STEINER YOUNG INVESTIGATORS

The North American Society for Psychosocial Obstetrics and Gynecology established the *Steiner Young Investigators' Symposium* in honor of Dr. Meir Steiner, a leading researcher in our field. The symposium provides a showcase for new and innovative research in the field of Women's Mental Health.

Residents and Fellows submitted abstracts of their original research to be considered for inclusion in this program. The four investigators selected to speak at the symposium each receive **$500** to help defray the costs of their travel, or to use as seed money for additional research.

STEPS TO IMPROVE THE PREGNANCY AND CHILDBIRTH EXPERIENCES OF PHYSICALLY DISABLED WOMEN

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Background: In the United States, nearly 27 million women live with a disability and nearly 15% of all Canadians live with a disability – and this number is growing. In the general population, women have a higher rate of disability than men. Women with disabilities have generally poorer health, lower educational attainments, fewer economic opportunities, and higher rates of poverty than non-disabled women do. Women with disabilities are less likely to marry, more likely to get divorced, more likely to live alone, and more likely to experience sexual and physical abuse/violence than non-disabled women are. Disabled women's physical and mental health concerns often go unmet, particularly with regard to their sexual and reproductive health (i.e., cervical cancer screening). Although pregnancy and childbirth have significant identity and health implications for all women, research to-date has focused almost exclusively on able-bodied women. For example, the Canadian Maternity Experiences Survey (2009), a survey of 6421 women designed to a representative Canadian survey on women's experiences during pregnancy, birth, and the early postpartum period, failed to consider the experiences of women with physical disabilities (and disabilities in general).

Objective: To understand the pregnancy and childbirth experiences of women with physical disabilities (WWPD).

Methods: I reviewed the available literature (primarily qualitative, retrospective single-site studies with small sample sizes and ethnographies) and analyzed the content and discourses in the literature to identify themes. A number of theoretical orientations, including feminist standpoint theory and the Social Model of Disability, guided this work.

Results: Most WWPD have normal fertility and are capable of becoming pregnant and of vaginal delivery. The literature however reveals that WWPD encounter numerous barriers during the perinatal period, hindering the care they receive and how adapt to motherhood, consequently affecting their physical and mental health. This presentation will detail this most prominent theme evident in the literature – barriers. This includes attitudinal, informational, physical, and financial barriers that WWPD encounter during pregnancy and childbirth. Many of these barriers originate from negative attitudes about women with disabilities (i.e., they are asexual, unlikely to be lovers, wives, and mothers, and incapable of taking care of others). This presentation will also include a discussion of how pregnancy and ultimately motherhood may serve as empowering experiences for WWPD, particularly because many WWPD have been denied sexuality and femininity since childhood.

Conclusions: This presentation will outline a number of key research, education, clinical/service delivery, and policy recommendations to better meet the needs of WWPD during the perinatal period and as they transition to motherhood. Some of these recommendations include adding questions on disability into provincial/state and national population-based surveys, enhanced disability training in medical school and continuing medical education, collaboration between providers/clinicians (i.e., obstetrician-gynecologists and rehabilitation therapists), and community-based research with WWPD. Finally, because this work serves as the foundation to my PhD project, I will conclude by outlining some of my next steps.

SIGNIFICANT GROUP DIFFERENCES IN EPSTEIN BARR VIRUS ANTIBODIES AND PERCEIVED STRESS, BUT NOT C-REACTIVE PROTEIN IN WOMEN WITH MAJOR DEPRESSION DURING PREGNANCY

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Summary: Low-grade inflammation, characterized by elevated plasma levels of C-reactive protein (CRP) and heightened Epstein Barr Virus (EBV) antibodies, are associated with a higher risk of developing depression (Pennix et al., 2003; Ladwig et al., 2005; Musselman et al., 2001).

Objective: This study sought to determine group differences in inflammatory markers, C-Reactive Protein, and Epstein-Barr Virus Antibodies and in perceived stress in unmedicated pregnant women (25-36 gestation) and during postpartum (6-8 weeks) with and without major depressive disorder. Also, we sought to determine the extent to which CRP, EBV, and perceived stress during pregnancy predict depression symptoms during postpartum.

Sample: We enrolled 19unmedicated pregnant women (28.4 years, SD=5.5): psychiatrically healthy (n = 13) or diagnosed with major depression (n = 6) in a prospective naturalistic study with two assessments, between weeks 25-36 pregnancy and at the six week postpartum phase.

Methods: Participants gave written informed consent, and a urine toxicology sample. They completed measures of depression (Structured Clinical Interview for the DSM-IV Axis I Disorders, Outpatient Version, SCID (First, Spitzer, Gibbon, & Williams, 1997), Patient Health Questionnaire (PHQ-9, Kroenke et al., 2001), Quick Inventory of Depression-Self Report (Rush et al., 2003), Positive Affect Negative Affect Scale (Watson et al., 1988), a blood spot sample for EBV and CRP samples (McDade, Stallings et al., 1999; Mihai et al., 2008) and the Perceived Stress Scale.

Results: The MANOVA showed a significant group effect for inflammatory markers and perceived stress during pregnancy, $F(3, 19) = 4.71$, $p = .016$, with asignificant main effect for EBV, $F(1,19) = 5.44$, $p = .03$, and a significant main effect for perceived stress, $F(1,19) = 5.44$, $p = .03$. The main effect for CRP was not significant, $F(1,19) = 0.12$, $p = .73$. Also, regression analyses were significant, $F(4,18) = 4.8$, $p = .014$ in which perceived stress during pregnancy predicted depression in postpartum ($t = 2.18$, $b = .49$, SE = .18, $p = .05$). No predictive relationships were detected for EPV and CRP.

Source of Funding: This research was supported by Northwestern University's Institute of Women's Health Research (PI: J.Gollan).

THE IMPACT OF MATERNAL OBESITY AND DEPRESSION ON EARLY INFANT BEHAVIOR

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Introduction: Obesity (Body mass index (BMI) above 30) has become a national public health concern. During pregnancy, obesity is associated with gestational diabetes and pre-eclampsia, and other delivery complications, including the risk of preterm labor. Psychologically, those who suffer from obesity also tend to have co- morbid psychological disorders, such as depression and anxiety. However, less is known about what impact maternal obesity, maternal depression, and the intrauterine environment may have on later infant neurobehavior. The purpose of the current study was to examine the impact of maternal obesity and depression on infant behavior within the first month of life.

Methods: This study is part of a larger study examining the effects of depression and antidepressant medications on infant outcomes. For purposes of the current study, those mothers who were members of the control group or were classified as suffering from MDD, but not taking antidepressants, were used in order to control for any potential effects of antidepressant use on weight gain. BMI was determined based on mothers' pre-pregnancy weight and height. Those with a BMI greater than 25 were classified as overweight (N=28), those with a BMI greater than 30 were classified as obese (N=27), and those with a BMI greater than 40 were classified as extremely obese (N=5). Infant behavior was examined on 5 occasions within the first month of life (Days 2, 4, 7, 14, and 30) using the NICU Network Neurobehavioral Scale (NNNS). The NNNS yields 13 summary scores of infant behavioral, neurological, and stress-abstinence domains. Generalized estimating equations were used to examine between and within group effects on NNNS summary variables over the first month of life.

Results: Mothers classified with MDD during pregnancy had infants who had lower arousal (Z=14.1, df=3, p<.05) scores than control mothers without MDD. Mothers classified as depressed and who were also overweight or obese had lower excitability (Z=68.0, df=10, p<.001) scores and higher lethargy scores (Z=54.9, df=9, p<.001) than infants whose mothers were in the normal BMI range and not depressed. These infants also had lower attention scores during the exam (Z=100, df=9, p<.001) and took longer to habituate to various stimuli (Z=34.1, df=7, p<.001. Finally, infants of extremely obese mothers (without depression) exhibited more CNS stress signs (Z=16.3, df=10, p<.001) and had lower quality of movement (Z=21.9, df=3, p<.001) during the exam than their normal weight counterparts.

Conclusions: Results indicated that maternal obesity and depression is associated with less optimal infant neurobehavior in the first month of life. This pattern of NNNS summary scores reflects under-aroused infants with signs of dysregulation and central nervous system stress signs. It can be posited that the influence of maternal obesity coupled with maternal depression on early infant development is likely a complex interaction of intrauterine exposures, genetics, and other postnatal factors (e.g., SES, feeding patterns). Thus, future studies should investigate other aspects of infant and child behavior to ascertain the potential long-term consequences of maternal obesity and depression.

HOW ARE WOMEN WITH BIPOLAR DISORDER TREATED?

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Objective: Bipolar disorder (BD) affects 1-2% of the population in the U.S. The mainstay of treatment for BD is pharmacotherapy, which creates a clinical challenge for women who become pregnant. Women with BD have a high risk of recurrence in the immediate postpartum period. No studies of community based treatment for pregnant and postpartum women with BD have been published. This study examined the frequency and type(s) of pharmacotherapy used in women with BD during pregnancy and the postpartum period.

Methods: This is a prospective observational study evaluating childbearing women with BD (N=135). For the women considering pharmacotherapy, the decision about treatment, as well as the risk benefit analysis, was made with her physician prior to study enrollment. The choice to accept or decline medication treatment did not dictate entry into the study. The women were assessed at 20, 30, and 36 weeks gestation, as well as 3 months postpartum; psychotropic pharmacotherapy data was collected via self-report at each visit and recorded by use during 1st, 2nd, and 3rd trimesters of pregnancy, as well as 3 months postpartum.

Results: Treatments received by patients included the following mutually exclusive drug categories: no psychotropic medication, antidepressants (buproprion, citalopram, duloxetine, escitalopram, fluoxetine, paroxetine, mirtazipine, sertraline, trazodone, and venlafaxine), lithium, anticonvulsants (carbamazepine, lamotrigine, and valproate), atypical antipsychotics (aripiprazole, olanzapine, paliperidone, quetiapine, risperidone, and ziprasidone), benzodiazepines (alprazolam, clonazepam, and lorazepam), and other psychotropic medication (amphetamine, atomoxetine, dextroamphetamine, hydroxyzine, gabapentin, perphenazine, pregabalin, topiramate, and zolpidem). The treatments received in the 1st, 2nd, and 3rd trimester, as well as 3 months postpartum, respectively, are listed according to frequency, from the most frequent to the least frequent: 1) no pharmacotherapy (58%, 64%, 58%, 46%); 2) other psychotropic or psychotropic combination (13%, 8%, 8%, 10%); 3) atypical antipsychotic (3%, 7%, 13%, 12%); 4) antidepressants (9%, 7%, 6%, 8%); 5) atypical antipsychotic plus antidepressant (5%, 5%, 5%, 4%); 6) benzodiazepine plus other psychotropic (3%, 2%, 2%, 10%); 7) lithium (1%, 2%, 2%, 4%); 8) anticonvulsant plus antidepressant (3%, 1%, 2%, 2%); 9) anticonvulsant (1%, 2%, 2%, 2%); 10) lithium plus antidepressant (3%, 1%, 1%, 2%); and 11) benzodiazepines (1%, 1%, 1%, 0%).

Conclusions: Pharmacotherapy standards recommended by the American Psychiatric Association for the treatment of patients with BD, including lithium, atypical antipsychotics, or anticonvulsants, were rarely (1-13%) provided during any trimester of pregnancy or the first three months postpartum. Thus, pregnant and postpartum women with BD are a differentially disadvantaged patient population, as they most often receive, with their doctor's supervision, no pharmacotherapy or pharmacotherapy that is not evidence-based. Although risk-benefit decision-making guidelines are available for the treatment of pregnant and breastfeeding women with BD, publications are not sufficient to disseminate evidence-based community treatment for this special population. Further research investigating strategies to educate and train community practitioners to implement risk-benefit decision-making guidelines with childbearing women diagnosed with BD is imperative.

POSTERS

POSTER #1

RESPONSIVENESS OF THE PELVIC FLOOR DISTRESS INVENTORY AND PELVIC FLOOR IMPACT QUESTIONNAIRE IN WOMEN UNDERGOING TREATMENT FOR PELVIC ORGAN PROLAPSE OR URINARY INCONTINENCE

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Introduction and Hypothesis: An evaluation of the responsiveness and minimal clinically important change (MCIC) of the Chinese Pelvic Floor Distress Inventory (PFDI and Pelvic Floor Impact Questionnaire (PEIQ) in women undergoing surgery for Urinary Stress Incontinence and or Pelvic Organ Prolapse (POP) treatment.
Methods: 156 women were assessed using PFDI and PFIQ before and after they received continence surgery with or without PFR surgery, or vaginal pessary. Responsiveness of PFDI and PFIQ were evaluated by effect sizes, standardized response mean and paired sample t-test. MCIC of PFDI and PFIQ were determined by difference in mean change score of "somewhat satisfied" group and "dissatisfied" group.
Results: Significant improvements in the respective subscales of PFDI and PFIQ, demonstrating moderate to great responsiveness after different treatments. Details will be discussed.
Conclusions: The Chinese PFDI and PFIQ instruments are responsive to change in women undergoing continence surgery, PFR surgery or vaginal pessary for USI or POP.

POSTER #2

PSYCHOLOGICAL TREATMENT VERSUS BRIEF ADVICE FOR TREATMENT OF HAZARDOUS SUBSTANCE USE IN PREGNANCY

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Objectives: Hazardous substance use in pregnancy compromises the health of mothers and their offspring. We compared substance use and birth outcomes in pregnant women who were users of hazardous substances and were randomized to receive either brief advice, administered by obstetrical clinicians, or a psychological treatment that combined motivational interviewing and cognitive behavioral therapy that was administered by trained nurses.
Methods: This was a randomized, parallel, controlled trial. We enrolled168 women with hazardous substance use who had not yet completed an estimated 28 weeks of pregnancy. We compared the two groups on the following primary outcomes: 1) the percentage of days in prior 28 days that alcohol and/or drugs were used, immediately before delivery and three months post delivery; and 2) the rates of deliveries that were preterm (<37 completed weeks gestation), low birth weight (<2500 gms) or small for gestational age.
Results: Subjects in both groups decreased substance use between intake and delivery, with no significant group differences in drug or alcohol use (Chi-square=0.25, p=0.88). Between delivery and three-month follow-up, both groups showed increases in substance use. There was a trend (p=0.08) for a lower rate of preterm birth among those who received the psychological treatment (10%) compared to those who received brief advice (20%).
Conclusions: Brief advice and psychological treatment were associated with comparable rates of hazardous substance use in pregnancy and after delivery. Notwithstanding this, birth outcomes may have been improved by psychological treatment. Results point to the need to intensify interventions in the immediate post-delivery period to avoid rebound of substance use.

POSTER #3

CLINICAL EXPERIENCE WITH MIRTAZAPINE FOLLOWED BY PROLONGED RELEASE MELATONIN ADD-ON AND MONOTHERAPY IN PERIMENOPAUSAL WOMEN WITH INSOMNIA

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Background: Insomnia is one of the most common complaints in the perimenopausal period with 40% of women reporting sleep difficulties. While hormone replacement therapy (HRT) has historically been considered a first-line treatment for menopausal insomnia, many women are now seeking alternative treatments due to concerns about their risks and side effects. The sedating antidepressant mirtazapin (Remeron ®) is used off label for insomnia in perimenopausal women. Despite its apparent efficacy, compared to hypnotic drugs mirtazapine is significantly more likely to cause increase in appetite and weight gain if treatments last more than 30 days. Prolonged release melatonin (Circadin ®), approved for primary insomnia in patients aged 55 years and older, facilitates withdrawal of hypnotic drugs and is not associated with weight gain. I report here the experience of using Circadin to prevent the weight gain while maintaining good sleep quality in perimenopausal women.
Methods: Seven perimenopausal women (age 45-52; normal BMI [24.2 ±0.6) with insomnia and no clinical signs of depression (Hamilton scale score of 7.71 ±1.3) were treated with Remeron 15 mg for 2-4 weeks. 2mg Circadin was then added-on and Remeron tapered-off for another 1-3 months. Prospective data on body weight, and subjectively assessed sleep quality and well-being were collected before, during and at end of treatment.
Results: Sleep quality significantly improved by 52 % during Remeron intake and 65% during subsequent Circadin monotherapy. Well being significantly improved by 83% with the treatment. Five of 7 women (71%) demonstrated weight gain following Remeron intake, 3 of which returned to their normal weight following Remeron withdrawal and Circadin intake. No adverse events were reported.
Conclusion: Application of Remeron followed by Circadin add-on and monotherapy improves sleep while evading Remeron induced weight gain in perimenopausal women. These results warrant further investigation of a larger population in controlled clinical trials.

POSTER #4

THE FIVE TRIMESTERS CLINIC: ADDRESSING A GAP IN REPRODUCTIVE HEALTH CARE

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Objectives: Present a model for setting up a clinic foster increasing access to psychiatric services in a university setting where differential reimbursement policies impede coordination between ob-gyn and psychiatry.

Methods: Preliminary discussions involved establishing clear goals: 1) providing low cost evaluation and triage to ob-gyn patients identified as possibly in need of mental health services; 2) increasing recognition of such patients by service providers of various disciplines (nurses, pediatricians, social workers and obstetricians, psychiatrists in the community); 3) increasing the knowledge and capacity of trainees to recognize and intervene with typical mental health concerns related to pregnancy. Prior to initiating the service, psychiatry faculty met with representatives from medical and nursing staff in ob-gyn and neonatal intensive care to assess their current practices and the perceived barriers to referral and psychiatric care. Simultaneously, a medical student surveyed local resources to identify where women could receive psychotherapy and psychiatric treatment based on their status as publically or privately insured, or without insurance. The creation and distribution of a brochure that encouraged both provider and self identification of psychiatric problems, coupled with simple instructions on how to access services quickly, has generated a flow of appropriate referrals. Direct services have been provided to referred women by a dedicated psychiatry resident at very low fees. After each visit, the resident communicates with the referring clinician via the electronic medical record. The resident also maintains statistics on the clinic, including follow up care. The clinic includes a brief weekly didactic session, involving medical students. A joint case conference with psychiatry and ob-gyn residents has been established, to foster discussion the issues of psychiatric dimensions of infertility, the treatment of psychiatric disorders during pregnancy and after delivery, and other topics selected by each department.

Results: The clinic was launched in July, 2011. The patient flow has been roughly one evaluation per week. Patients have been seen for between one and six visits, with some referred to other residents or psychology training clinics for psychotherapy, to ob gyn providers or generalist physicians for medication management, and to other community services. To date, most referrals come from a small number of obgyn physicians. Resident satisfaction and enthusiasm has been high. The time commitment from two supervising psychiatrists has been roughly an hour per week.

Discussion: Ob gyn providers in our setting are reluctant to screen women for psychiatric disorders unless they have an efficient mechanism for arranging treatment. They also identify women in need of services based on criteria other than the use of standard screens. Designing a service that meets their needs for flexibility, efficiency, and feedback has lead to a marked increase in their willingness to send women for psychiatric care. Having a functioning clinical service provides a foundation for further educational and research activity in this area.

POSTER #5

A BROADER VIEW OF PSYCHOLOGICAL BIRTH OUTCOMES: PERCEIVED CONTROL AND SATISFACTION WITH CHILDBIRTH

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Objective: Childbirth-related psychological distress (e.g., PTSD) is an often over-looked component of postpartum mental health, leading to potential gaps in clinical care. Furthermore, women report postpartum traumatic stress symptoms even if the birth did not pose a threat to her or the infant's safety/well-being. Thus, the purpose of the current study was to examine a broader model of childbirth evaluations, emphasizing the importance of women's perceived level of control over the childbirth environment and overall satisfaction with the birth experience.

Method: Participants recruited online and from two OB/GYN clinics included 187 women who had given birth to a single, live infant in the last four months (mean age 28.8; 84% White; 43% primiparous, 86% vaginal delivery).

Results: Only 9% identified the childbirth experience as traumatic; however, 33% reported clinically significant PTSD symptoms in at least one of the three symptom clusters (i.e., re-experiencing, avoidance, hyperarousal). Two multivariate regression models examined labor and delivery variables as predictors of childbirth satisfaction and PTSD symptom severity. Results indicated that perceived control of the childbirth environment explained the most variance in childbirth satisfaction (β = .49, p<.01). Pain management (β= .22, p < .05) and having an unplanned cesarean section (β = -.30, p < .05) were also significant predictors of satisfaction. In the second regression model, perceived control (β = -.13, p < .05) and labor complications (β = -.15, p < .01) significantly predicted PTSD symptom severity, while mode of delivery was not a significant predictor of PTSD symptoms.

Conclusions: Results suggest that regardless of labor complications and delivery type, enhancing women's control of the childbirth environment may be an important factor for preventing negative birth experiences. In addition, enhancing women's control may reduce risk of childbirth-related psychological distress, regardless of mode of delivery.

POSTER #6

SEX DIFFERENCES IN DEPRESSION UNDER CONDITIONS OF CHRONIC STRESS

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Background: Women experience higher rates of depression compared to men. For both sexes, stressful life events play an important role in the etiology of depression. Retrospective study designs however, limit our ability to investigate the cause and effect relationship between stress and depression and identify predictors of depression under conditions of stress. Further, traditional statistical modeling techniques are unable to account for the variability in response to stress and the development of depressive symptoms between men and women.

Objectives: 1) To advance our understanding of depression under stress by conducting a prospective study of a cohort set to begin medical internship, a rare situation where a dramatic increase in stress and depression rates can be predicted; and 2) To employ growth mixture modeling to examine the presence of distinct classes of depression trajectories under conditions of stress and identify predictors of class membership.

Methods: 3,861 interns from US residency programs were invited to take part in the study and completed online assessments two-months prior to internship, including demographic, medical education and psychological measures, and at 3-month intervals throughout internship year, including rotation setting, perceived medical errors, work hours and sleep. Depressive symptoms were measured at all assessments via the nine-item Patient Health Questionnaire.

Results: 2278 (59%) of interns chose to take part in the study. Three distinct classes of depressive symptoms were identified: 1) Stress-Sensitive: 16% of participants report low depressive symptoms before internship stress, but demonstrate a dramatic increase in depressive symptoms which is sustained throughout internship year; 2) Stress-Neutral: 22% of participants report a moderate level of depressive symptoms before and throughout internship year; and 3) Stress-Resilient: 62% of participants report low depressive symptoms before and throughout internship year. Individuals in the Stress-Sensitive and Stress-Neutral classes were more likely to have a history of depression, difficulty early family environment and high neuroticism compared to individuals in the Stress-Resilient class. Neuroticism and difficult early family environment increased the probability of membership in the Stress-Neutral class and female gender decreased the probability of being in this class compared to the Stress-Sensitive class.

Conclusions: Our findings support that men and women have similar depressive symptoms under conditions of low stress but, women are more likely to experience increased and continued depressive symptoms under conditions of chronic stress compared to men. Further, risk factors for depression are different for men and women and a better understanding of women's vulnerability to depression under conditions of stress is key to advancing our understanding of sex differences in depression. By prospectively studying individuals prior to and then during a time of high stress, and identifying different classes of depressive symptom trajectories under stress, we can potentially decrease the variance in subgroups and increase our ability to detect biological, psychological and environmental contributions to the disease. Identifying trajectory classes in other populations experiencing an imminent stressor i.e., pregnancy and postpartum could significantly advance our understanding of women's vulnerability to depression under conditions of stress and identify important predictors of depression in women.

POSTER #7

REPETITIVE TRANS-CRANIAL MAGNETIC STIMULATION FOR THE TREATMENT OF POSTPARTUM DEPRESSION

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Objective: Postpartum Depression is an illness affecting 10-15% of new mothers. It is the most common medical complication of childbirth, and can be gravely disabling, with potential deleterious impacts on the mother's ability to care for self, bond with her infant, breast feed the infant, and maintain her functioning in the home and the workplace. Over time, untreated maternal depression can lead to impaired cognitive and emotional development of the child.

Psychotropic medications for postpartum depression and anxiety are typically offered as first line treatment for women with severe postpartum symptoms. Studies have shown, however, that maternal acceptance of medication, particularly in women who are breast feeding, is limited by their concern about infant exposure to the medications, and uncertainty about long term developmental effects in their children from this exposure.

Repetitive Trans-cranial Magnetic Stimulation (rTMS) is an FDA approved treatment for major depression that offers promise in the treatment of postpartum depression. rTMS uses magnetic pulses to induce electrical current in the brain, in brain areas thought to be responsible for depression. This therapy is an attractive alternative to medication for postpartum mothers for several reasons: its effect is often rapid (within 1-2 weeks), the treatment is typically well tolerated and does not require prolonged recovery post-treatment, the treatment does not have systemic effects that interfere with lactation, and there is no medication exposure to the infant.

At the University of North Carolina at Chapel Hill, we are conducting an open label trial, to treat 10 women with postpartum depression with rTMS. The specific aims of this study are 1) to assess the efficacy of rTMS in postpartum women with major depression, 2) to assess the tolerability of this treatment in this population, and 3) to monitor the durability of effect over a 6 month period.

Methods: Ten women with postpartum depression, who are not taking antidepressants, will receive 20 rTMS treatments over a 4 week period (10 Hz, 120% motor threshold, left dorsolateral prefrontal cortex). Study subjects will be between the ages of 18 and 45, who are between 0 and 12 months postpartum. Initial diagnosis of major depression will be confirmed by a SCID interview. Beck Depression Inventories (BDI) and Edinburgh Postnatal Depression Scales (EPDS) will be assessed a baseline, weekly during active treatment, and at 3 months and 6 months post-treatment.

Results: This study has obtained institutional IRB approval and subjects are currently being recruited. We will look for change in depression rating scales as measured by the BDI and EPDS. We will report on treatment response and treatment tolerability data for this ongoing study.

Conclusions: Findings from this study will provide an important contribution to the field of perinatal psychiatry, where safe and non-pharmacologic treatments would be welcomed as an option for treating postpartum women who suffer from major depression.

POSTER #8

WOMEN'S WORK STATUS AND SLEEP DURING THE THIRD TRIMESTER OF PREGNANCY: PRELIMINARY RESULTS

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Objective: Pregnant women sleep less and have reduced sleep efficiencies during the third trimester compared to pre-pregnancy. Sleep disturbances towards the end of pregnancy have been attributed to discomfort, urinary frequency, restless legs symptoms, hormonal changes, and mood symptoms. Other psychosocial variables, however, may play a role in sleep disturbance during pregnancy as with nonpregnant adults. For instance, such factors as high work demands and work stress have been associated with poor sleep quality. Our objective was to examine the association of women's working status and sleep during third trimester of pregnancy. We hypothesized that full-time workers would have shorter sleep times and lower sleep efficiencies than non-working mothers-to-be.

Methods: As part of an ongoing study on sleep and mood in pregnancy, we enrolled 14 women (ages 23-37, mean$\pm$SD=29.5$\pm$5.1 years) with a history of major depressive disorder or bipolar disorder (but not in a current mood episode) from August 2010 to November 2011. Participants wore wrist actigraphs and kept daily sleep diaries for one week at approximately 33 weeks of pregnancy. Total sleep time and sleep efficiency were estimated from actigraphy data using the Sadeh algorithm (1994) in Action-W software (AMI, Ardsley, NY). Analyses excluded one woman whose actigraphy data underestimated sleep due to movement artifact when she slept for up to 2 hours daily during her train commute. We defined full-time workers as women

who worked a full day for pay on at least 4 of the 7 recording days. We used independent sample T-tests to compare mean total sleep times and sleep efficiencies between full-time workers and part-time and non-workers. Chi-square was used to determine whether full-time workers' sleep times were more likely to be below the sample median than part-time and non-workers.

Results: Among the full-time workers (n=5), the average number of days worked was 4.8, compared to 0.1 days in part-time/non-workers (n=8). Median sleep time was 412 minutes for the entire sample. Average total sleep time was 392±42 minutes for full-time workers and 417±77 minutes for part-time/non-workers. Average sleep efficiency was 82.5±8.3% in full time workers and 85.1±7.6% in non-workers. Neither total sleep time (t=.669, p=ns), nor sleep efficiency (t=.580, p=ns) showed statistically-significant differences as a function of work status. Among full-time workers, 80% had total sleep times below the median total sleep time of the sample, compared to only 37.5% of non-working women (Chi-Square (df=1)=2.24, p=.14).

Conclusions: Adequate sleep is key during the perinatal period because of the association of poor sleep with adverse health outcomes – including development of mood disorders. We observed no statistically-significant difference in total sleep time or sleep efficiency between full-time workers and part-time/non-workers in this small sample. Our future studies will examine the association of work patterns and sleep in the perinatal period in a larger sample that will include such other psychosocial factors as parity, breast-feeding, social support, and full-time versus part-time work.

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POSTER #9

POSTPARTUM JET LAG? PRELIMINARY EVIDENCE OF CIRCADIAN PHASE SHIFTS IN PERINATAL WOMEN MEASURED AT THIRD TRIMESTER OF PREGNANCY AND 6 WEEKS POSTPARTUM

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Objective: New mothers experience significant changes in sleep habits during the postpartum period. For instance, previous work indicates that women have earlier bedtimes and later rise times in the early weeks following delivery. A consequence may be altered light-dark exposure that may modify circadian phase. This study measured circadian phase before and after delivery to examine whether women experience circadian phase shifts across the perinatal period.

Methods: As part of an ongoing study of perinatal sleep and mood, we measured circadian phase at approximately 33 weeks gestation and 6 weeks postpartum in 11 women (ages 23-37, mean±SD=29.6±4.9 years) with a history of major depression or bipolar disorder (but not in a mood episode at enrollment during 3rd trimester). Participants wore wrist actigraphs and kept daily sleep diaries for one week before assessments of dim light salivary melatonin onset (DLMO) in their homes. Participants used salivettes (Sarstedt, Germany) to give a saliva sample every 30 minutes from ~2.5 hours before the predicted DLMO to ~3 hours after predicted DLMO (Burgess & Eastman, 2005). Light-induced suppression of melatonin was avoided by remaining in dim light and wearing dark welders glasses (Uvex, Smithfield, RI) for the entire saliva collection period. A researcher telephoned the participant at each scheduled sample time to ensure correct timing of the saliva collection. Samples were frozen at -20°C and later assayed for melatonin using ELISA (first two participants) or radioimmunoassay (Alpco, Salem, NH). DLMO time was computed by linear interpolation between the times of the saliva samples before and after melatonin levels reached threshold (6 pg/ml for ELISA; 4 pg/ml for RIA). Phase shifts were calculated by subtracting the 6-week DLMO phase from the 3rd trimester DLMO phase. We used paired samples T-tests to examine whether the DLMO times differed significantly between 3rd trimester and 6 weeks postpartum.

Results: We were unable to determine DLMO for 1 participant at 3rd trimester and 1 participant at either time point. Thus, we calculated phase shifts for 9 women. Absolute phase shifts ranged from 2 to 133 minutes (mean±SD=47±42 minutes). Six women exhibited phase delays (i.e., DLMO was later at 6 weeks postpartum compared to 3rd trimester) with an average delay of 53±46 minutes, range 2 to 133 minutes (t=-2.86, df=5, p=.035). Three women exhibited phase advances, (i.e., DLMO was earlier at 6 weeks postpartum compared to 3rd trimester), range = 8 to 79 minutes, mean±SD = 34±38 minutes (T-test not computed due to small sample size).

Conclusions: We observed individual differences in circadian phase shifts from pregnancy to the postpartum period; some women experienced significant circadian phase shifts during the perinatal transition. One-third of participants had phase shifts > 1 hour, equivalent to one time-zone change or to the phase shift experienced at transitions to and from daylight saving time. These findings point to a potential risk for mood disruption, since circadian phase abnormalities have been associated with depressed mood in nonperinatal women. Future work in a larger sample will examine associations between circadian phase shifts and postpartum mood disturbances.

POSTER #10

NAPPING, SLEEP, AND MOOD DURING THE THIRD TRIMESTER OF PREGNANCY: PRELIMINARY RESULTS

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Objective: Previous studies have shown that naps improve subjective and objective alertness and mood in non-pregnant young adults. In patients with insomnia, however, napping can disrupt nighttime sleep. Napping is a common phenomenon throughout pregnancy, and pregnant women experience sleep disturbances, particularly towards the end of gestation. The purpose of this study was to examine associations between napping and daily ratings of mood, sleepiness, and objectively estimated nighttime sleep in the third trimester.

Methods: As part of an ongoing study of perinatal sleep and mood, we enrolled 14 women (ages 23-37, mean±SD=29.5±5.1 years) with a history of major depression or bipolar disorder (but not currently in a mood episode) from August 2010 to November 2011. Participants wore wrist actigraphs and recorded sleep times and naps on daily sleep diaries for one week at approximately 33 weeks of pregnancy. Diary reported naps were verified by actigraphy. Naps observed on actigraphy but not reported on the sleep diaries were identified by questioning participants at the end of monitoring. Participants also completed a 6-item mood scale and 3-item sleepiness scale each night at bedtime that assessed how they felt overall on that day. Total daily nap minutes, nighttime sleep period (time from sleep onset to sleep offset), total nighttime sleep minutes, and nighttime sleep efficiencies were estimated from actigraphy data using the Sadeh algorithm (1994) in Action-W software (AMI, Ardsley, NY). We used Pearson correlations to examine associations of total daily nap minutes with subjective sleepiness, subjective mood, nighttime sleep period, total nighttime sleep minutes, and nighttime sleep efficiency in women who

reported at least one nap. [One participant was excluded from analyses because she napped daily during her train commute, and these naps could not be verified objectively due to movement artifact.]
Results: Complete diary and actigraphy data were available for a total of 88 days (mean=6.8 days/participant). Three diary-reported naps could not be verified by actigraphy; 8 actigraphy-identified naps not reported on diaries were confirmed by interview. Ten women had at least one nap and were included in further analyses. A total of 28 naps were scored [mean±SD=3.3±2.6 naps per person, range = 1-8 naps]. Average total daily nap minutes measured with actigraphy was 50±40 minutes (range = 6 to 144 minutes). Longer total daily nap minutes was correlated with higher evening sleepiness ratings (r=.253, p=.044). Nap minutes was not significantly correlated with evening mood ratings, nighttime sleep period, total nighttime sleep minutes, or nighttime sleep efficiency.
Conclusions: More than 70% of our sample experienced at least one nap during week 33 of pregnancy. Daytime napping was not associated with evening mood. The association between longer daytime naps and higher subjective sleepiness ratings may reflect increased sleep drive on nap days. Future studies will examine associations among naps, sleepiness, and mood in a larger sample and also during the postpartum period.

POSTER #11

CREATING OUR FAMILIES: EXPERIENCES OF LESBIAN, GAY, BISEXUAL AND TRANS PEOPLE ACCESSING ASSISTED HUMAN REPRODUCTION SERVICES IN ONTARIO

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Objective: Many lesbian, gay, bisexual, transgender, and transsexual (LGBT) people choose to parent, and LGBT people make up a significant proportion of assisted human reproduction (AHR) service users in some parts of North America. Despite this high rate of service utilization, little research has examined the experiences of LGBT people who access these services. This is particularly important in light of recent Canadian policy developments: in 2009, the Expert Panel convened by the Ontario Ministry of Children and Youth Services specifically recommended the removal of social barriers to AHR for LGBT people. Further, the Canadian *Assisted Human Reproduction Act (AHRA)* affirms a non-discrimination clause barring discrimination on the basis of sexual orientation or marital status. In this context, it is critical to determine to what extent AHR services are meeting the family creation needs of Canadian LGBT people.
Methods: This community-based research study was conducted in partnership between academic researchers in the health sciences and law, and a community-based organization serving LGBT people who are parenting or wish to parent (the LGBTQ Parenting Network). An Advisory Committee of AHR service providers and LGBT-identified service users supported the project for its duration. Using convenience sampling of AHR clinics and services for LGBT parents, we recruited over 100 LGBT individuals/families from across Ontario who had used or considered using AHR services since 2007. Of these, 40 individuals/families were selected to participate in semi-structured interviews, in which they were asked to describe their experiences with all aspects of AHR, including information seeking, clinic experiences, and/or choices to avoid using AHR services, where applicable. Interviews were transcribed verbatim and analyzed using thematic content analysis.
Results: Participants emphasized the need to 'reframe' AHR services, in order to address imbedded assumptions that service users are heterosexual, cis-gender (non-trans), partnered with a double income, and experiencing infertility. Participants described how these imbedded assumptions created unnecessary barriers to receiving family creation services. Based on the interview data, we describe specific strategies to accomplish such a reframe, including strategies to address service accessibility (e.g., considering provincial health insurance coverage of AHR services), service provision (e.g., ensuring that all forms are LGBT-inclusive and that appropriate language is used by all clinic staff), provider training (e.g., including LGBT content in medical curricula, providing LGBT training to all clinic staff), and policy and legislative issues (e.g., revising Health Canada Sperm Regulations that currently prohibit gay men from donating sperm).
Conclusions: This Ontario-based research project will assist AHR service providers across Canada and elsewhere to ensure access to and culturally competent service provision for their LGBT clients. The results of this study are currently being developed into interactive theatre workshops, in order to engage AHR service providers in the implementation of the strategies identified by our participants. These workshops will be offered to fertility service providers across Ontario in 2012.

Supported by the Canadian Institutes for Health Research

POSTER #12

TRAUMATIC STRESS IMPACTS BOTH PSYCHOLOGICAL AND PHYSICAL FUNCTIONING: IMPLICATIONS FOR OUR INNER-CITY OB/GYN PATIENTS.

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Objective: A considerable amount of past research has demonstrated the harmful effects of psychological stress on physical health. This association is especially true for women's reproductive health and pregnancy outcomes. Populations such as inner-city, ethnic minority women who live in low socioeconomic neighborhoods are at increased risk for specific and severe stressors as compared to women with greater access to resources. Not only do these inner-city women experience common stressful life events at a greater rate, but they also endure more frequent exposure to traumatic events including physical and sexual violence. The aim of this pilot project was to identify the prevalence and severity of violence against inner-city women as well as comorbid psychopathology and to discuss the implications of these findings on obstetric and neonatal outcomes.
Methods: Participants were a sample of 139 low-income, predominantly African American patients with Medicaid insurance from Rush University Medical Center's outpatient gynecology clinics who completed questionnaires regarding physical and psychological functioning. Physical/sexual violence was measured using the Trauma History Questionnaire (THQ; Green, 1994), depression was assessed using the Patient History Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002), and posttraumatic stress symptoms were measured by the Posttraumatic Symptom Scale (PSS; Foa et al., 1993). Self-report measures of physical functioning included the Short Form Health Survey (SF-36; Ware & Sherbourne, 1992) and the Pittsburgh Sleep Quality Inventory (PSQI; Buysse, 2000). **Results:** Preliminary results revealed a sample with substantial exposure to trauma. Initial analyses show that 44% of participants report having experienced sexual abuse, 53% report having experienced physical abuse, and 71% of participants report having experienced at least one type of physical or sexual abuse

at some point in their lives. Thirty percent have, at least once, feared for their lives or safety, with an additional 37% having witnessed the injury or death of another person. Further analyses are underway to determine the effects of such violence on broader physical health functioning. Conclusion: These findings elaborate on previously established connections between stress and psychological symptoms by exploring these relationships in a highly traumatized sample of inner-city women. Additionally, our results will address the often under-studied effects of physical and sexual violence as a primary predictor of overall physical health. Implications of these findings for OB/GYN patients will be discussed.

POSTER #13

RATES AND PREDICTORS OF PATIENT ENGAGEMENT IN A PSYCHIATRIC CLINIC-BASED SAMPLE OF PERINATAL WOMEN

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Objective: Perinatal depression represents a public health concern and affects nearly 20% of childbearing women. Although treatments for perinatal depression have been identified, perinatal depression remains underdetected and undertreated. Acceptability and preference for various treatments have been investigated, but not linked to patient retention in specialty care. The primary goals of this study were to 1) examine clinical characteristics of perinatal women seeking care in a specialty care setting and 2) examine rates and predictors of treatment engagement in perinatal women.

Methods: Study data were obtained from medical records of perinatal women, (N=366) who sought care at an outpatient psychiatry clinic from January 2007 to November 2010. As part of standard intake procedures, new patients completed questionnaires assessing severity of depressive, anxiety, and sleep symptoms. Clinicians made initial clinical diagnoses, which were corroborated by an attending psychiatrist with training in perinatal mood disorders. The number of and type of patient visits in the 12-month period following the initial evaluation were assessed. T-tests were conducted to evaluate differences between groups (minority vs. non-minority and pregnant vs. non-pregnant). Multiple regression analyses were conducted to test the effect of patient factors and symptom severity on patient engagement in treatment.

Results: Of the women who were seeking care in our clinic, 269 (73.5%) women identified themselves as Caucasian, and 73 (19.9%) identified themselves as belonging to another racial group. There were no differences between minority and non-minority women with respect to symptoms, age, or number of visits; however, pregnant women were significantly younger than non-pregnant women. Nearly half of the sample met criteria for major depressive disorder (N=147, 47.5%). Over 250 women (70.8%) returned for a follow-up visit, and 142 (54.8%) engaged in treatment (i.e. attended at least four visits). Returning patients sought psychotherapy (N=79, 30.5%), medication (N=81, 31.3%), or both (N=99, 38.2%). Patient age and severity of depression and anxiety symptoms predicted engagement. History of psychological treatment, minority status, and pregnancy were not significant predictors of treatment engagement.

Conclusions: Data from this preliminary study on clinical characteristics and rates of treatment retention and engagement suggests that retention and engagement in treatment are relatively high when women are seen in specialty care. Despite data suggesting that perinatal women prefer psychotherapy to medication, more than half of the women in our sample took medication. Similarly, women from minority groups have previously been shown to be less likely to engage in treatment; however, these findings were not replicated in our sample. Not surprisingly, women with more severe symptoms were more likely to engage in treatment; however, it may be that women with more severe psychopathology receive different treatment recommendations or needed more follow-up care than women with less severe illness. Future studies should focus on additional factors that may influence treatment-seeking to specialty care units, as well as decisions about returning for treatment.

POSTER #14

CANCER AND CHILDBEARING POTENTIAL: SURVIVING WITHOUT REGRETS

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Objective: Advances in cancer treatments give young women more hope for survival than ever before, but many treatments end all potential for natural conception. Assisted reproductive technologies can offer new options to preserve fertility through oocyte, embryo, and ovarian tissue cryopreservation, leading to growing numbers of young survivors referred to specialists for fertility preservation consultation (FPC). However, the decision to pursue these processes must occur in the very brief period of time between diagnosis and initiation of cancer treatment, which is often limited to a few days or weeks. Further, research suggests that the comprehension of fertility preservation (FP) information by newly diagnosed cancer patients is degraded by stress, the urgency of the decision, and the complexity of treatment options, impairing the quality of the final decision. In other reproductive contexts, decision aids (DA) have been constructed and tested with patients considering surgical birth control, cesarean childbirth, breast, cervical, and ovarian cancer prevention and treatment, hysterectomy, hormone replacement therapy, infertility and in vitro fertilization, breast reconstruction, and prenatal testing. Although the framework exists for a relevant decision aid adaptation, no such tool has yet been developed for women considering FP.

Methods: Two linked prospective observational studies were designed and carried out at the University of North Carolina at Chapel Hill (UNC-CH). All women age 18-42 years referred to the UNC-CH FP Program after a new diagnosis of cancer requiring gonadotoxic treatment (e.g. chemotherapy, radiation, oophorectomy) were eligible for participation. In the first investigation, *Preserving Reproductive Opportunities after Cancer Treatment (PROACT-I)*, investigators evaluated female cancer patients' knowledge acquisition and experiences after a single fertility preservation consultation. A fertility preservation knowledge index measure (FP-KI), designed by study investigators and validated through a multistage process, captured the patient's post-consultation knowledge and understanding of FP options. The subsequent study, *Cancer and Childbearing Potential: Surviving Without Regrets (PROACT-II),* evaluates a web-based audio-visual DA that prepares the patient for the consultation and decision-making process by augmenting information, exploring values and resources, and identifying support needs. Patients view the presentation before the FPC, collecting questions about process and clarifying values to present to the fertility specialist. Along with the FP-KI, other measures based upon the Ottawa Hospital Research Institute Patient Decision Aids are assessing decisional conflict, self-efficacy, acceptability, and regret. Data collection occurs before the intervention, after the FPC, approximately one-week post FPC (at decision point), and six months following the reported decision.

Results: In PROACT-I, the overall post-visit knowledge index of the study population (N = 51) was poor, with an average score of approximately 50% correct. In addition, 33% percent of participants reported significant decisional conflict when queried three to twelve months *after* the FP decision had been made. Thirty women are being recruited for PROACT-II, with data collection slated to be completed by

summer 2012. Preliminary data from PROACT-II will be presented at the conference.

POSTER #15

APPLYING THE STEPPED CARE MODEL AND INCREASING TREATMENT ENTRY FOR PERINATAL DEPRESSION

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Objective: This project investigated the feasibility of incorporating perinatal depression screening and assessment in an urban primary care clinic with the use of the Stepped Care Model. The goal of the current study was to evaluate if introducing an onsite behavioral specialist would improve rates of screening, assessment and treatment entry for women diagnosed with peripartum depression.
Study Design: The Stepped Care Model was implemented in a busy primary care clinic serving a predominantly Hispanic population. The patient population studied was women in peripartum (during pregnancy and in postpartum). The Patient Health Questionnaire (PHQ-9), a 9 item self-assessment tool, was administered to each patient twice during pregnancy and twice in the postpartum period. Positive screens (scores ≥10) were followed immediately, within the same visit with a primary care provider, by brief assessment and engagement strategies. A behavioral health specialist was present at the primary care site and if the initial assessment indicated presence of peripartum depression, the primary provider would immediately introduce the patient to the on-site behavioral health specialist. The behavioral health specialist would conduct a full psychiatric assessment, determine the severity of symptoms, and provide adequate treatment recommendations.
Results: Prior to the implantation of the Stepped Care Model, only 65.2% of patients completed a PHQ-9 and just 10% of those patients received on-site assessment of their positive PHQ-9 screens. None of the patients with identified perinatal depression were offered treatment. After the Stepped Care Model was implemented, 93.5% patients in peripartum completed a PHQ-9 depression screening and 84.8% of those patients received an on-site assessment. Of the patients that were diagnosed with perinatal depression, 83.3% were offered treatment and 90% of those patients entered treatment.
Conclusion: Perinatal depression is relatively common and yet grossly under-detected and undertreated during routine primary care. Multiple studies show that screening *per se* does not improve treatment outcomes. This study has shown that screening followed by a brief assessment, when necessary, is feasible even in a busy primary care setting. Additionally, this study demonstrated that implementing a Stepped Care Model, which allows for direct contact with a behavioral health specialist right in the primary care clinic, greatly improves treatment entry among perinatal women.

POSTER #16

EFFECT OF PLANNING, WANTEDNESS, AND ATTACHMENT ON PRENATAL ANXIETY

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Background: Recent findings suggest that anxiety symptoms are common during pregnancy and may lead to adverse fetal and infant developmental outcomes. However, besides pre-existing symptoms, the psychological and social predictors of prenatal anxiety are not well known. To address this knowledge gap, this study investigated how pregnancy wantedness and maternal attachment style and history predicted anxiety in a sample of women in late pregnancy.
Method: The investigators recruited 61 pregnant women from obstetric clinics and electronic bulletin boards utilizing standardized questionnaires (PBI, Parker, 1979; ECR-R, Fraley et al., 2000; PRA, Rini et al., 1999; PRAQ-R, Van den Bergh, 1990; HADS-A, Zigmond & Snaith, 1983) to assess predictors and symptoms of anxiety. Using this data, a conceptual model of predictors of prenatal anxiety was tested.
Results: Hierarchical multiple regression analyses were used to test whether a mother's prenatal anxiety could be predicted by pregnancy wantedness, suboptimal personal attachment experiences, and current relationship and/or attachment difficulties after controlling for risk status and parity. When predicting the mother's anxiety in late pregnancy, pregnancy wantedness was found to be a significant predictor for the anxiety dimension "concern regarding the future," $F(3, 56) = 3.38$, $p < .05$, accounting for 15.3% of the variance (ß= .2526, $p < .05$). Also in support of our hypotheses, personal attachment experiences of care and overprotection significantly predicted general anxiety symptoms, $F(4, 55) = 3.77$, $p < .05$, accounting for 21.5% of the variance. Finally, current relationship and/or attachment difficulties were found to predict general anxiety and prenatal anxiety subdimensions including pregnancy related anxiety, fear of the integrity of the baby, concern about the future.
Conclusions: This study implicates pregnancy wantedness, suboptimal personal attachment experiences, and current relationship and/or attachment difficulties as risk factors for prenatal anxiety. These findings may ultimately lead to enhanced public health efforts to prevent and treat prenatal anxiety, with the eventual goal of reducing adverse pregnancy outcomes.

POSTER #17

DEPRESSION, DIABETES, AND CHRONIC DISEASE RISK FACTORS AMONG U.S. WOMEN OF REPRODUCTIVE AGE

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Objective: Depression, chronic diseases and their risks factors have implications for women's overall health and possible future pregnancies. The objective of this study was to estimate the prevalence and predictors of diabetes and chronic disease risk factors among reproductive-age women with depression.
Methods: We used population-based data from the 2006, 2008, and 2010 Behavioral Risk Factor Surveillance System to examine prevalence of diabetes and prediabetes, binge and heavy drinking, smoking, overweight and obesity, and physical inactivity among 69,043 non-pregnant women aged 18 to 44 years with current major or minor depression, a past depression diagnosis, or no depression, as measured by the 8-item Patient Health Questionnaire (PHQ-8). In a multivariable logistic regression model, we calculated adjusted odds ratios (AORs) and 95% confidence intervals (CIs) of 1, 2, and 3 or more chronic disease risk factors by depression status.
Results: Of reproductive-aged women, 12.8% experienced both current depression and 1 or more chronic disease risk factors. Compared to women with no depression, currently depressed women and those with a past diagnosis had higher prevalence of diabetes, smoking, binge or heavy drinking, obesity, and physical inactivity ($\chi 2$ $P < .001$ for all). Eighty-nine percent of women who met PHQ-8 criteria for major depression, 85% who met PHQ-8 criteria for minor depression, and 77% with a past diagnosis compared to 66% of nondepressed women had 1 or more chronic conditions or risk factors ($\chi 2$ $P < .001$). Odds of 3 or more chronic conditions and risk factors

were elevated among women with major (AOR, 5.7; 95% CI, 4.3-7.7), minor (AOR, 4.7; 95% CI, 3.7-6.1), and past diagnosis of depression (AOR, 2.8; 95% CI, 2.4-3.4).

Conclusion: Depressed women of reproductive age have high rates of chronic disease risk factors, which may affect their overall health and future pregnancies. Interventions addressing both lifestyle behaviors and depression among reproductive-aged women are needed.

POSTER #18

POSTPARTUM RISK ASSESSMENT IN A SUBURBAN POPULATION

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Objective: Identification of women at childbirth at risk of postpartum depression (PPD) allows for early identification, education and intervention. PPD/Mood disorders occurs 15-20% in the first year after delivery. No woman is immune to this disorder. The purpose of this study was to identify how many women at childbirth were at risk of perinatal mood disorders for early intervention, education of mothers and caregivers of how many women were at risk and to involve them at follow up (either the GYN, the pediatrician or both). Locally women are encouraged to stop psychotropic medications either early in the pregnancy or in the third trimester to avoid any post delivery problems in the newborn (jittery baby syndrome), the concern is that this is when women are the most vulnerable to mood disorders, and often discouraged from breast feeding except when taking Sertraline.

Method: All women were given a self assessment screening (Postpartum Depression Risk Assessment PDRA) in 24 hours of delivery and scored. Scales were scored, none, moderate, high, or immediate by the number and type of yes responses. Those women scoring high or immediate were seen by the social worker or the psychiatrist. A review of symptoms of risk, psychiatric, medication, family histories, social stressors, and teaching on Postpartum Mood disorders was completed. Home going literature and list of resources was given to the individual. A letter sent to the OB/GYN with a copy of the womans scale and a blank Edinburgh Postpartum Depression (EPDS)for follow up at the 6 week postpartum checkup. Women with an immediate score had a letter, copy of the scale and an EPDS sent to both the OB/GYN and the pediatrician.

Results: 746 PDRA scales were completed of 1107 live births, with 70.6% scoring none or moderate responses. 21% scored high risk and 6% were immediate intervention, at eight months of the study. This correlates well with expected statistics of PPD/mood disorders. Three other hospitals are using a similar or the same PDRA scales with 66 % scoring none or moderate, 25 % high and 5% immediate, validating the similar ranges of percentages.

Conclusions: The scores of actual PPD are yet to be studied in this population. Three other hospitals are using the same PDRA or similar with the same percentages of scores; Two thirds scoring (66%) none or moderate risk, one fourth (25%) scoring high risk and five percent with immediate intervention necessary . These score (unpublished) validate the similar ranges of responses.

POSTER #19

EFFECTS OF MATERNAL POST-TRAUMATIC STRESS SYMPTOMS ON INFANT TEMPERAMENT

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Objective: Maternal psychopathology during pregnancy has been shown to not only affect mothers but infant outcomes as well. Research has revealed that depression and symptoms of anxiety are associated with immediate infant outcomes such as preterm birth and low birth weight. However, less research has focused on different types of psychopathology and infant outcomes beyond the immediate postpartum period. The current study aimed to expand on this literature by investigating the effects of post-traumatic stress symptoms during pregnancy on immediate infant outcomes, including birth weight, APGAR score, gestational age at delivery, length, and head circumference. In addition, associations between infant temperament at three months postpartum with depression, anxiety and post-traumatic stress symptoms from the first questionnaire were examined.

Methods: 175 women have currently been recruited from the mother and baby unit at the University of Iowa Hospitals and Clinics. Women are eligible to participate if they have given birth within the last week, are 18 years or older and speak English. One week following consent, participants receive a questionnaire via email that assesses for symptoms of depression, anxiety, post-traumatic stress and experiences of traumatic life events. Participants also are asked about specific health behaviors immediately before and during pregnancy. Three months following delivery, women receive a final questionnaire asking about their infant's temperament and behaviors as well as assessing for maternal symptoms of depression, anxiety and post-traumatic stress.

Results: Linear regression analyses were conducted to investigate predictive relationships between psychopathology scores and infant outcomes. Several immediate infant outcomes such as birth weight, length and gestational age at delivery were significantly predicted by models including demographic variables, health behaviors during pregnancy and symptoms of depression particularly related to anhedonia. Depression scores were added into regression models in a final step and accounted for significant additional variance in these infant outcomes beyond that of demographic variables and health behaviors. Maternal depression significantly predicted only one infant temperament scale, distress to limitations. Symptoms of post-traumatic stress, however, were not predictive of nor associated with immediate infant outcomes. Though symptoms of post- traumatic stress were correlated with smiling and laughter and sadness, they were not significant predictors in regression models.

Conclusions: Maternal psychopathology during pregnancy is an important predictor of infant outcomes, both immediate and delayed. Further, higher levels of depressive symptoms during pregnancy seem to stand out among different types of psychopathology as consistent predictors of poor infant outcomes. These findings emphasize the importance of screening for psychopathology during pregnancy in order to best serve new mothers and their infants.

POSTER #20

PSYCHOSOCIAL EFFECTS OF PROLONGED HOSPITALIZATION IN OBSTETRIC PATIENTS

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Background: Obstetric patients placed on bed rest for the duration of their pregnancies face the psychosocial stresses of both high risk pregnancy and prolonged hospitalization away from family, friends, and work. This study determines depression and stress levels of patients hospitalized on bed rest and re-evaluates scores weekly to track changes in mood over the course of a prolonged hospitalization.
Methods: Patients with a diagnosis likely to require prolonged hospitalization were recruited from those admitted to the Antepartum Unit at The Ohio State University Medical Center in Columbus, OH were given surveys that included the CES-D depression scale and an inventory of antepartum hospital stressors. Participants were reassessed with the same questionnaire after a hospitalization period of seven days; assessment was repeated every week until delivery or discharge.
Results: Of 26 women recruited to date, 16 have remained hospitalized long enough to complete two questionnaires, and 7 that have completed three. Initial data indicate a non-significant trend for both depression and stress scores to decrease with increased hospitalization time. CES-D scores average 17.6 (SD=11.3) in week 1 and decrease to 12.7 (SD=10.1) by week 3 (p=0.34). Stress scores average 54.2 (SD=17.3) in week 1 and decrease to 42.0 (SD=17.8) by week 3 (p=0.14). Notably, the stress scores for concern about the pregnancy and feeling worried were significantly decreased by week 3 as compared to week 1 (p=0.02 and p=0.03, respectively).
Conclusions: Although the research is ongoing, early results indicate an overall improvement of mood and decline in stress as the hospitalization progresses, likely because the medical condition is perceived as more stable as the pregnancy approaches full term. Recruitment will continue to achieve a sample size that will determine whether the observed trend is significant.

POSTER #21

GENDER DISAPPOINTMENT AND THE POSSIBLE RELATIONSHIP WITH POSTPARTUM DEPRESSION

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Objective: Gender disappointment (GD) has been defined in the non-psychiatric literature as a syndrome affecting women who are extremely focused on having a baby of a given gender, and suffer intense sadness when pregnant with a baby of the non desired gender. Previous studies have reported that the gender of a baby is often an important concern for both personal and cultural reasons. The objective of this talk is to review the psychiatric literature and the popular media coverage of this topic in order to explore the relationship between gender disappointment and postpartum depression.
Method: A literature review will be described, including one study by Klainin et al which cites preference of infants' gender as a risk factor for postpartum depression in Asian cultures. Two clinical cases will be used to illustrate the relationship between GD and postpartum depression: an American woman with recurrence of depression after learning of her male baby's gender and one Pakistani woman reporting depressive symptoms upon learning of her baby's female gender.
Results: The literature, though limited, supports the relationship between female newborn gender and maternal PPD in developing countries with gender inequalities. In contrast, one French study demonstrated an increased risk of PPD with the birth of male offspring (de Tychey 2008).
Conclusion: Further characterization of GD and research would help clarify the relationship between GD as a risk factor for perinatal depression, and specifically PPD.

POSTER #22

PERINATAL DEPRESSIONTREATMENT: OB/GYN PROVIDERS' PERSPECTIVES ON HOW BARRIERS CAN BE OVERCOME

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Introduction: Perinatal depression can cause tremendous suffering for mother, fetus/child and family. Untreated perinatal depression can lead to maternal engagement in poor health behaviors, substance abuse and suicide[1,2]. In spite of profound effects on mother, partner and child, barriers to the treatment of perinatal depression continue to persist[3]. The perinatal period is an ideal time to detect and treat depression[4] due to regular contact between mothers and health professionals. Despite the opportune time and setting, depression is under-diagnosed and under-treated in the obstetric setting[5]. Major change is needed to improve treatment and decrease the suffering of perinatal women. The goals of this study were to: (1) Identify barriers that OB/Gyn providers and support staff encounter in recognizing depression and engaging perinatal women in treatment; (2) Identify strategies to overcome barriers to treatment; and, (3) Inform the development of interventions aimed at improving treatment entry and follow-up.
Methods: Four, two hour focus groups were conducted with obstetric providers and staff. Focus groups were transcribed and resulting data analyzed using a modified grounded theory approach with a phenomenological emphasis.
Results: Key concepts regarding barriers, synthesized from discussions with OB/Gyn providers and staff, were lack of time and skills needed to diagnose, refer or treat women experiencing perinatal depression. Respondents reported that women felt stigmatized, minimized psychiatric illness and were often not comfortable discussing their psychiatric symptoms with OB/Gyn providers. Lack of collaboration between OB/Gyn and psychiatry providers was also perceived as a hindrance. Strategies identified to overcome provider barriers included OB/Gyn provider education and training and consultation with women's mental health specialists to improve psychiatric knowledge base, comfort level prescribing psychotropic medications and communication skills.
Discussion: Strategic changes are needed to successfully engage perinatal women in depression treatment. These data support the development of multidisciplinary treatment strategies that utilize patient psychoeducation, provider training and education, and consultation with women's mental health specialists to overcome patient and provider level barriers and engage women in depression treatment.

POSTER #23

SCREENING FOR BIPOLAR DISORDER IN PREGNANCY

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Objective: Bipolar disorder is an especially high-risk condition during pregnancy and postpartum. Untreated perinatal depressive and manic episodes pose risks to both the mother and fetus. Despite this, perinatal bipolar disorder is under-diagnosed and under-treated.

Misdiagnosis of depressive episodes as unipolar rather than bipolar can be especially problematic when treatment is initiated with an antidepressant and no concomitant mood stabilizer.

To elucidate the problem of under or misdiagnosed bipolar disorder, this pilot study will ask the following questions: What percentage of patients who score positive on the Edinburgh Postnatal Depression Scale (EPDS) also score positive on the Mood Disorder Questionnaire (MDQ) and what percentage of patients who score positive on the MDQ did not also score positive on the EPDS? The first question will reveal patients with possible bipolar disorder who would have been misdiagnosed as having unipolar depression and the second question will pick up patients with possible bipolar disorder who would have been missed altogether if only screened for depression.

Methods: Investigators will perform a chart abstraction from the electronic medical records of patients scheduled for initial prenatal visits in a resident OB clinic, during which they are screened for perinatal mood disorders. Investigators will determine and record whether there is documentation that the EPDS and MDQ were given, and if so, the numeric score for each.

Results: This is a descriptive pilot study currently in process. It is anticipated that data from approximately 500 study participants will have been collected by the time of presentation. From this, investigators will calculate:

- percent of initial prenatal patients receiving EPDS
- percent of initial prenatal patients receiving MDQ
- percent of patients scoring positive on EPDS among those who received it
- percent of patients scoring positive on MDQ among those who received it
- percent of patients scoring negative on both EPDS and MDQ
- percent of patients scoring positive on both EPDS and MDQ
- percent of patients scoring negative on EPDS and positive on MDQ
- percent of patients scoring positive on EPDS and negative on MDQ

Conclusions: These descriptive data will address the two questions listed above. The first of these questions speaks to the problem of misdiagnosis: what is the likelihood that depressive symptoms detected during pregnancy are actually part of a bipolar diathesis? The second question addresses the issue of under-diagnosis: how many women endorse a history of lifetime manic/hypomanic symptoms when they are not currently depressed? These findings will assist in revealing the magnitude of the problem of misdiagnosis and under-diagnosis of bipolar disorder in pregnancy, and to ascertain the potential usefulness of antenatal screening for bipolar disorder. It may also prompt further studies aimed at developing interventions designed to decrease the problematic use of antidepressants in bipolar disorder, increase psychiatric follow up in high risk patients and improve access to care during pregnancy and postpartum.

POSTER #24

CULTURAL-RELIGIOUS CODES AS A STRESSOR IN FIRST SEXUAL EXPERIENCE FOR WOMEN WITH BI-CULTURAL IDENTITY - A CASE STUDY OF JEWISH MODERN-ORTHODOX WOMEN

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Educational Objectives: at the conclusion of this presentation, the participants would recognize the special characteristics of the mental stress women face in bi-cultural society, when experiencing first sexual relations. Participants will get ideas and recommendations for preventive intervention in order to reduce women's mental stress.

Purpose: The Jewish modern-orthodox community has a dual identity as modern and western, while holding strict religious beliefs and practices. This dual identity influence and interfere with the women choices and experience, and in specific, with their first sexual experience. This happens within a context of cultural restrictions and beliefs that influence and shape the experience nature. This study goal was to examine the meaning of first sexual experience from the cultural point of view of young women in the Jewish Orthodox society.

Methods: 18 in-depth interviews were conducted with Jewish modern-orthodox women during their first year of marriage. The interviews text was analyzed using qualitative tools.

Results: The interviews show conflicts between the women cultural and religious practice to their sexual desire or physical intimacy. The subjects describe confusion, embracement and loneliness as feelings that are rooted in the social environment where they were born and raised to day. The interviews analysis yields three main stress areas resulting from to the physical interaction before marriage. The first stress area is about inner-personal stress, created by the conflict between obeying the religious laws and the desire for physical intimacy, which means violation of the religious law. Second area of stress is inter-personal, arousing when the religious code forcing physical separation affects the women' relations with their partners. A third stress area, and the most common one, is derived out of the expectations and social messages concerning sex and sexuality in the orthodox community.

Conclusions: The research findings reveal a code of silence around sex and sexuality, which affects the nature of the conflict and the ways women deal with it. The finding may serve as knowledge source for therapists, education and religious scholars who prepare women and couples for matrimony and sexual life. These findings have importance and relevance in other bi-cultural groups where the modern lifestyle might stand in conflict with religious laws or cultural traditions.

POSTER #25

IMPROVING RESILIENCE AMONG INFERTILE WOMEN: A PILOT STUDY WITH A 1-YEAR FOLLOW UP

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Objective: To describe the efficacy of a pilot program designed to improve resiliency (the ability to respond adaptively to adversity) in the context of infertility treatment.

Methods: We conducted a non-randomized pilot study of 51 women (4 groups) with a diagnosis of infertility who participated in a 10-session group program in Boston, Massachusetts that emphasized skills to enhance resiliency. The program was multidimensional and included strategies such as relaxation response (RR) elicitation, cognitive re-appraisal, health enhancing behaviors, coping skills and the promotion of optimism and acceptance. Descriptive analyses on demographics, pre/post measures under the construct of resiliency—depression (BDI-II), perceived stress (PSS-4), optimism (LOT-R), and social support (MOS)—and 1-year follow-up on infertility treatment, pregnancy and relaxation practice outcomes were collected. Paired t-tests examined pre/post changes.

Results: The mean age of participants was 35.6 (SD=4.2) years, 98% were married, 93% were Caucasian, and 97% had completed college. The average number of months trying to conceive was 25.7 (SD=12.3).

85% of women participated in 8 or more sessions. 67% of women were adherent to the RR practice (as defined by daily elicitation of the RR for > 7 weeks). 80% of enrolled women completed both pre and post questionnaires. At the end of treatment, there were significant improvements in depressive symptoms ($p<0.001$) and perceived stress ($p<0.001$), in addition to increased optimism ($p<.05$) and social support ($p<0.001$). Of the 26 women in the first two groups, using intent to treat analysis, 17 (65%) women reported becoming pregnant during either the group or the 1-year follow-up phase. Of the 26 women, 9 (35%) conceived during the group, and of these, 5 (56%) had delivered live births at the time of survey completion. Of the women, 8 (31%) conceived during the 1-year follow-up phase and of these women, 2 (25%) had delivered live births at the time of survey completion. Of the 23 women who completed the follow-up questionnaire, 54% were still practicing daily RR techniques.

Conclusions: Participants in this pilot study demonstrated enhanced resilience at the end-of treatment through decreased levels of perceived stress and depression and increased levels of optimism and social support. Two-thirds of participants were adherent to daily RR practice during treatment and the majority of participants continued their practice long-term. The 1-year long-term follow-up data showed that over half of the participants became pregnant.

POSTER #26

EXPLORING THE IMPACT OF MATERNAL STRESS EXPOSURE ON FETAL ADRENAL VOLUMES

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Objectives: Maternal psychosocial stress may affect fetal HPA axis development. We sought to examine the relationship between maternal stress and fetal adrenal gland volume. In addition, given that maternal early life adversity (ELS) may be an equally or more important factor in stress transmission, we added a measure of ELS. The main aim was to determine whether pregnant women levels of maternal stress and ELS were associated with altered fetal adrenal gland volumes.

Methods: As part of an ongoing longitudinal cohort study to investigate the impact of maternal stress and ELS on maternal and fetal HPA axis health - we are collecting data at three separate time points - 2 during pregnancy and 1 post-partum. Pilot data from the first phase of the study will be presented here. 51 pregnant women at 19-22 weeks gestation were recruited from the Hospital of the University of Pennsylvania. All subjects were ≥ 18 years of age, medically healthy with no active psychiatric diagnoses or history of pre-term birth, and able to give informed consent. Enrolled subjects completed a brief health and demographic questionnaire and the 10-item Perceived Stress Scale (PSS) (1). In 28 of these women the Adverse Childhood Experience Questionnaire (ACE) was administered. Following the completion of the health and demographic questionnaire, PSS and ACE, subjects received a 3D ultrasound of the fetal adrenal gland**.** Acquisition of the volume data set to identify the fetal adrenal glands came from the same initial plane as the fetal kidneys. Two volumes were obtained per patient by the same obstetrician and an average of the two volumes was determined. A corrected fetal adrenal gland volume calculated using estimated fetal weight (2, 3) was used as the outcome of interest. Histograms and normal probability plots were used to assess distributional assumptions. Multivariable linear regression was used to estimate associations and adjust for gestational age at the time of adrenal volume measurement.

Results: 51 women at 19-22 weeks gestation have completed the study. Mean age of the subjects was 26.5 years (SD 5.6). The mean gestational age was 20.8 weeks (SD 0.94). Mean PSS score was 16.17 (SD 8.4). 25% of the sample reported ACEs ≥ 2, 21% ≥ 1 and 54% no ACEs. Mean fetal adrenal volume (n=41 with 13 unreadable and 3 data lost) was 0.25 cc (SD 0.11). As expected, PSS and ACE were significantly correlated (rho=0.58, p=0.001). Corrected adrenal volume was negatively associated with the number of ACEs. In a multivariable linear regression model adjusting for gestational age, each additional ACE corresponded to a decrease in adrenal volume of 0.09 cc/kg, p=0.032. In a similar model which also adjusted for gestational age, PSS scores were not significantly associated with adrenal volume, p=0.95.

Conclusions: While self reported stress during pregnancy is not associated with fetal adrenal volume at 20 weeks in this sample, report of early life stress is associated with smaller fetal adrenal volumes. Maternal early stress exposure may be more important to fetal HPA axis health than perinatal stress levels.

POSTER #27

TREATMENT OF OPIOID DEPENDENCE IN PREGNANCY – A MODEL FOR COLLABORATIVE CARE

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Objective: The aim of this poster is to report on the development of a novel collaborative care setting in which buprenorphine treatment for opioid dependent pregnant women was developed. Mental health care was embedded in an academic obstetric clinic with the goal of integrating obstetric, psychiatric and addiction services.

Methods: The Director of the Reproductive Psychiatry Consultation Service and the Medical Director of Addictions partnered to develop a buprenorphine service within a mental health treatment setting embedded in an obstetric clinic. Support was sought for and obtained from the leadership in both the Departments of Psychiatry and Obstetrics and Gynecology. Prescribers with a DEA waiver to prescribe buprenorphine, and addiction therapists, were identified. Space requirement and availability were ascertained and the logistics of the patient flow was determined. Psychiatric, pain, and addiction rating scales were selected. The treatment was carefully planned as much as possible to prepare for contingencies. Input was solicited from stake holders and all members of the treatment team that included physicians and social workers. A detailed proposal was then prepared.

Results: Referrals for patients came via inpatient and outpatient consultations to our embedded mental health service. The goal was to maintain the patient at the center of treatment and facilitate smooth communication between prenatal, psychiatric and addiction service providers. This was accomplished through cultivating collaborative relationships between disciplines, integrating mental health and obstetric services, defining methods for communication including the use of electronic medical records, email and telephone, as well as impromptu contact as needed. Integrated care continued in the neonatal intensive care unit to support patients and their babies. Challenges were encountered regarding coordinating rapid responses to referral and coordinating peripartum pain management. This brought to light the importance of integrating anesthesia colleagues into the collaborative model. To date, the first three patients have been successfully maintained on buprenorphine through their pregnancies.

Conclusions: An embedded reproductive psychiatry service within an academic obstetric practice is a viable setting for treating opioid dependent pregnant patients with buprenorphine.

POSTER #28

DEPRESSION SCREENING AND ADVERSE BIRTH OUTCOMES AMONG LOW-INCOME AFRICAN-AMERICAN WOMEN

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Objective: The goal of the current study was to assess the relationship between depressive symptoms during pregnancy and adverse birth outcomes, including preterm birth and low birth weight, in a sample of low-income African-American women.

Method: As part of a larger study of the acceptability of treatment for depression during pregnancy, 261 women completed the Edinburgh Post-Natal Depression Scale during routine prenatal care. All subjects were African-American women over the age of 18. A retrospective chart review was conducted to assess birth outcomes (birth weight and gestational age) for these women. The current analyses were restricted to women whose pregnancies resulted in a live singleton birth for which information regarding birth outcome could be obtained. Additional risk factors for low birth weight and preterm birth, including demographic, medical, psychological and obstetric risk factors, were also assessed. Low birth weight was defined as < 2500 g and preterm birth was defined as birth between 32w0d and 36w6d gestation.

Results: 91 women (35%) reported EPDS scores ≥ 10 at screening. 22 women (8.4%) gave birth to infants weighing < 2500 g. Risk factors that were significantly associated with low birth weight included maternal height, EPDS scores ≥ 10, and preeclampsia during the current pregnancy. EPDS scores ≥ 10 were associated with a significant increase in risk for low birth weight (OR = 2.9, 95% CI 1.2-7.1). However, when additional variables were entered into the model, preeclampsia during the current pregnancy was the only significant predictor of low birth weight. 23 women (8.8%) gave birth between 32w0d and 36w6d gestational age. Risk factors that were significantly associated with preterm birth included EPDS scores ≥ 10, history of prior preterm birth, and preeclampsia during the current pregnancy. EPDS scores ≥ 10 were associated with a significant increase in risk for preterm birth (OR = 2.7, 95% CI 1.1-6.5). However, when additional variables were entered into the model, a history of prior preterm birth and preeclampsia during the current pregnancy were the only significant predictors of preterm birth.

Conclusion: This study suggests that screening for depressive symptoms during pregnancy can identify women at increased risk for adverse birth outcomes, specifically low birth weight and preterm birth, among low-income African-American women. While obstetric risk factors, including a history of prior preterm birth and preeclampsia, are more strongly predictive of adverse birth outcomes, depressive symptoms are a potentially modifiable risk factor that can be identified earlier in pregnancy.

POSTER #29

INTEGRATING MENTAL HEALTH CARE INTO OBSTETRICS/GYNECOLOGY: RESULTS FROM AN EMBEDDED PSYCHIATRY CONSULTATION CLINIC AND IMPLICATIONS FOR QUALITY IMPROVEMENT

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Background: Women experience the highest rate of psychiatric illness during their reproductive years, and obstetrician/gynecologists (OB/GYNs) effectively serve as primary care clinicians for many women. Efforts to expand access to mental health care have focused heavily on integrating psychiatric care into primary care settings but have largely overlooked the potential of OB/GYN practices. Few studies to date have described models of collaborative mental health care in the OB/GYN setting.

Objectives: To describe referrals to a women's mental health outpatient consultation clinic and to characterize opportunities and challenges related to providing integrated mental health care in an OB/GYN outpatient clinic at a tertiary care academic medical center.

Design/Methods: We performed a retrospective chart review on all patients referred by obstetric providers to our women's mental health outpatient consultation clinic for the six month period between September 2010 to February 2011 (n= 95). In addition to patient demographic data, we characterized pregnancy status, DSM-IV diagnosis, medication use, engagement in other mental health treatment, compliance with treatment recommendations, and rate of missed or cancelled appointments.

Results: Between September 1, 2010 and February 28, 2011, a total of 190 patient encounters (initial evaluations plus follow-ups) were scheduled for 95 unique patients. Of the 190 patient encounters scheduled, 59% of appointments (n=112) were kept, while 41% of appointments (n=78) were missed or cancelled. Of the 95 unique patients referred to the clinic, 74 patients (78%) kept at least one appointment. Patient age ranged from 17-68 years (mean 32.3 years). At the time of initial evaluation, 58% (n=43) of patients were pregnant, 31% (n=23) were postpartum, and 11% (n=8) were neither. 42% (n=31) of the patients met criteria for a depressive disorder, 16% (n=12) received a diagnosis of mood disorder NOS, 4% (n=3) met criteria for bipolar disorder, and 23% (n=17) suffered from an anxiety spectrum disorder. 66% of patients (n=49) were not on a psychiatric medication at the time of initial evaluation. Of these 49 patients, we recommended that 25 (51%) initiate medication treatment. Of these 25 women, 16 (64%) followed our recommendation to begin medication treatment while 7 (28%) declined medications; 2 women (8%) were lost to follow-up. Finally, 84% of patients evaluated (n=62) were referred for psychotherapy in addition to or instead of medication treatment, and 39% of these patients (n=24) followed through with this referral.

Conclusions: OB/GYNs utilized embedded care psychiatrists to assist in diagnosis and management of mental health issues in this clinic population. Depression was the most commonly encountered diagnosis in the sample, while anxiety spectrum disorders were the second most common diagnostic category. Many patients required medication and/or psychotherapy; however, women followed recommendations to utilize medication more consistently than recommendations to engage in psychotherapy. A major challenge in this sample was the high percentage of missed or cancelled appointments. Identification and modification of barriers to accessing scheduled appointments will be critical in addressing the unacceptably high no-show rate in this patient population. Exploration of factors

associated with patient inability to follow through with outpatient psychotherapy referrals will also be required to improve access to non-psychopharmacological treatment options.

POSTER #30

COLLABORATION BETWEEN PSYCHIATRY, OBSTETRICS AND NEONATOLOGY – DEVELOPING CONSENSUS AND INSTITUTIONAL GUIDELINES FOR THE SCREENING AND TREATMENT OF PERINATAL DEPRESSION

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Objective: Depression is a common complication of pregnancy. During pregnancy and the postpartum period, women who are depressed are in contact with a variety of health care professionals including their prenatal care provider, mental health provider and pediatrics provider in order to gather data and weigh the risks and benefits of treatment. Our aim is to formalize the relationships between Psychiatry, Obstetrics and Neonatology in an academic center in order to optimize the care of the mother-infant dyad throughout the course of treatment from pregnancy through the postpartum period

Methods: The process of developing consensus guidelines regarding collaborative care of the mother-infant dyad involved a number of steps:

- develop reproductive psychiatry consultation service – providing inpatient and outpatient consultation to obstetric services
- develop a collaborative relationship between reproductive psychiatry and the neonatal ICU staff (nurses, pediatricians/neonatologists and social workers) including weekly psychosocial rounds and informal and formal consultation if concern for parental mental health
- screen for mood disorders during prenatal visits and postpartum visits with defined referral process for psychiatric and/or social work evaluation
- use the preexisting relationship between Obstetrics and Pediatrics regarding collaboration with prenatally diagnosed congenital anomalies
- NICU Social work to assess all parents in the neonatal ICU for their need for support and refer parents with risk for depression for psychiatric evaluation
- formalize meetings between psychiatry, obstetrics and pediatrics to develop consensus guidelines

The Results will be a formal set of guidelines for the collaboration between obstetrics, psychiatry and pediatrics including screening for mood disorders during pregnancy and the postpartum period to identify women who are at high risk for decompensation, approach to treatment recommendations including how to approach the controversial decisions around psychopharmacology and discussion of neonatal effects of medications, methods of communication with members of the team at all stages (prenatal, delivery/immediate postpartum and in the pediatric setting). We are currently in the process of developing these guidelines but they will be complete by the time of presentation

Conclusions: This is the first collaboration of this kind between Psychiatry, Obstetrics and Pediatrics. Through cultivation of collaboration, we will be able to devise consensus guidelines for the screening and identification of women at risk for depression during pregnancy and the postpartum period with an emphasis on promoting the health and well being of both the mother and infant, with a dyadic approach. This type of collaboration has the potential to provide patients/parents-to-be with consensual, rather than potentially contradictory, guidance around treatment planning and mutual education of best practices. Additionally, the multidisciplinary approach allows colleagues to educate each other in best practices from their respective backgrounds and provides opportunities for provision of primary and secondary preventive measures.

POSTER #31

CHARACTERISTICS OF THE POPULATION OF PATIENTS ON A OBSTETRICS-GYNECOLOGY CONSULTATION-LIAISON

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Introduction: Psychiatric co-morbidity is common in pregnancy and postpartum, with postpartum depression as the most common complication of childbirth in the developed world. Psychiatric consultation-liaison services can potentially identify and treat acute disorders arising in the antenatal and postnatal periods. The literature on psychiatric consultations in obstetric inpatients remains scarce: there is no published study on inpatient OB populations in the United States. A study by Sloan et al from Toronto found the rate of referral to psychiatric CL is lower than what would be expected in the population (1.6%).

Objective: The aim of our study was to characterize the consultations performed by a liaison psychiatry service to the Obstetrics-Gynecology inpatient units at New York- Presbyterian Hospital/Columbia University Medical Center. We hypothesized that analysis of consultations would provide a detailed view of the psychiatric co-morbidities. We hypothesized that mood disorders would be prevalent, which might serve as a basis for a risk stratification program.

Methods: IRB approval was obtained to perform a retrospective chart review of 150 consultations; 40 charts were analyzed. Consultations were tracked in a longitudinal fashion. A comprehensive database was created to analyze the chart reviews. Data was gathered from the following documents: 1) psychiatric initial consultation note 2) final psychiatric consultation note, 3) social work note, and 4) obstetrics admission note. Identifying information was removed for confidentiality.

Results: Obstetric factors: consults primarily requested by the obstetrics team (30/40), with some by social work (7/40) and none by the patient. Indication for the consults was predominantly current psychiatric symptoms (20/40), also past psychiatric history alone (17/40), with few for reaction to a medical complication (2/40). Most were unplanned pregnancies (20/40) with fewer planned (11/40). Social factors: ethnicity included Hispanic (19/40), African-American (7/40), Caucasian: (6/40), and Asian (1/40). Socioeconomic assessment showed primary support from public assistance of the mother (15/40), employment of the mother (14/40), employment of the partner (14/40), and other sources of income (6/40). The majority were partnered with the father of the baby (26/40) whereas the minority were not (9/40). Psychiatric factors: 1/40 endorsed passive suicidal ideation, whereas the majority did not (38/40). 2/40 patients endorsed psychotic symptoms, and 36/40 did not. 10/40 patients were currently taking psychiatric medications and 30/40 were not. The outcome of the consults yielded Axis I diagnosis including MDD (4/40), Bipolar d/o NOS (6/40), Mood d/o NOS (13/40), Schizoaffective d/o (3/40), Psychosis NOS (2/40), Anxiety d/o NOS (6/40), PTSD (1/40), Adjustment Reaction NOS (5/40), Adjustment Disorder w depression/anxiety (2/40), and Bereavement (3/40). Outcomes included referral to a new mental health provider (21/40), referral to prior provider (17/40), referral to mobile crisis (8/40), and inpatient admission (2/40).

Conclusions: Our results point to trends in obstetric, social, and psychiatric data that will enable us to identify high-risk population subgroups. Past psychiatric history alone is a common reason for referral, which may facilitate risk stratification. Results indicate that mood disorders are prevalent in this population, which may allow for early intervention efforts for high-risk subgroups.

POSTER #32

THE NEW UNC PERINATAL PSYCHIATRY INPATIENT UNIT: SIX-MONTH REPORT

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Background: The University of North Carolina at Chapel Hill Center for Women's Mood Disorders is a comprehensive clinical and research program specializing in psychiatric illness experienced in the context of reproductive events. The robust growth of the outpatient clinic and associated research of the Center strongly supported the creation of a free-standing Perinatal Psychiatry Inpatient Unit to provide specialized care to the most severely ill patients. Programming was developed and tested with perinatal inpatients over a three-year period on a shared unit prior to the opening of the completely separate unit in August 2011. The goals of this new specialized unit are to provide comprehensive assessment and state-of-the-art treatment for women with severe mood disorders occurring during pregnancy or postpartum.

Objective and Methods: The UNC multidisciplinary team provides medication stabilization and management alongside specialized individual and group therapeutic interventions. Therapies scheduled each day include: biofeedback, yoga, art therapy, behavioral therapy, Partner-Assisted Therapy (PAT), mother-infant attachment therapy, mindfulness-based group therapy and psychoeducation for patients and their partners or other family members. The program encourages extended visiting hours for partners and babies to maximize positive interaction and critical opportunities for mother-infant bonding. Provisions include: skilled nursing staff, protected sleep times, gliders, in-room nursing pumps and supplies, and a dedicated group dayroom. In order to assess the effectiveness of the programming, we assembled pre- and post-treatment assessment batteries that are administered and completed by all patients admitted to the unit. The patients complete pre-treatment assessments within 24 hours of admission and the post-treatment assessments are completed on the day of discharge. Symptoms and domains measured include mood, anxiety, trauma/abuse history, mania, social support, attachment, lactation, medication efficacy and adverse effects of treatment. Measures include: Edinburgh Postnatal Depression Scale Patient and Partner Versions (EPDS; EPDS-P), Adverse Childhood Experience Questionnaire (ACE), Altman Self-Rating Mania Scale (ASRM), Frequency, Intensity, and Burden of Side Effects Ratings (FIBSER), Generalized Anxiety Disorder (GAD-7), Patient Health Questionnaire (PHQ-9), Work and Social Adjustment Scale (WSAS), Checklist of Parental Thoughts and Behaviors, Maternal Antenatal Attachment Scale, Infant Behavior Questionnaire (IBQ), and Lactation Intensity and Efficacy (LEI).

Results: Patient data from the first six months of operation of the Perinatal Psychiatry Inpatient Unit (August 2011- March 2011) will be presented.

Conclusion: The UNC Perinatal Psychiatry Inpatient Unit was developed to provide intensive psychiatric care in a safe and supportive setting. The unit encourages extensive interaction between mother and baby to promote attachment during a critical period of time. Specialized and targeted interventions appropriate for the perinatal period have been developed. Program evaluation is being carried out by pre- and post-treatment assessment instruments to monitor patient treatment response and service satisfaction.

POSTER #33

DETECTION OF THE ANXIETY DISORDERS IN A PERINATAL PSYCHIATRIC SAMPLE

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There is a great deal of evidence to suggest that the perinatal period is a time of elevated risk for psychiatric distress for many women, and symptoms of the anxiety disorders are common during this time (Heron et al., 2004). Further, despite that the perinatal phase is characterized by increased interfacing with the medical system, rates of detection of psychiatric distress remain alarmingly low (Goodman et al., 2010). Encouragingly, there are increasingly efforts made to specifically target this population and provide accessible treatment during this time. One such example is the Women and Infants' Day Hospital (DH) program, a unique mother-baby day treatment facility that provides integrated psychiatric care for pregnant and postpartum women who present with psychiatric disorders during the perinatal period (Howard et al., 2006). The current study aimed to evaluate the profile of diagnoses assigned to women who were admitted to this program. Specifically, given that the prevalence of anxiety disorders in a perinatal psychiatric population has not been fully characterized, this study focused on both self-reported symptoms of anxiety and the assignment of anxiety disorder diagnoses. The current study retrospectively reviewed the medical charts of 334 perinatal women enrolled in this program (30.3% currently pregnant). Initial analyses revealed a relatively high level of anxiety symptoms within both the pregnant and postpartum women in the sample based upon patient responses on a self-report screening questionnaire given to all women at intake. Specifically, over 50% of women reported experiencing some symptoms of Social Phobia (57%), Generalized Anxiety Disorder (76.6%), or Panic Disorder (71.3%). While many of these women may have not experienced sufficiently high symptoms and functional impairment to warrant a full psychiatric diagnosis, it was notable that these diagnoses are rarely assigned following an intake assessment (patients were assigned these diagnoses .2%, 3%, and 3.2% of the time, respectively). Self-reported symptoms of obsessions (36.7%) and compulsions (30%) were also notable, though a diagnosis of OCD was also assigned relatively rarely (4.6% of patients). In contrast, Post Traumatic Stress Disorder was diagnosed more frequently: whereas 38.7% of women self-reported struggling with distress related to a traumatic experience, 16% were assigned a diagnosis of PTSD. Anxiety disorders appear to be common among perinatal women seeking psychiatric treatment. We will discuss the value of assessing for anxiety disorders within the context of treatment and discharge-planning, considering the impact of undetected anxiety on the prognosis of mood disorders.

POSTER #34

PILOT STUDY OF A PHYSICAL ACTIVITY INTERVENTION FOR ANTENATAL DEPRESSION

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Objective: In spite of the high prevalence of antenatal depression [1] and associated negative outcomes for mother and infants [2], rates of treatment engagement remain very low [3]. Many affected women do not seek treatment due to potential adverse effects of prenatal

antidepressant use, or concerns about stigma. New non-medication based interventions are needed that are not only efficacious in treating antenatal depression, but are also viewed as acceptable by pregnant women [4]. Considerable evidence suggests that aerobic exercise has beneficial effects on psychological functioning [5], and has been shown to improve depression levels in non-perinatal samples [6]. However, to date, no study has evaluated the efficacy of a physical activity intervention for depressed pregnant women. Increased physical activity during pregnancy could provide some definite advantages. It not only avoids potentially harmful side effects associated with prenatal antidepressant use, it may also be viewed as less stigmatizing than traditional treatments. Some data shows prenatal exercise has a positive affect on mood [7]. Increased physical activity also offers the potential for alleviating common pregnancy discomforts [8], and improved general health outcomes for pregnant women [9, 10]. A physical activity-based intervention may also be cost-effective, flexible, and accessible, with a low risk of adverse events. In light of the potential advantages of this approach, our team recently initiated an open pilot trial of a physical activity intervention for women with mild-moderate depression during pregnancy.

Method: In this 10-week pedometer-based walking intervention, entitled "*Women Out Walking*," participants wear a small step-counter (pedometer) to track daily activity and attend brief biweekly sessions to obtain personalized support in gradually increase their daily step-count over the course of the intervention. All women are medically cleared by their prenatal care provider prior to participation. Women are monitored over the course of their involvement with regard to depression severity, physical injury, or difficulty with the walking program.

Results: To date, six pregnant women between 12-24 weeks gestation have enrolled in the program, all of whom met criteria for Major or Minor Depression. No injuries or adverse events have been observed, and women have generally reported positive feedback regarding the program. Three women have recently completed the full 10 week program, and initial data have shown depression symptom levels to generally be lower upon completion of the program. The majority of women have successfully complied with daily pedometer use, which has been objectively verified by examining pedometer data that is uploaded at each biweekly session. Findings will also be presented with regard to pre-post changes in depression and anxiety, behavioral activation, sleep, and physical activity level.

Conclusion: A gentle walking intervention may prove to be an acceptable and feasible intervention to address antenatal depression. If findings continue to be encouraging, this approach should be examined in a larger scale randomized controlled trial.

POSTER #35

PHENOTYPIC DIFFERENCES BETWEEN PREGNANCY-ONSET AND POSTPARTUM-ONSET MAJOR DEPRESSION

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Objective: To compare clinical features of major depression which onsets during pregnancy to clinical features of postpartum-onset depression. The hormonal environments of pregnancy and postpartum are quite different which may promote distinct subtypes of major depression.

Methods: Data were collected from medical records of 229 women who were evaluated in an academic medical center reproductive psychiatry clinic. All patients evaluated between 2005 and 2010 who were pregnant or in the first year postpartum and met DSM-IV diagnostic criteria for major depression were included. Comparisons between the pregnancy-onset and postpartum onset subjects included demographics, psychiatric diagnostic history, psychosocial stressors, reproductive history, and current episode symptoms. Time of onset within trimesters of pregnancy and within the postpartum year, as well as the effects of psychotropic medication discontinuation were also examined.

Results: Women with onset of major depression during pregnancy had higher rates of prior episodes of postpartum and non-perinatal major depression (both $p<.001$). Pregnancy-onset depression was also more commonly associated with psychosocial stressors. Obsessive-compulsive symptoms and psychotic symptoms were more common in postpartum onset depression. 94% of episodes of major depression onset within the first 4 months postpartum.

Conclusion: Women with a history of perinatal and nonperinatal major depression are more likely to relapse during pregnancy than postpartum, pointing out that these women should be monitored for depression during pregnancy. In addition, postpartum onset major depression appears to have a pathophysiology distinct from depression which onsets during pregnancy. Time of onset of perinatal depression should be considered in the design of genetic and treatment studies.

POSTER #36

TRANSCRANIAL MAGNETIC STIMULATION FOR DEPRESSION DURING PREGNANCY

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Objective: Despite the data that major depressive disorder (MDD) is common during pregnancy and that pregnant women prefer non-medication treatment options, there is a paucity of research examining alternative treatments for this special population. We present the results of an open label pilot study examining treatment with transcranial magnetic stimulation (TMS) in pregnant women with MDD.

Methods: 10 pregnant women with MDD in the 2nd or 3rd trimester of pregnancy were treated with 20 sessions of 1 Hz TMS at 100% of motor threshold to the right prefrontal dors

Results: 7/10 (70%) subjects responded (≥ 50% in Hamilton Depression Rating Scale (HDRS-17) scores). No adverse pregnancy or fetal outcomes were observed. All infants were admitted to the well baby nursery and were discharged with the mother. Mild headache was the only common adverse event and was reported by 4/10 (40%) subjects.

Conclusion: TMS appears to be a promising treatment option for pregnant women who do not wish to take antidepressant medications.

POSTER #37

PERINATAL SLEEP DISTURBANCES AS A PREDICTOR OF POSTNATAL DEPRESSION: RESULTS FROM THE WOMEN'S MENTAL HEALTH AND INFANTS PROGRAM (WMHIP) INTEGRATED DATASET

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Objective: The consequences of postnatal depression may have short- and long-term detriment to not only women but also their infants (National Academy of Sciences, 2009). Accordingly, a number of health guidelines stress the importance of early intervention for postnatal depression (Institute of Medicine, 2009). Early intervention, however, is somewhat dependent on health professionals' ability to identify women who are likely to develop postnatal depression. To do this,

health professionals often rely on an assessment of factors known to contribute to women's risk, such as history of depression and social disadvantage (Yonkers et al., 2009). Yet, despite a great deal of research, this method is unreliable, often producing false positives and false negatives.

One way to improve this risk assessment – and thus, maximize early intervention efforts – might be to include not only risk and protective factors but also known precursors to postnatal depression. Unfortunately, researchers have not identified antecedents to postnatal depression. This may be due, in part, to insufficient statistical power to detect such signs. One way to address such limitations might to integrate datasets from multiple investigations. In turn, an integrated dataset might improve representativeness of research samples.

One potential antecedent to postnatal depression might be perinatal sleep disturbances. One, researchers have demonstrated that sleep disturbances can be a precursor to, and not just a result of, depression occurring at non-reproductive times (Breslau et al., 1996). Two, researchers have found that sleep disturbances both persist after remission and predict recurrence of depression at non-reproductive times (Carney et al., 2007; Dombrovski et al, 2007). Three, researchers have shown that changes in sleep quality during the postnatal period are better predictors of postnatal depression among women with a history of depression than are changes in hormones (Okun, 2011).

Method: In this study, we integrated datasets from six completed NIMH-funded studies conducted by investigators who are members of the Women's Mental Health and Infants Program (WMHIP). The integrated dataset comprises 8,764 pregnant women who were approached by research staff members about research participation during a healthcare appointment. The purpose of this integrated dataset is to improve statistical power, assess sample representativeness, and determine whether perinatal sleep disturbances reliably predict postnatal depression above and beyond major risk and protective factors,

To assess sample representativeness, we compared a number of socio-demographic and clinical variables between women who were eligible for and participated in a study to women who were eligible and declined participation. To determine whether perinatal sleep disturbances predict postnatal depression, we will compare rates of postnatal depression among pregnant women who self-reported good sleep to pregnant women who self-reported poor sleep. We will complete these analyses for each trimester and with major risk and protective factors as covariates.

Results: Among the 1,720 women identified as eligible for research, 687 women participated and 1,033 women declined participation. Preliminary analyses suggest that the women who participated in these studies were representative of women who seek care at the healthcare sites. Additional analyses are needed to determine whether perinatal sleep disturbances predict postnatal depression.

POSTER #38

CHILD SEXUAL ABUSE HISTORY PREDICTS GREATER WEEKLY DRINKING AND SMOKING OVER PREGNANCY

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Pregnant women with a history of childhood sexual abuse (CSA) have more pregnancy complications, and are more likely to smoke and drink during pregnancy, than women without abuse histories. Therefore, these risky health behaviors may serve as mechanisms linking CSA history to pregnancy complications. However, previous studies 1) have not included biochemical verification of substance use, 2) have not examined patterns of use, and 3) have not compared history of CSA to history of non-sexual child abuse (CA). The objective of the current study was to understand whether patterns of substance use over pregnancy differ according to women's child abuse history.

Participants were 116 pregnant mothers (ages 18-40, Mean age=25, SD=5) from diverse ethnic (52% minority) and economic backgrounds (Mean income=$20-29K/yr) who completed a larger study of maternal smoking and fetal and infant behavior. 21% reported a history of CSA, 43% reported CA, and 36% reported no abuse (NA). Timeline Followback (TLFB) interviews were completed during third trimester and postpartum to ascertain daily cigarette and alcohol use 3 months before conception, over pregnancy, and 30 days post-delivery. Smoking status was verified by saliva and meconium cotinine and CO levels. 41% of the sample smoked, 23% quit during pregnancy, and 36% were non-smokers.

Controlling for maternal race and breastfeeding status, ANCOVAs revealed that women with CSA histories drank more in the preconception period (F's>2.5, p's<.05) and weeks 1-5 of pregnancy (F's>3.9, p's<.05) compared to CA and NA women (see Figure 1A). Both CSA and CA women smoked more than NA women in the preconception period (F's>4.0, p's<.05), weeks 1-8 and 19-26 of pregnancy (F's>2.66, p's<.05), and in the postpartum period (F's>2.7, p's<.05) (see Figure 1B). GEE models will further clarify these patterns.

In this study, women with CSA histories were at increased risk of alcohol and tobacco use, suggesting that 1) healthcare providers should screen for child abuse history in pregnant women, and 2) substance use interventions should be targeted in the 1st and 3rd trimesters for at-risk pregnant women. Such interventions may help to reduce maternal and infant complications in at-risk women.

POSTER #39

11β-HSD2 PLACENTAL GENE EXPRESSION PREDICTS INFANT CORTISOL LEVELS AND NEUROBEHAVIORAL OUTCOMES

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Background: Prior research indicates that high maternal glucocorticoids may have deleterious effects on fetal development. The placental gene, 11-hydroxysteroid dehydrogenase type 2 (11-HSD2) may play an important role in protecting the fetus from high maternal glucocorticoids. Environmental insults have been shown to alter 11-HSD 2 expression in animals and preliminary studies in humans. To our knowledge, however, no studies have investigated links between 11-HSD2 gene expression and behavioral outcomes in humans.

Methods: Placental tissue from 68 participants in a longitudinal study of maternal mood and behavior and infant behavioral development was assayed for 11-HSD2. Offspring cortisol and neurobehavior were assessed in the early (day 1) and later (days 10, 30) neonatal periods using the NICU Network Neurobehavioral Scale (NNNS).

Results: Controlling for maternal smoking status, increased 11B-HSD2 was associated with attenuated baseline cortisol in the early neonatal period (Day 1: r= -2.56, p=.030), but not at days 10 and 30 (ps=ns). Increased 11-HSD2 was also associated with worse attention scores in the later neonatal period (days 10 and 30: r's=-.264 and -.299, p's=.024 and .016), worse self-regulation in the later neonatal period (day 30: r=-.219, p=.065) and increased lethargy in the later neonatal period (days 10 and 30: r's=.256 and .338, p's=.028 and .003).

Conclusions: Results suggest higher placental 11-HSD2 expression is associated with attenuated cortisol in the early neonatal period and less favorable neurobehavioral outcomes in the later neonatal period. These findings highlight placental 11-HSD2 as a promising mediator of known long-term behavioral outcomes from prenatal insults.

POSTER #40

UNIVERSAL SCREENING FOR POST PARTUM DEPRESSION IN CANADA'S NATIONAL CAPITAL REGION

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Objective: Post-partum depression (PPD) affects 10-20% of new mothers (Gjerdingen and Yawn, 2007). The Edinburgh Postnatal Depression Scale (EPDS) is a validated tool for assessing risk for antepartum and postpartum depression (Gibson et al., 2009). A range of effective interventions such as telephone peer support, interpersonal therapy, and psychotropic medications exist. Despite these facts, the clinical and economic value of universal screening for PPD has come into question. It remains debatable whether universal screening measures should be recommended and accepted as best practice (The American College of Obstetricians and Gynecologists, 2010) since few studies have focused their analyses on the clinical and health resource implications of population screening. In 2010, Ottawa Public Health (OPH), which services a catchment area in Ottawa, Canada with 11 000 births per year, made the internal decision to initiate universal screening of all postpartum women using the EPDS. Ottawa is a highly generalisable region with broad sociodemographic representation, making it an appropriate study context for knowledge translation to other geographical areas. This created a unique opportunity to study the local implications of universal screening for PPD as well as to potentially inform the wider perinatal mental health audience. Our overall objective was to explore the impact of the universal screening initiative adopted by OPH. Our specific objectives were to evaluate the uptake of screening for PPD using the EPDS, to assess sustainability of universal screening for PPD in the serviced region, and to describe the epidemiology of postpartum mental health that was generated by universal screening.

Methods: The Parkyn Postpartum Screening Tool assesses various demographic and psychological perinatal risk factors. As part of routine care, the Parkyn is administered to postpartum women before discharge from hospital. This tool is passed to OPH who contacts the woman within 48 hours post-discharge and administers the EPDS. Anonymized aggregate data from the Parkyn and EPDS were supplied by OPH to our research team and were first used to assess uptake of universal screening. Descriptive statistics were conducted to identify the number of women screened and those who were not. A descriptive profile of the socio-demographic characteristics of women contacted was developed, and a comparison between characteristics of women who consented to the EPDS and those who did not was conducted. To assess sustainability of universal screening, the research team used a time series regression, with no control group, over a 12-month period. A regression curve was used to analyze screening practices over time, and to evaluate any drop-offs in terms of sustainability. To evaluate the epidemiology, anonymized aggregate EPDS scores were analyzed to evaluate the proportion of women meeting case definition of risk for PPD as compared to published data. A logistic regression analysis was also conducted to identify predictors of PPD from sociodemographic and infant risk factors.

Results/Conclusions: Results of this study show reasonable uptake and sustainability of screening. Epidemiology was in keeping with other similar populations. The implications for health care utilization and program implementation within the national capital region of Ottawa, Canada are discussed.

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