



Perinatal Anxiety
Stress in Pregnancy
Media Conference
Facilitator Guide

Contributors

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Overview

The biological consequences of perinatal stress are diverse, and our scientific understanding of them continues to evolve. There has been an increasing appreciation of the sequelae of stress in perinatal mental health and wellbeing.

The ability to field patient questions arising from popular culture is an important professional skill for trainees. In particular, trainees should be able to explain data and statistics cited in the lay media in an accurate, reassuring, and clinically relevant manner. Thus, the goal of this module is to have residents build communication skills that enable them to serve as knowledgeable and thoughtful representatives of reproductive psychiatry to a lay audience.

This session consists of three parts:

1. Reviewing and critiquing a piece on stress from the popular media (such as from newspaper articles or social media)
2. Appraising the comparable medical literature
3. Role-playing a psychiatrist/patient interaction that allows for practice communicating this topic

The aim of reviewing the medical literature is to compare peer-review findings with the information portrayed in the media. For this exercise, the most relevant parts of medical literature are the abstract, the introduction, and the discussion. The aim is not to have an in-depth, “journal-club” analysis of the article (an important skill for residents to master elsewhere in their training), but to identify the gaps between the information presented by the media compared with medical literature.

Sessions last approximately 50 minutes, but can be modified depending on the number of media items and articles selected. The media conference is designed for PGY-4 psychiatry residents, but can be tailored to any resident trainee. A small group setting with time and space to work within break-out format is recommended. After a review of the media items and the medical literature, the group will divide up into small groups of 2-3 residents to role-play the clinical interaction.

This module can be tied-in with the statistics modules so that residents can review statistical concepts first then apply them to the media/literature module.

Selection of Content

Content can be selected in advance or at the time of the session. The faculty and residents may pre-select a topic that is of particular interest to the group and distribute the media item and the article 1-2 weeks prior to the session. Alternatively, if there is a media item of particular interest to one or more of the trainees, they can bring the item to the session and the relevant literature can be appraised in real-time by the faculty and trainees, using a laptop and projector.



Learning Objectives

By the end of this module, participants will be able to:

- 1) Demonstrate the ability to analyze issues related to stress in pregnancy, as portrayed in the lay media
- 2) Locate and analyze relevant scientific literature as it relates to the issues of stress raised in the media
- 3) Differentiate perinatal stress from perinatal anxiety
- 4) Communicate thoughtfully and accurately with a lay audience (e.g. a patient in a reproductive psychiatry consultation)

Resources Required

- 1) A faculty moderator
- 2) Samples from media
- 3) Relevant article references
- 4) Laptop (with internet access) and projector

Session

1. Presentation of media items (10 minutes): Faculty and residents together will review the media item(s)
2. Review of medical literature (10 minutes): Faculty and residents together will briefly assess the comparable medical literature using a structured format
3. Role-play with case example (15 minutes): Small groups of residents will role-play a psychiatrist/patient discussion.
4. Large group discussion (10 minutes)
5. Wrap-up and Q+A (5 minutes)

Presentation of Media Items

Main Media Item

- 1) CNN: “Stress during pregnancy may harm unborn baby's brain, studies find.”

<https://www.cnn.com/2020/12/07/health/pregnancy-stress-fetal-impact-study-wellness/index.html>

Supplementary Media Items

- 1) Newsweek: “How stress can affect you and your unborn baby”

<http://www.newsweek.com/how-calm-your-anxiety-during-pregnancy-315242>

- 2) The Conversation: “Health Check: can stress during pregnancy harm my baby?”

<http://theconversation.com/health-check-can-stress-during-pregnancy-harm-my-baby-81825>

- 3) The New York Times: “Some Pregnant Women in New York City Will Have to Deliver Babies Alone.”

<https://www.nytimes.com/2020/03/24/parenting/coronavirus-labor-birth.html>

Critique of Media Coverage

- 1) What is the central claim of these media pieces?

Facilitator elicits the following:

- An association was found between prenatal maternal anxiety and disturbances in fetal brain functional connectivity, suggesting altered fetal programming
- This finding taken in the context of chronic stress experienced during the Covid-19 pandemic highlights the



significance of mental health screening and resources for pregnant people

2) How do these media pieces influence (and potentially bias) the lay reader?

Facilitator elicits the following:

- Vague definition of “toxic” levels of anxiety (sub-threshold for anxiety disorder diagnosis) that is dependent on a given person’s type and degree of day-to-day role and responsibilities
- There is no clear differentiation between anxiety and stress or nuanced discussion of the severity and chronicity of these.
- Although it mentions the Covid-19 pandemic, the article does not clearly differentiate between everyday stressors, such as length of work hours, and severe stressors such as life during the pandemic or a death of a loved one
- Introduction of the idea that maternal stress before conception can shorten the length of the fetus’s telomeres and impact the rate at which the future baby ages can be an additional source of self-blame, guilt, anxiety in birthing parents
- Although the article does emphasize the importance of screening, treatment, and resources for pregnant people, the emphasis of health outcomes in the fetus and future offspring offers a bias that somewhat deemphasizes the birthing parent’s mental health and overall health in their own right. This may imply that their health is a priority only in the context of pregnancy and the future health of their offspring, when in fact the mental health of the birthing parent has an impact that runs deeper than the biological impact on the offspring.

3) How accurate is the headline/title of the article in relation to the data discussed?

Facilitator elicits the following:

- Some studies have identified developmental changes, including impact on learning and emotions, of offspring exposed to stress, anxiety, and depression in pregnancy, that can translate into future social, emotional, and behavioral problems.
- Risk factors such as maternal stress, anxiety, and depression are modifiable, suggesting that with improved screening and access to resources including treatment and other supports, the discussed outcomes in offspring may be modifiable, also
- Chronic stress, as can be seen in a pandemic such as Covid-19, can further amplify these effects on maternal stress on the fetus and present unique challenges
- Most of the articles, as they evolve, become more balanced in their reporting.

Read and Review Scientific Literature

Source material for media article: <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2773772>

De Asis-Cruz J, Krishnamurthy D, Zhao L, et al. Association of Prenatal Maternal Anxiety With Fetal Regional Brain Connectivity. JAMA Netw Open. 2020;3(12):e2022349. doi:10.1001/jamanetworkopen.2020.22349

1) What is the study design? What were the study variables? What were the main conclusions? What are the limitations of this study?

Facilitator elicits the following:

- Prospective observational cohort study
- Variables: prenatal maternal self-reported measures of stress, anxiety, and depression; resting-state functional connectivity MRI in fetuses. Main conclusions of the study:
 - Alterations in late second- to third-trimester fetal brain functional connectivity were associated with maternal anxiety.
 - Prenatal maternal anxiety may affect the development of a diverse set of brain regions and networks, which may, in turn, impact long-term neurodevelopmental outcomes.



- Functional connections between areas that developmentally associate earlier (ie, brainstem and sensorimotor areas and local short-range connections) were stronger in high maternal trait anxiety states.
- Functional connections that emerged later in development (ie, more distant anteroposterior, interhemispheric connections) were weakened by higher levels of anxiety.
- Strengthening of earlier emerging connections suggests a preference for networks that support more fundamental processes (ie, sensory and motor processing, arousal) as opposed to connections between association regions that will eventually subserve higher-order cognitive functions such as executive control.
- These findings suggest an association between altered fetal programming in fetuses and maternal anxiety, supporting a fetal programming hypothesis.
- These findings support the need for mental health surveillance and interventions for pregnant women.
- Limitations of the study:
 - Samples from low-risk obstetric clinics of women with healthy full-term pregnancies.
 - Investigating the timing of connectivity changes was a challenge since younger fetuses (ie, at lower gestational ages) were not equally represented in the sample (in part to the technical difficulties associated with the acquisition and processing of these images).
 - A relatively small percentage of the sample was positive for trait or state anxiety.
 - Maternal anxiety was measured using self-report.
 - Clinical relevance: whether the functional connectivity findings observed during the fetal period predict infant and childhood neurobehavioral outcomes needs to be validated with longitudinal studies.

2) How are the main conclusions drawn from the study different from the media article?

Facilitator elicits the following:

- **Clinical relevance:** whether the functional connectivity findings observed during the fetal period predict infant and childhood neurobehavioral outcomes needs to be validated with longitudinal studies. The media article more strongly implies that there may be a long-term significance for offspring of birthing parents with prenatal stress, anxiety, or depression.
- **Media article:** “Fetuses of expectant moms with higher anxiety levels were more likely to have weaker connections between two brain areas involved in executive and higher cognitive functions and stronger connections between parts of the brain connected to emotional and behavioral controls.”
- **Scientific study:** “Our data showed an association between reduced connectivity in regions that are part of the executive control network and increasing maternal anxiety”... “Default mode network-related regions also showed an association of reduced connectivity with increased maternal anxiety” ... “Our resting state findings are also consistent with volumetric and diffusion tensor imaging studies that showed structural abnormalities in the limbic, temporal, and frontal regions in fetuses and infants exposed to prenatal distress” ... “In newborns and infants exposed to anxiety in utero, fractional anisotropy, a diffusion tensor imaging metric that reflects neuronal integrity, has been shown to be decreased in regions critical to emotional and cognitive development (the insula and dorsolateral frontal regions), visual processing (middle occipital cortex), and social functioning (angular region and posterior cingulate), 88 areas also affected in the current study.”

Role-Playing Exercise

Trainees should separate into groups of 2 or 3 with one trainee playing the role of reproductive psychiatrist and one or two trainees playing the role of a patient who is experiencing stress/distress.

Sample Clinical Case:

Elizabeth C. is a 32-year-old married Black woman who is 14 weeks pregnant with her first baby (G1P0). She has no history of major depressive episodes, suicide attempts, or hospitalizations. She was briefly treated by her primary care physician with fluoxetine, 20 mg daily for anxiety symptoms in the context of a breakup with a



boyfriend in college. She does not believe she was ever diagnosed with a formal anxiety disorder. Since that time up until the present, her anxiety symptoms have not recurred. Her score on the EPDS is 6 (within normal range); her score on the Perinatal Anxiety Screening Scale (PASS) is also within the normal range.

However, she reports that she has been under a particular amount of stress lately, because of multiple psychosocial factors. She just graduated from a master's program in architecture and is starting a new position in several months.. She has heard about how new associates tend to work many hours per day, and she is worried that she won't have time for any self-care activities such as running. Additionally, her mother was recently diagnosed with Stage III breast cancer and is about to undergo intensive treatment. Lastly, the patient and her partner plan to move to a new city for their jobs after they are married, and she is very worried about not being near her family and having to make new relationships over again. She and her partner have considered canceling their plans to move and start the new positions in order to stay nearer to her mother in case her condition should worsen.

During the consultation with the psychiatrist, Elizabeth says "I'm under so much stress that this can't possibly be ok for the baby. I'm running around all the time and my mind is spinning. I can't keep up. I read the article online on the *CNN* website about how stress will harm my baby, and now this is all that I can think about. I am starting to worry that this level of stress can't be safe for the pregnancy, but then I start to think that stressing so much about my stress is also not good for the pregnancy. I would consider going back on my medication, but I would also feel too stressed about that too. I'm stuck. I got scared when I read that article because I started to think that I should not move to a new city or not work so many hours. And in the back of my mind, I am constantly thinking about my mom and if she will make it through her cancer treatment. How dangerous is it to be under this kind of stress for the baby?"

Sample reproductive psychiatry script

"The issue of how stress affects pregnancies is complex. It is true that some studies have demonstrated that stress in pregnancy can have an impact on the offspring. However, it is more nuanced than what is suggested in the *Newsweek* article. For example, the impact of maternal stress hormones on the pregnancy changes over the course of the pregnancy. Elevated levels of maternal stress hormones may be more significant very early in the pregnancy but may have much less of an impact in the later stages of pregnancy. Additionally, experimental data demonstrating an impact of stress doesn't necessarily translate into something that is clinically meaningful. Lastly, it is hard to conduct these studies because of confounding factors such as depression or socioeconomic pressures. For you, the most important thing we can do is focus on supporting you through this stressful time. We can focus on making sure you have enough support around you, focusing on stress management strategies, screening for anxiety or depression, maximizing support in the postpartum period, and considering further measures such as psychotherapy that can help you navigate these life transitions."

Follow up questions

Elizabeth asks:

- 1) Should I go back on my medications?

Elicit the following:

- Since she is not currently meeting criteria for anxiety or depression, would not start immediately

- 2) What should I do in the meantime?

Elicit the following:

- Increase social support
- Initiate stress management strategies
- Continue to screen for anxiety and depression
- Address elevated risk of postpartum depression
- Consider psychotherapy such as interpersonal psychotherapy to focus on role shifts, role transitions, and grief



3) Does this stress level mean I am at risk for postpartum depression?

Elicit the following:

- She is at somewhat elevated risk given her multiple psychosocial stressors
- Aim will be to reduce stress overall as above and to monitor closely in the postpartum period

4) Elizabeth has been especially worried about restrictions in allowing supportive others to be present in the labor and delivery room in the setting of COVID-19 restrictions as well as disturbing statistics she has learned about regarding maternal mortality in Black women. She expresses concern about the level of support she would have overall during this process, especially in the context of structural racism. She notes “It feels like the odds are against me, no matter how you look at it.”

Elicit the following:

- Chronic psychosocial stress also includes being a member of a racial minority group that experiences discrimination and systemic racism
- Racism and discrimination contribute to negative birth outcomes independent of other types of stress, and a number of studies have directly linked these factors to adverse obstetrical outcomes such as low birth weight
- Emphasize collaborative care between members of the treatment team (OB/GYN, psychiatry, doulas, supportive others in her life, including family) and offer to coordinate communication and supports regarding her concerns
- Validate the reality of her concerns while also supporting her in advocacy for herself through things that she is able to control, such as communication with her providers, education regarding her treatment options, transparency in the screening, treatment, and labor and delivery stages of pregnancy, transparent risk-risk discussions with her providers regarding her treatment for anxiety, risk factors for perinatal depression, and offer her relevant treatment options and resources (see resources below)

Q+A: Large Group Discussion



Additional Resources

- 1) *Reprotox*: <https://reprotox.org>
- 2) *MGH website*: <https://womensmentalhealth.org>
- 3) *LactMed*: <https://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm>
- 4) *PubMed*: <https://www.ncbi.nlm.nih.gov/pubmed>
- 5) *MotherToBaby* www.mothertobaby.org
- 6) <https://therapyforblackgirls.com>
- 7) <https://www.blackdoulas.org>

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