March 6, 2020

Pastides Alumni Center
900 Senate Street
Columbia, SC

Established and coordinated by the
Department of Obstetrics and Gynecology
Palmetto Health-USC Medical Group
Welcome! This year we are celebrating the 13th anniversary of the Carolina Women’s Health Research Forum! Thank you to all the participants and attendees who support this forum at Palmetto Health-USC Medical Group.

The forum would not be possible without the collaboration and expertise of faculty from other departments, schools, and colleges at the University of South Carolina and across Prisma Health. Please take a moment to review the members of the Forum Steering and Scientific Committees.

Today’s keynote speaker is Virginia White, LMSW. Her presentation will focus on “Rural Maternal Care.” Virginia serves as the Director of Family Solutions for the South Carolina Office of Rural Health, leading all strategies and objectives related to Family Solutions, including the federally funded Healthy Start grant. Prior to joining SCORH, Virginia served as a Maternal Child Health Coordinator for the Resource Mothers Program with the Department of Health and Environmental Control.

Transformative conversations will take place around our theme for the day, “Women's Health in Rural SC: Promoting Access and Equity.” Our panel discussion will be led by diverse professionals sharing their expertise from the fields of Women’s Health Research, Contraceptive Access, Family and Preventative Medicine, and data analytics on Maternal and Child Health Outcomes and SC Birth Outcomes Initiative.

The poster session will feature research abstracts related to many aspects of women’s health submitted by researchers and health professionals in multiple disciplines. Prisma Health/USC School of Medicine (Columbia) OB/GYN resident physicians will provide selected oral presentations. A light breakfast will be served.

We hope you will take advantage of ample opportunities for networking today. We sincerely hope the forum will be productive, informative, and valuable for you. Please take a few minutes to complete an evaluation in person or through email. We value your input and will use your feedback as we plan for future Women’s Health Research Forums.

Thank you.

T. Fleming Mattox, M.D.
Forum Chair
Associate Professor
Department of Obstetrics and Gynecology
Palmetto Health-USC Medical Group

Ivory Harding, M.S.
Forum Coordinator
Department of Obstetrics and Gynecology
Palmetto Health-USC Medical Group
Forum Steering Committee

T. Fleming Mattox, M.D.
Forum Chair
Associate Professor, Obstetrics and Gynecology
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Ivory Harding, M.S.
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Daniela Friedman, Ph.D
Professor and Department Chair, Health Promotion, Education, and Behavior
Co-Director, Office for the Study of Aging
Arnold School of Public Health

Janice G. Edwards, M.S., C.G.C.
Clinical Professor and Director, Genetic Counseling Program
USC School of Medicine

Forum Scientific Committee

Deborah Billings, Ph.D.
Chair, Forum Scientific Committee
Affiliate, Institute for Families in Society
University of South Carolina
Group Care Global

Kristl Tomlin, M.D.
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USC School of Medicine

Sue P. Heiney, PhD, RN
Research Professor and Dunn Shealy Professor of Nursing, College of Nursing
University of South Carolina

Alexander Gasparian, PhD
Clinical Assistant Professor, College of Pharmacy
University of South Carolina
Virginia Berry White serves as the Director of Family Solutions for SCORH. Virginia manages and leads all strategies and objectives related to Family Solutions, including the federally funded Healthy Start grant. She has been with SCORH since 1998. Under Virginia’s leadership, the Low Country Healthy Start received the Outstanding Community Health Project Award from the SC Rural Health Association. Virginia has served on boards for the SC Perinatal Regional Association, the SC Perinatal Association, the National Association of Social Workers, the Orangeburg Health Improvement Council, and the March of Dimes Program Service Committee. Prior to joining SCORH, Virginia served as a Maternal Child Health Coordinator for the Resource Mothers Program with the Department of Health and Environmental Control. She managed a team of indigenous community workers and provided psychosocial assessments to pregnant teens. During this time, she received the District Social Worker of the Year Award.

Beth Sundstrom, Ph.D., M.P.H. is an associate professor of communication and public health at the College of Charleston, South Carolina where she is the Director of the Women’s Health Research Team (WHRT), a member of the graduate faculty, and a faculty affiliate in the Women’s & Gender Studies program. Dr. Sundstrom holds an adjunct assistant professor appointment at the Brown University School of Public Health and the Medical University of South Carolina (MUSC) and serves as a faculty affiliate in the Cancer Control Program at Hollings Cancer Center (HCC). Dr. Sundstrom conducts applied research that bridges the gap between theory and practice, informing the development of community-based public health
interventions and communication campaigns. She is a Fulbright Scholar and leading expert on health communication, social marketing, and women’s reproductive health. Dr. Sundstrom is the author of Reproductive Justice and Women’s Voices: Health Communication across the Lifespan (2015) and the forthcoming Birth Control: What Everyone Needs to Know (Oxford University Press) along with more than 40 peer-reviewed journal articles.

Angie Olawsky, RN, MPH, CPM, Panel Speaker

Angie Olawsky is the Deputy Director of Programs and Operations for the Choose Well initiative. Choose Well is a contraceptive access initiative led by the New Morning Foundation. Prior to her work with the foundation, Angie was the State Director of Public Health Nursing at the South Carolina Department of Health and Environmental Control. Angie has a Bachelor’s of Science in Nursing from Clemson University and a Master’s in Public Health from the University of South Carolina.

Olabisi Badmus, MD, Panel Member

Olabisi Badmus, MD, MPH is an Assistant Professor in the Department of Family and Preventive Medicine at the University of South Carolina School of Medicine. She currently serves as the Program Director for the Prisma Health/USC School of Medicine General Preventive Medicine/Public Health Residency Program. Prior to her appointment to the University of South Carolina SOM, Dr. Badmus served as a medical epidemiologist in various leadership roles within public health practice at the New York City Department of Health and Mental Hygiene followed by the South Carolina Department of Health and Environmental Control in the Division of Acute Disease Epidemiology.
Dr. Badmus completed her medical and clinical training at the University of Cincinnati College of Medicine, University of Chicago, and Morehouse School of Medicine in Atlanta, Georgia. Her special interests are women's health, population health, addressing health disparities and social determinants of health, and graduate medical education.

Ana López-De Fede, PhD, Panel Member

Dr. Ana López-De Fede is Research Professor and Associate Director of the University of South Carolina’s Institute for Families in Society (IFS). Dr. López-De Fede currently directs a wide body of interdisciplinary research dedicated to exploring the links and geospatial intersections between health, health service delivery systems, place, and well-being. Among her activities, she is currently Co-Chair of the SC Birth Outcomes Initiative (BOI) Data Committee and, with the team at IFS, works with linked data sets for all SC payers in support for the evaluation and policy formulation efforts of this initiative.

Dr. López-De Fede was a 2013 Nominee, White House Champion of Change for Public Health and Prevention, Secretary of Health and Human and Human Services, as well as recipient of the University of South Carolina 2014 Breakthrough Leadership in Research Award.
Special Acknowledgements

We extend a special thanks to our supporting organizations!

UofSC

South Carolina

PRISMA HEALTH
Schedule of Events

7:30 – 8:00 a.m.  Poster hanging
                 Registration

8:00 – 8:15 a.m.  Welcome and Opening Remarks
                   T. Fleming Mattox, MD
                   Forum Chair
                   Associate Professor, Obstetrics and Gynecology
                   Palmetto Health-USC Medical Group

                   Judith Burgis, MD
                   EJ Dennis Professor Emerita
                   Department of Obstetrics and Gynecology
                   University of South Carolina School of Medicine

8:15 – 9:15 a.m.  Keynote Presentation
                   Rural Maternal Care
                   Virginia Berry White, LMSW
                   Director of Family Solutions
                   South Carolina Office of Rural Health

9:15 – 9:45 a.m.  Resident Research Presentations
                   Retrospective Analysis of Primary Cesarean Sections Comorbidities
                   Women with Compared to those with BMI < 40
                   Jennifer Higdon, MD
                   OBGYN Resident, PGY3, Prisma Health / USC School of Medicine

                   Using Composite Scores and Ultrasound Determinants for Predicting
                   Adnexal Torsion in Children and Adolescents
                   Nivedita Umasankar, MD
                   OBGYN Resident, PGY3, Prisma Health / USC School of Medicine

9:45 – 10:45 a.m.  Poster Session and Refreshments

10:45 – 11:15 a.m.  Resident Research Presentations
                   A Quality Improvement Project to Determine The Prevalence Of Opioid
                   Use Prior To Initiating Prenatal Care In A University Setting
                   Liane Gozmao, MD
                   OBGYN Resident, PGY3, PrismaHealth / USC School of Medicine
11:15 – 12:00 p.m.  Panel Presentation
   Women's Health in Rural SC: Promoting Access and Equity
   Beth Sundstrom, Ph.D., M.P.H.
   Angie Olawsky, RN, MPH, CPM
   Olabisi Badmus, MD
   Ana Lopez-De Fede, PhD

12:00 – 12:15 p.m.  Award Presentations

12:15 – 12:30 p.m.  Summary and Closing Remarks
   T. Fleming Mattox, MD
   Forum Chair
   Associate Professor, Obstetrics and Gynecology
   Palmetto Health-USC Medical Group

Al-Sammarraie N and Ray S THE REGULATION OF BONE MORPHOGENIC PROTEIN 4 (BMP4) BY CALCIUM SIGNALING IN SPINAL CORD INJURY (SCI)

Benavidez G, Zgodic A, Zahnd W, and Eberth J DEMOGRAPHICS OF BREAST CANCER SCREENING IN SOUTH CAROLINA

Bouknight S, Caudell C, Wilbanks P, Tucker W, Heinichen A, O’Byrne C, Kramps K, and Lane-Cordova A sFlt-1 LEVELS ARE HIGHER IN WOMEN WITH PAST ADVERSE PREGNANCY OUTCOMES BUT UNRELATED TO VASCULAR FUNCTION

Brett C, Puckett H, Potter D, Ahuja D, and Badmus O PROVIDER ADHERENCE TO CERVICAL CANCER SCREENING IN HIV PATIENT POPULATIONS: A QUALITY IMPROVEMENT INITIATIVE AT THE IMMUNOLOGY CENTER

Byrd T CLINICAL-COMMUNITY LINKAGES FOR INCREASED ACCESS TO CONTRACEPTION: STATEWIDE CONTRACEPTIVE REFERRAL DIRECTORY

Day K, Wilcox S, Liu J, and Hutto B ASSOCIATIONS BETWEEN PERCEIVED NEIGHBORHOOD ENVIRONMENT & OBJECTIVELY MEASURED PHYSICAL ACTIVITY AMONG PREGNANT WOMEN


Gozmao L, Cai B, Connolly R, Harding I, and Sims K A QUALITY IMPROVEMENT PROJECT TO DETERMINE THE PREVALENCE OF OPIOID USE PRIOR TO INITIATING PRENATAL CARE IN A UNIVERSITY SETTING

Hartman R and Cook J SUPPORT AND EDUCATION FOR INCARACTERATED MOTHERS, A PILOT STUDY

Higdon J, Mick S, Cai B, and Sims K RETROSPECTIVE ANALYSIS OF PRIMARY CESAREAN SECTIONS COMORBIDITIES WOMEN WITH COMPARED TO THOSE WITH BMI < 40

Humphrey M, Cook J, and Castleberry L OVARIAN MASS WITH NEGATIVE BIOMARKERS IN A YOUNG PATIENT: CASE REPORT
Jasper C and Felder T PROJECT TITLE: INCREASING RATES OF BREASTFEEDING AMONG AFRICAN AMERICAN WOMEN

Kase B, Wilcox S, Hutto B and Liu J PHYSICAL ACTIVITY AND SLEEP IN OVERWEIGHT AND OBESE PREGNANT WOMEN DURING EARLY PREGNANCY

Kimsey J THE OB NAVIGATOR: INNOVATIVE CONTRACEPTIVE CARE IN SC HOSPITALS

Kishman E, Sparks J, Liu J, Castleberry L, Cook J, Youngstedt S, and Wang X SLEEP CHARACTERISTIC DIFFERENCES DURING EARLY POSTPARTUM IN WHITE AND AFRICAN AMERICAN WOMEN

Kumar A, Belhaj M, Hess A, DiPette D, and Potts J ALGINATE MICROCAPSULES BASED DELIVERY OF ALPHA-CALCITONIN GENE RELATED PEPTIDE (α-CGRP) PROTECTS AGAINST CONGESTIVE HEART FAILURE


Loud E, Lambert V, and Billings D A NARRATIVE ANALYSIS OF ANTI-ABORTION DISCOURSE USED DURING SOUTH CAROLINA’S LEGISLATIVE HEARINGS ON A FETAL “HEARTBEAT” ABORTION BAN

Luchok K, Robinson L, Fan X, Bubier I, Aplin Z, and Christenbury S EVALUATING A PROGRAM TO INCREASE REPRODUCTIVE HEALTH LITERACY AMONG TEENS IN THE SC FOSTER CARE SYSTEM

Nolana M, Lynna M, Millsb B, Lacroixc R, Brownleeec J, and Kellyd D ADOLESCENT TRICHOMONAS VAGINALIS IN A HIGH-BURDENED REGION OF THE SOUTHERN UNITED STATES

Pope B, Harrigon E, Morgan C, Calatayud B, and Gustavo A A ROLE FOR MICROGLIA IN THE BEHAVIORAL AND CARDIOVASCULAR RESPONSE TO REPEATED SOCIAL STRESS IN FEMALE RATS

Sheng J, Heiney S, and Abshire D PHYSICAL ACTIVITY AMONG EAST ASIAN AMERICAN WOMEN: A SCOPING REVIEW

Wang X, Kishman E, Sparks J, Liu J, Castleberry L, Cook J, and Youngstedt J SLEEP DISTURBANCE BUT NOT SLEEP DURATION IS ASSOCIATED WITH PERCEIVED STRESS AND SELF-ESTEEM IN POSTPARTUM WOMEN

Wilbanks P, Hoffner P, Tucker W, Caudell C, O’Byrne C, Heinichen A, C O’Connor E, and Lane-Cordova A RELATION OF PREGNANCY PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR WITH GESTATIONAL WEIGHT GAIN

Wohlrab S, Moncrieft S, Henderson D, and Shealy K PROVIDER PERSPECTIVES ON PREVENTION, DIAGNOSIS, AND TREATMENT OF NEONATAL ABSTINENCE SYNDROME IN SOUTH CAROLINA

Wright P, Dawson R, and Corbett C MEDICAL EQUITY AND ACCESS FOR WOMEN WITH PCOS

Umasankar N and Tomlin K USING COMPOSITE SCORES AND ULTRASOUND DETERMINANTS FOR PREDICTING ADNEXAL TORSION IN CHILDREN AND ADOLESCENTS
VALIDATION OF AN ANATOMICALLY ACCURATE, LOW FIDELITY VAGINAL HYSTERECTOMY MODEL
Francisco Aguirre, MD1, Stephanie Cross, MD2, Mitchell I Edelson, MD3, Recia Frenn, MD MA4, Adam Kansagor, DO5, Bronwyn Kenny, MD6, Melissa Moffitt, MD7, Dani Zoorob, MD MHA8, and Erika Banks, MD9

1 Prisma Health-USC, 2 University of Tennessee Graduate School of Knoxville, 3 Abington Hospital-Jefferson Health, 4 Loyola University Medical Center, 5 East Carolina University, 6 University of Vermont Medical Center, 7 Oregon Health and Science University, 8 University of Toledo College of Medicine and Life Sciences / ProMedica, and 9 Montefiore Health System.

ABSTRACT

Purpose: To develop an anatomically accurate, low fidelity vaginal hysterectomy model and evaluate construct validity amongst residents at multiple sites of which Prima Health-USC was one of the research sites.

Background: Surgical simulation training in many instances has been shown to improve performance in the operating room. Vaginal hysterectomy has been decreasing in frequency leading to concerns regarding decreased surgical proficiency among graduating residents. Limited data from individual institutions describe vaginal hysterectomy models for training. The purpose of this study was to develop a model and assess residents from multiple institutions for construct validity of the model for vaginal hysterectomy simulation in obstetrics and gynecology residents.

Methods: Surgical scholars from eight institutions developed a low fidelity vaginal hysterectomy model by making adaptions to previously published models to optimize anatomic and haptic accuracy. An objective skills assessment tool comprised of a previously validated global rating scale (GRS) and a task specific checklist (TS) was created to assess performance on the vaginal hysterectomy model. Obstetrics and gynecology residents from nine institutions performed a vaginal hysterectomy on the model and were rated with the same objective skills assessment tool.

Results: Prisma Health-USC residents performed a vaginal hysterectomy on the standardized model. The median TS and GRS scores of the local residents fell within similar trends of performance based upon the overall analysis of the 169 residents and showed that their performance was correlated with year of training. The overall TS scores correlated with the GRS scores (P<0.001).

Discussion: This low fidelity vaginal hysterectomy model is inexpensive, reusable and easy to build and available here at Prisma health-USC. We are considering determining how our Obstetrics and gynecology program may utilize this model to teach and assess resident vaginal hysterectomy skills.

Contact Information: Category: Clinical Science
THE REGULATION OF BONE MORPHOGENIC PROTEIN 4 (BMP4) BY CALCIUM SIGNALING IN SPINAL CORD INJURY (SCI)
Nadia Al-Sammarraie and Swapan K. Ray

Department of Pathology, Microbiology, and Immunology, University of South Carolina School of Medicine

Abstract

Background and Significance: Spinal Cord Injury (SCI) is a debilitating injury that results from traumatic or non-traumatic insults to the spinal cord, causing significant impairment of patient’s activity and quality of life. Autophagy or “self-eating” is a central molecular mechanism that regulates tissue homeostasis in health and diseases. However, recent studies suggest impairment in autophagic activity after SCI, adversely affecting neuronal myelination and viability. Calcium ion (Ca\(^{2+}\)) is a critical intracellular messenger that regulates wide variety of cellular functions in healthy and disease states. Elevated concentrations of Ca\(^{2+}\) have been implicated in neuronal demyelination and death after SCI leading to poor outcome in patients. However, Ca\(^{2+}\) mediated regulation of autophagy in SCI remains largely elusive. The focus of this study is to understand the role of Ca\(^{2+}\) in dysregulation of autophagy and its implication in pathogenesis in cell culture and animal modes of SCI. First, we aim to understand how the increase in intracellular concentration of Ca\(^{2+}\) alters autophagy flux and at which step. Second, we aim to understand how Ca\(^{2+}\) signaling regulates Bone Morphogenic Protein 4 (BMP4) to disrupt autophagy post SCI.

Methods: PC12 (neuronal cells) and C6 (astroglial cells) were obtained from ATCC. First, C6 cells were allowed to grow overnight in RPMI 1640 medium supplemented with 10% fetal bovine serum and 1% penicillin and streptomycin. Second, PC12 cells were co-cultured with C6 cells and further allowed to grow overnight. Cells were seeded in 96-well plate in triplicate and treated with water and DMSO for control, calcium ionophore A23187 (4 mM) alone, BMP4 (50 ng/ml) alone, BMP4 (50 ng/ml) + calcium ionophore A23187 (4 mM), or Noggin (100 ng/ml) + BMP4 (50 ng/ml) + calcium ionophore A23187 (4 mM) and allowed to grow for 24 hours. On the second day, cell viability was assessed using MTT assay following manufacture’s protocol. For morphological analysis, cells were stained using Shandon™ Kwik-Diff™ Stains (Eosin- Methylene Blue) and were imaged by Biotek Cytation 5 Imaging Reader using 20x objective lens.

Results: High-dose of calcium ionophore reduce cell viability in PC12-C6 co-culture and induce morphological features of apoptotic cell death. In contrast, inhibition of BMP4 signaling partially improve cell viability in PC12-C6 co-culture and reduce cell apoptosis.

Conclusion: Understanding the molecular mechanisms by which Ca\(^{2+}\) disrupts autophagy during SCI is critical for uncovering the underlying pathogenesis of disability after SCI. Besides, elucidating whether inhibition of Ca\(^{2+}\) at early stage of pathogenesis would sustain
autophagy flux could provide a possible therapeutic target to improve SCI prognosis in the future.

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Category: Basic Science
DEMOGRAPHICS OF BREAST CANCER SCREENING IN SOUTH CAROLINA
Gabriel A. Benavidez\textsuperscript{1,2}; Anja Zgodic\textsuperscript{1,2}; Whitney E. Zahnd\textsuperscript{1}; Jan M. Eberth\textsuperscript{1,2}

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\textsuperscript{2} Department of Epidemiology and Biostatistics, Arnold School of Public Health, University of South Carolina

Background & Significance: Breast cancer is the second leading cause of cancer death in the United States. Fortunately, the 5-year survival rate for breast cancer is upwards of 90% when detected in early stages. The United States Preventive Service Task Force recommends that women of average-risk between the ages of 50-74 years be screened for breast cancer using mammography biennially. Although national breast cancer screening rates demonstrate increasing trends, some states in the south eastern part of the United States are lagging behind. To understand why some states fare better than others in screening rates, it is important to understand the distribution of those who get screened across multiple sociodemographic characteristics. This is especially important in South Carolina where the rate of breast cancer mortality is in the third highest in the country.

Methods: We analyzed data from the 2018 Behavioral Risk Factor Surveillance System (BRFSS) to examine differences in breast cancer screening proportions across multiple sociodemographic factors. Only those responses for the state of South Carolina were used in this analysis. We used weighted Rao-Scott chi square tests to compare differences by rurality, race, education, employment status, health insurance status, and financial barriers to healthcare.

Results: The weighted proportion of age eligible women that met breast cancer screening guidelines was 76.9%. The proportion of women who met breast cancer screening guidelines did not statistically different by rural/urban living area ($p=.28$) or employment status ($p=.10$). The proportion of being screened for those with a college degree (81.6%) was significantly higher than those with less than ($p=.01$). The proportion of being screened among those making 50K+ annually (81.5%) was significantly ($p<.0001$) higher than who made 25K or less (70.4%). The proportion of African Americans (83.4%) and Hispanics (85.7%) being screened was significantly higher ($p<.001$) than the proportion of Whites (75.4%). The proportion of being screened among women who reported having insurance of any kind (78.9%) was significantly ($p<.001$) higher than those reporting not having any insurance (56.6%)

Conclusion: This analysis reveals large disparities among important sociodemographic characteristics. This data help shed light on past efforts to reduce the screening disparities among people of color and those living in urban areas. However, socioeconomic factors appear to remain a barrier to getting screened in South Carolina. Increased efforts to reduce these disparities are needed to increase the breast cancer screening rate in order to reduce the higher than average state breast cancer mortality rate.

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Category: Social Science
sFlt-1 LEVELS ARE HIGHER IN WOMEN WITH PAST ADVERSE PREGNANCY OUTCOMES BUT UNRELATED TO VASCULAR FUNCTION

Samantha J Bouknight1, Chloe W Caudell1, Paige K Wilbanks1, William C Tucker1, Abby J Heinichen1, Catherine A O’Byrne1, Katie E Kramps1, Abbi D Lane-Cordova1

1Department of Exercise Science, Arnold School of Public Health, University of South Carolina

Abstract

Background and significance: Soluble fms-like tyrosine kinase 1 (sFlt-1) is an anti-angiogenic protein detected in maternal circulation in pregnancies affected by poor placentation. sFlt-1 can directly induce maternal endothelial dysfunction during pregnancy, contributing to clinical features of pregnancy-induced hypertensive disorders and preeclampsia. When infused into pregnant animals, sFlt-1 evokes a preeclampsia phenotype, but when infused into non-pregnant animals, sFlt-1 does not induce hypertension. Associations of sFlt-1 with blood pressure (BP) and vascular function in humans soon after pregnancy have not been described. Our purpose was to compare serum sFlt-1 levels in women with versus without a history of adverse pregnancy outcomes, i.e. preterm birth, small-for-gestational age delivery, preeclampsia, hypertensive disorders of pregnancy, or gestational diabetes. We evaluated associations of sFlt-1 levels and sensitive measures of vascular function in women soon after delivery.

Methods: Participants delivered a singleton fetus 6 months-3 years ago and were 18-45 years old. Women were excluded if they smoked, had type 1 or type 2 diabetes, active cancer, or HIV/AIDS. Serum concentrations of sFlt-1 was measured using a commercially available ELISA kit. Brachial BP was measured in duplicate following a 5-minute rest period, then averaged. Arterial stiffness was measured via carotid-femoral pulse wave velocity (SphygmoCor), and the R wave of the ECG was used as the timing marker. A Kruskal-Wallis test was used to detect differences in sFlt-1 concentrations; linear regression was used to evaluate associations of sFlt-1 and vascular function, adjusted for age and BMI.

Results: Of the 40 women, mean age=33±1 yrs, mean BMI=27.3±1.0 kg/m². sFlt-1 tended to be higher in women with versus without a history of adverse pregnancy outcomes. There were no significant associations of sFlt-1 with BP or arterial stiffness: $\beta=-1.03\pm1.2$, p=0.40 for systolic BP; $\beta=3.3\pm12.7$, p=0.26 for arterial stiffness, even in analyses stratified by adverse pregnancy outcome status.

Discussion: While elevated sFlt-1 can help identify women at risk for serious cardiovascular-related disorders during pregnancy, sFlt-1 may not be a useful biomarker to identify subclinical vascular dysfunction soon after pregnancy. Further studies are needed to elucidate the role of sFlt-1 in women post-pregnancy, as well as underlying mechanisms that connect adverse pregnancy outcomes to vascular dysfunction and heart disease later in life.

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PROVIDER ADHERENCE TO CERVICAL CANCER SCREENING IN HIV PATIENT POPULATIONS: A QUALITY IMPROVEMENT INITIATIVE AT THE IMMUNOLOGY CENTER

Catherine Brett, MD, MPH¹, Hannah L. Puckett³, Devin C. Potter⁴, Divya Ahuja, MD²,³,⁴, Olabisis Badmus, MD, MPH³,⁴
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Abstract

Background and Significance:
Human papillomavirus (HPV) is the most common sexually transmitted infection in the US. Although most HPV infections are transient, persistent infection strongly predicts subsequent risk of cervical intraepithelial neoplasia (CIN) 3 or cervical cancer. Known cofactors that increase the likelihood of persistent HPV infection include cigarette smoking, a compromised immune system and human immunodeficiency virus (HIV) infection. Antiretroviral therapy has dramatically improved life expectancy in persons living with HIV, however, prolongation of life leads to increasing cumulative incidence of tumors over time, as well as a longer duration of HPV persistence. Screening guidelines for HIV infected women differ from women without HIV. Most cases of cervical cancer occur in women who were either never screened or were screened inadequately. However, over-screening for cervical cancer can lead to unnecessary stress and procedures, as well as adding increased and unnecessary costs to the patient and to the healthcare system.

The central aim of this project is to evaluate provider adherence to cervical cancer screening guidelines in HIV positive women at the Immunology Center (IC) and to identify factors (patient and provider factors) associated with over and underscreening.

Methods: A retrospective chart review from January 1, 2015, to December 31, 2017 was performed. Study included HIV-seropositive women seen at the IC between April 2014 and June 2018. Exclusion criteria includes prior hysterectomy, abnormal cytology, cervical excision procedures, or other causes of immunosuppression.

Results: Of the 803 HIV positive women identified, n=262 met criteria for inclusion in the study. Overall adherence was 48%, with statistical significance found in cervical cancer screening between MDs and NPs, with an OR=2.51 (p < 0.01).

In regard to gender of provider, statistical significance in over screening was found between male and female providers, with an OR=4.3 (p< 0.01), and in under screening between male and female providers, with an OR= 0.43 (p< 0.05).

Over screening led to 44 excess pap smears over a two-year period. HPV co-testing was underutilized, with only one-third of encounters having HPV testing performed.

Conclusion: This project gives us the opportunity to reeducate and retrain the clinical staff and practitioners providing cervical cancer screening at the Immunology Center. This is an ongoing quality improvement project, where adherence will be reassessed on a continuous basis at one-year intervals to ensure compliance with guidelines-based cervical cancer screening among female HIV seropositive patients at the Immunology Center.

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Category: Clinical Science
CLINICAL-COMMUNITY LINKAGES FOR INCREASED ACCESS TO CONTRACEPTION: STATEWIDE CONTRACEPTIVE REFERRAL DIRECTORY

Tiffany Byrd

New Morning Foundation, Columbia, SC

Abstract:

Background and Significance: Unintended Pregnancy in South Carolina mimics that of the national average—hovering around 50 percent. Therefore, creating unique approaches to increasing access to contraception is of paramount importance to Choose Well, a statewide contraceptive access initiative. Accessing quality, affordable healthcare can be hard for families, particularly when it comes to birth control. In rural, under-served areas of South Carolina, the average distance to a family medicine provider can be upwards of 37 miles and 14 counties in the state are without a single OBGYN. Since 2017, Choose Well has worked to equip local community-serving organizations to be strong contraceptive referral partners—capitalizing on an already valued presence in South Carolina communities. Choose Well works with a diverse range of partners to increase access to contraceptive counseling, clinical services, and low-cost, highly effective contraceptive methods. The Choose Well partner base includes over 60 partners representing 171 clinical sites and 9 community partners, also known as community-reaching organizations (CROs).

Methods: During Year 1 of the initiative, CRO partners identified the need to have a clear, streamlined process for referring clients counseled by their certified Family Planning Health Workers to clinical partners for contraception. It was also necessary to establish a feedback loop from the clinical partners to the CROs on referred clients’ services for continuity of care and minimization of appointment related barriers. In Year 2, a workgroup was formed to assess current contraceptive referral trends, facilitators and barriers across the Choose Well partner base. Using the Delphi technique in decision-making and by modeling the community based participatory research approach; the workgroup identified best practices for initiating and completing contraceptive referrals to develop the first Statewide Contraceptive Referral Directory.

Results: In 2018, community-reaching organization (CRO) partners helped to actively refer and schedule appointments for contraceptive services for 446 women, with 246 (55%) of those women attending their appointment. In 2019, 492 active referrals were made, with 377 women (77%) attending their appointment.

Discussion: Partners expressed that in order for contraceptive care referrals to be effective they needed a directory with points of contact well versed in the initiative, a consistent referral process, a webinar to share with their staff for continued reinforcement, and a data monitoring system to track appointments and missed opportunities. Prior to the resources developed by the workgroup, there has not been such a robust system for connecting people to contraceptive care services in any state to date. Connecting the men and women of South Carolina to healthcare related services is integral to the overall health of communities. This undertaking, though time-consuming and labor intensive, is well worth the effort.

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*Data through October 2019 presented at the November 2019 American Public Health Association Annual Meeting. Poster will reflect data through December 2019*
ASSOCIATIONS BETWEEN PERCEIVED NEIGHBORHOOD ENVIRONMENT & OBJECTIVELY MEASURED PHYSICAL ACTIVITY AMONG PREGNANT WOMEN
Kelsey R. Day1,2, Sara Wilcox1,2, Jihong Liu1,3, Brent Hutto1

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Background & Significance: The 2018 Physical Activity Guidelines for Americans recommend 150 minutes per week of moderate intensity aerobic activity for pregnant women. Physical activity (PA) during pregnancy promotes maternal and fetal health and may reduce the risk of adverse pregnancy outcomes or conditions. Despite these benefits, many women do not meet the recommended activity threshold. The built environment may impact PA behaviors among pregnant women, but few studies to date have examined the relationship between neighborhood environment and PA during pregnancy. This study examined associations between perceived neighborhood environment and objectively measured PA among pregnant women.

Methods: Baseline data were drawn from the Health in Pregnancy and Postpartum (HIPP) study, a randomized controlled trial that included White and African American women aged 18-44 (≤16 weeks gestation) who entered pregnancy overweight or with obesity (n=205). Steps per day and minutes per week of moderate- to vigorous-intensity PA (MVPA) were measured via SenseWear armbands, worn continuously for ≥ 5 days (≥ 21 hours per day, including at least one weekend day). To assess perceived neighborhood environment, participants completed a modified 11-item version of the validated Physical Activity Neighborhood Environment Scale (PANES). Mean neighborhood score was calculated, as well as mean subscale scores for specific environmental features (Land Use, Infrastructure, Recreation, Crime, Traffic, Pedestrian Safety, and Aesthetics). Pearson’s correlations and generalized linear models adjusted for income and race were used to examine associations between PANES item and subscale scores and daily steps and MVPA.

Results: Participants (44% African American) had a mean BMI of 33.6 kg/m² and a mean gestational age of 12.4 weeks. Participant mean daily step counts and MVPA were 5,360 steps and 37 minutes, respectively. Mean neighborhood score was not correlated with steps per day or MVPA. Participants who reported more favorable neighborhood aesthetics had higher levels of MVPA (p<.05) and more steps per day (p<.01). Those who reported higher levels of neighborhood crime had lower daily MVPA (p<.01), but steps per day were only correlated with one item in the crime subscale (daytime walking safety; p<.01). No other correlations were significant. In the adjusted linear model, aesthetics was no longer associated with MVPA or steps. The mean crime subscale score remained negatively associated with steps per day (p<.05), but was not associated with MVPA. Both the daytime walking safety and perceived neighborhood crime rate items were also associated with MVPA (p<.05 for both). Daytime walking safety was the only crime subscale item associated with steps per day in the adjusted model (p<.01).

Discussion: These results indicate that higher levels of perceived neighborhood crime may reduce PA and steps per day during early pregnancy. Negative perceptions of daytime neighborhood safety may be particularly influential on PA behaviors among these women.

Funding: This study is funded by the National Institutes of Health (NICHD), R01HD078407.

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Category: Social Science
TREND OF OPIOID PRESCRIPTION USE AND LONG-TERM USE AMONG WOMEN OF REPRODUCTIVE AGE, UNITED STATES 1999-2016

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Abstract

Background and Significance: In the United States, opioid use and long-term opioid use have increased dramatically resulting in prescription misuse and fatal overdoses. Women are prescribed opioids more often than men and the prevalence of opioid use disorder at delivery quadrupled between 1999 and 2014 indicating a dramatic increase in both opioid use and it’s long-term use among women. Given that half of all pregnancies are unplanned and prenatal opioid exposure has many risks, it’s essential to examine opioid use among women of reproductive age.

Methods: Using 1999-2016 NHANES survey data, a nationally representative cross-sectional study, we determined the prevalence and trend of opioid prescription use and long-term use (≥ 90 days of use), as well as it’s predictors, among women ages 15-44 (n=10,016). Opioid use within the last 30 days and prescription duration were collected through interviews and identified using prescription codes. We used logistic regression to determine prevalence estimates and joinpoint regression to identify statistically significant changes in the temporal trends of both outcomes. Chi square tests of independence were used to examine whether national prevalence estimates of opioid use and long-term opioid use vary by characteristics of women of reproductive age. Data management and data analyses were performed using SAS version 9.4, SUDAAN version 11.0, and NCI’s Joinpoint Trend Analysis Software version 4.7.

Results: The prevalence of overall opioid use was 5.2% and almost half of prescription opioid users reported long-term use (48.8%). No significant trend was found for opioid use but a significantly increasing trend was discovered for long-term use. Survey years 2011-2016 had higher odds of long-term opioid use and joinpoint analysis identified a significantly increasing trend from 1999-2016. Women of reproductive age had almost 3 times higher odds of long-term opioid use during 2011-2016 compared to 1999-2010 (aOR: 2.78, 95%CI: 1.68-4.57). Correlates of long-term opioid use included ages 30-44, non-Hispanic whites, and women with poor or fair health status (p-value <.01)

Discussion: Our study demonstrated an increasing trend in long-term prescription opioid use among women of reproductive age. Long-term opioid use among this population raises many concerns for perinatal, neonatal, and postpartum health outcomes. There is limited evidence regarding benefits of long-term opioid use while research has proven it may lead to dependence. Policy makers and healthcare providers should consider the demographic groups most likely to use prescription opioids and develop targeted research studies and interventions.

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Category: Social Science
A QUALITY IMPROVEMENT PROJECT TO DETERMINE THE PREVALENCE OF OPIOID USE PRIOR TO INITIATING PREGNATAL CARE IN A UNIVERSITY SETTING
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Abstract

Purpose: To establish the self-reported prevalence of opioid use disorder (as well as alcohol and other substances) among pregnant women at both Prisma Health Women’s Center and USC OBGYN.

Background: In light of the growing opioid epidemic the American College of Obstetricians and Gynecologists has recommended universal screening for all patients at the first prenatal visit using validated screening tools such as SBIRT (screening, brief intervention, and referral to treatment) questionnaires. The purpose of this study was to screen patients for self-reported opioid use and substance abuse with an anonymous survey that contains validated questions. Based on these responses we hope to develop a more directed and validated screening method for our population.

Methods: An anonymous survey was created to screen and establish a prevalence of opioid use disorder (as well as alcohol and other substances) for distribution among the pregnant population at the Prisma Health Women’s Center. The survey was developed independently but several items were modeled on the CRAFFT questionnaire. Patients completed the online survey at their convenience during their OB Intake appointments.

Results: Fifty-six surveys were completed with various responses to each question. Forty percent (22/55) of patients received an opioid prescription in the past. One-third of these patients stated that they had received this prescription within the past 2 years. Approximately six percent (3/53) of patients who completed the survey reported that they used narcotics in the past year at least once a day.

Discussion: The response group was small, but it was evident that opioid use is present in our sample size with 5.6% of the responses received admitting to current daily use. Based on the small size of usable survey responses received, the goal is to continue survey implementation to develop better, more generalizable, universal screening protocols.

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Category: Clinical Science
SUPPORT AND EDUCATION FOR INCARCERATED MOTHERS, A PILOT STUDY
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Abstract

Background and Significance: In the United States there are over 200,000 incarcerated women. Specifically, there are almost 1500 women in the South Carolina Department of Corrections system. Of these women, 1 in 25 are pregnant upon intake.¹ Often, these women receive very little prenatal care prior to being placed into prison. In addition, in most jurisdictions, they are not allowed to have support personal present at the time of delivery. This results in poor perinatal outcomes and increased c-section rates.² Currently, six states allow doulas in the prison and to be present during deliveries in order to be a support person for the inmates. Previous studies have demonstrated that having doulas involved lowers preterm deliveries, c-section rates, and most notably, recidivism rates.³ Potential benefits could include lower preterm birth rates, higher birth weight babies, and decreased rates of postpartum depression, which would result in lower healthcare costs.³ Our ultimate goal in starting a doula program is to have students trained to become doulas for the inmates in hopes of having similar outcomes as the programs in other states. The goals of this pilot study are to determine if doula led childbirth education classes had an impact on incarcerated patients’ desire for a doula to be involved in their care and their understanding of child birth.

Methods: Inmates were surveyed before and after a two hour childbirth class lead by a doula. We utilized a 5 point Likert scale. The topics covered in this first session included: the role of a doula, stages of labor, pain management during labor, and interventions that may take place during labor. A paired T-Test was used to analyze the results.

Results: All of the six women present were multigravida. However, only one had attended any type of childbirth class in a prior pregnancy. There were increases from the pre-survey to the post-survey in all topics. The topics with a positive trend included: the role of a doula, stages of labor, pain management during labor, and interventions that may take place during labor. The statement, “I understand the role of a doula in the birth process,” had a statistically significant increase with a p-value of 0.0063. The statement, “I am interested in having a doula involved in the birth process,” had a statistically significant increase with a p-value of 0.0125. Those two statements had the largest increases.

Discussion: While the sample size may be small, there was a positive trend with all questions, when comparing the pre-survey to the post-survey, with two of these statements reaching statistical significance. This pilot study shows that after completing a childbirth class, inmates are interested in having a doula involved in their birth process and they better understand the role of a doula during the birth process. In the future, research can look at the effect of medical student doulas and the impact they have on birth outcomes.

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RETROSPECTIVE ANALYSIS OF PRIMARY CESAREAN SECTIONS COMORBIDITIES WOMEN WITH COMPARED TO THOSE WITH BMI < 40

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Abstract

Background:
Obesity is the most common health care problem in women of reproductive age. This study will specifically look at the implications of women class III obesity (BMI >40) on women with primary cesarean sections rates to investigate if there are differences in comorbidities compared to those women with BMI < 40.

Methods:
Retrospective chart review was performed on those women undergoing primary cesarean sections to determine if there are differences associate comorbidities or indication for cesarean in those women with BMI >40 and BMI <40.

Results:
Women with class III obesity were more likely to have arrest disorders as the indication for primary cesarean (53% vs 33%) and were more likely to have hypertensive disorders (59% vs 31%) than those women who had a BMI < 40.

Discussion:
Our research thus far has shown that there are increase rates of primary cesarean rates due to arrest disorders in those with class III obesity. Further investigation will be to determine if at our institution if these women also have an overall higher rate of cesarean when comparing data from our vaginal deliveries. Ultimately, based on this we will be able to provide our patients will more effective counseling specifically on pregnancy risks, including rates of primary cesarean, related to BMI.

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Category: Clinical Science
OVARIAN MASS WITH NEGATIVE BIOMARKERS IN A YOUNG PATIENT: CASE REPORT
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Abstract

Background: Borderline tumors resemble cancerous ovarian tumors in morphology and composition yet lack the invasive potential. Ovarian tumors are rare in adolescents, and borderline tumors even less. It is estimated that borderline tumors are represented in less than 1% of child/adolescent ovarian tumors and 10-30% of epithelial ovarian neoplasms. Without histology, they are difficult to distinguish from their malignant counterparts and display inconsistent biomarker results.

Case: A 14-year-old African American female presented complaining of right flank pain and nausea. Abdominal exam revealed right lower quadrant pain without distension and was otherwise benign. Urinalysis revealed hematuria and vaginal PCR testing was positive for chlamydia. CT imaging demonstrated a complex right adnexal lesion. Abdominal ultrasound showed a 12cm multi-locular solid mass with a color score of 2, and no signs of torsion were identified. Serum HCG, AFP, LDH, CEA, testosterone, Inhibin B and CA-125 were negative. Laparoscopic right oophorectomy was performed, and pathology reports diagnosed a serous low malignancy borderline tumor.

Conclusion: Two uncommon features of borderline tumors were illustrated by this case: the age of the patient at diagnosis and the absence of elevated biomarkers. Although CT and transabdominal ultrasound imaging revealed a mass of substantial size with potential neoplastic properties, the tumor remained unidentifiable by tumor markers commonly elevated with ovarian tumors in the adolescent patient. As a result, the tumor was considered likely benign both pre and intra-operatively. This case emphasizes the variant nature and timing of presentation of borderline tumors and is a reminder that it should be included in the differential of ovarian masses in the adolescent patient.

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This work has been presented at the NASPAG convention.
PROJECT TITLE: INCREASING RATES OF BREASTFEEDING AMONG AFRICAN AMERICAN WOMEN

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Abstract

Background and Significance: The American Academy of Pediatrics recommends exclusive breastfeeding for the first six months of life and continued breastfeeding after the introduction of solids until 12 months of life. This recommendation is based on the numerous benefits of breastfeeding, both for infants and their mothers. Research has shown that for infants, there are decreased rates of infections, including otitis media, pneumonia, UTI, and diarrheal illnesses, as well as allergies, eczema, asthma, childhood overweight and obesity, Type 1 and 2 diabetes, childhood leukemia, lymphoma, and a greater than 70% reduction in the odds of SIDS. There are also decreased rates of necrotizing enterocolitis in pre-term infants. For mothers, there is decreased post-partum bleeding, decreased rate of both breast and ovarian cancer, as well as decreased risk of diabetes. In spite of the documented benefits of breastfeeding, there are still low rates of breastfeeding in the United States among minorities, particularly among African American, Native American, and Puerto Rican women. Many of the illnesses that breastfeeding is protective for are illnesses that disproportionately affect these particular minority groups. Rates of breastfeeding are lowest among African American women in the US, with initiation rates around 64.3%, compared to 81.5% for white women and 81.9% for Hispanic women. Increasing rates of breastfeeding is particularly relevant in the South and the Midwest, where disparities in breastfeeding initiation and duration between White and African American mothers and babies are highest. South Carolina, in particular, is one of the top states in these disparities. This means potential for interventions in our State that have the ability to greatly impact rates of initiation and duration of exclusive breastfeeding. These increased rates may have the ability to decrease health disparities for both infant and maternal health. It is possible that interventions that increase breastfeeding initiation and duration may impact both mothers' health now and have preventative effects on infants that extend into adulthood. These impacts may help to narrow existing health disparities for minority groups. It is therefore critical that strategies be identified that can increase breastfeeding rates in minority women.

Methods: We desire to better characterize interventions that have the potential to increase rates of breastfeeding among African American women. We posed the questions of whether a provider discussing the benefits of breastfeeding prenatally and while in the hospital post-partum with their patient will increase rates of those who intend to breastfeed (defined as exclusive and combined breast and bottle feeding or exclusively breastfeeding). In order to answer this question, we will perform a secondary data analysis on data from the Mocha Mama’s milk interactive online forum pilot study. Mocha Mama’s Milk is a free, interactive website that was designed by USC School of Nursing, Dr. Tisha Felder. This site provides a learning center for pregnant African American mothers to log on and learn about the benefits of breastfeeding in a supportive online community. We also seek to analyze what impact the Mocha Mama’s Milk interactive platform will have on rates of breastfeeding. As well as what modifications to the website can be added to increase breastfeeding rates.

Discussion: Data from Mocha Mamas Milk pilot study will be analyzed to show the impact of providers discussing the benefits of breastfeeding on breastfeeding rates. Additionally, we will analyze the impact of the Mocha Mama’s Milk platform on breastfeeding rates. African American women have the lowest rates of breastfeeding initiation among all groups in the US, therefore interventions aimed at increasing rates of breastfeeding initiation and duration among this population are critically needed.
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PHYSICAL ACTIVITY AND SLEEP IN OVERWEIGHT AND OBESE PREGNANT WOMEN DURING EARLY PREGNANCY

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Background: Sleep disturbances are common in pregnancy, especially in overweight/obese women. In the general population, moderate- to vigorous- physical activity (MVPA) is shown to improve sleep. However, few studies have examined the association between physical activity and sleep quality in overweight/obese pregnant women and differences in racial groups.

Purpose: To examine the association between objectively measured MVPA and sleep measures in overweight/obese women during early pregnancy among White and African Americans.

Method: Data came from the baseline participants (n=213, 55.7% white) of the Health In Pregnancy and Postpartum study, an ongoing trial examining the impact of a behavioral lifestyle intervention on gestational weight gain. Participants were recruited ≤ 16 weeks gestation and were overweight/obese before pregnancy. Sleep and PA data were collected with a SenseWear armband ≥21 hrs/day for ≥5 days. Sleep measures included total sleep time (TST), sleep efficiency (TST divided by time in bed), and wake after sleep onset (WASO). Multiple linear regression analysis stratified by race was used to examine the association between MVPA (mins/day) and sleep measures.

Result: Among African American participants, a minute increase in MVPA was associated with a decrease in TST by -1.01 mins (95% CI; -1.79, -0.22), while there was no significant association between MVPA and TST (-0.49 mins, 95% CI; -1.14, 0.20) in White participants. In the total sample, a one-minute increase in MVPA was associated with a decrease in WASO by 0.28% (95% CI; -0.52, -0.04). MVPA was not associated with sleep efficiency.

Conclusion: The relationship between MVPA and sleep time was different by racial groups of overweight/obese pregnant women. MVPA was associated with decrease in WASO. The future study will examine changes in sleep and MVPA and their associations over time in different races during late pregnancy and postpartum.

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Category: Clinical Science
THE OB NAVIGATOR: INNOVATIVE CONTRACEPTIVE CARE IN SC HOSPITALS
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Abstract:

Background and Significance: More than half of all pregnancies in South Carolina are unintended. Unintended pregnancies have a greater likelihood of negative health outcomes for mother and baby. Additionally, unintended pregnancy costs the state millions of healthcare dollars each year. In 2017, the Choose Well Initiative was launched by the New Morning Foundation with the goal of reducing unintended pregnancy in SC. Key strategies to achieve this goal include expanding access to all methods of birth control and to high-quality, individualized contraceptive counseling.

Methods: Choose Well identified a diverse group of partners in order to build access to contraceptive services. The partner base includes hospitals, federally qualified health centers, rural health clinics, county health departments and other safety net providers. One key area of focus for Choose Well is the expansion of contraceptive services in hospitals. A foundational element of hospital work for the initiative was the creation and development of the OB Navigator role in partner hospitals.

Results: Initially, key responsibilities included implementing immediate postpartum long-acting reversible contraception (IPP LARC) provision in their hospitals, coordinating trainings for clinicians and staff, and providing contraceptive counseling to delivering mothers. Over time, the role has expanded to managing initiative work by recruiting other hospitals to provide IPP LARC, working in OB/GYN and Family Medicine clinics to strengthen contraceptive services, and gaining the ACOG Contraceptive Counseling Provider & Trainer certification.

Discussion: Institutional and leadership support for this role in hospitals across the state could positively impact maternal and fetal outcomes by increasing awareness and knowledge of contraceptive options and reducing unintended pregnancies. This dedicated staff role ensures that a hospital-based contraceptive service program is sustainable from a financial and institutional cultural perspective by supporting proper coding for service reimbursements, EHR modifications, and staff training.

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Category: Clinical Science
SLEEP CHARACTERISTIC DIFFERENCES DURING EARLY POSTPARTUM IN WHITE AND AFRICAN AMERICAN WOMEN
Erin E Kishman¹, Joshua R Sparks¹, Jihong Liu¹, Lauren A Castleberry², James W Cook², Shawn D Youngstedt³, Xuewen Wang¹

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Abstract
Introduction: In the general population, poor sleep quality and shorter sleep duration is associated with several adverse health outcomes. African American adults are more likely to report poorer sleep quality and shorter total sleep duration compared to White adults. However, there is limited information comparing sleep characteristics in White and African American women during postpartum, when many women experience reduced sleep quality. The purpose of this study was to compare sleep quality at 6-8 weeks postpartum in White and African American women.

Methods: White (n=84) and African American (n=37) women, who gave birth to a singleton at ≥ 37 weeks of gestation, completed the Pittsburg Sleep Quality Index (PSQI) and the Epworth Sleepiness Scale (ESS) at 6-8 weeks postpartum. The PSQI was used to assess global sleep quality, time in bed, and 7 components regarding sleep. The components included: Subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The ESS total score was used to assess daytime sleepiness.

Results: The global PSQI score was higher for African American women (8.8 ± 3.3, mean ± SD), indicating poorer sleep quality than White women (7.1 ± 3.0, p=.006). African American women had higher sleep latency and shorter sleep duration compared to White women (p=0.0179 and p<.0001, respectively). Time in bed was not statistically different for African American women compared to White women (485.6 ± 143.7 and 530.8 ± 85 minutes/night, p=.08). No other components of the PSQI were significantly different between the two racial groups. African American women scored higher on the ESS than White women (8.9 ± 3.1, 6.6 ± 3.2, p=.0002) indicating greater daytime sleepiness.

Conclusion: These results suggest that African American women experience lower sleep quality and greater daytime sleepiness in early postpartum compared to White women.

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Category: Clinical Science
ALGINATE MICROCAPSULES BASED DELIVERY OF ALPHA-CALCITONIN GENE RELATED PEPTIDE (α-CGRP) PROTECTS AGAINST CONGESTIVE HEART FAILURE

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Background and Significance: Congestive heart failure (CHF) is the leading global cause of morbidity and mortality for both men and women. About 6.5 million adults in the United States have heart failure. Despite the availability of several classes of drugs, the 5-year survival rate for CHF is still only 50%. Hence, more effective therapeutic strategies are needed to be established. Studies conducted by us and other research groups confirmed the cardioprotective role of α-calcitonin gene related peptide (α-CGRP), a 37-amino acid neuropeptide and a potent vasodilator, in cardiac diseases. Systemic delivery of α-CGRP decreases blood pressure in hypertensive humans, and improves hemodynamic variables in CHF patients. However, short half-life of α-CGRP (~5.5 min in the human plasma) limits its use as a drug in human for long-term treatment regime. The present study utilized alginate polymer, a natural polysaccharide from seaweeds, as a novel drug carrier and developed α-CGRP encapsulated alginate microcapsules as a novel drug delivery system for long-term continuous release of α-CGRP. The applicability of alginate-α-CGRP microcapsules was tested in the pressure-overload mouse model of heart failure.

Methods: An electrospray method was used to prepare α-CGRP filled alginate microcapsules of 200 µm size. The cytotoxicity of prepared microcapsules was tested in in vitro cell culture system using two cardiac cell lines, HL-1 and H9C2 cells. Transverse aortic constriction (TAC) procedure was performed to develop pressure-overload induced heart failure in nine-week-old C57/BL6 mice. Two days post-TAC, alginate-α-CGRP microcapsules (containing 150 µg α-CGRP) was administered subcutaneously on alternate days, until day 28. Echocardiography was performed on every 7th day to measure cardiac functional parameters. After day 28 of CGRP delivery, mice were euthanized, hearts were removed, photographed, and weighed. Apical portion of the left ventricle (LV) was stored at -80°C for biochemical analyses, and basal portion was fixed in 4% paraformaldehyde/PBS (pH 7.4) for histology.

Results: Our in vitro cell viability assays showed that prepared alginate-α-CGRP microcapsules were non-toxic when incubated with two cardiac cell lines, HL-1 and H9c2 cells, for 7 days. Subcutaneous administration of microcapsules containing 150, 250, or 500 µg α-CGRP lowered systolic pressure up to 18 h, 3 days, and 7 days, respectively, in wild-type mice (measured by tail-cuff method), indicating that released α-CGRP from the microcapsules remains biologically active in vivo. Echocardiography, histology, and biochemical data showed that TAC-induced pressure overload markedly decreased cardiac function (as measured by % fractional shortening and ejection fraction), and increased cardiac hypertrophy, dilation, and LV fibrosis compared to the sham mice. Alginate-α-CGRP microcapsules delivery in TAC mice significantly preserved cardiac functions, and reduced LV hypertrophy and fibrosis to levels comparable to sham mice. Additionally, TAC pressure-overload significantly increased LV apoptosis (determined by cleaved caspase-3 protein) and oxidative stress (measured by 4-hydroxynonenal staining) compared to the sham mice but this increase was prevented by α-CGRP administration.

Conclusions: Our results show that α-CGRP delivery through alginate microcapsules protects hearts from cardiac failure. As alginate is immunologically inactive, the alginate microcapsules offer a new potential delivery paradigm for patients with heart failure.

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THE EFFECTS OF AN ANTENATAL LIFESTYLE INTERVENTION ON GESTATIONAL WEIGHT GAIN IN OVERWEIGHT AND OBESE PREGNANT WOMEN: A RANDOMIZED CLINICAL TRIAL

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PURPOSE: To evaluate the effect of a lifestyle intervention program on gestational weight gain in overweight and obese pregnant women.

METHODS: An 18-month, randomized, assessor-blind, clinical trial enrolled 219 overweight and obese pregnant women from Columbia, SC. Eligible women were randomized to a behavioral intervention (n=112) or a standard care group (n=107). The antenatal intervention was designed to promote weight self-monitoring and increase physical activity and healthy dietary behavioral practices. The intervention was delivered through one in-depth counseling session, followed by phone counseling, behavioral podcasts, and social media support. Standard care women received monthly mailings and a matched number of podcasts on non-weight related topics. The primary outcome was total gestational weight gain (kg), calculated as weight in delivery room/last prenatal care visit minus self-reported prepregnancy weight.

RESULTS: Our sample was racially diverse (56% white, 44% African American) with a mean prepregnancy BMI of 32.3±6.0 kg/m². The mean gestation age was 12.6±2.4 wks at baseline and 39.0±1.5 wks at delivery. There was no difference in mean total weight gain between the intervention (12.9±6.9) and standard care group (12.4±8.6), although the variance was smaller in the intervention group (p=0.02). Among overweight women, total weight gain was lower in the intervention group (13.9±5.3) vs. standard care group (16.5±6.9, p=0.03), while among obese women, the total weight gain was higher in the intervention group (11.9±8.0) than standard care group (8.8±8.3, p=0.05). Among white women, the intervention group had smaller variance than the standard care group for mean total weight gain (13.0±5.9 vs. 12.2±8.4, p<0.001).

CONCLUSION: The antenatal behavioral lifestyle intervention was beneficial in changing the distribution of total gestational weight although it was not significant in changing the mean. This intervention was effective in reducing total weight gain in overweight but not obese women.

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SENSOR-MEASURED PHYSICAL ACTIVITY IN OVERWEIGHT AND OBESE WOMEN IN EARLY PREGNANCY: THE HEALTH IN PREGNANCY AND POSTPARTUM (HIPP) STUDY
Jihong Liu, Sara Wilcox, Ellen Wingard, Brent Hutto, Gabrielle Turner-McGrievy, Judith T Burgis, Alycia Boutte, Lara Schneider

BACKGROUND AND SIGNIFICANCE: Overweight and obese pregnant women may benefit from physical activity (PA) in pregnancy. Yet few studies have examined sensor-measured PA in pregnancy. The purpose of this study was to evaluate sensor-measured PA in overweight and obese pregnant women and its sociodemographic and psychological correlates.

METHODS: We analyzed baseline data from an ongoing behavioral lifestyle intervention trial in Columbia, SC (n=202). PA was measured with the SenseWear Armband; compliance was set at wearing for 21+ hrs/d, 5+ days (including 1+ weekend day). PA measures were daily duration of light PA (LPA), moderate to vigorous PA (MVPA), daily steps, and meeting MVPA guidelines (≥150 min/wk of MVPA in ≥10 min bouts). PA was presented as median (interquartile range). Subgroup differences in medians were examined with quantile regression models. Correlations of PA measures with perceived stress, depressive symptoms, PA social support, PA self-efficacy, and PA self-regulation were studied. A logistic regression model was used to examine correlates of meeting MVPA guidelines.

RESULTS: Participants (mean of 12.4 weeks gestation) had a median of 203 (154, 258) min/d LPA, 34 (20, 49) min/d MVPA, and 4,870 (3768, 6590) steps/d. LPA, MVPA, and steps were lower in African American and obese women (p<.05). LPA was lower in nulliparous women (p<.05). Participants with less than college education had lower MVPA and steps (p<0.05). Further, LPA, MVPA, and steps were positively associated with PA self-efficacy (r’s ranging from 0.13 to 0.16, p≤.05) and PA goal setting (r’s ranging from 0.16 to 0.21, p<.05). MVPA was positively associated with PA planning (r=0.16, p<.05). Only 10.4% of participants met MVPA guidelines, which was more prevalent in white (17.1%) vs African American (2.2%) women and in overweight (17.9%) vs obese women (3.7%) (p<0.05). After adjusting for age, parity, and marital status, white women and overweight women had higher odds of meeting MVPA recommendation than their counterparts: white: 5.8 (1.2-28.6); overweight: 5.2 (1.6, 16.9).

CONCLUSION: Sensor-measured PA was low in overweight and obese pregnant women in early pregnancy with significant differences by race, education, parity, and pre-pregnancy weight status. Programs targeting PA are needed for this population.

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This study was presented at the 66th annual meeting of the American College of Sports Medicine, Orlando, FL, May 2019 as a poster. The study was funded by NIH/NICHD (R01HD078407).
A NARRATIVE ANALYSIS OF ANTI-ABORTION DISCOURSE USED DURING SOUTH CAROLINA'S LEGISLATIVE HEARINGS ON A FETAL “HEARTBEAT” ABORTION BAN
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Abstract

**Background and Significance:** In several states around the country, including South Carolina, anti-abortion activists are promoting the passage of fetal “heartbeat” bills, which ban all abortions performed after fetal cardiac activity is detectable. These restrictions would criminalize medically necessary abortions or miscarriages after six weeks of pregnancy, which is before most women are aware of their pregnancy. These bills will require women to carry to term when they are unable to do so safely or do not want to be pregnant and inevitably lead to an increase in the number of unsafe abortions. To counter these bills and prevent them from being passed, pro-choice advocates need to better understand the arguments and strategies being used by anti-choice advocates and legislators. South Carolina’s fetal “heartbeat” bill, H.3020, was proposed during the 2019 legislative session and will likely be voted on during the 2020 legislative session. Throughout 2019, the SC legislature held multiple public hearings on the H.3020, during which advocates, community members, and legislators testified for and against the bill. We conducted a narrative analysis of the anti-choice arguments and strategies used during these hearings.

**Methods:** Audio files from the videos of hearings publicly posted on the State House Video Archives and the Women’s Rights Empowerment Network (WREN)’s Facebook page were downloaded and transcribed using Happy Scribe, a transcription service. The transcripts were fidelity checked and imported into NVivo, a qualitative analysis software, where they were coded using thematic coding techniques. Analysis of these videos is ongoing.

**Results:** Preliminary findings show that major themes include the claim that a “heartbeat” grants legal status and personhood to fetuses, an appropriation of established civil rights laws, religious arguments, and the abundant use of false medical claims.

**Discussion:** This analysis reveals that the abortion ban strategies aim to undermine the legal precedent of Roe v. Wade. Opponents of abortion bans can use this information to combat the false claims and harmful discourse used by anti-abortion individuals during future hearings. This information can help prepare pro-choice advocates to advance reproductive rights and sexual health by countering anti-choice arguments that are not only harmful to women in South Carolina, but also in other contexts where reproductive rights are at stake.

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**Category:** Social Science
EVALUATING A PROGRAM TO INCREASE REPRODUCTIVE HEALTH LITERACY AMONG TEENS IN THE SC FOSTER CARE SYSTEM

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Background: South Carolina ranks 11\textsuperscript{th} out of 51 in teen pregnancies among 15-19 year olds. Nearly half of girls in foster care have been pregnant by age 19, oftentimes derailing the path to independent living. Traditional fear-based and boring sex education often fails these teens. Instructors frequently rely on technical information to reduce subject-matter discomfort; this diminishes connection, discourages mindfulness and undermines personal empowerment. In today’s age of unlimited information, teens need help extracting fundamental concepts that encourage healthy sexual choices.

Methods: Pre-post design. Workshops using sticky messages for explaining reproductive health were conducted in group foster homes with 108 participants from 5 locations. Survey and narrative data were obtained through closed and open-ended post-test questions. Workshops used sticky messages, normalization, and connection. Sticky messages use humor, everyday language, simple analogies, and concrete metaphors to make complicated reproductive facts easily understood. Normalization shifts the focus away from shame, taboos, and fear-based messages. Connection is promoted by replacing preachy “you” messages with empowering “we” messages that allow people to be seen, heard, and valued without judgment. We also provided contraceptive methods fact-sheets and lists of local providers of free services.

Results: 70\% of teens were African-American; 16.7\% white; 13\% mixed, and 6.5\% Latino. Using ANOVA, intentions to use condoms and contraception increased by over 25\%. Knowing where to get birth control, understanding birth control choices and feeling more comfortable talking to a health provider about contraception increased in post-test to over 90\% agreeing (<.001). Narrative themes--workshops were superior to previous sex education, more straightforward, more concrete and understandable.

Conclusions: Increasing reproductive literacy of teens allow them to control their own reproductive destinies, rather than letting it control them. Finding ways to engage teens can increase their mindfulness in making decisions about sexual activity and lead to reductions in unintentional pregnancies.

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Category: Social Science

Poster previously presented at the 12th Annual James E. Clyburn Health Equity Lecture.
ADOLESCENT TRICHOMONAS VAGINALIS IN A HIGH-BURDENED REGION OF THE SOUTHERN UNITED STATES

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Abstract

Background: We evaluated the clinical management, risk factors, and socioeconomic health determinants for Trichomonas vaginalis-positive adolescents in upstate South Carolina.

Methods: An EPIC electronic medical record report was generated to identify any physician-ordered T. vaginalis test from February 2016 to December 2017 for patients aged 12–18 years within the Prisma Health System. Utilizing a case-control study design of patients with a documented T. vaginalis diagnostic result, we reviewed records of patients with physician-ordered T. vaginalis tests for demographics, clinical disease course, sexually transmitted infection test results, treatment order and dosage, infection risk factors, comorbidities, pregnancy term, and neonatal birth outcomes. Residential addresses of T. vaginalis-positive patients and controls were geospatially analyzed with a hotspot analysis, and socioeconomic determinants of health and poverty index data were compared between groups.

Results: Of 789 male and female adolescents with physician-ordered T. vaginalis tests, 44% had a documented result. Of those with a document test result, 13% were T. vaginalis positive. Cases (n=45) and randomly selected negative controls (n=45) were all female. Cases were more likely to be African American, symptomatic, and present with vaginal discharge, pain, and vulvar itch. Physicians’ prescription dosage habits significantly (p=0.0483) differed by insurance type, with publicly insured patients receiving lower metronidazole dosages than privately insured (2 g one-time dose versus 7 days of 500mg twice daily). T. vaginalis patients were more likely to have documented histories of chlamydia (p<0.0001) and gonorrhea (p=0.0191), with 18% having concurrent triple infections (T. vaginalis, chlamydia, and gonorrhea). All pregnant girls with T. vaginalis delivered full-term, healthy infants.

Conclusions: We identified a disproportionally high burden of T. vaginalis infection, with an alarmingly high rate of triple infections, among a population of suspected high-risk adolescents. Our results indicate the need to clarify infection prevalence, develop pediatrician-focused education campaigns, and elucidate potentially modifiable risk factors for these high-risk patients.

Category: Clinical Science

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A ROLE FOR MICROGLIA IN THE BEHAVIORAL AND CARDIOVASCULAR RESPONSE TO REPEATED SOCIAL STRESS IN FEMALE RATS
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Abstract

Background and Significance: Social stress is a common risk factor for anxiety and cardiovascular disease (CVD). Following the onset of puberty and continuing through menopause, women are more likely than men to suffer from comorbid anxiety and CVD. While the underlying neural mechanisms linking these pathological conditions remain unclear, the central nucleus of the amygdala (CeA) and the locus coeruleus (LC) are two stress-sensitive regions which facilitate both behavioral and cardiovascular responses to social stress. Neuroinflammation has been shown to play a causative role in generating stress-induced anxiety-like behavior. However, the contribution of microglial cells to stress susceptibility in a female population remain unclear. Here we demonstrate that in both the LC and CeA, 25 μg clodronate (CLD) results in a local 50% reduction in microglia. The current study aimed to examine, separately, the effects of partial (~50%) microglial depletion in the CeA and the LC on behavioral and cardiovascular susceptibility in normally cycling female rats. Methods: Following recovery from surgical implantation of cardiovascular transmitters (DSI, HD-S11) and bilateral CeA or LC cannulae, rats were treated with either intra-CeA or intra-LC liposomal CLD injections (25 μg/side, 5 μl) or empty-liposomal vehicle (0 μg/side, 5 μl). Female rats were then subjected to witnessing an aggressive social defeat encounter between a male intruder and a novel male resident for 15 minutes on 5 consecutive days. Stress-induced anxiety-like burying and cardiovascular responses were compared between witnesses and controls treated with vehicle or CLD in either the CeA or LC. Results: These studies identified that witness stress exposure evoked increased burying duration compared with controls. Intra-CeA CLD dampened the pressor response to acute stress, but had no effect on stress-induced blood pressure upon the 5th exposure to stress versus vehicle-treated witness stress rats. Alternatively, intra-LC CLD had no cardiovascular effect upon the first exposure to stress, yet promoted the pressor response following repeated stress exposure (day 5). Conclusion: These findings suggest that despite a lack of effect on behavior, microglia in the CeA may play a role in facilitating the hypertensive response to acute social stress in females. In contrast, microglia in the LC mediate the anxiety-like response during acute and repeated social stress, but mitigate the pressor response to repeated social stress exposure in females. Taken together, these studies reveal a novel role for microglia in regulating behavioral and cardiovascular responses to social stress in females.

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AN EXPERIMENTAL SYSTEM OF PRENATAL KYNURENINE ELEVATION: DISTINCT SEX-DEPENDENT ALTERATIONS IN BRAIN KYNURENIC ACID AND SLEEP DISTURBANCES IN ADULTHOOD

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ABSTRACT:

Background and Significance
Dysfunction in the kynurenine pathway (KP) of tryptophan metabolism has been implicated in the pathology of schizophrenia (SZ). The KP metabolite kynurenic acid (KYNA) is an endogenous antagonist of α7 nicotinic acetylcholine (α7nACh) and N-methyl-D-aspartate (NMDA) receptors, and an activator of aryl hydrocarbon receptors (AhR). KYNA has been linked to cognitive impairments in SZ and may also contribute to sleep disturbances in patients. To further understand the role of KYNA in SZ etiology, we developed an experimental system in rats (Pocivavsek et al., Psychopharm., 2014) where kynurenine (kyn; 100 mg/day) is fed to pregnant Wistar dams from embryonic day (ED) 15 to ED 22 (control: ECon; kyn-treated: EKyn) to elevate KYNA in the fetal brain.

Study Aims
The present study was designed to investigate 1) KP metabolism during the light (ZT6) and dark phase (ZT18) and 2) sleep-wake behavior during both phases in male and female adult (postnatal day 56-85) offspring from ECon and EKyn litters.

Results
Cortical KYNA levels were increased (+128%) at ZT6 in male, but not female, EKyn compared to ECon (**P<0.01). No differences were found at ZT18. Adult offspring were implanted with telemetric devices to acquire polysomnographic recordings to combine electroencephalogram (EEG) and electromyogram (EMG) readings (N=6-8 per group). Analyses of vigilance state parameters categorized as wake, rapid eye movement (REM) and non-REM (NREM) were assessed. Our findings indicate distinct sex differences in sleep disturbances among ECon and EKyn offspring. EKyn males had significantly less REM duration during the light phase (*P<0.05, -21%). EKyn females had less frequent wake bouts (*P<0.05, -30%), which were also longer in duration (**P<0.001, +37.5%), and less frequent NREM bouts (*P<0.05, -28%) during the dark phase. Delta and theta power were assessed during each vigilance state to define deficits in sleep oscillations.

Conclusion
Taken together, our data demonstrate a striking sex- and light phase-dependent increase in cortical KYNA and sleep alterations in EKyn offspring. We are continuing to investigate elevated prenatal kynurenine exposure to further understand the interplay between KP metabolism in psychiatric illness, sleep disturbances, and cognitive outcomes.
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*This work has been presented at Society for Neuroscience 2019 and the Morgan Newton Symposium.*
PHYSICAL ACTIVITY AMONG EAST ASIAN AMERICAN WOMEN: A SCOPING REVIEW
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Abstract

Background: Asian American (AsAm) women are seldomly targeted for interventions to increase physical activity (PA) despite being at greater risk for adverse health outcomes at a lower body mass index. The objective of this scoping review is to assess PA levels, and culturally bound attitudes and belief related to PA among East Asian American women (i.e., Chinese-, Japanese-, and Korean-ethnicities American).

Methods: A scoping review of the literature was conducted using online databases including CINAHL, PubMed, PsycINFO, and Web of Science. Combinations of the following keywords and Mesh terms were used as search terms: physical activity, exercise, sports, Chinese-, Korean-, Japanese-Americans, and Far East. Studies were eligible for inclusion if they were published from January 2000 to November 2019; reported PA levels, attitudes, or beliefs on East AsAm adult women; published in English; and conducted in the U.S. Studies were exclusive if PA was not a primary variables; studies combined AsAm subgroups together; women participants were less than 40%

Results: 426 studies were initially retrieved, 261 duplicates were excluded, 129 articles were excluded after title and abstract review. After full article review, 33 studies (quantitative n=25, qualitative n=5, mixed method n=3) were included in the final synthesis and analysis. Of the 33 studies included, none utilized objective measures of PA. Overall, 17 studies examined the prevalence of PA among East AsAm women. Compared to other racial groups, PA levels were lower among East AaAm women in 14 studies, higher in 2 studies, and similar in 1 study. Among the qualitative studies, East AsAm in 3 studies stated that PA is physically and psychologically beneficial. However, women in 2 studies reported little social and environmental support for engaging in PA. No studies were conducted in Southern U.S., where rates of obesity and obesity-related conditions are amongst the highest in the nation.

Conclusions: This review has identified the qualitative, quantitative, and mixed method studies on PA among East AsAm women. AsAm women engage in less self-reported PA compared to other racial groups. Future research involving objective measures of PA are needed to validate self-reported PA findings. Culturally tailored interventions that address gaps of knowledge and provide insight on social and environmental factors are needed to increase PA in this population.

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Category: Social Science
Introduction: Healthy sleep is known to contribute to psychosocial well-being. Pregnancy and postpartum could have profound influences on women’s psychosocial well-being related to physiological changes and interrupted sleep due to caring for the infant. The purpose of this study was to determine the associations between self-reported sleep characteristics and psychosocial well-being.

Methods: Forty-seven women who delivered a singleton infant after ≥ 37 weeks of gestation were interviewed at 6-8 weeks, 4 months, and 6 months after delivery. The Pittsburgh Sleep Quality Index (PSQI) was used to obtain sleep duration, sleep disturbance, and the global PSQI score, and the Epworth Sleepiness Scale total score was used to assess daytime sleepiness. The Edinburgh Postnatal Depression Scale, Perceived Stress Scale, and Rosenberg Self-Esteem Scale were used to assess psychosocial well-being, and a summary score of each instrument was calculated.

Results: The self-reported nightly sleep duration decreased over time (535 ± 95, 505 ± 78, 488 ± 66 minutes, respectively at each timepoint, mean ± SD, p = 0.007). Other sleep characteristics did not change. There were also no significant changes over time in the scores of depressive symptoms, stress, or self-esteem. At 6-8 weeks postpartum, sleep disturbance was associated with stress (r = 0.32, p = 0.026) and self-esteem (r = -0.38, p = 0.008) so that women who had greater sleep disturbances perceived greater stress and lower self-esteem. These associations did not exist 4 months or 6 months after delivery. Sleep duration, global PSQI score, and sleepiness were not associated with any of the psychosocial measures.

Conclusions: Sleep disturbance is an important correlate of psychosocial well-being in early postpartum. The decreased sleep duration likely indicates recovering from pregnancy and delivery, and adapting to routine lifestyle.

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Category: Social Science

Note: This work has been submitted to the SLEEP meeting 2020.
RELATION OF PREGNANCY PHYSICAL ACTIVITY AND SEDENTARY BEHAVIOR WITH GESTATIONAL WEIGHT GAIN
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Background & Significance: Pregnancy is an influential time for shaping physical activity behaviors in women. Increased prenatal physical activity levels are correlated with less gestational weight gain and may affect current physical activity levels post-delivery. Little is known about the relationship between sedentary behavior during pregnancy and gestational weight gain. The purpose was to determine whether or not the amount of prenatal physical activity and sedentary behavior corresponds to gestational weight gain and to determine the association between prenatal physical activity levels and current physical activity levels.

Methods: Of the 56 women in the study, average age was 33 ± 1 years, and average BMI was 26.9 ± 0.92 kg/m². Scored Godin surveys to measure physical activity and the Sedentary Behavior Questionnaire was used to recall prenatal sedentary behaviors. Gestational weight gain, and demographics were obtained by self-report. Correlations of activity behaviors and gestational weight gain, as well as prenatal and current physical activity, were assessed with Pearson correlation analyses.

Results: Physical activity was found to be not associated with gestational weight gain, with an R-value of -20 and a P-value of 0.15. Sedentary behavior was not associated with gestational weight gain, the R-value being 0.05 and the P-value being 0.70. Pregnancy and current physical activity levels were correlated with an R-value of 0.59, and P-value less than 0.0001. Results have been adjusted and unadjusted for race and ethnicity.

Discussion: These results suggest that neither prenatal physical activity, nor sedentary behavior, was associated with less gestational weight gain. However, physical activity during pregnancy is highly correlated with continuing exercise postpartum. Findings suggest that intervening on physical activity during pregnancy might shape long-term maternal health due to its relationship with post-pregnancy physical activity and not necessarily effects on gestational weight gain.

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Category: Clinical Sciences
PROVIDER PERSPECTIVES ON PREVENTION, DIAGNOSIS, AND TREATMENT OF NEONATAL ABSTINENCE SYNDROME IN SOUTH CAROLINA
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Abstract
Background and Significance: Neonatal Abstinence Syndrome (NAS) causes symptoms of withdrawal among infants due to intrauterine exposure to addictive prescription drugs, often resulting in lengthy and costly hospital stays after birth. Incidence of NAS in South Carolina tripled from 1.3 per 1000 births in 1999 to 3.9 per 1000 births in 2013. The SC Department of Health and Environmental Control contracted the USC Core for Applied Research and Evaluation (CARE) to perform a needs assessment to inform future NAS prevention and intervention strategies in South Carolina.

Methods: Prenatal care providers, neonatologists and pediatricians, and medication-assisted treatment providers were recruited by CARE researchers to participate in a structured interview. Providers were asked to describe current practices, challenges encountered, and resources needed in the prevention, identification, and treatment of NAS. Interviews lasted approximately 20 minutes and were conducted via telephone using an interview guide. Participants were offered a $50 gift card incentive.

Results: 32 interviews have been conducted. Providers identified a number of challenges related to treatment of NAS in newborns, including subjectivity in symptom scoring, lack of standardized treatment protocols, poor adherence to follow-up care, and strain on hospital resources associated with extended hospital stays and labor-intensive treatment. Providers also described barriers related to the treatment of mental health and/or substance use disorders among mothers, such as limitations on insurance coverage for post-partum care, and lack of access to providers – especially in rural areas. Misinformation, lack of communication and trust, and stigma were also frequently cited as barriers to effective prevention and treatment for newborns and mothers.

Discussion: Results of the study will be used to inform resource allocation and the design of public health strategies aimed at addressing the opioid epidemic in South Carolina. Overall, provider responses highlighted a need for increased clarity and consistency in diagnostic codes and procedures as well as the need for enhanced access to behavioral healthcare services. Efforts to improve communication, eliminate misinformation, and address stigma among patients and providers may also be warranted. Future research should be conducted to explore patient experiences in NAS treatment as well as perceived barriers to care.

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MEDICAL EQUITY AND ACCESS FOR WOMEN WITH PCOS
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Abstract

Background and Significance: Polycystic ovary syndrome (PCOS), the most common chronic endocrinopathy and the leading cause of infertility in women, has significant clinical consequences, including cardiovascular, endocrinological, oncological, and psychological co-morbidities. PCOS is associated with significant financial costs for individuals/families and health care systems. Since the discovery of PCOS in 1935, conclusive causes and treatment remain elusive and government funding for research limited. Little is known about the medical experiences of these women.

Methods: Through the lens of the social construction of illness framework, this qualitative descriptive study examined stories (n=95) written by women with PCOS on a public social support website using low inference content analysis. The three researchers independently analyzed the first seven stories. Using constant comparative analysis, a consensus was reached on a coding scheme. Using this scheme, each researcher independently analyzed one-third of the remaining stories, and then collaboratively reviewed.

Results: A major theme was identified: Healthcare encounters—“I don’t feel like I’m getting the help I need”. Many of the women reported seeing three or more healthcare providers before being diagnosed and/or treated for PCOS. The women revealed access issues to specialists and, even when identified, patient-physician relationships were frequently reported as being unsatisfactory. Often feeling disregarded, patients expressed frustration with physicians’ perceived lack of concern. One woman stated, “The doctors where I live don’t care about the problems I face with this condition, it’s a physical and mental struggle on a daily basis.” Additionally, women cited difficulty affording healthcare, medications, and treatments due to costs and inadequate insurance coverage.

Discussion: The social construction of illness posits that some medical conditions are embedded in cultural meaning and socially constructed at the experiential level and that medical knowledge is also socially constructed in a way that reflects inequalities of gender. Conditions disproportionately experienced by women, such as PCOS, have been under-researched, resulting in diagnostic and treatment ambiguity. As such, women feel their symptoms are minimized or dismissed. Appropriate healthcare access is also affected as women statistically pay higher insurance premiums and reproductive healthcare costs than men.

Conclusion: Provider education about PCOS is necessary to enhance timely diagnosis and implement individualized treatment strategies. Solutions need to be multi-disciplinary, multifactorial and multi-level to ameliorate biopsychosocial issues associated with PCOS. Changing the healthcare experience for women with PCOS requires accommodating health and illness as meaningful phenomena that transcends underlying biological pathology. PCOS can affect health insurance, depending on the severity and treatment. Even with adequate financial resources, the appropriate medical specialist and specific treatments might not
be available or affordable in certain geographic areas. Policy changes are warranted to address access to care, health insurance inequities, and inadequate funding for PCOS-related research.

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Category: Social Science
USING COMPOSITE SCORES AND ULTRASOUND DETERMINANTS FOR PREDICTING ADNEXAL TORSION IN CHILDREN AND ADOLESCENTS

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Background:
Ovarian torsion can be difficult to diagnose in the pediatric and adolescent population given shared symptoms with other conditions, such as appendicitis. However, torsion that goes unreversed can result in loss of the ovary and potential adverse effects on future fertility. Therefore fast and efficient diagnosis of torsion can improve chances of ovarian preservation. Previous studies have looked at clinical and ultrasound predictors of torsion. In this study we hope to clarify predictors of ovarian torsion in a primarily African American population, as well as to evaluate an established composite score in predicting ovarian torsion.

Methods:
A retrospective chart review was performed to identify cases of ovarian torsion, confirmed by laparoscopy, over the course of 10 years at a tertiary referral center. The primary population was pediatric and adolescents between the ages of 0 – 21. Inclusion criteria were surgically proven cases of torsion diagnosed by ultrasound imaging. Exclusion criteria included pregnancy of unknown location, preoperative imaging with CT only, or other suspected preoperative diagnoses (e.g. appendicitis, hemorrhagic cyst). Clinical and ultrasound predictors of torsion were analyzed for correlation to torsion, and the previously proposed composite score was applied to these confirmed torsion cases to determine predictability of torsion.

Results:
A total of 53 cases of surgically proven ovarian torsion were found meeting the above criteria. 25% were premenarchal, while the remainder were postmenarchal. Approximately 60% were African American, 30% were Caucasian, and 10% were Hispanic. The average BMI of all individuals was 29. Adnexal mass, ovarian edema, leukocytosis, nausea/vomiting, adnexal ratio, and ovarian volume were all significantly associated (p < 0.05) with ovarian torsion. Temperature, absence of arterial/venous flow, peripheral cysts, and pelvic free fluid were not associated with ovarian torsion. These findings correlate with the predictors identified in the components of the composite score. Over 90% of cases of confirmed torsion could have been identified by the composite score discussed above (with a score greater than 2).

Conclusion:
This previously published composite score for torsion, using both clinical and ultrasound findings, can successfully be used to predict torsion in African American and high BMI premenarchal and postmenarchal adolescents. Faster diagnosis by healthcare professionals could improve time to diagnosis and could potentially improve surgical outcomes.

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