prevotella than low ACE participants (q=5.7x10^-13). Abundance of several gut taxa were significantly associated with cortisol, IL-6, TNF-α and CRP AUC. IL-6 response to stress was buffered among high ACE women with high intake of docosahexaenoic acid (DHA) (p=0.03) and eicosapentaenoic acid (EPA) (p=0.05).

Conclusions: Our findings suggest that multiple ACEs are associated with altered gut microbiota composition during pregnancy. Exploratory analyses suggested that high dietary intake of omega-3 fatty acids dampened inflammatory response to acute stress specifically in high ACE women.

Acknowledgements: K23 MH107831 (Hantsoo), March of Dimes Early Career Award (Hantsoo)

DEPRESSION DURING PREGNANCY IS ASSOCIATED WITH AN ALTERED GUT MICROBIOME AND THE IMMUNE SYSTEM IN THE MOMENT (MOMS AND MENTAL HEALTH) COHORT.

Beatriz Penalver Bernabe1, Shannon Dowty2, Lacey Pezley3, Zainab Shah2, Elle Hill1, Neil Gottel1, Robert Gibbons4, Lisa Tussing-Humphreys4, Pauline M. Mak2,5,6, Jack A. Gilbert1,7

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2 Department of Psychiatry, University of Illinois at Chicago, Chicago, IL
3 Division of Academic Internal Medicine and Geriatrics of the Department of Medicine, University of Illinois at Chicago, Chicago, IL
4 Departments of Medicine & Public Health Sciences (Biostatistics) The University of Chicago, Chicago, IL
5 Department of Psychology, University of Illinois at Chicago, Chicago, IL
6 Department of Obstetrics and Gynecology, University of Illinois at Chicago, Chicago, IL
7 Scripps Oceanographic Institute, University of California San Diego, La Jolla, CA

Objective: Antenatal depression (AND) is common among minority women and confers significant risks to mother and child. Despite increasing evidence linking depression to the gut microbiome, this research has not been extended to the perinatal period.

Methods: A subsample of sixty-four pregnant women (80% under-represented minorities) from the MoMent cohort provided fecal and blood samples at their first (<16 gestational weeks, T1) and second trimesters (24-28 gestational weeks, T2) and completed the Computerized Adaptive Diagnostic Test for Major Depression Disorder diagnostic screening tool (CAD-MDD). Using DADA2, 16S rRNA amplicon sequence analysis of fecal DNA, DADA2 identified exact sequence variants (ESVs) that were correlated against AND using Generalized Linear Models (GLM). GLM were adjusted by age, gestational weeks and BMI. Multiple comparisons were corrected for false discovery rate.

Results: AND rate were 15.6% and 10.6% during T1 and T2, respectively. While Shannon index was not associated with AND, the average Bray-Curtis distance was inversely associated with AND (p=0.02). Several ESV were different in women with and without AND. For instance, Paraprevotella and Faecalibacterium were enriched and depleted respectively in women with AND overall, while Lactobacillus was only depleted at T1. Additionally, TNF-alpha was negatively associated with AND during T1 (p=0.1), and IL-6 and IL-12(p70) were increased in mothers with AND in T2 (p<0.05).

Conclusions: Our results provide new evidence that AND is associated with an altered gut microbial composition and immune system that vary with gestational age and could serve as a future assay to detect AND in clinical settings.
MICROBIAL METABOLITES: AT THE INTERSECTION OF MICROBIOTA-GUT-BRAIN AXIS AND PERINATAL MOOD AND ANXIETY DISORDERS

Mary Kimmel, MD; Wancen Mu, MS; Kai Xia, PhD; Kun Lu, PhD; Hannah Rackers, MPH; Samantha Meltzer-Brody, MD, MPH; Rebecca Santelli, PhD

University of North Carolina and Michigan State University

Objective: Microbial metabolites, such as bile acids modified by the gut microbiota, are an important component of the microbiota-gut-brain axis in relation to depression and anxiety. While bile acids have been studied across pregnancy, they have not been analyzed in relation to Perinatal Mood and Anxiety Disorders (PMAD).

Methods: Women were recruited in the first or second trimester, characterized by a number of factors including mental health history, into the postpartum period. Anxiety was assessed by the Generalized Anxiety Disorders-7 (GAD-7). Microbial composition was analyzed through 16S sequencing of fecal samples. Microbial composition alpha-diversity was measured with Chao1, Shannon, PD whole tree, and observed species methods. LC-MC was used to analyze serum for bile acids.

Results: Change in two measures of alpha diversity were associated with change in hyocholic acid from the initial visit to the third trimester and again from the third trimester to the postpartum visit. Hyocholic acid levels were also associated with history of major depression. Changes in ω-muricholic acid, glycohyocholic acid and taurocholic acid from the initial visit to the third trimester were associated with changes in GAD-7 score. Levels of ω-muricholic acid, ursodeoxycholic acid, glycochenodeoxycholic acid, chenodeoxycholic acid, and deoxycholic acid were associated with alpha-diversity by three or four methods.

Conclusions: While this is a small pilot study, it shows further investigation of perinatal mental health, the gut microbial composition, and bile acids is warranted. Changes in metabolites such as bile acid levels resulting from lower microbial diversity hold promise for better understanding PMAD.

Acknowledgements: Foundation of Hope Seed Grant, NIMH 1K23MH110660-01, NARSAD Young Investigator Award and P&S Fund.

Concurrent 7B
Dogwood Room

Symposium

Short- and Long-Term Consequences of Severe Postpartum Mental Disorders: Recent Epidemiologic Evidence Based on Danish Population Registers

Chair: Trine Munk-Olsen

The National Center for Register-based Research, Aarhus University, Aarhus, Denmark.

Symposium introduction:
Population based registers, including Danish health registries, have across last decades provided compelling epidemiological evidence related to both incidence and prevalence of postpartum mental disorders, but also risk factors for the disorders. The ability to follow individuals several years in registers offer unique and unparalleled opportunities to study short- and long-term outcomes across the entire female population. Despite an increasing research focus on perinatal mental health, evidence is still lacking particularly regarding long-term consequences of postpartum mental disorders, including postpartum depression. The main reason for this, is due to limited data sources with such detailed long term follow-up opportunities.

Symposium aims: The aim of the proposed symposium is to introduce conference attendees to recent and newest evidence concerning the short- and long-term outcomes of postpartum mental disorders, including both maternal and child outcomes. This will be done through four presentations focused on the epidemiological evidence and the clinical relevance of these findings. All presenters will provide the newest population based evidence related to both maternal outcomes (recurrence risk, subsequent fertility rates and risk of self-harm and suicide attempts) and child outcomes (risk of self-harm and suicide attempts). A minimum of 10 minutes for discussion will be prioritized.

WILL IT HAPPEN AGAIN? A POPULATION BASED STUDY ON RECURRENCE RISK OF POSTPARTUM MENTAL DISORDERS.

Trine Munk-Olsen (1), Xiaqin Liu (1).

(1): The National Center for Register-based Research, Aarhus University

Introduction: Mothers with records of postpartum mental disorders are understandably concerned about the risk of recurrence after successive deliveries, and we therefore aimed to examine recurrence risk of an episode of mental disorders in the postpartum period following a subsequent delivery.
**Methods:** A population-based cohort study using Danish nationwide registers identifying 514,860 women aged 15–45 years with a first live birth during 1997–2015 from the Danish Medical Birth Registry, leaving a total of 414,673 women in the final analysis. Postpartum mental disorders were defined as in- or outpatient treatment for psychiatric disorders (primary diagnosis with all ICD-10 codes, excluding F10–F19 and F70–F79) or redeemed prescription for psychotropic medications within 6 months after the first delivery. The cumulative incidence of postpartum psychiatric disorders for first, second, and third deliveries was estimated using the command “stcompet” by Coviello and Boggess.

**Results:** Preliminary results indicate that following the second delivery, the cumulative incidence of a postpartum psychiatric episode was 25.5% (95% CI: 23.8–27.2%) for women who had mental disorders after their first delivery and 1.6% (95% CI: 1.6–1.7%) for those who had not. Following the third delivery, the cumulative incidence was 56.8% (95% CI: 46.8–65.6%) for women who had postpartum mental disorders in the two previous postpartum periods and 2.0% (95% CI: 1.9–2.1%) for those without a history of psychiatric disorders.

**Conclusions:** Recurrence risk of postpartum mental disorders is substantial and should be considered across clinical practice for both prevention and treatment planning.

**Acknowledgements:** Munk-Olsen T. is supported by iPSYCH, the Lundbeck Foundation Initiative for Integrative Psychiatric Research (R155-2014-1724), The National Institute of Mental Health (NIMH) (R01MH104468) and Fabrikant Vilhelm Pedersen og Hustrus Legat. Liu X. is supported by the Danish Council for Independent Research (DFF-5053-00156B).

**POSTPARTUM MENTAL DISORDERS: HOW DO THEY INFLUENCE SUBSEQUENT FERTILITY?**
Xiaoqin Liu1,2,3, Esben Agerbo1,2,3, Katja Ingstrup1,2,3, Oleguer Planas-Ripoll1, Trine Munk-Olsen1,2,3

1 The National Center for Register-based Research, Aarhus University, Aarhus, Denmark;
2 CIRRAU-Centre for Integrated Register-based Research, Aarhus University, Aarhus, Denmark;
3 Lundbeck Foundation Initiative for Integrative Psychiatric Research, iPSYCH, Denmark;

**Objective:** To investigate whether postpartum mental disorders are associated with a decreased likelihood of a subsequent livebirth, and if so, whether the associations are modified by the survival of the first child.

**Methods:** We conducted a population-based cohort study of 414,673 women with a first live birth during 1997–2015 and followed them until the subsequent conception of a live birth, emigration, death, or June 30, 2016, whichever occurred first, using Danish national registers. Cox regression models were used to estimate the hazard ratios (HRs) of having a subsequent live birth.

**Results:** Women with postpartum mental disorders had a 34% reduction in the rate of having a second livebirth (HR=0.66, 95% CI: 0.64–0.69), compared with women with no postpartum mental disorders, however this association disappeared if the first child died (HR=1.06, 95% CI: 0.88–1.26). Postpartum mental disorders requiring hospitalizations were associated with a more pronounced reduced fertility irrespective of the survival status of the first child (HR=0.54, 95% CI: 0.47–0.62 if the first child survived, and HR=0.48, 95% CI: 0.23–1.01 if the first child died).

**Conclusions:** Our preliminary findings indicate that women experiencing postpartum mental disorders have decreased likelihood of a subsequent childbirth. This association is reduced if the first child died. If postpartum psychiatric disorders are severe, fertility is independent of the child’s survival status. The reduced fertility in women with postpartum psychiatric disorders may be due to a combination of reproductive choice and subfertility.

**Acknowledgements:** Liu X. is supported by the Danish Council for Independent Research (DFF-5053-00156B). Agerbo E. and Munk-Olsen T. are supported by iPSYCH, the Lundbeck Foundation Initiative for Integrative Psychiatric Research (R155-2014-1724). Agerbo E. is also supported by Niels Bohr Professorship Grant from the Danish National Research Foundation and the Stanley Medical Research Institute. Munk-Olsen T. is also supported by the National Institute of Mental Health (NIMH) (R01MH104468) and Fabrikant Vilhelm Pedersen og Hustrus Legat. Ingstrup K.G. is supported by AUFF NOVA (AUFF-E 2016-9-25.). Planas-Ripoll O. is supported by the European Union’s Horizon 2020 research and innovation programme (Marie Sklodowska-Curie grant agreement No 837180).

**SELF-HARM IN WOMEN WITH MODERATE-SEVERE POSTPARTUM MENTAL DISORDERS**
Benedicte Marie Winther Johannsen1, Janne Tidselbak Larsen1,2, Thomas Munk Laursen1,2, Karyn Ayre3, Louise M Howard3, Samantha Meltzer-Brody4, Bodil Hammer Bech5, Trine Munk-Olsen1

1 National Center for Register-based Research, Aarhus University
2 CIRRAU, Centre for Integrated Register-based Research, Aarhus University

Fuglesangs Allé 26, 8210 Aarhus; Denmark
MATERNAL POSTPARTUM PSYCHIATRIC EPISODES AND SELF-HARM/ SUICIDE ATTEMPTS IN OFFSPRING.

Katja G Ingstrup1, Merete Lund Maegbaek1, Xiaqin Liu1, Simone Vigod2, Trine Munk-Olsen1.

1 National Center for Register-based Research, School of Business and Social Sciences, Aarhus University, Aarhus V, Denmark
2 Women’s College Research Institute Department of Psychiatry, Women’s College Hospital, Toronto, Canada

Objective: The postpartum period is a high-risk period for women to develop psychiatric disorders with highly negative consequences for mothers and offspring. Deliberate self-harm and suicide attempts in adolescence and early adulthood are an important public health concern. Our aim was to investigate if maternal postpartum psychiatric episodes were associated with subsequent self-harm and suicide attempts in the offspring.

Methods: We performed a register-based cohort study using Danish national registers identifying all live firstborn children from 1980 to 2015. Exposure was defined as a psychiatric disorder (ICD-10 F00-99 and ICD-8 290-315) within 6 months after birth in mothers. The outcome was defined as offspring hospital contacts for self-harm and suicide attempts. We used Cox proportional hazards regression for the analyses with hazard ratios as outcome measures.

Results: Out of the 1,140,936 participating children, 24,644 children (2.2%) had a self-harm or suicide episode, and 3296 mothers had a postpartum psychiatric episode. Preliminary results show children of mothers with a postpartum psychiatric episode to have an increased risk of self-harm/suicide attempts compared to children of mothers with no psychiatric episodes in the postpartum period, adjusted hazard ratio 1.58 (95% confidence interval 1.22 - 2.05).

Conclusions: We found children of mothers with a postpartum psychiatric episode within six months after birth to have a 58% higher risk of self-harm and suicide attempts, confirming existing literature that children born by mothers with postpartum mental disorders constitute a particularly vulnerable group.

Acknowledgements: K.G. Ingstrup and M. Maegbaek are supported by AUFF NOVA, grant number: (AUFF-E 2016-9-25) T. Munk-Olsen is supported by iPSYCH, The Lundbeck Foundation Initiative for Integrative Psychiatric Research, grant number (R155–2014-1724) and Fabrikant Vilhelm Pedersen og Hustrus Mindelegat. Liu X. is supported by the Danish Council for Independent Research (DFF-5053-00156B).
**Introduction:** Women frequently seek complementary health practices for improving mood, lowering anxiety and/or enhancing overall wellbeing. These practices include a diverse range of health behaviors, including mind and body practices (yoga, exercise, tai chi), and natural products and nutritional supplements (Omega-3 fatty acids). Research suggests complementary health practices are increasingly common among pregnant and postpartum women, with women frequently turning to these approaches to address psychological and emotional wellbeing. Though still relatively understudied, empirical research on complementary health practices for perinatal mental health has grown tremendously. This symposium brings together experts across a range of disciplines who will present new findings, and provide overviews of the current literature with regard to complementary health practices for perinatal women: 1) **Dr. Patricia Kinser**, women’s mental health researcher and a nurse practitioner based at VCU will discuss discuss results from an NIH-funded pilot trial of a group-based mindful physical activity program, 2) **Dr. Nafisa Resa**, a fellow in perinatal psychiatry will present a review of nutraceuticals for perinatal depression; 3) **Dr. Anne Porter**, a fellow in Maternal-Fetal Medicine will discuss a mindfulness intervention she is piloting with pregnant women, and 4) **Dr. Camille Hoffman**, an MFM researcher will discuss the role of sleep and chronotherapies for perinatal women. Last, symposium chair, **Dr. Cynthia Battle**, a clinical psychologist at Brown and Women & Infants’ Hospital, will add final remarks about the growth of research in this area as represented by several recently-funded NIH trials testing the efficacy of complementary health approaches to improve perinatal mood, including her 2 RCTs evaluating yoga and physical activity for antenatal depression.

**PRELIMINARY EFFECTS OF A MINDFUL PHYSICAL ACTIVITY INTERVENTION FOR PREGNANT WOMEN WITH DEPRESSIVE SYMPTOMS**

Patricia Kinser, Ph.D.,¹ Thacker, L.,² Moyer, S.,³ Rider, A.,¹ York, T.,³ Amstead, A.,³ Mazzeo, S.,⁴ Starkweather, A.⁵

¹Virginia Commonwealth University Department of Nursing
²Virginia Commonwealth University Department of Biostatistics
³Virginia Commonwealth University School of Medicine/ Virginia Institute for Psychiatric and Behavioral Genetics
⁴Virginia Commonwealth University School of Nursing
⁵University of Connecticut School of Nursing

**Objective:** Nearly 20% of women experience clinically significant depressive symptoms during pregnancy, yet many pregnant women are concerned about stigma, adverse effects, and/or costs of the “usual care” for depressive symptoms (e.g., antidepressants, psychotherapy). To address the need for an accessible, non-pharmacologic, complementary approach for these women, we seek to evaluate the effects of a 12-week group-based mindful physical activity program (“Mindful Moms”).

**Methods:** In this longitudinal pilot trial, we examined preliminary effects of the “Mindful Moms” intervention on maternal depressive symptoms, perceived stress, and anxiety from baseline to end of intervention in pregnant women with high depressive symptom severity (n=41), compared with archival data of those receiving the usual care (n=32). A secondary aim was to investigate whether intervention participation influenced DNA methylation patterns.

**Results:** Repeated measures analysis models were fit using a mixed linear model for each variable; post-hoc tests using the least squares mean estimates assessed significance in the change over time. Significant decreases in all variables were observed in the “Mindful Moms” group compared to the control over time: depressive symptom severity (0.64[0.24], p=0.009), perceived stress (-3.66[1.59], p=0.023), and anxiety (-0.58[0.29], p=0.0486). Analysis of DNA methylation is on-going.

**Conclusions:** The findings from this study address the urgent need for adjunctive treatments for depressive symptoms in pregnancy, particular those with target self-management of current symptoms and prevention of recurrent symptoms.

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**NUTRACEUTICALS AND PERINATAL DEPRESSION**

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Objective: Approximately 14% to 23% of women develop depression during pregnancy and up to 16.7% develop depression within 3 months postdelivery. Perinatal depression (PND) is underdiagnosed and undertreated. It is associated with adverse health outcomes for both mother and child. Perinatal women may inquire about increasingly prevalent nonpharmacologic treatments. This review examines the evidence regarding the safety and efficacy of common complementary and alternative medicine (CAM) in reducing unipolar perinatal depression.

Methods: This was a focused review of the literature in the past decade on nutraceuticals used for PND, based on the prevalence of use and availability of evidence from randomized control trials. Specific natural products included omega-3 fatty acids (O-3FA), folate, vitamin D, selenium, zinc, magnesium, and B vitamins. In the absence of evidence specific to PND, studies addressing the impact of these products on depressive symptoms within the general adult population were reviewed.

Results: There is encouraging preliminary data supporting the consideration of O-3FA, folate, and vitamin D (in cases of deficiency) for PND. At this time there is insufficient evidence for the efficacy of selenium, zinc, magnesium, and B vitamins.

Conclusions: Given the wide availability and popularity of CAM in perinatal women, this is an important area for future study and should be inquired about by treatment providers. Overall, there is little data on the safety and efficacy of CAM compared to traditional treatments (e.g., psychotherapy, pharmacotherapy). Adequately powered high-quality studies are necessary to determine the role of nutraceuticals for treating perinatal depression.

Acknowledgements: This article was supported by National Institutes of Health Grant 5K23MH097794 (K.M. Deligiannidis).

MATERNAL MINDFULNESS AS A PRACTICE TO DECREASE PERINATAL STRESS AND ANXIETY
Annie Porter, MD
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Objective: Mindfulness is the practice of focusing awareness on the present moment. Outside of pregnancy, it has been shown to decrease both subjective and objective measures of stress. This presentation will introduce the emerging evidence for a mindfulness practice in pregnancy as a technique for stress reduction. In addition, preliminary data will be presented from an ongoing study evaluating the utility of an app-based mindfulness practice in decreasing perceived stress levels in pregnant women.

Methods: A literature review was performed on the topic of mindfulness in pregnancy using the keywords “mindfulness and pregnancy.” The ongoing study aims to enroll a total of 100 women to use a mindfulness app developed specifically for pregnancy. Perceived stress scores will be compared to an existing cohort who did not use the app as well as among app users based on frequency of use.

Results: A total of 15 trials were reviewed, with 8 applying an intervention to increase mindfulness. Mindfulness was found to decrease maternal perceived stress, anxiety, depression and postpartum depression. Other outcomes included increased feelings of acceptance and self-compassion as well as improved neonatal social-emotional behavior. Preliminary data from the current study support mindfulness as a highly acceptable technique to patients with >90% enrollment for those eligible.

Conclusions: Existing research has shown an association between subjective stress levels and adverse pregnancy outcomes; thus, techniques to limit stress, especially those that are acceptable to patients desiring lower intervention such as mindfulness, are of paramount importance.

SLEEPING WELL: AN INTEGRATIVE STRATEGY TO IMPROVE PERINATAL MOOD AND OVERALL HEALTH AND WELLNESS.
Camille Hoffman, MD, MSCS
University of Colorado School of Medicine, Department of Obstetrics and Gynecology, Division of Maternal Fetal medicine. Aurora, Colorado, US

Objective: Perinatal Mood and Anxiety Disorders (PMADs), along with all diagnosed mental health conditions, are associated with impaired sleep. This presentation will aim to introduce the evidence base on sleep during the perinatal period, differentiating between data on the antepartum versus postpartum period. It will also offer practical advice
that our patients may use to enhance their sleep as an integrative strategy to augment therapies designed to treat PMADs.

Methods: A literature review was performed assessing articles on the topic of sleep, sleep trajectories, circadian rhythms, and PMAD trajectories. In addition, sleep intervention studies in antepartum and postpartum women were reviewed.

Results: A total of 17 intervention trials were reviewed with postpartum depression or depressive symptoms as primary outcome and a total of 48 intervention trials were reviewed with “sleep AND pregnancy” as keywords. Efficacy of treatment, timing of intervention, and type of intervention deemed efficacious varied depending on maternal comorbidities, trauma history, treatment for PMADs, and whether participants were antepartum or postpartum.

Conclusions: Sleep is an important pillar of health and wellness and improving sleep quality and duration is possible, even in newly postpartum women.

Acknowledgements: n/a

Concurrent 7D
Redbud B Room - Oral Presentations (6) - Chair: Barbara Parry

• "Who Says We Don't Belong?" A Protocol to include Postpartum Disorders as Formal Diagnoses in the DSM
Margaret Spinelli
*Psychiatry, Columbia University College of Physicians and Surgeons*

**Background:** The diagnosis of postpartum psychosis (Psychosis with Childbirth) was included in the second edition of the 1968 American Diagnostic and Statistical Manual of Mental Disorders (DSM II). The word “postpartum” was stricken from the psychiatric nomenclature of the DSMIII (1980) and DSMIIIIR (1987) for 14 years (1980-1994). This created a generation of American psychiatrists who disregarded the existence of mental illness associated with childbearing. Still today, recent editions of the DSM (DSMIV and DSMV) continue to deny a formal diagnostic classification for postpartum psychosis suggesting it is not a “distinct diagnosis” and does not differ from nonpuerperal psychosis.

**Objective:** The specifier “peripartum onset” does not demonstrate the unique diagnostic criteria of postpartum psychosis or other postpartum disorders. The science that underlies postpartum psychosis provides the diagnostic credibility necessary for inclusion in the DSM. As experts in the field of perinatal psychiatry we must ensure that the science and symptoms of all postpartum disorders are identified.

**Method:** Through the research expertise of international perinatal centers identifiable criteria and biological determinants now provide necessary DSM validators for inclusion of postpartum psychosis as a formal diagnosis. Validators include family aggregation, psychiatric history, genetic patterns, neural substrates, immune system dysregulation, stability of diagnosis and course of Illness, all factors necessary to complete the DSM submission protocol for diagnosis.

**Conclusion:** The absence of formal diagnostic criteria for postpartum mental illness in the DSM flies in the face of biology. Inclusion of all postpartum disorders can provide a common language for identification, treatment, research and prevention. This model for submission of postpartum psychosis to the DSM should encourage the perinatal community to pursue the goal of formal diagnostic inclusion for all postpartum disorders.

• A Pilot Feasibility Study of Using App-Based Ecological Momentary Assessment and a Wearable Tracking Device to Enhance the Clinical Care and Management of Postpartum Depression
Holly Krohn1, Samantha Meltzer-Brody1, Jerry Guintivano2, Rachel Frische1, Hannah Rackers1, Jamie Steed1
1 *Psychiatry, 2 Genetics, University of North Carolina at Chapel Hill*

**Objective:** Tracking devices and personal technology are increasingly being used in an effort to enhance clinical care. We investigated the clinical utility and acceptability of using an app to track daily mood, anxiety and sleep quality via ecological momentary assessment (EMA) and the use of a wearable device, an Apple Watch, to capture physiological data among women with postpartum depression.

**Methods:** Participants (N=23) attended 3 research visits over the course of a 6-week enrollment period. Questionnaires to assess depression, anxiety, and maternal functioning were periodically collected, along with daily self-reported symptoms and passively collected physiological data. Feedback was collected from participants and the study clinician to determine the utility and acceptability of daily tracking. Compliance with daily EMA was measured.

**Results:** Participants completed EMA ratings of mood, anxiety and sleep quality on average over 65% of the time. Passive heart rate and activity data were collected over 75% of the time. Sleep was tracked 46% of the time. Both positive and critical feedback were solicited from participants and the study clinician regarding the use of EMA and wearable device tracking.

**Conclusions:** App-based EMA and the use of wearable devices is a feasible approach to enhance clinical care for women with
PPD. Although feedback was ascertained for improvements to this method, the majority of participants and the clinician endorsed this as beneficial to care. With the growing integration of personal data into medical records, this could be a potentially powerful way to capture data among a group that experiences many barriers to care.

- Establishing Preliminary Severity Ranges for Scores on the Edinburgh Postnatal Depression Scale
  Jennifer E. McCabe¹, Lisa S. Segre², Michael W. O’Hara²
  ¹Western Washington University, ²University of Iowa
  **Objective:** Edinburgh Postnatal Depression Scale (EPDS) cutoff scores are used to identify clinically significant depression in perinatal women. This dichotomous approach renders equivalent all women classified as possibly depressed and fails to account for variability in depression severity across cases. Establishment of EPDS depression severity ranges (e.g. mild, moderate, severe) would provide incremental information to inform treatment referrals and lead to increase specificity in research. The present study established preliminary EPDS severity ranges based on the Beck Depression Inventory (BDI), a widely used depression symptom scale with previously established severity ranges.

  **Methods:** A convenience sample of 1516 postpartum women completed the EPDS and the BDI. Equipercentile linking identified the concordance between EPDS and BDI scores. Preliminary severity ranges were established by identifying EPDS scores that corresponded to established severity ranges on the BDI.

  **Results:** The following severity ranges were identified for EPDS scores: no/minimal depression (0-6), mild depression (7-13), moderate depression (14-19), severe depression (19-30). An EPDS score of 19 corresponded to both 29 and 30 on the BDI and that scale’s cut point for moderate vs. severe depression.

  **Conclusions:** Perinatal women experience a range of depression severity. The use of severity ranges on the EPDS may improve screening and referral in clinical settings and increase depression severity specification in treatment studies. Given the nature of this convenience sample, replication in a larger sample of perinatal women exhibiting higher symptom severity is an important direction for future research.

- The Role of Napping and Sleep Disturbance in the Onset of Antenatal Depression: Objective vs. Subjective Findings
  Sanam (Sammy) Dhaliwal¹, Huynh-Nhu (Mimi) Le¹, Daniel S. Lewin², Jennifer Keller²
  ¹Psychology, The George Washington University, ²Sleep and Pulmonary Medicine, Children’s National Health System, ³The George Washington University School of Medicine and Health Sciences
  **Objective:** Sleep disruption affects >85% of pregnant women and contributes to psychological distress and antenatal depression. This project examined whether (a) poorer objective sleep quality contributed to depression severity, (b) daytime napping related to nighttime sleep, and (c) daytime napping predicted better daytime mood and lower depressive symptoms later in pregnancy, independent of nighttime sleep.

  **Methods:** In a mixed-methods study, 450 women (age: M=32.4 years; gestation: M=28.4 weeks, 58% Black) completed the Pittsburgh Sleep Quality Index, Edinburgh Postnatal Depression Scale and measures of pregnancy-related physiological factors. A subset of 30 nulliparous women with no history of psychopathology completed actigraphy (9-nights; 10-days) and daily stress diaries (3-days). Hierarchical linear regressions adjusted for age, race, sleep-disordered breathing, and gestational age.

  **Results:** Greater subjective sleep disturbance predicted clinically-significant antenatal depression (B = .38, p<.05). Objectively-assessed shorter duration and lower efficiency sleep predicted greater depression symptoms (B = 1.8, 2.1, respectively; ps<.01). Daytime naps inversely, but non-significantly, correlated with nighttime duration. Average nap lengths of 15-28 minutes predicted the lowest depression symptoms, after adjusting for nighttime sleep duration (B = .24, p<.05). Those with a single daily nap <30 minutes reported better daytime mood (B = .1, p<.05) and lower depressive symptoms later in pregnancy (B = .31, p<.05).

  **Conclusion:** Short daytime naps (<30 minutes) may buffer against antenatal mood disturbance, independent of poor nighttime sleep. Tracking daytime sleep can inform clinical guidelines and carries intervention implications. Providers should query nighttime and daytime sleep and consider short-term daily ecological measures.

  **Acknowledgements:** 1R36MH118000-01; CNMC CTS121517

- Neural and Affective Effects of Reproductive Steroid Manipulation in Reproductive-Related Mood Disorders
  Crystal Edler Schiller¹, Gabriel Dichter², Joshua Bizzell², Sarah L Johnson², Erin C Richardson¹, Peter Schmidt¹, Ayseñil Belger¹, David Rubinow¹
  ¹Psychiatry, University of North Carolina at Chapel Hill, ²University of North Carolina at Chapel Hill, ³Behavioral Endocrinology, National Institute of Mental Health
  **Background:** Neuroendocrine factors are purported to play a role in the etiology of reproductive-related mood disorders. Here we present data from two pharmaco-fMRI studies investigating the effects of experimentally controlled reproductive steroid
Methods: In Study 1, the hormone states of pregnancy and parturition were simulated in women with a history of PPD (n=15) and controls (n=15) by inducing hypogonadism, adding back supraphysiologic doses of estradiol (E2) and progesterone for 8 weeks (“addback”), and then withdrawing both steroids (“withdrawal”). In Study 2, depressed perimenopausal women (MDD; n=20) and controls (without depression) (n=23) were treated with transdermal E2 for 3 weeks. In both studies, fmri sessions, conducted at baseline and post-treatment, included the monetary incentive delay task (MID).

Results: In Study 1, 11 of the 15 women with a history of PPD were “hormone sensitive” (i.e., showed 30% increased mood symptoms during the hormone challenge). Hormone sensitive women showed decreased activation of the bilateral putamen (p<.01) during hormone withdrawal (compared with baseline), whereas controls showed no change in brain activation. In Study 2, MDD women showed decreased mood symptoms (p’s<.005) following E2 treatment, whereas controls showed no change. fMRI analyses are underway.

Conclusions: Our data support a role of E2 and progesterone in reproductive related mood disorders. Steroid changes were associated with perturbation of neural reward circuitry and consequent depressive symptoms in hormone sensitive women, and E2 reduced mood symptoms in those with perimenopausal depression. The neural reward circuitry may underlie mediation of hormone-related affective dysfunction.

• Assessing the Specificity of Perinatal Anxiety to the Neural Correlates of Infant Face Processing

Helena Rutherford, Emily Vancor
Yale Child Study Center, Yale University

Objectives. The perinatal period is characterized by heightened levels of anxiety that may impact mothers and their developing child. Therefore, it is necessary to understand brain-based correlates of anxiety to inform the perinatal origins of parenting. Electroencephalography (EEG) is a non-invasive and acceptable neuroimaging methodology employed during the perinatal period to measure processing of infant face stimuli. Prior research has shown maternal anxiety is associated with an EEG-derived component, the late positive potential (LPP), elicited by neutral, but not distressed, infant faces. Unknown is whether these findings are specific to perinatal anxiety or represent a broader mechanism of anxiety interactions with infant face processing.

Methods. Anxiety-LPP associations from pregnant (N=43) and postpartum (N=47) samples were compared to anxiety-LPP associations in nulliparous females recruited from community (N=35) and college (N=29) populations. EEG was recorded while women viewed neutral and distressed infant faces, and the LPP elicited by those faces was measured. Women also completed self-report anxiety assessments.

Results. Anxiety was associated with the neutral infant face LPP elicited in pregnant, r=.52, p<.001, and postpartum, r=.40, p<.01, women. However, anxiety in college, r=0.06, p=0.77, and community, r=0.01, p=0.97, participants was not associated with the neutral infant face LPP. There were no associations between anxiety and the distressed infant face in the perinatal or nulliparous samples, p’s>.05.

Conclusions. Perinatal anxiety specifically affects the processing of neutral infant faces pre- and postpartum. These findings indicate the importance of anxiety to maternal neural responses to infant cues and its potential contribution to the perinatal origins of parenting.
#1 - ASSESSING THE IMPACT OF PERINATAL DEPRESSION ON POSTPARTUM CONTRACEPTION INTENT AND CHOICE
Smita Carroll¹, Grace Masters³, Linda Brenchle³, Sharina D Person¹, Jeroan Allison³, Nancy Byatt², Tiffany A Moore Simas¹
¹ Obstetrics and Gynecology, ² Psychiatry, UMass Memorial Medical Center, ³ University of Massachusetts Medical School

Objectives: Addressing perinatal mental health and postpartum contraceptive needs are key components of comprehensive perinatal care. Discussing postpartum contraception is essential to decrease unintended pregnancy and allow for optimal inter-pregnancy intervals, especially given that unintended pregnancy and stressful life events are risk factors for perinatal depression. The objective of our study was to assess contraceptive intent and use in a perinatal cohort, receiving treatment for depression during the perinatal or postpartum period.

Methods: Our sample included 41 women, aged 18-55, that screened positive for depression (Edinburgh Postnatal Depression Scale [EPDS] ≥10) at some point in the perinatal period, and negative for bipolar disorder or substance use disorder. The subjects were interviewed regarding contraceptive intent, choice of contraception method, and actual use 4-12 weeks postpartum and were re-assessed for depressive symptomatology.

Results: A statistically significant decrease was noted between intention of use and actual use of Tier 1 contraceptive methods (LARCs, male or female sterilization) in the EPDS positive population (-31.3%, p=0.02). Though not significant, a higher percentage of EPDS negative subjects reported using any contraceptive method compared to EPDS positive subjects (63.6% versus 56.3%, p=0.65).

Conclusions: In this cohort, we demonstrate a decrease between intent and use of Tier 1 contraception. This cohort tended to choose more user-dependent contraception or abstinence. The findings support an association between perinatal depression and usage of less effective contraception. Research is indicated further into the postpartum period, as well as in individuals with comorbid bipolar disorder and/or substance use disorder.

Acknowledgements: This study was supported by the Centers for Disease Control and Prevention (Grant Number: U01DP006093) and the UMass Center for Clinical and Translational Science TL1 Training Program (UL1TR001453, TL1TR01454, KL2TR01455).

#2 - POSTPARTUM DEPRESSIVE SYMPTOMS AND ATTENDANCE AT POSSIBLE SCREENING VENUES, 2012-2015: 8 PRAMS JURISDICTIONS
Sarah C. Haight¹, Jean Y. Ko¹, Michael W. Yogman³, Sherry L. Farr²
¹ Division of Reproductive Health, ² National Center for Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention, ³ Department of Pediatrics, Harvard Medical School, Harvard University and Mount Auburn Hospital

Background: Screening women for depression only at the postpartum obstetric checkup may miss women who do not attend or whose depressive episode occurs earlier or later. We evaluated postpartum engagement with health services to identify additional screening opportunities for postpartum depressive symptoms (PDS).

Methods: Pregnancy Risk Assessment Monitoring System (PRAMS) data, 2012-2015, from 8 jurisdictions (n=22,885, representing 1,820,000 women) were used to calculate percent of women attending a postpartum checkup, a well-baby checkup, and receiving postpartum home visitation by presence of PDS. PDS were assessed using the 2-item Patient Health Questionnaire. Adjusted prevalence ratios (aPR) and 95% confidence intervals (CI) were calculated to compare attendance by PDS, adjusted for sociodemographic characteristics. Analyses were conducted in SUDAAN, accounting for complex sampling.

Results: Among women with and without PDS, respectively, almost all attended a postpartum checkup (85.8% and 91.9%; aPR=0.97, 95% CI=0.94, 0.99) and well-baby checkup (97.6% and 99.0%; aPR=0.99, 95% CI=0.98, 1.00); 13.6% and 11.0% received home visitation (aPR=1.16, 95% CI=1.00, 1.34). Of women with PDS who did not attend a postpartum checkup, 91.5% reported their baby attended a well-baby checkup and 13.6% received home visitation. Of women with PDS, 99.0%, 86.6% and 11.4% reported engagement with one, two or three health services.

Conclusion: A large percentage of women with PDS engage in well-baby checkups or home visitation, representing opportunities for frequent depression screening and referral for care.

#3 - UTILIZATION OF HEALTHCARE AMONG PERINATAL WOMEN IN THE UNITED STATES: THE ROLE OF DEPRESSION
Grace Masters¹, Nien Chen Li¹, Kate Lapane¹, Shao-Hsien Liu¹, Sharina Person¹, Nancy Byatt¹,²
¹ UMass Medical School, ² UMass Memorial Health Care

Acknowledgements: This study was supported by the Centers for Disease Control and Prevention (Grant Number: U01DP006093) and the UMass Center for Clinical and Translational Science TL1 Training Program (UL1TR001453, TL1TR01454, KL2TR01455).
Purpose Individuals with depression have increased non-psychiatric healthcare utilization. Associations between depression and utilization have not been studied in perinatal women, despite their heightened depression risk. We examined patterns of non-psychiatric healthcare utilization in women with symptoms of perinatal depression, expecting more frequent use of acute services while being less likely to have routine medical care.

Methods We identified 1,103 perinatal women from the 2005-2016 National Health and Nutrition Examination Surveys (NHANES). Weighted analyses were used to make results nationally representative. The Patient Health Questionnaire (PHQ-9) was used to identify depression (score ≥10). We evaluated associations between perinatal depressive symptoms and healthcare utilization using logistic models and relative excess risk due to interaction (RERI) using adjusted models.

Results In the US, 7.3% of perinatal women had depression symptoms. Relative to those without, women experiencing depressive symptoms were younger, more impoverished, and uninsured (p <0.05). Women with depressive symptoms had twice the odds of being without routine medical care (21.6% v. 12.5%, adjusted odds ratio (aOR): 2.1, 95% Confidence Interval (CI):1.1-4.1) and of using urgent care more frequently (26.5% v. 15.1%, aOR: 1.9, 95%CI: 1.0-3.9). Depressive symptoms combined with lack of insurance increased the odds of not having routine care (RERI: 8.4, 95%CI: -0.5-17.3) and more frequent use of urgent care (RERI: 7.1, 95%CI: -2.7-17.0).

Conclusions Perinatal depression is a prevalent, high-risk disease and requires more non-psychiatric services, in addition to increased psychiatric care. Approaches that facilitate establishing a place for routine care and decreasing acute care use are necessary.

#4 - WOMEN’S TREATMENT DECISIONS FOR BIPOLAR DISORDER DURING THE PERINATAL PERIOD: RESULTS FROM A MIXED METHODS STUDY
Cynthia L Battle PhD1,2,3 Margaret Howard, Ph.D., 1,3 Cintly Celis-de Hoyos, MA, 1 Jennifer Johnson, Ph.D. 4 Teri Pearlstein, MD, 1,5, Lauren Weinstock, Ph.D. 1
1 Alpert Medical School of Brown University 2 Butler Hospital 3 Women & Infants’ Hospital of Rhode Island 4 Michigan State University 5 Miriam Hospital

Objective: Bipolar disorder (BD) is a recurrent, disabling illness, and research indicates that the perinatal period is particularly destabilizing for women with BD. Pharmacologic treatment decisions can be challenging, and many women do not access care, increasing risk for episodes of depression or mania. This investigation examined treatment decisionmaking patterns, symptom changes, and related experiences among perinatal women with BD.

Methods: We enrolled 40 women with BD, assessing symptoms, pharmacologic decisions, and other variables from pregnancy to postpartum. When possible, we interviewed providers who treated the enrolled participants prenatally. A subsample of patients (N=24) also completed an in-depth qualitative interview regarding prenatal treatment decisions.

Results: 73% of women met criteria for BDI, the rest had BDII. Symptom levels were in the moderate range. We documented a wide range of treatment trajectories, with women reporting multiple, often complex, changes in pharmacologic treatment across pregnancy and during the postpartum period. Only a minority of women (10%) reported being on a mood stabilizer consistently throughout the entire pregnancy. Women reported concerns regarding impact of medications on the fetus; many also voiced concerns about decreases in their functioning, should symptom increased. Provider interviews suggested that there is a wide range of comfort levels when prescribing medications for BD prenatally, with prior reproductive psychiatry training associated with much greater comfort.

Conclusions: Perinatal women with BD often experience challenges accessing care and making treatment decisions during the perinatal period, and many experience changes in their treatment status. Tailored support for women with perinatal BD is needed.

Acknowledgments: This study was supported by a NIMH grant (R34MH103570) awarded to Drs. Battle and Weinstock.

#5 - PERINATAL USE OF LURASIDONE FOR THE TREATMENT OF BIPOLAR DISORDER
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Objective: Second generation antipsychotics (SGAs) are commonly prescribed for the treatment of bipolar disorder (BD) in women of childbearing age and are increasingly used during pregnancy. Evidence regarding the impact of physiologic changes during pregnancy on the concentration of SGAs is limited, specifically in the case of lurasidone. Data to guide dosing in pregnancy that maximizes efficacy and minimizes adverse effects are lacking. This report presents novel data on the perinatal changes in concentration of lurasidone and the implications for BD illness course.
**Methods:** Prospective monthly monitoring of lurasidone serum concentrations and recurrence of BD symptoms after the second trimester of pregnancy until the third postpartum month were completed.

**Results:** Lurasidone serum concentrations ranged from 0 to 4.7ng/mL during pregnancy and increased to a range of 10 to 12ng/mL postpartum. The patient presented with fluctuating anxiety, manic, and depressive symptoms during the observed pregnancy months. Her lurasidone dose was increased from 80 to 120mg daily over the course of her pregnancy and reduced to 80mg daily after delivery. Despite the decrease in lurasidone dose post-delivery, the concentrations were higher and the patient’s symptoms significantly improved.

**Conclusion:** Lurasidone serum concentrations are lower during pregnancy compared to postpartum regardless of higher than baseline doses, suggesting the need for therapeutic monitoring and dose titration during pregnancy. Pregnant women who require lurasidone or other similarly metabolized SGAs during pregnancy for the treatment of BD should be closely monitored to ensure timely dose adjustments and to avoid disease relapse during the perinatal period.

**#6 - TYPE OF INFANT FEEDING CONTRIBUTES TO POSTPARTUM MOOD AND ANXIETY DISORDER SYMPTOMS**

Mary Banahan¹, Christina Ventura-DiPersia¹

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**Objective:** Postpartum mood and anxiety disorders (PMAD) affect 1 in 7 women and are the most common complication of childbirth in the U.S. Studies show breastfeeding may have a protective effect on PMAD symptomatology. However, research is lacking regarding the effect of feeding practices on social interactions and subsequent PMAD symptoms. This study sought to ascertain the relationship between infant feeding practices and the development of PMAD symptoms.

**Methods:** A cross-sectional survey was designed and disseminated online via social media to women who had given birth in the preceding twelve months in October 2018, containing items related to sociodemographics, infant feeding practices, and self-reported mood symptoms. Multivariate logistic regression analysis was employed to assess the impact of infant feeding practices on social interactions and feelings of anxiety or worry.

**Results:** The survey had N=689 respondents. Women who reported that their infant feeding practices affected their social interactions a great deal had significantly higher odds of feeling anxious or worried for no clear reason (OR: 3.10, 95% CI: 2.06-4.67), compared to women who reported that their feeding practices affected their social interactions slightly or not at all. This association remained significant even after adjusting for age, education, income, marital status, and self-reported depressive symptoms (OR: 2.51, 95% CI: 1.574-3.997).

**Conclusions:** Social isolation is known to be a risk factor for PMAD symptoms. The type of infant feeding practice may contribute to a decrease in social interactions leading to an increase in PMAD symptoms.

**#7 - THE IMPORTANCE OF MEDICAL AND SIGNIFICANT OTHER’S SUPPORT IN THE RELATIONSHIP BETWEEN BODY IMAGE DISSATISFACTION AND MENTAL HEALTH SYMPTOMS IN PREGNANT MEXICAN-AMERICAN WOMEN.**

Miriam Soledad Bautista

Psychology, California State University of San Marcos, R.I.S.E., & O.T.R.E.S.

**Objective:** Pregnant women become more vulnerable to body image dissatisfaction as they are going through constant physiological and psychological changes at a rapid pace. Mexican-Americans have high fertility, obesity, and maternal depression rates, thus are a population that may be affected by body image dissatisfaction during pregnancy. However, the protective factors that may buffer the adverse effects of body image dissatisfaction are unknown. Social support likely plays a role, including that from medical professionals and significant others, given the medical and social aspects of body image.

**Methods:** Women (n=187) reported body image dissatisfaction based on comfortabiliy in weight, body change, and clothes fit as well as anxiety and depressive symptoms throughout pregnancy. Pregnant women also stated their satisfaction based on their significant other and the medical staff support in their second trimester.

**Results:** Less satisfaction with support from medical staff and significant others were correlated with high body image dissatisfaction within the first trimester (body change r = -.236, p = .001/ weight r = -.151, p = .039, respectively). Less satisfaction with support from medical staff and significant other was associated with more depressive and anxiety symptoms throughout the first and second trimester (ps>0.05). Medical staff support mediated the relationship between body image dissatisfaction and depressive symptoms (indirect effect: 0.325, CI: 0.009-1.101)

**Conclusions:** Body image dissatisfaction is an important factor for maternal mental health during pregnancy and social support from both partners and medical staff may play an important role. Perinatal interventions should focus on these social supports to promote healthy maternal-child outcomes.
#8 - PREMENSTRUAL SUICIDAL IDEATION AS A DIMENSION OF PREMENSTRUAL SYNDROME: A CROSS-SECTIONAL STUDY OF A CLINICAL SAMPLE
Sara V Carlini1, Kristina M Deligiannidis1,2,3

1 Department of Psychiatry, Division of Psychiatry Research, Zucker Hillside Hospital, 2 Departments of Psychiatry and Obstetrics & Gynecology, Zucker School of Medicine at Hofstra/Northwell, 3 Feinstein Institute for Medical Research

Objective: Suicidal ideation is not included in the DSM-5 diagnostic criteria for premenstrual dysphoric disorder, but the disorder is associated with increased suicidal ideation, plans, and attempts in epidemiological studies. The aim of the present study is to assess the prevalence of passive or active suicidal ideation as a specific dimension of premenstrual syndrome.

Methods: The Women’s Mood Disorder Task group of the National Network of Depression Centers developed a survey assessing women’s mood across the lifespan that is being distributed in up to 14 academic sites nationally. Data collection using a one-time, anonymous, IRB-exempt survey is ongoing across Zucker Hillside Hospital (ZHH) and Long Island Jewish Medical Center (LIJMC) campuses among women 18 and older utilizing ambulatory psychiatry and obstetrics/gynecology clinics, inpatient psychiatric units, and the partial hospitalization program.

Results: During July-November 2018, 256 surveys were collected. 54% had a positive screen for premenstrual symptoms with 11% concurrent passive SI and 9% concurrent active SI. For psychiatriically hospitalized patients: 53 total surveys collected with 70% positive premenstrual symptoms screen and 32% concurrent passive SI and 23% concurrent active SI. For outpatient psychiatry patients: 75 total surveys collected with 52% positive premenstrual symptoms screen and 13% concurrent passive SI and 13% concurrent active SI. For obstetrics-gynecology patients: 114 total surveys collected with 50% positive premenstrual symptoms screen and <1% concurrent passive and active SI.

Conclusion: A subset of women with premenstrual syndrome may also experience concurrent suicidal ideation, further highlighting the urgency of diagnosing and adequately treating this often overlooked disorder.

#9 - SECONDARY ENDPOINTS IN A PHASE 3, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL OF SAGE-217 IN POSTPARTUM DEPRESSION: THE EDINBURGH POSTNATAL DEPRESSION SCALE AND THE BARKIN INDEX OF MATERNAL FUNCTIONING
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Introduction/Objectives: Postpartum depression (PPD) is the most common complication of childbirth. This double-blind, randomized, placebo-controlled Phase 3 trial examined depressive symptoms and maternal function following administration of SAGE-217, an investigational, orally-bioavailable GABAA receptor positive allosteric modulator, in women with PPD.

Methods: Women with PPD (n=151), ages 18-45, ≤6 months postpartum, with a Hamilton Rating Scale for Depression (HAM-D) total score ≥26, were randomized 1:1 to receive SAGE-217 or placebo for 14 days, with 4 weeks follow-up. Change from baseline in HAM-D score at Day 15 was the primary endpoint. Changes from baseline in HAM-D score at different time points, the Edinburgh Postnatal Depression Scale (EPDS), and the Barkin Index of Maternal Functioning (BIMF) were evaluated throughout the study. Safety and tolerability were assessed by adverse event (AE) reporting.

Results: SAGE-217 achieved the primary endpoint of a significant reduction in least-squares mean HAM-D versus placebo at Day 15 (-17.8 vs. -13.6, p=0.0028). Significant differences were observed from Day 3 (p=0.0252) through Day 45 (p=0.0027). SAGE-217 was associated with numerical improvements versus placebo in EPDS and BIMF at Day 15 that reached statistical significance at Day 45 (EPDS: -11.8 vs. -8.3, p=0.0005; BIMF: 26.9 vs. 19.7, p=0.0164). Somnolence, headache, dizziness, upper respiratory tract infection, diarrhea, and sedation were the most common (≥5%) AEs in the SAGE-217 group.

Conclusions: SAGE-217 was associated with rapid (by Day 3) and sustained (through Day 45) reductions in depressive symptoms, followed by significant improvement in maternal function by Day 45.

Acknowledgements: Sage Therapeutics, Inc. supported this study.

#10 - EXPLORING POSTPARTUM EXPERIENCES AMONG KOREAN IMMIGRANT WOMEN
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Objective: Untreated postpartum depression (PPD) can lead to devastating effects on the mother, infant, and family. Little research has examined perceptions of PPD among Asian American women which is concerning given the growing population within the United States. Therefore, the aim of this study was to explore the perceptions of PPD among Korean women.
Methods: Using a qualitative design, immigrant Korean women who had given birth in the past 13 months, completed the Edinburgh Postnatal Depression Screening Scale (EPDS) and participated in a semi-structured interview.

Results: Participants included 11 married, Korean women between 22-44 years of age, who had been in the US between 1-25.5 years. Most (n = 10, 90.9%) gave birth vaginally, 63.6% (n = 7) had male infants, and 54.5% (n = 6) were breastfeeding. EPDS scores indicated 27.3% (n = 3) were at risk of developing PPD. Content analysis of interview data revealed five themes: 1) Mixed feelings about Korean cultural values; 2) practice and examples of postpartum traditions; 3) postpartum challenges; 4) postpartum support; and 5) lived experience with depression and help seeking.

Conclusions: Although women identified triggers for depressive symptoms in line with women in the general population (e.g. poor social support, sleep disturbance), Korean women believed PPD would naturally heal with time and that symptoms were not severe enough to warrant help-seeking. Healthcare providers working with Korean women must be knowledgeable about how of depression is perceived along with childbearing traditions to promote maternal-infant wellbeing outcomes.

#11 - RESILIENCE RESOURCES ARE ASSOCIATED WITH FEWER SYMPTOMS OF POSTPARTUM DEPRESSION
Melissa Julian, Jessica Lee Irwin, Huynh-Nhu Le, Calvin J Hobel, Mary Coussons-Read, Christine Dunkel Schetter
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Objective: Women are at elevated risk for depression during the perinatal period. While some studies indicate resilience resources may be important to study in perinatal populations, most research has only focused on risk factors for postpartum depression. The current study tested associations of optimism, mastery, and positive affect (conceptualized as resilience resources) with symptoms of postpartum depression from 6 weeks through one-year postpartum.

Methods: The sample consisted of 234 women from Los Angeles, CA (n=116) and Denver, CO (n=118) who participated in the Healthy Babies Before Birth (HB3) Study. Interviews were conducted during each trimester of pregnancy and at 4-8 weeks (P1), 5-7 months (P2), and 11-13 months (P3) postpartum. The sample was 45% White (n=105), 37% Latina (n=86) and 18% Other (n=44). A resilience resources index (RRI) reflecting relatively stable traits was formed by standardizing and summing total scores on measures of mastery, dispositional optimism, and positive affect assessed during pregnancy. Postpartum depressive symptoms were measured by the Edinburgh Postnatal Depression Scale (EPDS) at each of the three postpartum time points. Pearson’s correlation coefficients were used to examine bivariate associations between the RRI and the EPDS at all three postpartum timepoints.

Results: Greater RRI scores were significantly associated with lower EPDS scores at each time point: P1 (r=-.45), P2 (r=-.38), and P3 (r=-.36), all ps<.001.

Conclusion: These findings highlight the importance of studying the factors that promote resilience when studying postpartum mood disorders and suggest that resilience should be a focus of preventive and treatment interventions for postpartum depression.

#12 - THE ROLE OF ACCULTURATIVE STRESS, ACCULTURATION, AND DISCRIMINATION ON SOMATIC SYMPTOMS OF DEPRESSION AMONG PREGNANT MEXICAN-AMERICANS
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Objective: Mexican American women exhibit higher levels of depression during pregnancy compared to their White counterparts. Sociocultural stressors, such as discrimination and acculturative stress, may play a role in this disparity as they have been linked to poor mental health outcomes. Additionally, research has looked at the ways in which different ethnic groups experience symptoms of depression, with evidence showing that ethnic minorities tend to report more somatic symptoms of depression. This study aims to examine the roles of discrimination, acculturative stress, and acculturation in the reporting of somatic symptoms of depression among pregnant Mexican American women.

Methods: Pregnant Mexican American women (n=295) were recruited and given questionnaires to measure their somatic depressive symptoms, acculturative stress, acculturation, and perceived discrimination.

Results: High acculturative stress predicted higher levels of somatic symptoms of depression during early and late pregnancy (R²=.013, B=.047, t=6.298, p<.001; R²=.019, B=.025, t=2.268, p=.024, respectively) as well as postpartum (R²=.113, B=.336, t=6.242, p<.001). High perceived discrimination predicted higher levels of somatic symptoms of depression during early and mid-pregnancy (R²=.037, B=.982, t=3.344, p=.001; R²=.016, B=.918, t=2.100, p=.037, respectively) as well as postpartum (R²=.057, B=1.713, t=4.301, p<.001). Higher levels of acculturation were associated with more somatic symptoms of depression during mid-pregnancy (R²=.027, B=.030, t=2.430, p=.016) and postpartum...
#13 - UNCOVERING BIOLOGICAL FACTORS ASSOCIATED WITH PERIPARTUM MOOD DISORDERS

Jennifer Jo Kim¹, Zoe Dodge-Rice¹, Kelly Schnecke¹, Subhajit Sengupta¹, Robert R. Butler¹, Eric Gaffney¹, Jesse Brejente¹, Sara Polonsky¹, Madeleine U. Shalowitz¹, Siobhan West¹, Rita Elue¹, Emily Cleveland¹, Marci G. Adams¹, Harald H. H. Göring², Robert D. Gibbons³, Richard K. Silver¹, Pablo V. Gejman¹, Alan R. Sanders¹

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**Objective:** Peripartum mood disorders (PPMD) are frequently severe, commonly remain undiagnosed or untreated, and often demonstrate unsatisfactory treatment response. Risk factors are based largely on personal and family history of mood disorder, but prediction remains very imprecise. Our goal is to uncover underlying biological processes by detection of changes in ‘omics measurements associated with diagnosis and with major mood changes.

**Methods:** We have studied 100 women, enrolled at 16-32 weeks of gestation and longitudinally followed until 12 months postpartum. Biospecimen were collected using two different methods, each with a unique goal: (a) at three pre-defined fixed time-points during antepartum, partum, and postpartum care and (b) coinciding with mood shifts, indicated by clinical alerts from a computerized adaptive testing method (CAT-MH™).

**Results:** The current findings illustrate the clinical and epidemiological characteristics of our initial 100 participants. 31 participants experienced a CAT-MH™ indicated mood transition: 23 depressive, 4 hypomanic/manic, and 4 mixed. We validated mood episodes with Electronic Health Records information (diagnoses and prescriptions) and the Composite International Diagnostic Interview. Participants who experienced mood transition had a higher probability of being single, utilizing public aid, carrying multiples, and delivering preterm.

**Conclusions:** In addition to the demographic and obstetric associations identified, we are also generating high-throughput multiomics data from participants who experienced mood transitions and epidemiologically matched participants who remained euthymic throughout the study. Ultimately, we will identify and integrate multiomic signatures associated with PPMD in particular, as well as with significant mood changes. New recruitment is ongoing. Acknowledgments: NorthShore’s Associate Board, Center for Psychiatric Genetics, and Genomic Health Initiative provided support for this research.

#14 - ARE PEDIATRIC PROVIDERS ON-BOARD WITH CURRENT RECOMMENDATIONS RELATED TO MATERNAL MENTAL HEALTH SCREENING AT WELL-CHILD VISITS IN THE STATE OF GEORGIA?

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**Background:** The American College of Obstetricians and Gynecologists, the American Psychological Association, and the U.S. Preventive Services Task Force all recommend screening for perinatal depression and anxiety. The American Academy of Pediatrics has also weighed in, in support of depression screening during well-child visits. However, it is unclear to what extent these recommendations are being adopted in pediatric practices in the state of Georgia—a state with one of the highest rates of maternal mortality and morbidity. Anecdotally, the urban areas, including metro Atlanta, appear to be the best-resourced in terms of support, education, and screening.

**Methods:** A team of medical students from Mercer University School of Medicine (Macon, GA) facilitated 5 focus groups aimed at elucidating pediatric provider attitudes towards and adoption of the recommendation of maternal mental health screening at well-child visits. The five chosen sites were participants in the school’s preceptor network, constituting a convenience sample.

**Results:** Two of five practices were screening for postpartum depression, one of which was seated in Savannah, one of the most populous urban areas in the state of Georgia. Primary reasons given for not screening were lack of training and access to the mother’s medical records and time constraints. Several providers did not appear familiar with the current recommendations.

**Conclusions:** While significant progress has been made due to state legislation and overall national awareness, there remains a considerable amount of work to do in promoting provider adherence to these recommendations especially in rural or underserved areas in the state of Georgia.
#15 - MINING HEALTH AND HEALTHCARE UTILIZATION PATTERNS DURING PREGNANCY TO DISCOVER RISK FACTORS FOR POSTPARTUM DEPRESSION
Alison Hermann1, Shuojia Wang1,2, Scott Breitinger1, Kelsey Power3, Jyotishman Pathak1, Yiye Zhang1
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Objective: The US Preventive Services Task Force recently asserted a level B recommendation that women at risk for postpartum depression be offered or referred for preventive psychotherapy. However, there are significant knowledge gaps in determining which women are at risk, particularly in regard to medical contributors. Furthermore, scales that have been developed thus far to assess risk do not take into account how risk may evolve over the course of pregnancy and may have limited feasibility on a population-wide scale. This project attempts to address this screening problem using machine learning technology and electronic health record data to describe patterns of health and healthcare utilization during pregnancy that may predict risk for postpartum depression (PPD).

Methods: Using electronic health record data from Weill Cornell Medicine and New York-Presbyterian Hospital from 2015 to 2017, we followed pregnant women’s (n=9978) clinical visits from their first trimesters to childbirth. Clinical events, such as billing diagnoses and medication orders from physician encounters, were mined using machine learning algorithms and modeled into clusters based on patterns of healthcare utilization. Clusters were subsequently analyzed in relation to the outcome of PPD within one year after delivery.

Results: We discovered three clusters, which differ in the distribution of demographics, health, and healthcare utilization. The cluster with the highest prevalence of PPD had statistically significant higher age, higher body mass index, and higher likelihood of being unmarried. In addition, this cluster also had statistically significant higher rates for medical and/or obstetric complications during pregnancy and higher number of thyroid-related prescriptions.

Conclusions: Applying machine learning algorithms to electronic health record data may be a powerful tool for more accurately identifying women at risk for PPD, particularly when that risk changes over the course of pregnancy due to medical or obstetric complications.

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#16 - RATES OF PERINATAL DEPRESSION USING THE CAT-MH™VERSUS PHQ-9 IN URBAN-DWELLING AFRICAN-AMERICAN AND HISPANIC WOMEN
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Objective: Underserved minority women experience high rates of perinatal depression (PND), but low rates of follow-up for referral and treatment. To address this health disparity, we implemented a computerized adaptive test (CAT-MH™), which includes a diagnostic screen for MDD (CAD-MDD™) tailored for PND, and a measure of severity of depressive symptoms (CAT-DI). We examined and compared rates of PND and symptom severity on CAT-MH™ and PHQ-9, and measured concordance of CAT-MH™ measures with PHQ-9 in African-American and Hispanic women.

Methods: A total of 179 pregnant women (49% African-American; 30% Latina) from an urban university outpatient clinic were evaluated at 416 visits using CAT-MH™ as part of a longitudinal PND study. The relationship between PND outcome and method of screening (CAD-MDD™, PHQ-9 (cut-off score>10)) was determined using Chi-Square analysis. Linear associations between CAT-DI severity scores and PHQ-9 scores were determined by Pearson correlation.

Results: The average overall PND rate per visit on CAD-MDD™ was 14.95% (17.9% in African-Americans and Latinos), with 4% in the moderate/severe categories on CAT-DI. The rate per visit on average of PND on the PHQ-9 was 10.8% (9.9% in African-Americans and Latinos). There was a trend toward an association between screening measure and PND outcome, with CAD-MDD™ detecting higher incidence of PND compared to PHQ-9 (p=.09). CAT-DI and PHQ-9 scores significantly correlated (r=0.70, p<.001). Results were similar in minority women.

Conclusions: CAD-MDD™ detected higher rates of PND than the PHQ-9, particularly for minority women. Psychiatric diagnostic interviews are underway to compare the sensitivity of the two measures.

#17 - INSOMNIA LATE IN PREGNANCY IS ASSOCIATED WITH PERINATAL ANXIETY: A LONGITUDINAL COHORT STUDY
Rannveig Storaune Osnes1,2, John Olav Roaldset2,4, Turid Folkestad3, Malin Eberhard-Gran5,6,7
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Background: Postpartum anxiety (PPA) affects a substantial number of women. Despite increasing recognition of PPA, few studies have focused on perinatal anxiety and potential PPA triggers. Here we aimed to estimate the prevalence of perinatal anxiety disorders, and to explore the association between insomnia during late pregnancy and anxiety before and after childbirth.

Methods: This study was part of the large population-based Akershus Birth Cohort (ABC) Study. We analyzed data from the hospital's birth records and questionnaire responses from pregnancy weeks 17 and 32 and postpartum week 8 (n = 1563). Perinatal anxiety symptoms were measured using the Hopkins Symptom Check List. Anxiety disorder measurements were based on questions from the Mini-International Neuropsychiatric Interview. Insomnia was measured using the Bergen Insomnia Scale.

Results: Among perinatal women, 10% reported symptoms of at least one anxiety disorder. The observed prevalence of obsessive-compulsive disorder was higher after delivery (4.2%) than during pregnancy (2.5%). Multiple regression analysis, with adjustment for several psychosocial and reproductive variables, indicated that insomnia during pregnancy was significantly associated with postpartum anxiety symptoms. However, this association was markedly weakened when depression variables were included in the analysis, indicating that gestational insomnia may also be a marker for a mood disorder.

Conclusions: Our results suggest that anxiety disorders are prevalent during the perinatal period. Moreover, insomnia during pregnancy is associated with perinatal anxiety. Health professionals should be aware that women with gestational insomnia may have an increased risk of mood and anxiety disorders.

Acknowledgements: Funded by the Research Council of Norway.

#18 - THE HEALTHY IMMIGRANT PARADOX RE-EXAMINED IN POSTPARTUM DEPRESSION
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1 UNC School of Medicine, Psychiatry Department, University of North Carolina, Chapel Hill, 2 University of North Carolina, Chapel Hill

Objective: The healthy immigrant paradox states that immigrants have better health outcomes compared to the nativeborn population on a number of indicators, most namely physical health. Previous finding illustrate that despite stresses related to migration and cultural acclimation, this paradox is seen in mental health disorders. Nevertheless, it has not been examined extensively in the United States if this extends to pregnancy-related mood disorders. Due to the increasing immigrant population in the United States and lack of research on this topic, we examine whether being of foreign born status affects the incidence of developing postpartum depression.

Methods: This study utilizes the National Epidemiologic Survey on Alcohol and Related Conditions III, a nationally study of 36,309 adults in the United States. After excluding males and women not pregnant in the last 12 months, we performed analysis on 1,019 individuals.

Results: After adjusting for previous history of mental health, income, education, race, ethnicity, marital status, past year posttraumatic stress disorder, and parental history of anxiety and depression, we did not find a significant association between foreign born status and perinatal depression (OR: 0.92 95% CI [0.50, 1.67]) or perinatal anxiety (OR: 1.07 95% CI: [0.47, 2.43]).

Conclusions: Inconsistent with the healthy immigrant paradox, the odds of perinatal depression among immigrant women is not significantly different than that of the native born population, suggesting that the protective factors associated with those who immigrate do not influence perinatal mood disorder development. This is of particular interest because it demonstrates that the healthy migrant effect is not consistent across all health measures. We must be conscious of and address mental health in immigrants, specifically perinatal women, and provide adequate access to mental health resources.

Acknowledgements: This manuscript was prepared using a limited access dataset obtained from the National Institute on Alcohol Abuse and Alcoholism and does not reflect the opinions or views of NIAAA or the U.S. Government.

#19 - POSTPARTUM MENTAL HEALTH CARE FOR MOTHERS OF MULTIPLES: A QUALITATIVE STUDY OF NEW MOTHERS’ TREATMENT PREFERENCES
Susan Wenze1, Cynthia Battle2,3,4
1 Lafayette College, 2 Warren Alpert Medical School of Brown University, 3 Butler Hospital, 4 Women & Infants’ Hospital of Rhode Island

Objectives: Despite the expanding literature on empirically-supported strategies for treating perinatal mental health concerns in new mothers, no published reports have examined tailored support interventions for parents of twins or higher-order multiples. In the current study, we aimed to better understand the unique postpartum experiences of new mothers of multiples, gauge
interest in both traditional and eHealth approaches to mental health care, and discuss aspects of mental health treatment viewed to be most helpful.

**Methods:** Twenty-eight women who had given birth to their first set of multiples within the past year were recruited online. Participants completed self-report measures of depression, anxiety, and sleep disruption and took part in telephone focus groups.

**Results:** On average, participants had elevated depression and anxiety symptoms, and notably disrupted sleep. Although some positive elements of the postpartum period were noted, most described this time as stressful, overwhelming, and exhausting. Participants identified experiences that were unexpected or unique to parenting multiples and indicated numerous desired aspects of mental health treatment. Interest in internet-delivered care was especially high.

**Conclusions:** This study lays the groundwork for development of a targeted psychosocial intervention to address mental health concerns among new mothers of multiples, particularly those who are already engaged and seeking support and community online. This report also suggests myriad ways in which providers can best address the needs of this population (e.g., utilize providers with expertise in multiples, deliver care in the home, use eHealth approaches, normalize unique stressors and negative moods).

**Acknowledgements:** This project was funded in part through an American Fellowship, awarded by the American Association of University Women to the first author.

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**#20 - RELATIONS AMONG SOCIAL AND INSTITUTIONAL SUPPORT AND WOMEN’S ADJUSTMENT FOLLOWING PREGNANCY LOSS**

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¹ Idaho State University

**Objective:** Half a million US women suffer from miscarriages annually, 48-51% experience psychiatric difficulties following the loss, and 22-44% exhibit clinically significant anxiety and depression. Researchers have explored the role of social, marital, and healthcare services in relation to these outcomes. While the desire for additional support appears to be universal, there are mixed findings regarding its impact on women’s psychological outcomes. Additionally, it is unclear whether gestational age at loss impacts women’s perceptions of support and/or psychological adjustment.

**Methods:** The present project will compare social/institutional support and psychological outcomes (i.e., depression, anxiety, and adjustment) in women who experienced early (prior to 20 weeks gestation) versus late-term pregnancy loss (after 20 weeks).

**Results:** Current project data collection is in progress. It is expected that women who experience higher levels of social and institutional support will report decreased psychological dysfunction following pregnancy loss and that these relations will be more robust for women with earlier pregnancy loss, since these women tend to receive less support and follow-up care.

**Conclusions:** This project may assist in better understanding women’s experiences following pregnancy loss, including factors such as the timing and support/resources received, which may impact women’s psychological adjustment. This may help to elucidate prospective targets for intervention, increase social awareness of mental health difficulties following pregnancy loss, decrease stigmatization, and inform healthcare policy reform priorities to increase support for women’s fertility experiences. Future longitudinal studies should examine the course of adjustment for women and their families following pregnancy loss.

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**#21 - THE UNIQUE PRESENTATION OF PSYCHOSIS AND PREGNANCY DENIAL**

Nirmaljit Dhami - Psychiatry, El Camino Hospital

**Objectives:** To discuss the complexity of care in a patient with chronic untreated psychosis and pregnancy denial during the latter half of her pregnancy, delivery and postpartum.

**Method:** Review of Hospital Medical Records

**Results:** Treatment plan and decision making

**Conclusions:** This case highlights the complexity of decision making in patients with chronic psychosis and pregnancy denial. Patients with chronic psychosis often are unable to accurately self report their symptoms. The treatment team needs to be vigilant about symptoms and follow through on patients complaints. Multidisciplinary approach involving OBGYN/pediatrician and inpatient and outpatient psychiatry team’s is also recommended

**Acknowledgements:** El Camino Hospital inpatient Psychiatry unit
#22 - CASE STUDY IN PHYSIOLOGICAL MARKERS OF AUTONOMIC NERVOUS SYSTEM DYSREGULATION IN POSTPARTUM ANXIETY

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**Objective:** Perinatal mood and anxiety disorders (PMAD) occur in up to 10-20% of women around the world and significantly impact maternal and fetal health. A relationship between autonomic nervous system (ANS) regulation and psychopathologies such as anxiety disorders has been suggested. ANS divisions are responsible for the stress response via sympathetic and parasympathetic branches, thus heart rate variability (HRV), salivary alpha amylase (sAA), and salivary cortisol (CORT) serve as physiological markers of ANS dysregulation in PMAD. The current study's objective is to compare the effects of physiological stress reactivity in women with elevated symptoms versus healthy controls.

**Methods:** One anxiety case (AC) and one healthy control (HC) with similar psychiatric histories were chosen due to differences in GAD-7 scores from a larger cohort of pregnant women. Participants completed the Trier Social Stress Test (TSST) to induce moderate psycho-biological stress. Outcome measures were CORT, sAA, and HRV response as indicators of ANS dysfunction.

**Results:** Preliminary results illustrate differences in physiological markers of stress between HC and AC. Lower CORT secretion in response to stressor for AC suggests burnt-out response due to allosteric stress, as well as irregular sAA response in comparison to HC. Noticeable decreases in HRV from baseline during TSST indicate limited ability of adaptation for AC.

**Conclusions:** Such findings illuminate varying stress responses between pregnant women with elevated anxiety symptoms and healthy controls. The results of this case study inform analysis of the larger cohort in relation to ANS dysfunction and postpartum anxiety.

#23 - PRESCRIBING PSYCHIATRIC MEDICATION TO BEREAVED MOTHERS FOLLOWING STILLBIRTH DUE TO TERMINATION OF PREGNANCY

Vered Bar-Eve Clinic, Reproductive Psychiatry, Sheba Medical Center

**Objectives:** About 2.7 million stillbirths occur worldwide every year. Stillbirth might be due to Intra Uterine Fetal Death (IUFD), due to Termination of Pregnancy (TOP) or intrapartum fetal death. Stillbirth may lead to severe mental consequences. Depression, anxiety, post-traumatic stress disorder (PTSD), and adjustment disorder, are common outcomes. The rates of attempted suicide and the risk for completed suicide are increased in women who experienced fetal loss compared to mothers of live children, in the postnatal year and women who are not postnatal. Symptoms cause disability in the short term after pregnancy loss and can continue throughout the following pregnancies and affect the mother’s ability to bond and treat her live children. There is sparse knowledge in the literature about psychopharmacologic interventions in women going through stillbirth. In the sparse information available, there is none that deals with this specific populations. We attempt to research a homogenous group of women going through stillbirth after TOP. It is important to understand the mental outcome of this population. Better knowledge can affect future decision making regarding late TOP.

**Methods:** The medical records of women going through (TOP) and stillbirth in Sheba medical center during 2017-2018 were evaluated. Permission was granted by the ethical committee.

**Results:** 70% of the women were diagnosed as suffering from normal grief, 26% were diagnosed as suffering from adjustment disorder. Only 30% of women received psych medication.

**Conclusion:** The role of pharmacotherapy in this population is limited and reserved for women suffering more severe symptoms over a longer period of time.

#24 - GROUP THERAPY FOR WOMEN AFTER STILLBIRTH

Vered Bar¹, Piki Reshef² - Eve Clinic, Reproductive Psychiatry, Sheba Medical Center ²Sheba Medical Center

**Objectives:** About 2.7 million stillbirths occur worldwide every year. Stillbirth might be due to Intra Uterine Fetal Death (IUFD), due to Termination of Pregnancy (TOP) or intrapartum fetal death. Stillbirth may lead to severe mental consequences. Depression, anxiety, post-traumatic stress disorder (PTSD), and adjustment disorder, are common outcomes. The rates of attempted and completed suicide are increased in women who experienced stillbirth compared to mothers of live children, in the postnatal year and women who are not postnatal. Symptoms cause disability in the short term after pregnancy loss and can continue throughout the following pregnancies and effect the mother’s ability to bond and treat her live children. There is sparse knowledge in the literature about effective interventions for women going through stillbirth. We developed a group therapy for these women and have been using it for the past 11 years. Developing efficient therapeutic interventions for this population can improve their mental outcome.
Methods: Women referred to Eve clinic, a Reproductive Psychiatry clinic, fill out, clinical questionnaires, including: Demographic, Edenborough Post Natal Depression Scale (EPDS), Spielberger Trait and State (STAI), and PTSD Check List (PCL). The women receive individual and group therapy treatment according to a clinical evaluation and each woman’s preference. Women participating in an adapted CBT group therapy using psychoeducation, relaxation techniques and sharing were evaluated before and after the group therapy.

Results: At the end of the group therapy, a reduction in all symptoms was observed.

Conclusions: Group therapy is effective in alleviating symptoms in women undergoing stillbirth.

#25 - PSYCHOSIS DURING FERTILITY TREATMENT - COULD ESTROGEN BE THE CAUSE?

Maya Sheffer, Vered Bar - Eve Clinic, Reproductive Psychiatry, Sheba Medical Center

Estrogen’s protective effect on women’s mental health, specifically its protective properties in regard to the emergence of psychotic disorders, was previously postulated and researched. In an opposite manner to this hypothesis, though, a few case reports discussed the entity of menstrual psychosis, with psychotic symptoms mainly during the follicular phase. In addition, several reports on psychotic breaks during fertility treatments or other gynecological treatments, suggested the culprit to be certain other agents such as GnRH analogues, clomiphene, bromocriptine or to the withdrawal from estrogen replacement therapy; but never, in our knowledge, have estrogen treatment been linked to psychosis during fertility treatments. Thus, surprisingly, we present an intriguing case report of a 28 years old patient, with no previous psychiatric history, recently hospitalized in Sheba psychiatric closed ward due to acute hallucinatory psychosis, for the second time – in both times the psychosis emerged during fertility treatment, specifically with estradiol. The patient was released and referred to Eve Clinic. We will review the literature on the correlations between psychosis and both endogenic hormones and exogenic hormonal treatments and discuss recommendations for care.

#26 - PERINATAL CANNABIS USE: CONSIDERATIONS FOR MENTAL HEALTH PROVIDERS TREATING PREGNANT AND POSTPARTUM WOMEN

Susan Karabel1,2, Cynthia L. Battle3,4,5

1Psychiatry, Well-Cornell Medical School, 2Psychiatry, New York-Presbyterian, 3Alpert Medical School of Brown University, 4Psychiatry, Women & Infants’ Hospital of Rhode Island, 5Psychiatry, Butler Hospital

Objective: Cannabis is the most commonly used drug used in pregnancy, and rates of use are increasing. This trend is expected to continue with legalization, changing risk perceptions, and increased access. Maternal cannabis use raises concerns about harm to both fetus and mother. Because use tends to be higher among women with psychiatric conditions, mental health clinicians have an opportunity to provide interventions to reduce use. In this poster, we provide a focused literature review on perinatal cannabis use, particularly the needs of women seeking care for behavioral health conditions.

Methods: A PubMed search was conducted to identify English language studies with human participants addressing prevalence, predictors, and associated outcomes with perinatal cannabis use, as well as intervention strategies.

Results: Prenatal cannabis use has been steadily rising from 2002 to 2014. Many women reduce cannabis use during pregnancy but postpartum relapse is common. Preliminary data suggest that common reasons for prenatal use are nausea, depression and anxiety. Although findings are inconsistent, increasing data suggest a potential for negative longterm consequences. Interventions to promote cannabis discontinuation include motivational interviewing, CBT, and contingency management; however none have been been tested among perinatal women. Clinicians must effectively assess cannabis use and treat underlying psychiatric and somatic symptoms that may drive women’s use decisions.

Conclusions: Despite a growing literature, higher-quality studies on perinatal cannabis use are needed to clarify predictors of use and women’s treatment needs. Research is critically needed to examine the efficacy of interventions for perinatal women who may wish to discontinue use.

#27 - TREATING OPIOID USE DISORDER IN PREGNANT AND POSTPARTUM WOMEN

Amelia Wendt1, Cresta Jones2

1Psychiatry, 2Obstetrics, Gynecology and Women’s Health (OBGYN), University of Minnesota

Objective: National rates of Opioid Use Disorder (OUD) are increasing among reproductive-aged and pregnant women.

Untreated OUD is a significant public health concern and leads to adverse maternal and neonatal outcomes. By educating healthcare providers on evidence-based recommendations for treating OUD in pregnant and postpartum women, we can improve the care and outcomes in this population. This presentation will describe treatment options for pregnant and postpartum women with OUD, focusing on a risk and benefit analysis.
Methods: A literature review was performed to assess the evidence-based recommendations for treating OUD in pregnant and postpartum women.

Results: The standard of care for treatment of OUD in pregnant and postpartum women is medication-assisted treatment with methadone or buprenorphine and evidence-based behavioral interventions. The benefits of pharmacotherapy for OUD during pregnancy outweigh the risks of untreated OUD. Medically supervised withdrawal is not recommended during pregnancy, and switching medication prenatally is not recommended as it can destabilize opioid abstinence. Neonatal opioid withdrawal syndrome is a treatable condition among infants with chronic opioid exposure prenatally. Research has shown that buprenorphine and methadone have minimal long-term neurodevelopmental impacts.

Conclusions: Pregnant and postpartum women with OUD are a vulnerable and growing population that require evidence-based treatment with both pharmacologic and nonpharmacologic treatments. Education of healthcare providers and implementation of these treatments in clinical practice is an important area in psychiatry. Future research is still needed on long-term neurodevelopmental outcomes in exposed infants and methods to improve care and treatment retention in these women.

#28 - ADDRESSING THE MENTAL HEALTH NEEDS OF SURVIVORS OF INTIMATE PARTNER VIOLENCE: PROGRAM EVALUATION OF THE THRIVE NYC MENTAL HEALTH COLLABORATION

Obianuju Berry, Elizabeth Fitelson - Columbia University Irving Medical Center, New York State Psychiatric Institute

Objectives: To evaluate a collaborative care model that imbeds psychiatry within intimate partner violence centers

Background: Intimate partner violence (IPV) is a global health problem of epidemic proportions affecting 1 in 3 women worldwide especially during the perinatal period. Despite strong associations between IPV and psychiatric disorders, the socio-emotional needs of IPV survivors continue to go unmet with significant barriers that prevent survivors from accessing mental health care.

Materials and Methods: In 2017, an academic, government, and private partnership collaboration imbedded a mental health team (psychiatrist, psychologist, and administrator) within all five family justice centers (FJCs) in New York City to provide free, evidence-based psychopharmacologic and psychotherapeutic interventions in a culturally and trauma-informed way to survivors of IPV. A program evaluation involving focus groups and anonymous questionnaires to the survivors and FJC staff was undertaken.

Results: Results from 120 FJC staff and 53 IPV survivors who completed the anonymous questionnaires indicated large unmet mental health needs (40% reported prior suicide attempts); improved access (80% saw a mental health clinician < 2 weeks); improved functioning (71% clients reported improved sleep, 87% reported improved mood, 43% reported decrease in self harm thoughts, 77% reported enhanced social support). Focus groups suggested increased knowledge, wellbeing, and decreased stigma.

Conclusions: Given the widespread nature of IPV and mental health concerns globally, a collaborative program between psychiatry and IPV advocates is attainable and leads to immense clinical improvements for IPV. Future directions apply to what specific interventions led to reductions in mental health outcomes.

Acknowledgements: Research supported by the Chapman Pearlman Foundation

#29 - PROCESS OF CREATION OF A CURRICULUM, ASSESSMENT TOOLS AND TREATMENT APPROACHES FOR A BLENDED MBU/ PHP IN THE UNITED STATES

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1 psychiatry, El Camino Hospital, 2 psychiatry, El Camino Hospital

Objectives: To discuss the comprehensive process involved in designing and implementing a therapeutic curriculum for perinatal patients admitted on an inpatient psychiatry unit

Method: review of existing protocols and treatment plans from El camino BHS (Inpatient unit), NIMHANS MBU and South London and maudsley NHS foundation

Results: Comprehensive day treatment scheduled for both in patients and day treatment patients were created. Curriculum included focus on interpersonal psychotherapy, shame and resiliency work, trauma based interventions, cognitive behavior therapy, dialectical behavior therapy, interpersonal psychotherapy, attachment based interventions, comprehensive nursing and physician assessment tools with special focus on perinatal population, mother baby dyad were created

Conclusions: MBU, PHP (partial hospitalization) curriculum for perinatal patient is significantly different from general inpatient curriculum and incorporate elements of mother infant bonding and other family treatment modalities. Nursing interventions should include specific assessments of mother infant morning, mother’s behavior and focus on helping the mother baby dyad

Acknowledgements: El Camino Hospital inpatient Psychiatry unit and MOMS iOP PROGRAM
POSTPARTUM DEPRESSION AND SLEEP: A NOVEL INTERVENTION TO BOOST INFANT SLEEP AND REDUCE POSTPARTUM MOOD DISORDER
Harvey Neil Karp, Alison Reminick, Reem Abu-Libdeh

Objective
Newborns require almost constant attention. This care makes many mothers feel exhausted, which can lead to postpartum mood and anxiety disorders (PPMADS) (Dennis, Ross. 2005; Dørheim, et al. 2009; Swanson, 2011). Postpartum exhaustion is closely related to the infant’s sleep pattern. Interventions to improve infant sleep using white noise and/or swaddling have shown benefits (Meyer, Erler. 2011; Spencer, et al. 1990; Öztürk Dönmez R, Bayik Temel A. 2019) and extinction sleep training has been reported to reduce postpartum depression and anxiety. (Symon B, et al. 2012) It was hypothesized that a new infant bed (SNOO, by Happiest Baby, Inc.) might increase infant sleep and reduce PPMADS. (SNOO shushes, rocks and safely swaddles babies all night, responding to fussing with increased rhythms).

Methods
Twelve women enrolled in the UCSD IOP were given SNOOs. They will be compared to women enrolled in the IOP not given SNOOs. Inclusion criteria: < 6 months postpartum; medically healthy; no active substance use. A retrospective chart review will compare differences in depressive/anxiety symptoms between the groups.

Results
The study is completed, but data are not yet analyzed (will be available 10/19). We will discuss the case of a mother presenting with PPMADS 4 weeks postpartum. She immediately began psychotherapy and SSRIs but was not improving, until she began using SNOO. Within a few weeks her EPDS dropped from 30 to 6.

Conclusion
Infant sleep interventions may augment existing treatments for PPMADS.

Funding was from internal departmental sources. SNOOs donated by Happiest Baby, Inc.

POSTERS – SATURDAY, OCTOBER 26, 2019

#1 - POSTPARTUM STRESS, EMOTION REGULATION, AND THE MATERNAL BRAIN
Leah Grande, Aviva Olsavsky, Rebekah Tribble, Pilyoung Kim

Clinical Child Psychology, Developmental Psychology, University of Denver, Children’s Hospital Colorado

Objective: Early parenting relies on emotion regulation capabilities, as mothers are responsible for regulating both their emotional state and that of their infant during a time of new changes and stressors. Previous research highlights the importance of frontal cortical regions in facilitating effective emotion regulation, but few studies have investigated emotion regulation among postpartum women.

Methods: We assessed perceived stress and everyday emotion regulation among 58 first-time, postpartum mothers. During fMRI scanning, participants were instructed to experience their natural emotional state (Maintain) or to decrease the intensity of their negative affect by using cognitive reappraisal (Reappraise) while viewing negative images.

Results: Elevated perceived stress was associated with more suppressive expression (r = .284, p = .032) and less cognitive reappraisal (r = -.290, p = .029) during everyday emotional coping. Whole-brain analysis revealed a two-way interaction of perceived stress x condition in the right superior frontal gyrus at p < .05 cluster-wise corrected, controlling for covariates. Higher stress was associated with increased activity during Reappraise vs. Maintain. Greater activation of the right superior frontal gyrus was associated with greater right amygdala (r = .317, p = .015) and left amygdala activation (r = .418, p = .001) during Reappraise vs. Maintain.

Conclusions: Stressed mothers show less ease in utilizing reappraisal strategies in everyday life and in the scanner. Findings complement prior research suggesting that distressed individuals exhibit greater, but counterproductive relative recruitment of the right PFC during reappraisal. Future research will examine effective emotion regulation strategies and treatment interventions for stressed postpartum mothers.

Acknowledgements: This work was supported by the National Institute of Child Health and Human Development [R21HD078797; R01 HD090068].

References:
Social Behavior, 24, 386-396.

#2 - BREAKING DOWN THE SILOS OF CARE: THE DISTRICT OF COLUMBIA’S INAUGURAL REGIONAL PERINATAL MENTAL HEALTH SYMPOSIUM

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1 Dept of Psychiatry, George Washington University School of Medicine, 2 Metropolitan Doulas, 3 Pediatric Emergency Medicine, Children’s National Health System, 4 Maternal Mental Health Program, Mary’s Center for Maternal and ChildCare

Objective: Women living in DC, Maryland, and Virginia face multiple barriers to receiving mental health services in the perinatal period. One such barrier is the “silo-ing” of care that hinders communication and coordination between providers.

Methods: A diverse team of more than 20 professionals and paraprofessionals, representing every city ward, called the Perinatal Mental Health (PMH) Champions, came together for a 9-month training program, through Mary’s Center for Maternal and Child-Care, a community organization. The program aimed to support regional leaders across a range of fields in education and advocacy for PMH. The concept for DC’s first PMH Symposium was conceived at the conclusion of the Champions program, with a multidisciplinary steering committee ultimately executing this vision.

Results: The half-day symposium, attended by 165 providers, including physicians, therapists, doulas and mid-wives, was held at Children’s National Hospital. Institution sponsors were recruited, and a plenary speaker trained in diveristy and inclusion provided the keynote. A panel of experts spoke on gaps in care and solutions to regional dilemmas. Breakout sessions included preventing birth trauma, evidenced based treatment for low-income ethnically diverse women, and psychiatric medications in pregnancy. The event concluded with a resource session with particular attention to women of color and a social event.

Conclusions: A fragmented healthcare system not only burdens women and families, but also prevents collaboration and connection between disciplines. By creating an atmosphere of shared learning, we supported perinatal providers and energized the community for further efforts in advocacy, program building, and clinical engagement.

#3 - PREVALENCE AND PATTERNS OF PSYCHIATRIC DISORDERS AMONG WOMEN IN URBAN AND RURAL BANGLADESH: A TWO-STAGED CROSS-SECTIONAL STUDY

Rifat Binte Alam1, Nilufer Akhter Jahan2, Mohammad S I Mullick3, Md Shadiqul Hoque4, M Kumrul Hasan5

1 University of Illinois at Urbana-Champaign, 2 National Institute of Mental Health, 3 Bangabandhu Sheikh Mujib Medical University, 4 University of Arkansas for Medical Sciences, 5 Armed Forces Medical Institute

Introduction: Worldwide, women hold increased risk of psychiatric disorders which is accentuated by the twin issues of stress and poverty in developing countries.

Objective: The research aimed at examining the prevalence and pattern of psychiatric disorders and their correlates among women.

Method: This two-staged cross-sectional study investigates a random sample of 533 adult women. A questionnaire by modifying SCID-1/NP research version section was applied including the following demographic variables education, location, family size, age, parity and number of children. SRQ-24 was used to ascertain probable cases. SCID1/NP research version compatible with DSM-IV was used to diagnose clinical cases. Instruments were in native language. Multivariate logistic regression was conducted to determine socio-economic and demographic variables associated with having a psychiatric disorder.

Result: Point prevalence was 23% where 60% of cases were from the urban setting. Depressive disorders had the highest (14.3% and 7.4% urban and rural, respectively) and anxiety disorders had the second highest prevalence (9.3% and 6.8%). Association found with age (p<0.006), urban settings (p=0.002), family size (p<0.014), family type (p<0.019), number of children (p<0.021) and deprivation of any kind (p<0.006). Deprivation (OR 2.68, 95% CI 1.67 -4.31) was an independent predictor and higher number of children showed a trend as well.

Conclusion: Every fourth urban and every sixth rural women suffer from current psychiatric disorders. Further research on high risk like pregnant or postpartum women deserves priority.
#4 - SEEKING SOCIAL SUPPORT AND POSTPARTUM DEPRESSION: A RETROSPECTIVE STUDY OF PERCEIVED CHANGES
Peggy O’Neill¹, Annette Cycon²

1 Social Work, Smith College for Social Work, 2 GPS GROUP PEER SUPPORT

Objective: Evaluations of interventions that focus on social support in real-world settings for women experiencing PPD are lacking. In this pilot study we asked how perceived changes over time in three types of social support (significant other, family, and friends) in participants who sought help and attended postpartum peer support groups related to perceived changes in depression over the same time period.

Design: Retrospective design and Internet survey.

Setting: On-line survey referring to in-person participation in peer support groups for postpartum women. Participants: Fifty-seven women who attended postpartum peer support groups.

Methods: We investigated how self-reported changes over time in three types of social support (significant other, family, and friends) relate to perceived changes in depression over the same period. Parametric statistical analyses using SPSS 20.0 included Cronbach’s alpha tests, paired sample t-tests and Pearson correlational analyses.

Findings: Significant improvement was reported. Pre-post change scores of perceived social support from friends and significant other were significantly correlated to pre-post depression change scores suggesting that social support contributed to a reduction in depression in this sample of postpartum women.

Implications for Practice: Seeking social support may contribute to a reduction in depression, particularly as it relates to perceived support from friends and significant other. Other variables not measured are discussed.

#5 - THE MEDIA REPRESENTATION OF POST-PARTUM DEPRESSION: WHY SHOULD WE CARE?
Anne TM Konkle¹,²,³, Annika Fenton², Dayajyot Kaur¹, Miriam Kidanemariam¹, Danielle Sarpong¹

1 Interdisciplinary School of Health Sciences, 2 School of Psychology, 3 Brain and Mind Research Institute, University of Ottawa

Objective: Post-partum depression (PPD) reportedly afflicts 10-20% of women, though proper diagnostic criteria and tools are still lacking. Obvious reasons for this short coming is that PPD is still not particularly well understood. The media plays an important role in our perceptions of health and illness. In our digital world, information is readily accessible, as is misinformation, that can influence perceptions and sustain stereotypes about certain health conditions. This is particularly true when disorders of mental health are presented in the media. Thus, the aim of this research was to ascertain the representation of PPD in the media.

Methods: We conducted a conventional content analysis pertaining to the keywords "postpartum depression", "postnatal depression" and "postpartum mental health". We assessed tone, themes and whether stigmatizing language was used in the posts. Consulted media included Canadian newspapers as well as the social media platforms Pinterest, Twitter and YouTube.

Results: Our analyses indicate that most media platforms do advocate for increased awareness about PPD, yet, depending on the platform, posts continue to use stigmatizing language. Symptoms, resources and paternal mental health were also notable themes. Of interest is our finding of self-disclosure as a prominent theme; Pinterest was a particularly good source for extended and complex personal narratives. These personal accounts showcased bad experiences that prevented women from seeking medical or social support, with such barriers including internalization of stigma, fear of consequences, distrust in the health care system, and a lack of awareness about PPD.

Conclusions: This work showcases the representation of PPD in the media. Our findings speak to the need for further awareness campaigns to better inform and sensitize individuals and healthcare workers about this woman’s health issue. We also advocate for a better understanding of potential barriers to seeking professional and/or social support, during this particularly vulnerable period in a woman’s life.

#6 - LIVING IN AN EXTENDED FAMILY HOUSEHOLD IN CHINA IN WHICH A GRANDMOTHER IS A PRIMARY CAREGIVER CAN EXACERBATE PMAD SYMPTOMS AND COMPLICATE RECOVERY
Katherine Anne Mason - Anthropology, Brown University

Objective: This poster presents results from a qualitative pilot study conducted in Luzhou, China June-August 2017, with follow-up research in June 2018. Goals were to assess the impact of family dynamics and local postpartum rituals on Chinese women with PMADs. Chinese women suffer from PMADs at the same rate as women in other countries, but little is known about their experiences.

Methods: The author conducted a longitudinal series of ethnographic interviews and home observations over a twomonth span with 10 women who scored >10 on the Chinese version of EPDS. Each participant sat for three 45-60 minute interviews over several weeks. Follow-up interviews were conducted with 7 of 10 interviewees one year later.
Results: Women who reported following local norms of turning newborn and postpartum care during the postpartum period over to a mother or mother-in-law attributed a considerable amount of their distress to these practices. Abusive relationships with the baby's grandmother(s), perceived displacement by the grandmother as primary caregiver, and a lack of control over her own household exacerbated symptoms. Cultural prohibitions against removing problematic family members from the home led to mothers feeling trapped.

Conclusions: Customs regarding family structure and expectations of elder care should be considered when treating women with PMAD symptoms from Chinese families.

Acknowledgements: KAM acknowledges the support of a Richard B. Salomon Faculty Research Award, Henry Merritt Wriston Fellowship, Social Science Research Institute Seed Grant, and Population Studies and Training Center support grant - all at Brown University.

#7 - THE ROLE OF PERCEIVED STRESS AND DYADIC ADJUSTMENT IN PRENATAL DEPRESSION AMONG FIRST-TIME PARENTS: AN ACTOR-PARTNER INTERDEPENDENCE MODEL APPROACH

Sonia Mangialavori1, Arianna Cantiano1, Giammaria Temporin1, Annachiara Franquillo1, Marco Cacioppo1, and Michael O’Hara2
1LUMSA, University of Rome, Department of Human Sciences
2The University of Iowa, Department of Psychological and Brain Sciences

Objective: In the field of perinatal psychology, most studies focus on mothers’ psychological and behavioral states during pregnancy, neglecting the role of their partners. This study used an Actor-Partner Interdependence Model approach to evaluate the role of perceived stress and dyadic adjustment on risk of prenatal depression in both members of marital couples who were expecting their first baby.

Method: 138 couples were asked to complete questionnaires about perceived stress, dyadic adjustment and depression. Given that dyadic adjustment is found to be mutually determined by both partners, a plan of analysis utilizing the dyad was incorporated. Specifically, multilevel modelling was employed.

Results: The model revealed that only actor perceived stress and actor marital adjustment were significantly related to depression. While the effect of perceived stress on depression was stronger for the expectant mothers, there was no significant difference between mothers’ and fathers’ dyadic adjustment on their depression risk. Prenatal depression was not predicted by partner’s stress and dyadic adjustment. However, both stress and dyadic adjustment in mothers were linked to fathers’ ones.

Conclusion: This study shows that pregnancy is a complex phase in which individual and relational factors may play a role in the development of depression in both members of the couple. It underlines the importance of dynamics within the couple in the development of depression, and it suggests that in clinical practice they should be considered both for prevention and for treatment of affective disorders.

#8 - ADDRESSING THE UNADDRESSED: TEACHING INTIMATE PARTNER VIOLENCE TO RESIDENTS ALYSON GORUN, JULIE PENZNER, ALISON HERMANN NEW YORK PRESBYTERIAN HOSPITAL: WEILL CORNELL MEDICAL CENTER

Alyson Gorun1, Julie Penzner1, Alison Hermann1

1Department of Psychiatry, New York Presbyterian Hospital - Weill Cornell Medical Center

Objective: Intimate partner violence (IPV) is defined as actual or threatened psychological, physical, or sexual harm by a current or former partner. Women who experience IPV have an elevated risk of psychiatric disorders, co-morbid medical conditions, and adverse pregnancy outcomes. Literature regarding resident’s ability to treat patients exposed to IPV is scarce. No standardized curriculum exists. Barriers to screening include inadequate training and knowledge. Training has been shown to increase screening rates in physicians. Therefore, training is likely a useful intervention for trainees. Our aim was to develop a workshop to address the documented gap in IPV training and assess outcomes.

Methods: Third year psychiatry residents participated in an IPV workshop. They completed a survey assessing their confidence on a scale of 1 (not confident at all) to 5 (very confident) in identifying IPV and co-morbidities, psychotherapeutic interventions for IPV and treatment and safety planning before and after the workshop.

Results: Confidence levels increased from an average of 3 to 3.75 for identifying IPV and co-morbidities, 2.4 to 3.75 for psychotherapeutic interventions, and 2.1 to 4 for treatment planning and safety.

Conclusions: Workshops appeared to be an effective intervention in increasing residents confidence in all three areas assessed. Significantly, the area with the largest increase in resident confidence was treatment and safety planning, which will likely have the most meaningful impact on our patients. Given there are no standardized guidelines to teach IPV in psychiatric training, this represents an opportunity for growth in education.
#9 - SELF-REPORTED BURDEN OF SEVERE POSTPARTUM DEPRESSION SYMPTOMS

Jerry Guintivan1, Stephen O Crawford2, Margaret E. Gerbasi2, Ming-Yi Huang2, Vijay Bonthapally2, Adi Eldar-Lissai2, Samantha Meltzer-Brody3

1 Department of Psychiatry, University of North Carolina at Chapel Hill, 2 Sage Therapeutics

Introduction: Postpartum depression (PPD) is one of the most common complications of childbirth, however significant gaps remain in understanding the burden of this condition.

Objective: To describe the self-reported burden of severe PPD symptoms.

Methods: The burden of severe PPD symptoms was examined among women with a lifetime history of PPD in the United States who were recruited via the PPD ACT app and agreed to complete additional assessments including: Barkin Index of Maternal Functioning (BIMF), and healthcare resource utilization (HCRU) questionnaire. Responses to assessments were based on worst episode of PPD symptoms, assessed with lifetime version of Edinburgh Postnatal Depression Scale (EPDS). This analysis evaluates women with severe PPD symptom severity, based on lifetime EPDS score ≥19.

Results: In total, 443 women with severe PPD symptoms completed all assessments. Participants were 32 years old on average, predominantly white (91%), geographically distributed across the US, and majority were identified within two years of their worst episode of PPD. Thoughts of self-harm were reported by 70.9%. Average BIMF scores (60.5) suggested substantial impairment in maternal functioning. HCRU burden among participants was substantial: 10% had an inpatient admission, 15% visited the ER, 64% visited specialists, and 54% reported counseling (average of 8 visits).

Conclusions: Women with severe PPD symptoms participating in the PPD ACT app reported a high burden of illness, underscoring the importance of early detection and treatment to prevent adverse outcomes to mother and child.

Acknowledgements: This study was supported by the Foundation of Hope, NIH, and Sage Therapeutics, Inc. Word Count (with Acknowledgements): 250/250

#10 - SCREENING MOMS FOR POSTPARTUM DEPRESSION & PTSD IN THE NEONATAL INTENSIVE CARE UNIT AT MAGEE-WOMENS HOSPITAL

Andrea Favini1, John Silipigni2, Alexandra Walton3, Gillian Kruszka3, Priya Gopalan4, Eydie Moses-Kolko4

1 Psychiatry, Allegheny Health Network, 2 UPMC Magee Womens Hospital, 3 University of Pittsburgh School of Medicine, 4 UPMC Western Psychiatric Hospital

Objective: Mothers of infants admitted to a NICU are at increased risk of developing postpartum depression (PPD) and post-traumatic stress disorder (PTSD). We implemented a screening and referral program for mothers of infants admitted to our NICU.

Methods: Women were screened using the Center for Epidemiological Studies-Depression (CES-D) [1] and the Revised Perinatal Post-Traumatic Stress Disorder Questionnaire (PPQ) [2]. Descriptive statistics were utilized to evaluate service utilization. We used multiple regression analysis to evaluate predictors of PPD and PTSD including maternal medical illness burden, psychotropic medication use, and infant illness severity measured by the Clinical Risk Index for Babies II (CRIBII) scale.

Results: Over one year, 21% of eligible mothers completed screening measures (n=680 eligible, n=146 participated) and 34% (n=49) scored positive for depression. One third of depressed mothers also screened positive for PTSD (n=16). Of the 49 women referred for perinatal psychiatric evaluation, 41% scheduled an appointment (n=20). The most common barriers to engagement included inability to establish phone contact (48%) and existing mental health services (24%). The results of the regression indicated that more severe infant illness, as measured by increased CRIBII score, significantly predicted higher maternal depression scores.

Conclusions: Depression rates in our sample are similar to population estimates, demonstrating a higher rate of PPD in NICU mothers. Our program improved linkage to existing outpatient perinatal psychiatric services for a population that remains underserved. Severity of infant illness, a known risk factor of PPD, was replicated in our sample as a predictor of higher depression scores.


#11 - BEYOND THE EPDS: EVIDENCE FOR SCREENING AND IMPLEMENTATION IN OBSTETRICS SETTINGS

Hillary A Robertson1, Aimee Danielson1, Huynh-Nhu (Mimi) Le2, Stephen Kane3, Ruthie Arbit1, Melissa Fries4, Matthew G Biel1

1 Department of Psychiatry, Georgetown University Medical Center, 2 Department of Psychology, George Washington University, 3 Georgetown University School of Medicine, 4 Women’s and Infants’ Services, MedStar Washington Hospital Center
OBJECTIVE: In 2015, the American College of Obstetricians and Gynecologists called for universal screening for postpartum depression (PPD) and treatment referrals when indicated. This study examined screening rates for PPD at two major obstetrical centers in Washington, DC during the year following the recommendation. These settings had differing levels of institutional support for PPD screening and subsequent referral to specialized perinatal mental health services.

METHODS: Electronic medical records of 2,022 women (site A: 22.4% White, 58.6% African American, 4.8% Asian; site B: 50.7% White, 25.0% African American, 5.2% Asian) who received postpartum care at the two hospitals were obtained. The Edinburgh Postnatal Depression Scale (EPDS) was the main measure of depression screening.

RESULTS: Of the 2,022 women receiving postpartum care, nearly 70% (n=1,413) were screened with the EPDS across both settings. Of the 1,413 women screened, 9.3% (n=131) met criteria for PPD based on EPDS ≥10. There were significant differences between screening rates (χ²=194.062, p<.001); at Hospital B, 86.1% (n=756) of women receiving postpartum care completed an EPDS while only 58% (n=657) of the women seen at Hospital A completed a screen. There were no significant differences in rates of positive screens between hospitals (8.2% at Hospital A vs. 10.2% at Hospital B).

CONCLUSIONS: Screening rates differed by institutions. The higher screening rate in Hospital B may be due to increased programmatic support, training, and a direct pathway to care – suggesting that these elements facilitate implementation of universal screening for PPD.

ACKNOWLEDGEMENTS: The Marriott Foundation and Early Childhood Innovation Network

#12 - PMDD ASSOCIATION WITH SUICIDE AND VIOLENCE: A HYPOTHESIS AND REVIEW OF SUPPORTING DATA
Nazish Syed

Hypothesis: Reproductive depression is a subgroup of depressive disorders in which depression occurs at times of hormonal changes in women. Symptoms of depression, anxiety, irritability, anger, and suicidal ideation occurring in the days before onset of menstruation is premenstrual syndrome (PMS), or its severe form premenstrual dysphoric disorder (PMDD). If these symptoms occur in the weeks after pregnancy, then it is postpartum depression (PPD). Evidence suggests history of one type of reproductive depression predicts depressive episodes at other times of a woman’s reproductive cycle and may even be the same disorder. As PPD has serious morbidity and mortality associated with it, we hypothesize that similar cases of suicide and violence can be seen in women with PMDD.

Methods: A review of literature pertaining to PDD and PMDD was conducted, including symptomology, etiology, treatment, and cases.

Results: PMDD and PDD share similar symptomology, etiology, and treatment. However, when looking for an association of suicide and violence in PMDD, as seen with PDD, there is a lack of information. This can be attributed to: 1) illnesses are still poorly understood. PMS has no well-defined criteria and only recently the symptoms of PMDD were classified separately in DSM. In addition, the DSM classifies PPD as a subgroup of MDD. However, evidence shows these are different illnesses. 2) most studies done on PMDD symptoms are retrospective studies relying on women to recall symptoms occurring on specific days of their monthly cycle leading to recall basis.

Conclusion: Limited data and lack of cases on correlation of suicide and violence in PMDD can be attributed to the diagnostic classification of these illnesses in the DSM and lack of prospective studies. This prompts the need for better DSM classification of reproductive depression and the need for longitudinal prospective studies on suicide and violence coinciding to specific days of a woman’s menstrual cycle.

#13 - EATING DISORDERS THROUGHOUT THE REPRODUCTIVE CYCLE: CASE SERIES AND LITERATURE REVIEW
Robin Valpey, Wynne Lundblad - Psychiatry, University of Pittsburgh Medical Center

Objective: While amenorrhea is no longer part of the diagnostic criteria for anorexia nervosa, eating disorders are associated with numerous changes in the hypothalamic-pituitary-ovarian axis. Subsequently, menstrual and fertility issues as well as other forms of sexual dysfunction are common in women with eating disorders.

Methods: A three case series is presented as a framework to review the literature on sexual health issues seen in women with eating disorders, with discussion surrounding menstrual changes, sexual dysfunction, fertility issues and peripartum complications.

Results: The first case highlights issues related to sexual dysfunction in a 22 year old female with anorexia nervosa, with subsequent exploration of common symptoms, differences among subtypes, contributing factors and potential treatment. Case 2 offers an example of a 34 year old female with infertility concerns, with further review of the trends and treatments among women with eating disorder trying to conceive. Finally a third case is presented of a 21 year old female at 29 weeks gestation.
who was admitted to an inpatient eating disorder unit due to inadequate weight gain, followed by discussion of screening, assessment and management of eating disorders during pregnancy.

**Conclusions:** Given the prevalence of issues related to sexual function in women with eating disorders, increasing awareness of these issues may improve the complex care of these individuals. More research is needed to determine best recommendations for screening, diagnosis and management of these issues. References: Andersen AE, Ryan GL. Eating disorders in the obstetric and gynecologic patient population. Obstetrics & Gynecology 2009;114(6):1353-1367.

### #14 - EXPANDING SERVICES: FROM UNIVERSITY OF NEW MEXICO MENTAL HEALTH PERINATAL CLINICS TO A WOMEN'S AND INFANT MENTAL HEALTH REPRODUCTIVE FELLOWSHIP

Kimothi Cain , Simerjeet Brar , Nina Gonzales , Anilla Del Fabbro - Psychiatry, University of New Mexico

**Objectives:** Depression is one of the most common obstetric complications and cause of maternal morbidity; approximately 15-20% of women experience depressive symptoms in the peripartum period. New Mexican mothers suffer incrementally based on a 2008 survey, nearly 30% screened positive for depression. This period offers a pivotal opportunity to provide early intervention and detection because if left untreated, these conditions can have devastating effects on mothers, children, and families. To bridge the gap of maternal mental health needs in New Mexico, the UNM Department of Psychiatry created a wide array of clinical services and most recently a new training fellowship in infant and maternal mental health.

**Methods:** Services at UNM for maternal mental health needs include consultation on mother-baby unit, creation of outpatient perinatal psychiatry clinics, integration within outpatient OBGYN clinics, and more recent expansion with the proposed Reproductive and Infant Mental Health Fellowship.

**Results:** The fellowship will ensue in 2019 and be comprised of longitudinal experiences in maternal, paternal, and infant mental health. Components include clinical, educational, scholarly, teaching, supervisory, and research experiences.

**Conclusions:** Untreated maternal and paternal mood disorders can have devastating effects on family systems. Early origins of disease and pathology can be seen in the developing fetus in utero, with lifelong lasting impacts. Education via interdisciplinary models, cross collaboration, community outreach, and academic training models can begin to bridge the gap for early intervention and prevention. Ongoing neuroscientific research and advocacy at the local and national levels will be pivotal in informing our practice.

### #15 - ACHIEVING REPRODUCTIVE PSYCHIATRY LITERACY: WHAT SHOULD RESIDENTS KNOW AND HOW SHOULD WE TEST THEIR KNOWLEDGE?

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**Objective:** Although there is growing awareness of the importance of treating pregnant women with mental illness, not all programs train medical providers to be competent in providing this care. Nor is there any national standard describing what knowledge trainees should have to be competent in treating this population. This pilot study developed a 5 question quiz to assess resident knowledge across reproductive psychiatry topics and then tested residents to determine both the quality of the testing instrument and to identify gaps in knowledge.

**Methods:** A 5 question multiple choice quiz was developed exploring resident knowledge on the topics of managing psychiatric illness in pregnancy with pharmacotherapy, poor neonatal adaptation syndrome in pregnancy, managing depression in pregnancy, marijuana use in pregnancy, and use of neuroleptics in pregnancy. Residents from 3 different training programs were tested.

**Results:** Still being determined. Will present the test instrument used as well as data on the percentage of correct answers by training program and by topic.

**Conclusions:** This research begins to establish a testing framework for measuring trainee literacy in reproductive psychiatry. As the US based National Curriculum in Reproductive Psychiatry Task Force finalizes its online reproductive psychiatry curriculum and opens access to trainees nationally this work helps to clarify norms that could be used to establish requirements for training in this crucial area of psychiatry.

### #16 - DEVELOPING A NOVEL MULTIDISCIPLINARY CLINICAL PROGRAM FOR BIRTH TRAUMA

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**Objective:** 20-48% of women experience their delivery as traumatic and 2-6% of women meet criteria for postpartum posttraumatic stress disorder (PTSD). We aim to use qualitative data from focus groups composed of women with traumatic deliveries to identify factors that may enhance obstetric and mental health care for women at risk for birth trauma.

**Methods:** For this exploratory study, we ran a series of focus groups, each with 4-10 women who had been through a complicated birth experience involving abnormal placentaion, hemorrhage, and/or hysterectomy. General questions about
patient’s pregnancies, births, and postpartum experiences were asked to generate discussion. The groups were audio recorded and subsequently transcribed.

RESULTS: Initial themes that emerged from the discussion include desire for peer support, difficulty engaging in referral for mental health early in the postpartum period, concern for traumatic impact on partner, resentment regarding not having a typical pregnancy, gratitude to providers, and difficulty returning to hospital for follow-up care. These themes will be elaborated on and connected at the conclusion of the study.

CONCLUSIONS: We aim to develop a trauma-informed, evidence based clinical program to serve women at-risk for traumatic birth, which will include obstetric and anesthesia planning, psychotherapy, and psychopharmacology. We hope to provide targeted interventions during pregnancy and through 6-12 months postpartum, including screening for trauma related disorders and depression, psychiatric and psychological assessment, engagement in therapy and psychopharmacologic treatment, specialized and collaborative multi-disciplinary treatment planning, and peer support to facilitate recovery and growth.

#17 - CREATING A TRAUMA-INFORMED OBSTETRICAL PRACTICE
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Introduction: Adverse childhood experiences (ACEs) and other traumatic exposures are strongly associated with poor adult health outcomes such as depression, suicidality and early sexual activity. Emerging evidence indicates that ACEs are also significantly associated with obstetrical risk (e.g., low birth weight, prematurity, fetal death). However, awareness about ACEs among national OB/GYN organizations is still developing and resources for the implementation of trauma-informed care (TIC) within OB/GYN settings are limited.

Methods: We convened a TIC workgroup at an urban academic center serving disadvantaged families (>90% Medicaid) containing both OB/GYN and Pediatrics practices to better understand 1) clinician and staff knowledge about TIC, 2) staff and patient perceptions of the healthcare environment, 3) current policies pertaining to TIC and 4) staff and patient preferences about potential TIC practices. As part of a pediatric integrated care learning collaborative with the National Child Traumatic Stress Network, the team is utilizing a cross sectional survey of patients (N=101 women), a survey of clinicians, staff and trainees (N ~ 200), and focus groups.

Results: Only 45% women described their mental health as very good or excellent. Nevertheless, 96% reported feeling comfortable and welcomed, and 87% reported that their clinicians had good understanding of their life circumstances. Staff survey and focus group results will be available summer 2019.

Conclusions: TIC is a critical component of medical care. This effort will provide guidance for those aiming to integrate TIC into OB/GYN settings serving vulnerable women and families.

#18 - REMOVING BARRIERS TO CARE: NORTHWELL HEALTH ZUCKER HILLSIDE HOSPITAL'S COMPREHENSIVE PERINATAL PSYCHIATRY PROGRAM
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Background: Northwell Health’s Zucker Hillside Hospital (ZHH) sought to improve mental health care access for perinatal patients through the development of a comprehensive perinatal psychiatry program.

Methods: The program began with the development of an Ambulatory Perinatal Psychiatry Division consisting of a specialized, multidisciplinary team offering medication management and psychotherapies. In 2016, a 22-bed Inpatient Women’s Unit was constructed: the only unit of its kind in New York and among only a few in the country. Also composed of a multidisciplinary team, the unit facilitates the continuation of breast-feeding, allows for mother-baby visits, and has perinatal-focused group therapy. The perinatal psychiatry program extends to our largest medical hospital, Long Island Jewish, where consult-liaison psychiatrists work closely with OB/GYNs to care for admitted patients and coordinate needed perinatal psychiatric care at ZHH. In addition to clinical services, the program provides training and now includes a Women’s Behavioral Health Research center.

Results: Since its inception, the program has provided care to thousands of perinatal patients. Annually its ambulatory division completes over 3,000 outpatient visits and the Women’s Unit cares for up to 100 perinatal women. Perinatal psychiatry clinical training is a component of the education of all psychiatry residents, consult-liaison fellows (not only Women’s Behavioral Health fellows), and rotating medical students. Focused perinatal psychiatry clinical and research pathways are popular subspecialty training opportunities aimed at increasing the number of trained clinicians.

Conclusion: ZHH’s perinatal psychiatry program has improved mental health care delivery to women by providing specialized clinical care through experienced providers.
#19 - USING FREE OPEN ACCESS MEDICAL EDUCATION TO EDUCATE PROVIDERS ON THE DIAGNOSIS AND TREATMENT OF PERIPARTUM DEPRESSION

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Objective: While peripartum depression represents the most common complication of childbirth, many affected women go untreated. One reason for this may be that providers lack adequate confidence and knowledge to identify and manage this illness. Free open access medical education may provide an avenue to educate medical professionals. This study evaluates the effectiveness of an online module focused on the diagnosis and treatment of peripartum depression.

Methods: A review of the literature and input from content experts were used to create 6 videos focused on the diagnosis and treatment of peripartum depression. Each video was less than 10 minutes in length and created in accordance with the 12 principles of multimedia design. Videos were disseminated to 31 psychiatry residents who were asked to view the 6 videos over 4 weeks. Outcomes were changes in knowledge and confidence which were assessed using a pre/postmodule short answer test and questionnaire.

Results: 21/31 psychiatry residents completed the study. The mean pre-module test score was 19.21 (+/-6.28) out of 44 total points and mean post-module test score was 34.21 (+/-4.82). The improvement in test score was statistically significant (p<0.0001). The mean pre-module confidence rating was 1.52 (+/-0.68) which indicated “not-so to somewhat confident” and mean confidence rating post-module was 2.52 (+/-0.51) which indicated “somewhat to very confident”. The improvement in confidence was statistically significant (p<0.0001).

Conclusion: This novel free open access medical education module on peripartum depression improved both knowledge and confidence and may provide an avenue to educate medical professionals.

#20 - POSTPARTUM DEPRESSION IN AN UNDOCUMENTED HONDURAN IMMIGRANT WOMAN: A CASE REPORT

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Objective: Hispanic immigrant women are at high risk for postpartum depression, and the rates of mental health service utilization by this population are extremely low. In this report, I discuss the risk factors and barriers to care in an undocumented Honduran immigrant woman at six weeks postpartum.

Methods: I describe the patient's symptomatology at presentation, the social factors complicating her care and barriers to seeking care sooner, the rationale for involuntary hospitalization, and patient's response to this decision.

Results: The patient was a 30-year-old undocumented Honduran immigrant woman with no prior psychiatric history who presented to the emergency department at six weeks postpartum with suicidal ideation. Her depressive symptoms began at 2 weeks postpartum and met criteria for a major depressive episode. Her psychosocial stressors included social isolation, lack of support or understanding of her illness by her husband, and insecure legal status. The decision was made to involuntarily hospitalize her, and she was greatly distressed by this, as she felt that her family would see this as abandonment and due to fear of deportation.

Conclusions: When outpatient care is not sought, this may lead to the worsening of symptoms resulting in involuntary psychiatric hospitalizations, which can be traumatic for the patient and family and may lead to future distrust of the medical system. Efforts are needed to address these barriers to allow for more timely intervention.

#21 - BARRIERS AND FACILITATORS RELATED TO PERINATAL DEPRESSION TREATMENT ENGAGEMENT AMONG ASIAN, BLACK, LATINA, AND WHITE WOMEN

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Objective: One out of 7 women suffer depression during the perinatal period with many foregoing treatment, especially women from racial/ethnic minority groups. This study used focus group methodology to examine barriers and facilitators related to Asian, Black, Latina, and White women's engagement in treatment for perinatal depression.

Methods: Thirty pregnant or postpartum women (10 Asian; 5 Black; 6 Latina; 9 White) with a perinatal depression diagnosis or positive Patient Health Questionnaire screen (PHQ-9=10+) and receiving obstetric care within Kaiser Permanente Northern California, participated in one of eight telephone focus groups (2 groups per race/ethnicity). A clinical psychologist elicited discussion about factors influencing engagement with perinatal depression treatment using a semistructured guide. The audio recorded discussions were transcribed and coded by two researchers using a general inductive approach in NVivo qualitative analysis software.

Results: Key themes included stigma surrounding mental health, time constraints, and mismatch between the patient and available treatments or providers. Women across race/ethnicity noted cultural or family messages challenging the value of
depression treatment. Although women from all groups described difficulties scheduling treatment around childcare responsibilities, Black and Latina women emphasized economic pressures related to inflexible work schedules. Treatment engagement often hinged on participants’ comfort while discussing depression with particular obstetric or mental health providers. Convenience also played a role (e.g., preferences for web-based appointments, mental health provider embedded in obstetric clinic).

**Conclusions** Women with perinatal depression may benefit from strategies that mitigate stigma, provide flexibility, and allow multiple opportunities to find a treatment or provider meeting their needs.

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### #22 - MENTAL HEALTH LITERACY OF MEXICAN-AMERICAN ADOLESCENTS: EXAMINING THEIR PERCEPTIONS ABOUT PERINATAL DEPRESSION

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**Objective:** Perinatal depression is a major concern as it poses health risks for both the mother and infant. Despite this, there is limited information concerning the mental health of Mexican-American adolescents during the perinatal period. Previous research identified low mental health literacy as one of the primary reasons for their limited use of mental health services. The purpose of this qualitative study was to understand pregnant and postpartum Mexican-American adolescents’ perceptions concerning perinatal depression through the application of a mental health literacy framework.

**Methods:** A convenience sample of 20 pregnant and postpartum (perinatal) Mexican-American adolescents between the ages of 15 and 19 years were interviewed. Participants were recruited from parenting classes across urban high schools in Southwestern United States. This qualitative descriptive study used deductive and inductive content analysis to analyze data. Categories and subcategories describing the mental health literacy of perinatal Mexican-American adolescents concerning depression will be presented.

**Results:** Participants had difficulty recognizing depressive symptoms and often dismissed them as normal pregnancy and postpartum changes. Many were reluctant to seek help due to the stigma associated with depression. Participants emphasized the importance of confiding in individuals whom they believed could relate to the challenges of motherhood. The internet, social media, and health care providers were mentioned as sources of mental health information.

**Conclusions:** Application of the mental health literacy framework provided a comprehensive description of Mexican-American adolescents’ knowledge and attitudes concerning perinatal depression. Interventions may benefit from using this framework to help perinatal Mexican-American adolescents achieve positive mental health outcomes.

### #23 - TIES THAT BIND: BUILDING SOCIAL SUPPORT AND COORDINATED COMMUNITY SERVICES FOR CHINESE IMMIGRANT WOMEN DURING PREGNANCY AND THE POSTPARTUM PERIOD

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**Objective:** Chinese immigrant women often experience low levels of social support and parenting self-efficacy. This project aims to address these concerns by (1) implementing a structured, group prenatal care program for mothers to receive accurate medical information and increased social support during pregnancy; and (2) assessing general psychosocial health and well-being among Chinese immigrant women receiving OB/GYN care at South Cove Community Health Center (SCCHC).

**Methods:** This mixed-methods study examined psychosocial experiences of Chinese women, both pregnant and nonpregnant, through questionnaires and in-depth interviews. In the process, we evaluated a group-based prenatal care program, Centering Pregnancy, by collecting data on women enrolled into the program (n=17) and women receiving one prenatal care at SCCHC (n=12). Women were asked questions about acculturation, stress, social support, resilience, and parenting at two time points (second trimester and 6-weeks postpartum).

**Results:** Women reported a diverse range of socioeconomic status, acculturation levels, and stress. Preliminary data suggested that women enjoyed structured, group-based care due to social support from other mothers and increased provider attention. Cultural modifications, such as incorporating the practice of “sitting the month” into Centering Pregnancy, were helpful. Future results will report whether the program improved outcomes for women, specifically an increase in social support and preparedness for caregiving, and a reduction in levels of stress, depression, and anxiety.

**Conclusions:** Future research should acknowledge diversity among Chinese immigrant women by taking a holistic lens and considering immigration and family context. Acknowledgements: This project is funded by the Hope & Grace Foundation.
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