

FOREWORD

Welcome! This year we are celebrating the 12th anniversary of the Carolina Women's Health Research Forum! Thank you to all the participants and attendees who support this forum at the 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 USC and Prisma Health. Please take a moment to review the members of the Forum Steering and Scientific Committees.

Today's keynote speaker is Heather Weiss, JD. Her presentation will focus on "The Health Care Bridge to Addressing Human Trafficking in South Carolina". Heather has served as Senior Assistant Deputy Attorney General for the SC Attorney General's Office working in State Grand Jury and General Prosecution since January of 2011. Heather's division runs the SC Human Trafficking Task Force, provides outreach on Human Trafficking, and got the first Human Trafficking convictions in the State.

Transformative conversations will take place around our theme for the day, "Violence Against Women." Our panel discussion will be led by diverse professionals sharing their expertise from the fields of Prevention and Advocacy Student Services, Psychiatry, Gender-Based Violence and Adolescent Rights Law, and State and Local Policy.

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 OB/GYN resident physicians and 2019 Carolina Women's Health Research Forum poster award winners will provide selected oral presentations. A light lunch 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.

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

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Associate Professor, Obstetrics and Gynecology
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Adjunct Associate Professor, Health Promotion, Education, & Behavior
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Associate Professor and Chair, Cell Biology and Anatomy
USC School of Medicine

Bernadine Pinto, Ph.D.

Associate Dean for Research and Professor
USC School of Nursing

Caroline Hartnett, Ph.D.

Assistant Professor, Sociology and Women's and Gender Studies
USC College of Arts and Sciences

2019 Carolina Women's Health Research Forum Speakers



Heather Weiss, JD, *Keynote Speaker*

Heather Weiss has served as Senior Assistant Deputy Attorney General for the SC Attorney General's Office working in State Grand Jury and General Prosecution since January of 2011. She has prosecuted a range of cases including murders, human trafficking, child abuse, insurance fraud, narcotics and public corruption throughout the state of SC. Heather's division runs the SC Human Trafficking Task Force, provides outreach on Human Trafficking, and got the first Human Trafficking convictions in the State as well as the first State Grand Jury indictments and convictions for Human Trafficking. Heather is currently working with the courts to address the issues surrounding adolescent victims of trafficking in the juvenile court system.



A. Katie Reid, MSW, *Panel Moderator*

Annie Kathleen “Katie” Reid is the Director of Systems Advocacy and Prevention at the South Carolina Coalition Against Domestic Violence and Sexual Assault (SCCADVASA). Katie works to collaborate with state and local allies to advocate for the rights of survivors of sexual and intimate partner violence and to break down systemic barriers to equal services to all victims. A graduate in Social Work from New York University (BSSW, '00) and the University of South Carolina (MSW, '03), Katie has over 15 years of experience working in social justice advocacy and working for systemic change. Her experience brought her to Tanzania, where from 2011-2015 she worked with organizations and programs to support the development and equality of Tanzanian women and girls. Katie was lead author on The Evolution of a Sexual Assault Program, published in the January 2012 edition of The Sexual Assault Report, is a former adjunct Social Work professor at the University of South Carolina's School of Social Work, and has facilitated many state-wide conferences and served on state-wide advisory boards.



Marguerite O'Brien, MSW, ACSM-CPT, RYT-200, *Panel Member*

Marguerite O'Brien is the Director of Wellness, Prevention and Advocacy Services with Student Health Services at the University of South Carolina. She earned her Bachelor's and Master's degrees from USC and is proud to be working at her alma mater. In addition to serving on university committees such as the Provost's Advisory Committee on Women's Issues and the Diversity and Inclusion Advisory Council, Marguerite provides supervision to MSW students, is a University 101 instructor, and leads mindfulness sessions on campus. She is trained in Mindfulness Based Stress Reduction (MBSR) and is a trained True Colors® facilitator. Marguerite serves on national committees through the American College Health Association, and is President of the Southern College Health Association.

Prior to working at USC, Marguerite was the Executive Director of City Year, Columbia, National Program Coordinator for City Year, Inc. and a Wellness Coordinator at Lexington Medical Center. Marguerite is also a certified personal trainer, fitness and Yoga instructor. She is active in the community and volunteers regularly with the American Red Cross and the Women's Shelter.



Eric Williams, MD, *Panel Member*

Eric Williams is the Assistant Dean for Student Affairs and the director of the Introduction to Clinical Medicine first-year medical student course at the University of South Carolina School of Medicine. He also co-teaches a junior/senior pre-med undergraduate class entitled "Transitioning to Medical School." His practice includes working with an ACT team and seeing adolescent and young adult patients.

He earned his medical degree from the Wake Forest University School of Medicine and completed his general residency and child and adolescent fellowship with the Palmetto Health Alliance/University of South Carolina School of Medicine. He worked in an academic setting, an inpatient setting, in juvenile justice, college student mental health, and as a traveling psychiatrist prior to his current positions. His after-hours job is as a BodyStep and BodyAttack group exercise instructor at Müv Fitness.



Lisa Martin, JD, *Panel Member*

Lisa Martin is an assistant professor at the University of South Carolina School of Law. She specializes in legal issues relating to gender-based violence, the rights of adolescents and the regulation of the family. Her scholarship draws from her experiences advocating for adults and adolescents who have been subjected to dating and domestic abuse, sexual assault and stalking. She also has experience working with families living in poverty.

Prior to joining the University of South Carolina faculty, Professor Martin was a member of the faculty at The Catholic University of America, Columbus School of Law, where she was the Co-Director of the Families and the Law Clinic, the Director of the Experiential Curriculum, and taught Gender, Law, and Policy. Prior to that, she taught International Rights of Women as a lecturer at the George Washington University Law School, directed the Teen Dating Violence Program at Women Empowered Against Violence (WEAVE) in Washington, D.C., and practiced as a litigation associate at Arent Fox LLP. Professor Martin received her B.A., *magna cum laude*, from the College of William and Mary, and her J.D., *cum laude*, from the Georgetown University Law Center.



Deborah Billings, PhD, *Panel Member*

Deborah L. Billings, PhD, worked as Senior Research and Evaluation Associate with Ipas, collaborating with health systems as well as youth, women's, and feminist organizations throughout Africa and Latin America to improve sexual and reproductive health services. She served as Assistant Professor in the Arnold School of Public Health and Women's and Gender Studies at the University of South Carolina before becoming Director of a statewide contraceptive access initiative known as Choose Well. She now works as an independent consultant with local, national, and global agencies, focused on issues including immigration and refugee policies as well as sexual and reproductive health and rights, with an emphasis on preventing violence against women.

Special Acknowledgements

We extend a special thank you to our sponsors and supporting organizations!



WREN

Office of the Vice President for Research



We wish to acknowledge the support of the University of South Carolina School of Medicine in providing poster display stands for the Forum poster session.



UNIVERSITY OF
SOUTH CAROLINA
School of Medicine



Schedule of Events

- 7:30 – 8:45 a.m. Poster hanging
Registration
- 9:00 – 9:15 a.m. Welcome and Opening Remarks
Fleming Mattox, MD
Forum Chair
Associate Professor, Obstetrics and Gynecology
Palmetto Health-USC Medical Group
- Judith Burgis, MD
Academic Chair, Obstetrics and Gynecology
Palmetto Health-USC Medical Group
- 9:15 – 10:15 a.m. Keynote Presentation
The Health Care Bridge to Addressing Human Trafficking in South Carolina
Heather Weiss, JD
Senior Assistant Deputy Attorney General
SC Attorney General's Office
- 10:15 – 11:00 a.m. Poster Session – Part 1
- 11:00 – 11:30 a.m. Resident Research Presentations
- Retrospective Review of Etonogestrel Implantable Device Retention Rates*
Andrew Mather, MD
OBGYN Resident, PGY3, Prisma Health / USC School of Medicine
- Preterm Labor Assessment Toolkit (PLAT) Pilot Study at Prisma Health Richland Hospital*
Chandler Finney Inabinet, MD
OBGYN Resident, PGY3, Prisma Health / USC School of Medicine
- 11:30 – 12:30 p.m. Networking Lunch
- 12:30 – 1:15 p.m. Poster Session – Part 2
- 1:15 – 2:15 p.m. Panel Presentation
Prevention, Policy and Protection
A. Katie Reid, MSW

Panel Moderator
Director, Systems Advocacy and Prevention
South Carolina Coalition Against Domestic Violence and Sexual Assault
(SCCADVASA)

2:15 – 2:45 p.m. Resident Research Presentations

The First Year of Postplacental IUD placement in a Tertiary Care Center
Katelyn Parnell, MD
OBGYN Resident, PGY3, PrismaHealth / USC School of Medicine

2:45 – 3:30 p.m. Oral Research Presentations
2019 Forum Poster Award Winners

Best Student Poster

Gender Differences in Calcific Aortic Valve Disease
Nadia Al-Sammarraie, MBChB, MS, PhD Candidate
Department of Cell Biology and Anatomy
University of South Carolina School of Medicine

Best Basic Science Poster

MiR-155 in the Regulation of Mast Cell Mediator Release by Resveratrol
Zahraa Mohammed, PhD Candidate
Department of Pathology, Microbiology, and Immunology
University of South Carolina School of Medicine

Best Clinical Science Poster

Longitudinal Associations Between Symptom Domains of Attention Deficit-Hyperactivity Disorder and Body Mass Index From Late Childhood to Early Adulthood
Bezawit Kase, PhD Candidate
Department of Epidemiology, Arnold School of Public Health
University of South Carolina

Best Social Science Poster

Sexual Assault, Depressive Symptoms and Adherence to Antiretroviral Therapy Among Women Living With HIV In South Carolina: A Mediation Analysis
Monique Brown, PhD, MPH, Assistant Professor
Department of Epidemiology and Biostatistics, Arnold School of Public Health
University of South Carolina

3:30 p.m. Summary and Closing Remarks
Fleming Mattox, MD

Conference Abstracts

(Listed Alphabetically by First Author)

Al-Sammarraie N, Johnson J, and Azhar M GENDER DIFFERENCES IN CALCIFIC AORTIC VALVE DISEASE

Boswell E DOES SEXUAL VIOLENCE HAVE A GREATER EFFECT ON FEMALE ADOLESCENTS?

Brown M, Harrison SE, and Li X SEXUAL ASSAULT, DEPRESSIVE SYMPTOMS AND ADHERENCE TO ANTIRETROVIRAL THERAPY AMONG WOMEN LIVING WITH HIV IN SOUTH CAROLINA: A MEDIATION ANALYSIS

Browne T, King B, Christopher R, DeHart D, and Iachini A THE ORGANIZATIONAL IMPACT OF RURAL SUBSTANCE USE DISORDER AGENCY CAPITAL EXPENDITURES IMPROVEMENTS

Burton D, Kimsey J, Riva BD, and Secrest L NAVIGATING THE POSTPARTUM CONTRACEPTIVE COURSE

Christopher RL, King LB, Reitmeier MC, Browne T, and Iachini A OPIOIDS & MEDICATION ASSISTED TREATMENT (MAT): CONSIDERATIONS FOR MOTHERS, FAMILIES, & PROVIDERS

Claire J, Sims K, Seal P, and Poole S TREATMENT OF POSTPARTUM FEVER WITH POSTPLACENTAL IUD IN SITU

Cook J, Steverson K, Burgis J, and Steinauer J AN INTRODUCTION TO THE MEDICAL MANAGEMENT OF OBESITY IN WOMEN'S HEALTH AND THE MANAGEMENT OF THE POST-BARIATRIC SURGERY DURING PREGNANCY

Cox DAL, Heiney SP, and Baliko B AN EVIDENCE-BASED PRACTICE CHANGE TO INCREASE PROVIDER ADHERENCE TO MAMMOGRAPHY GUIDELINES WITHIN A LOCAL PRIMARY CARE PRACTICE

Cram E LACK OF EVIDENCE-BASED PRACTICE IN ADULT ANOREXIA NERVOSA TREATMENT: AN OVERVIEW AND SUGGESTIONS

Dixon R and Wearing B INCREASING ACCESS TO CONTRACEPTIVE OPTIONS ON SOUTH CAROLINA COLLEGE CAMPUSES

Inabinet CF and Sims K CASE REPORT: RECURRENT ASCITES IN A REPRODUCTIVE AGE FEMALE

Karim S, Liu J, Merchant A, Chen L, Truong K, and Shi L ASSOCIATION OF MATERNAL GESTATIONAL DIABETES AND RISK OF ABNORMAL BLOOD GLUCOSE IN CHILDREN IN EARLY LIFE.

Karim S, Zhang Z, Lohman M, Richard C, and Liu J DOES PRENATAL PHYSICAL ACTIVITY MODIFY ASSOCIATION BETWEEN STRESS DURING PREGNANCY AND POSTPARTUM DEPRESSION?

Kase BE, Rommelse N, and Hartman CA LONGITUDINAL ASSOCIATIONS BETWEEN SYMPTOM DOMAINS OF ATTENTION DEFICIT-HYPERACTIVITY DISORDER AND BODY MASS INDEX FROM LATE CHILDHOOD TO EARLY ADULTHOOD

Liu J, Broadway A, Boghossian N, McLain A, Karim S, and Richard C LEISURE-TIME PHYSICAL ACTIVITY BEFORE AND DURING PREGNANCY AND PRETERM BIRTHS IN SOUTH CAROLINA, 2009-2015

London OE and Reid AKW IMPROVING HEALTH OUTCOMES AND CONTRACEPTIVE ACCESS BY ADDRESSING REPRODUCTIVE COERCION IN INTIMATE PARTNER VIOLENCE

Mather AR and Judith B RETROSPECTIVE REVIEW OF ETONOGESTREL IMPLANTABLE DEVICES

McCaskill A, Inabinet CF, Tomlin K, and Burgis J PRE-PUBERTAL GENITAL BLEEDING: EXAMINATION AND DIFFERENTIAL DIAGNOSIS IN PEDIATRIC FEMALE PATIENTS

McMullen TP, Turner-McGrievy G, Saunders RP, Liu J, and McIver-Cordon K DOES MARRIAGE, EMPLOYMENT, AND HAVING CHILDREN MATTER? A SECONDARY ANALYSIS ON PHYSICAL ACTIVITY LEVELS AND SOCIAL ROLES AMONG WOMEN IN THE UNITED STATES

Mohammed Z and Gomez GM IR-155 IN THE REGULATION OF MAST CELL MEDIATOR RELEASE BY RESVERATROL

Moran M and Davis B RECRUITING MEDICAID MEMBERS FOR A RANDOMIZED INTERVENTION TRIAL

Purser J and Bennett K RURAL-URBAN ZCTA-LEVEL SOUTH CAROLINA OB/GYN PROVIDER ANALYSIS

Seal P, Bingham D, Kimsey J, Locklear A, and Harding I IMMEDIATE POSTPARTUM UPTAKE OF LEVONORGESTREL IUD AFTER INTRODUCTION OF THE CHOOSE WELL INITIATIVE

Sevoyan M and Boghossian NS EFFECT OF GESTATIONAL AGE ON SUBSEQUENT PRETERM BIRTH

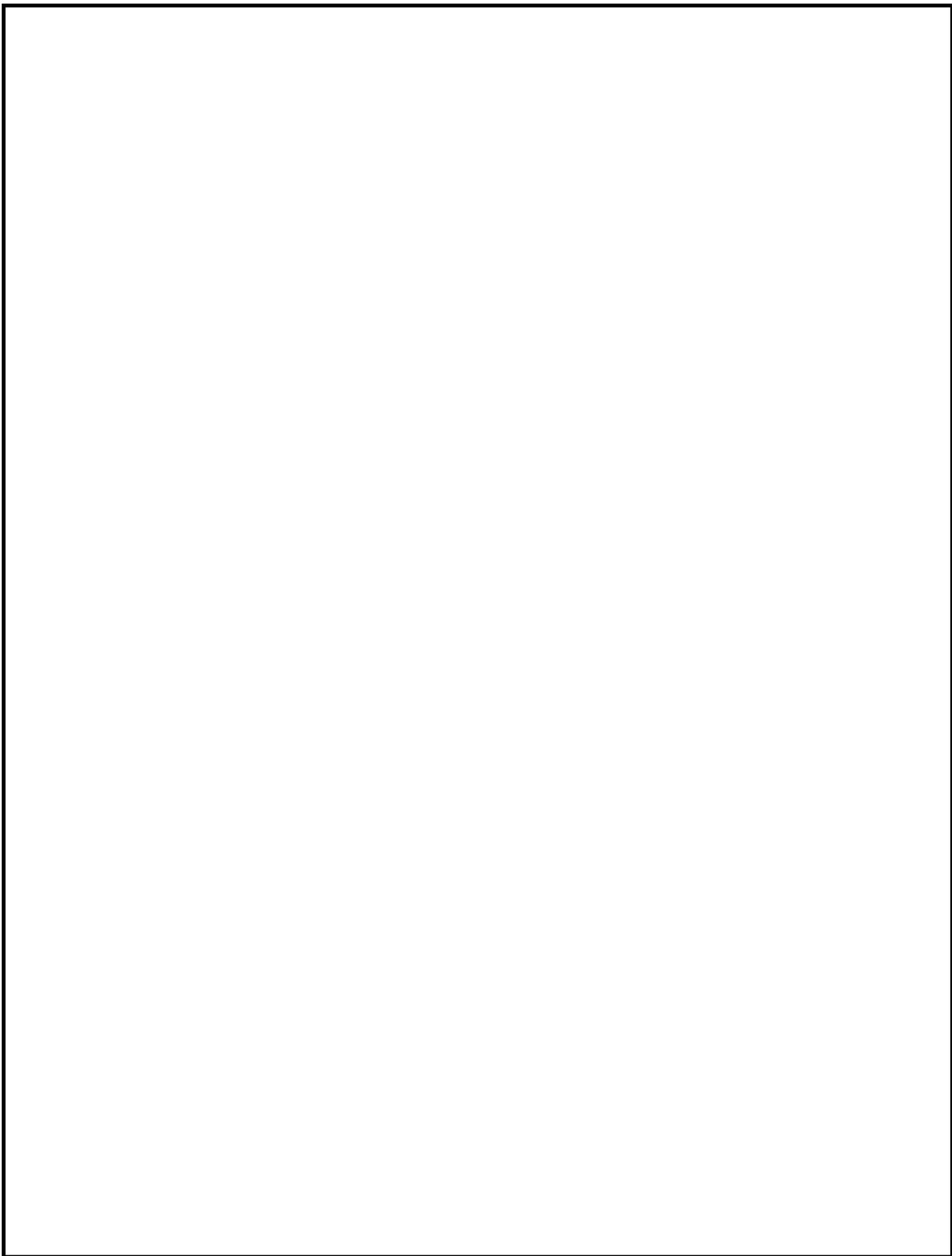
Sevoyan M and Boghossian NS RECURRENCE RISK OF PREGNANCY COMPLICATIONS
IN TWIN AND SINGLETON DELIVERIES

Tucker CM and Felder TM DISPARITIES IN NON-HISPANIC BLACK MATERNAL
MORTALITY: A LITERATURE REVIEW

Umasankar N, Tomlin K, and Burgis J VULVOVAGINAL IRRITATION IN A PEDIATRIC
PATIENT: USE OF PREMARIN TO TREAT KERATIN PEARLS

Wende ME, Liu J, McLain A, and Wilcox S TRENDS IN GESTATIONAL WEIGHT GAIN IN
SOUTH CAROLINA, 2004-2015

ABSTRACTS



GENDER DIFFERENCES IN CALCIFIC AORTIC VALVE DISEASE

Nadia Al-Sammarraie, John Johnson, and Mohamad Azhar

Department of Cell Biology and Anatomy, University of South Carolina School of Medicine,
Columbia, SC 29209

Abstract

Background and Significance: Calcific aortic valve disease (CAVD) is the most prevalent valvular heart disease and the leading cause of valve replacement in the United States. CAVD is characterized by progressive thickening and calcification of aortic valve with significant number of patients developing the aortic stenosis (narrowing of the aortic valve lumen) and impairment of heart function, which worsens with age. Age, gender, and cytokine dysregulation are potential risk factors for CAVD development. The exact causes and mechanisms of pathogenesis of CAVD remain to be fully determined. Clinical studies have shown that levels of transforming growth factor beta-1 (TGF β 1), a multifunctional cytokine and growth factor, is increased in the aortic valve tissue resected during valve replacement surgery of CAVD patients. Similarly, *in vitro* studies suggest a potential role of TGF β 1 in inducing calcification in aortic valve interstitial cells. Whether increased TGF β 1 causes CAVD in a gender-specific fashion remains unknown. In this study, we generated transgenic mice with bioactive TGF β 1 overexpression. Rigorous analysis and comparison of control and *Tgfb1* transgenic mice were done by histological and morphometric analyses for the age-dependent and/or gender-specific development and progression of CAVD.

Materials and Methods: Overexpression of *Tgfb1* in aortic valve interstitial cells using conditional knockout approach was further confirmed by PCR genotyping of the transgenic and non-transgenic mice. Histological analysis was performed on serial paraffin sections prepared from dissected aortic valves of age and gender matched (transgenic and control) mice. Histological and morphometric examination was assessed using Hematoxylin-Eosin and Pentachrome stains (for general histological features). Detection of calcium deposits was performed using Alizarin Red and Von kossa stains. Collagen content and organization was detected using Trichrome and Picosirius Red stains. Proteoglycan content was assessed using Alcian blue stain. TUNEL assay was used to quantify apoptosis in the cushion mesenchymal cells (progenitors of aortic valve cells) during heart development.

Results and Conclusion: Here we reported for the first time that *Tgfb1* overexpression *in vivo* causes CAVD initiation and progression in both female and male mice. Female mice show less calcification and valve thickening and do not develop aortic valve stenosis. In contrast, age-matched male mice show more extensive aortic valve calcification and thickening, and develop severe aortic valve stenosis in response to increased bioactive TGF β 1. Overall, our results establishes a gender-specific difference in the development and progression of CAVD and that female mice have regulatory mechanisms to minimize the degenerative effect of increased pathological levels of TGF β 1 and are protected against progression to aortic valve stenosis.

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DOES SEXUAL VIOLENCE HAVE A GREATER EFFECT ON FEMALE ADOLESCENTS?

Emma K. Boswell¹ and Myriam E. Torres², PhD, MSPH

¹College of Arts and Sciences

²Arnold School of Public Health (Epidemiology and Biostatistics and Consortium for Latino Immigration Studies)

University of South Carolina, Columbia, South Carolina

Abstract

Background and Significance: Intimate partner violence (IPV) and sexual assault have long been problems faced by women and girls on a global scale, and their effects are deep and far reaching. Sexual assault affects adolescents at a disproportionate rate (Tjaden & Thoennes, 1998). and has been linked with increased suicide ideation in teenagers (Cash & Bridge, 2009). While there have been some studies conducted using the results from the Center for Disease Control's YRBSS questionnaires regarding IPV and suicide ideation on a regional level, a national investigation into the association between IPV and suicidality is still needed. It has been several years since the last research regarding the effects of sexual assault on the mental health of teenagers was conducting, meaning new analysis is desperately needed. Additionally, many studies on the same topic have been unable to conclusively recognize differences in the association between IPV and suicidality across ethnic groups, due to a small number of minority respondents.

Methods: Over the past twenty years, the Center for Disease Control and Prevention has administered the Youth Risk Behavior Surveillance System (YRBS) questionnaire to U.S. high schools to learn more about various adolescent behaviors, such as sexual practices, drug and alcohol use, suicidal thoughts and behaviors, and other factors (Kann, et al., 2018). Data from the CDC's 2017 Youth Risk Behavior Surveillance System was used to conduct a statistical, bivariate analysis on the association between the experience of sexual assault and suicidality.

Results: 10.9% of female respondents reported having been forced to have sexual intercourse, 14.6% reported having experienced sexual violence, 9.9% reported having experienced sexual dating violence, and 9.9% reported having experienced physical dating violence. All these frequencies are higher than the frequencies reported by male respondents. Proportionately more females (41.2%) reported feeling sad and hopeless nearly every day for two or more weeks (41.2%) and seriously considered suicide (22.7%) when compared to males (21.7% and 12.2%, respectively). Among female adolescents, being forced to have sexual intercourse was significantly associated with feeling sad and hopeless daily for two or more weeks (OR=4.3; 95% CI= 3.6, 5.0) and having seriously considered suicide in the twelve months before the survey (OR=5.0; 95% CI= 4.3, 5.8).

Conclusion: Preliminary results indicate that women who have experienced some form of sexual assault or intimate partner violence are more likely to feel sad or hopeless for a significant length of time than both women who have not experienced this and men with similar experiences. In an age when more and more women are feeling empowered to share their stories of assault, the ramifications of their experiences on their mental health cannot be underestimated.

Organizations such as universities should keep these findings in mind when interacting with

young people who are depressed or suicidal, and approach them about these subjects appropriately.

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Category: Social Science

*This research will be presented at Discover USC in April 2019.

SEXUAL ASSAULT, DEPRESSIVE SYMPTOMS AND ADHERENCE TO ANTIRETROVIRAL THERAPY AMONG WOMEN LIVING WITH HIV IN SOUTH CAROLINA: A MEDIATION ANALYSIS

Monique J. Brown,^{1,2} Sayward E. Harrison,^{2,3} Xiaoming Li^{2,3}

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Abstract

Background and Significance: One in three women in the US will report sexual violence in their lifetime, placing them at risk for negative mental health outcomes, including depression. For women living with HIV, depressive symptoms associated with sexual assault may negatively impact their adherence to antiretroviral therapy (ART). ART adherence is critical in achieving and maintaining viral suppression, as well as preventing secondary transmission of the virus. However, research examining the potential mediating role of depressive symptoms in the association between sexual assault and ART adherence is lacking. Therefore, the aim of this study was to evaluate the mediating role of depressive symptoms in the relationship between sexual assault and ART adherence among women living with HIV in South Carolina.

Methods: Data were obtained from 123 women living with HIV in South Carolina who were receiving HIV care from a large immunology clinic from May to September 2018. Path analyses were conducted in Mplus version 8, adjusting for age, race, ethnicity, education and income.

Results: After adjusting for age, race, ethnicity, education and income, sexual assault was negatively associated with ART adherence ($\beta = -0.296$; $p = 0.005$). The association between sexual assault and depressive symptoms ($\beta = 0.118$; $p = 0.069$), and depressive symptoms and ART adherence ($\beta = -0.097$; $p = 0.387$) were not statistically significant. Depressive symptoms did not statistically significantly mediate the association between sexual assault and ART adherence ($\beta = -0.019$, $p = 0.435$).

Conclusions: Among a clinic sample of women living with HIV in South Carolina, the experience of sexual assault was directly associated with lower ART adherence. This negative correlation should be further explored, since adherence is critical for maintaining health and preventing secondary transmission of the virus. Contrary to expectations, depressive symptoms did not play a statistically significant mediating role in this relationship. This finding may be due to all women in the study receiving comprehensive, integrated HIV care. The results suggest that interventions aimed at improving ART adherence are warranted for women living with HIV who have experienced sexual assault. Future research is needed to determine alternative mediating factors to identify modifiable variables that may serve as targets of these interventions.

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Category: Social Science

NAVIGATING THE POSTPARTUM CONTRACEPTIVE COURSE

Daniel Burton¹, Julia Kimsey, BSN, RNC-OB²; Beth Dall Riva BSN, RN³; Lynn Secrest, BSN, RNC⁴

¹New Morning Foundation, Columbia, SC; ²Palmetto Health Richland, Columbia, SC; ³McLeod Regional Medical Center, Florence, SC; ⁴Spartanburg Regional Healthcare System, Spartanburg, SC

Abstract

Description: More than 50% of pregnancies in South Carolina are unintended. Unintended pregnancies and births have health, economic and societal consequences for women and for our state as a whole. The financial impact of unintended pregnancy costs South Carolina hundreds of millions each year. In 2017, the Choose Well Initiative awarded grants to 4 SC hospitals to implement an Immediate Postpartum (IPP) contraceptive program to ensure that delivering mothers received individualized family planning counseling during their hospital stay and that they – regardless of their ability to pay – had access to all methods of birth control before discharge. Choose Well is a statewide initiative seeking to reduce unintended pregnancy by developing and disseminating culturally appropriate information about all contraceptive methods, thereby increasing access to contraceptive counseling and clinical services.

Methods: This presentation will highlight the work of three hospitals and the creation of the role of the “OB Navigator.” The OB Navigator is a registered nurse responsible for implementing the Choose Well Initiative’s IPP contraceptive program. In addition to coordinating training for providers, nurses, and hospital staff, the OB Navigator counsels women on their choices for contraception with a focus on highly effective methods of contraception using a shared decision-making model. By increasing awareness and engagement on multiple levels in the hospital setting, the OB navigator works to create a culture where delivering mothers consistently have access to high-quality counseling and birth control.

Results: From January 2018 through July 2018, 1,585 postpartum women have received both quality, and comprehensive contraceptive counseling. Of those women, 518 women (33%) have received a highly effective method of birth control (IUD or implant) prior to hospital discharge. The remaining 67% have left with a better understanding of all options as it relates to their reproductive health, and where to access contraceptive care post discharge. This nursing model is empowering women to know their choices and helps with planning a future pregnancy or preventing an unintended one, thereby offering mom and baby a better chance at a healthier life.

Funding: The work reported in this initiative was supported by the New Morning Foundation.

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Category: Clinical Science

This work was presented at the NC/SC Perinatal Partnership Conference

OPIOIDS & MEDICATION ASSISTED TREATMENT (MAT): CONSIDERATIONS FOR MOTHERS, FAMILIES, & PROVIDERS

Rebecca L. Christopher, L. Bailey King, Melissa C. Reitmeier, Teri Browne, Aidyn Iachini
College of Social Work at the University of South Carolina

Background and Significance

In 2017, the Health and Human Services Department declared the opioid crisis a nationwide public health emergency with a new, five-point opioid strategy that listed improving access to prevention, treatment, and recovery support services as the top priority. As a result, scholarship regarding Medication Assisted Treatment (MAT) for the effective and safe treatment of Opioid Use Disorder (OUD) has exponentially grown due to this heightened national attention and funding agenda. Research and scholarship focusing on women, pregnancy, and infants is especially important given that the number of pregnant women with OUD at the time of delivery quadrupled from 1.5 per 1,000 delivery hospitalizations in 1999 to 6.5 per 1,000 in 2014. As the opioid crisis continues to impact individuals and families, more research and scholarly consideration is needed regarding OUD and the use of MAT with specialized populations.

Purpose: The purpose of this systematic literature review was to identify themes and gaps in research exploring MAT as an evidence-based approach to treat OUD from 2015-2018, in an effort to better direct practice and inform future research. **Method:** Using Academic Search Complete, Medline via PubMed, PsycINFO, Cochrane Library, Social Work Abstracts, Social Services Abstract, and Google Scholar, articles were identified using terms Medication Assisted Treatment, Opioid-Assisted Treatment, Opioid Use Disorder and Opioids. **Results:** The search yielded 1,115 articles of which 251 were included for analysis. Ten themes related to MAT and OUD emerged from these articles, including 1.) attitudes and stigma surrounding MAT and OUD, 2.) outcomes of MAT and OUD, 3.) MAT treatment modalities, 4.) international MAT treatment modalities, 5.) MAT and OUD practice recommendations, 6.) outcomes of OUD and MAT, 7.) OUD and MAT policy analyses, 8.) systematic literature reviews, 9.) concurrent substance use research while also testing OUD and MAT, and 10.) conceptual pieces regarding OUD and/or MAT and OUD. Of the included articles, 38 pertained to women, pregnancy, and infants. **Discussion:** Most MAT and OUD scholarship centers on population-specific studies, attitudes and stigma surrounding MAT and OUD, and the outcomes of MAT alone and/or in combination with another form of therapy. Limitations noted consistently across scholarship relate to the availability of MAT interventions, stigma barriers, and the negative multi-behavioral health implications due to inaccessibility to MAT in general.

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Category: Social Science

TREATMENT OF POSTPARTUM FEVER WITH POSTPLACENTAL IUD IN SITU

Jillian Claire, MD; Kerry Sims, MD; Patricia Seal, MD; Shannon Poole, MD
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Abstract

Postplacental IUDs are a popular and effective method of contraception in the postpartum period. Treating patients who develop suspected endometritis after placement of an IUD is a concern, as there have been limited cases reported in the literature. Options for treatment include immediate removal of the IUD or antibiotic therapy with the IUD in place. We report five cases in which patients were treated for suspected postpartum endometritis while the IUD remained in place. In all but one of the cases, the patients recovered without removal of the IUD

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SAAOG Annual Meeting, January 26-29 2019
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AN INTRODUCTION TO THE MEDICAL MANAGEMENT OF OBESITY IN WOMEN'S HEALTH AND THE MANAGEMENT OF THE POST-BARIATRIC SURGERY DURING PREGNANCY

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Key Words: Bariatric Surgery, Obesity, Pregnancy, Woman's Health

Evidence-Based Education Project:

Problem: There is lack of knowledge among medical students about the effects of bariatric surgery on pregnancy and the medical management of obesity as it relates to women's health. Additionally, there is bias toward obese patients among clinicians and learners.

Intervention: We are designing a flipped classroom learning experience focused on teaching medical students about the impact and management of obesity and bariatric surgery on pregnancy and women's health, with the use of pre-reading and clinical vignettes. Students will take the Implicit Attitude Test (IAT) before the seminar and will be asked to read two review articles; an ACOG Practice Bulletin and Endocrine Society Practice guideline. During a 60-minute, in-person seminar students will first work in small groups to discuss clinical vignettes and answer questions/design treatment plans (45 minutes), and then will discuss their results on the IAT and how bias may affect patient care. Faculty preceptors will oversee the work and lead discussion.

Context: This will occur as part of the third-year ob-gyn clerkship curriculum.

Outcome/Lessons Learned: We will measure basic knowledge about obesity and bariatric surgery (using pre- and post-seminar quizzes, with facts taken from the pre-reading and learning objectives), and their impacts on pregnancy and women's health. We will also assess students' feelings about the seminar's discussion regarding bias toward obese patients during the post-seminar quiz.

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AN EVIDENCE-BASED PRACTICE CHANGE TO INCREASE PROVIDER ADHERENCE TO MAMMOGRAPHY GUIDELINES WITHIN A LOCAL PRIMARY CARE PRACTICE

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Background/Significance: Breast cancer is the most prevalent cancer among women ages 18 to 64 years of age. Mammography screening is the most effective method for early detection of breast cancer which decreases mortality and morbidity. The American Cancer Society recommends women ages 45 to 54 be screened annually and women age 55 and older to have biennial screening.

Methods: The plan, do, study and act process (PDSA) was utilized to examine current guideline concordant care in the practice and develop changes to improve recommendations for mammography. The planning phase included observation of current clinic practices and examination of medical records. Data from this work indicated that only 12% of women received an order for mammography. Process observation of clinic flow and examination of the EMR noted that no system was in place to alert the provider to the need for the mammogram. We initiated a patient checklist that was given to the patient at reception for check-in. The patient was instructed to give the checklist to the provider who will review and then counsel the patient about breast cancer prevention. Based on this plan, the PICOT was as follows: Among providers at the clinic, does the use of a patient screening checklist increase use of breast cancer screening guidelines for women aged 40 or older at average risk for breast cancer?

Results: The implementation phase occurred in the spring of 2018. The results of the second chart audit revealed an increase in provider adherence to mammography guidelines. The analysis of the audit was calculated as a percentage. A total of 79 electronic medical records were examined. The percentage of women whom a mammogram was recommended and ordered was 69.6%. This represents a statistically significance increase from the original chart audit conducted in May 2017. The screening checklist demonstrated effectiveness in increasing provider adherence to mammography guidelines.

Conclusions/Implications: Increasing guideline concordant screening guidelines may increase early detection of breast cancer. A paper checklist is a feasible method to improve provider adherence to breast cancer screening. Additionally, since other preventive parameters were included on the screening checklist, it could be used to evaluate and improve adherence to other screening and immunization guidelines. Further, a new EMR is being developed for implementation in the practice. This new EMR will incorporate an electronic version of the screening checklist which should have increased impact on adherence to screening guidelines and provision of preventive care by primary care providers.

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Abstract has been presented previously

LACK OF EVIDENCE-BASED PRACTICE IN ADULT ANOREXIA NERVOSA TREATMENT: AN OVERVIEW AND SUGGESTIONS

Elouise Cram, Master's Candidate

BACKGROUND & SIGNIFICANCE: Anorexia nervosa (AN) and associated eating disorders (ED) including binge eating disorder, bulimia nervosa, and eating disorder not otherwise specified affect over 11 million Americans annually, however only one in four women diagnosed with an eating disorder seeks treatment. The number of psychiatric and private beds available in hospitals for patients with eating disorders has increased in the past ten years, however the implementation of evidence-based treatment has not followed this developmental trend. This literature review examines the state of evidence-based practice (EBP) in adult anorexia nervosa treatment.

METHODS: The primary search engines used for this literature review were EBSCO Academic Search Complete and PubMed. The literature search was conducted using the key words “anorexia nervosa treatment” and “treatment modalities anorexia nervosa.” Overall, the most significant challenge in writing the literature review stemmed from the lack of quality, definitive research surrounding AN treatment.

RESULTS: Evidence-based practice in eating disorder treatment, like EBP in other psychopathologies, has three categories—provider expertise, client experience, and research evidence—which are taken into consideration when evaluating the most effective practice to use for a patient. The congruence of these factors is difficult to find in eating disorder treatment; often practices and treatment centers employ unsearched and unfounded treatment methods to treat patients. This lack of EBP is extremely detrimental to patients with AN, taking into consideration AN is the psychiatric illness with the highest rate of mortality.

CONCLUSION: This literature review suggests a lack of evidence-based practice in eating disorder treatment. The lack of a gold standard for treatment is extant throughout the literature—demonstrated by inconclusive studies and subjective results. Treatment modalities for EDs, specifically AN, are targeted toward short-term outcomes. Overall, follow-ups for treatment modality efficacy studies have shown remission rates at just 49%, leaving a significant percentage of AN patients uncured or still highly symptomatic. The highly systemic and chronic nature of AN symptoms attest to the difficulty of treatment, however 49% of patients' providers were not able to agree on a universal treatment method for these patients. Previous studies report the diversity of treatments for other EDs is broader and better researched than those for AN. Most clinicians prefer to rely on their own personal experiences to make treatment decisions rather than consult scientific resources or prior studies.

Multiple different, alternative approaches to eating disorder treatment have been proposed in the literature, including the use of recovery stories and the targeting of perfectionistic tendencies. Overall, the most significant challenge in writing the literature review stemmed from the lack of quality, definitive research surrounding AN treatment. As the neurobiological determinants of AN are being identified and researched, the recent bulk of literature focuses on this and not the actual treatment process. Additionally, very little research is extant on adults with AN, so it was difficult to filter out research targeting adolescents with the condition. The lack of evidence-based practice (EBP) in eating disorder treatment is evident in the literature; inconclusive studies and subjective results are extant. The impact of this literature gap is significant—without the

proper knowledge of effective treatments for AN, patients must instead rely on experimental and unsupported treatments for the condition.

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INCREASING ACCESS TO CONTRACEPTIVE OPTIONS ON SOUTH CAROLINA COLLEGE CAMPUSES

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Abstract

Background and Significance: Unintended pregnancies are the highest among women between the ages of 18 and 24 years old in the United States. Colleges and universities are positioned with ideal opportunities to assist with reducing unintended pregnancy by addressing some of the barriers to obtaining contraception in their health centers, lack of knowledge about available options, financial constraints and logistical barriers to receiving a desired method. In collaboration with the Choose Well, a four-year contraceptive access initiative, the South Carolina Campaign to Prevent Teen Pregnancy (SCCTPTP) has partnered with six college campuses across the state to assist with increasing access to contraceptive options for women of reproductive age. In doing so, this project attempts to minimize some barriers through marketing and outreach, training and technical assistance and financial support for contraceptives, in effort to improve access and increased patient knowledge.

Methods: The SCCTPTP collaborated with partnering college campus health centers by offering trainings and individualized technical assistance on providing contraceptive care for young women. The second tier involved a directive marketing campaign, WhoopsProofSC, targeting college women. This marketing campaign provided communication materials – paid advertising on student media channels where available, posters and other digital advertising and collateral materials to promote the health center and the availability of contraceptive options. We obtained 2018 data from the health center examining reproductive health services appointments made and number of females leaving the health center with a most or moderately effective contraceptive method.

Results: Through collaboration with the Choose Well Initiative and the SCCTPTP, college campus health center saw an increase in the number of young women using a most effect method of contraception. Among participating colleges receiving the three-tier approach, 659 females reported using the most effective method (long-acting reversible contraceptives, LARCs) while 4,104 females reported using a moderately effective method. So in total 4,763 women reported using a most or moderately effective method at 3 participating college campus health centers, showing a clear and promising value in utilizing a three-tier approach involving technical assistance, marketing and funding for devices.

Conclusion: The success in collaboration and increase in access of contraception on South Carolina college campuses will continue to improve the unintended pregnancy prevention efforts. Examples of this includes the enhanced contraceptive care services in participating college health centers and increased access to contraceptive options and services by providing free or low-cost contraception to students.

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CASE REPORT: RECURRENT ASCITES IN A REPRODUCTIVE AGE FEMALE

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Background:

Endometriosis is a chronic condition characterized by the implantation of endometrial glands and stroma on tissues outside of the uterine cavity. It affects approximately 6-10% of reproductive age women. While exceedingly rare, endometriosis may present with recurrent hemorrhagic ascites.

Case:

A 27-year-old African American G0, with a past medical history significant for endometriosis, ovarian cysts s/p right oophorectomy, and irritable bowel syndrome, presented to the Emergency Department with a chief complaint of a syncopal event at home. On evaluation, she reported abdominal pain and distention of three months duration. A CT scan revealed a large volume of ascites, cystic areas in the left adnexa, exophytic uterine lesions, and a fluid distended endometrial cavity. In addition, minimal nodularity was noted along the anterior omentum. A pelvic ultrasound showed a dominant follicle within the left ovary and a benign appearing cyst measuring up to 4.2 cm in size. A large volume of ascites was noted, with its origin listed as being "indeterminate." A right upper quadrant ultrasound revealed several small subcentimeter hepatic cysts. On exam, the patient was noted to have a distended abdomen that was tender to palpation with a positive fluid wave sign. Speculum exam was unremarkable. Bimanual exam revealed an 8-week sized, immobile, and irregularly shaped uterus. Her uterus and right adnexa were tender to palpation.

Three weeks prior, she underwent a paracentesis at an outlying facility, where 2050 cc of "dark red fluid" was removed. A repeat paracentesis was performed at the time of presentation with another 2260 cc of fluid evacuated. Ovarian tumor markers were negative. The initial pathology report was notable for hemosiderin laden macrophages.

When the patient failed to respond to multiple doses of Depo-Provera® 150mg, she was dispositioned for operative intervention. Intraoperatively, 1 liter of hemorrhagic ascites was removed. Findings included significant endometriosis throughout the abdomen and pelvis, as well as extensive adhesive disease. The final pathology report from the operative specimens confirmed the diagnosis of endometriosis.

Conclusions:

Abdominal ascites that mimics ovarian neoplasm in reproductive age females may be secondary to endometriosis.

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PRETERM LABOR ASSESSMENT TOOLKIT (PLAT) PILOT STUDY AT PRISMA HEALTH RICHLAND HOSPITAL

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Abstract

Background and Significance: Preterm birth, defined as delivery between 20 weeks and 0 days gestation and 36 weeks and 6 days gestation, is the leading cause of neonatal mortality and is the most common reason for antenatal hospitalization. In the United States alone, roughly 12% of all births occur preterm, which are preceded by preterm labor approximately 50% of the time. In addition, preterm delivery accounts for a significant burden on healthcare resources due to its associated morbidity and mortality. Studies have shown that preterm birth accounts for 70% of neonatal deaths, 36% of infant deaths, as well as 25-50% of cases of long-term neurologic impairment in children. The purpose of this study was to implement a Preterm Labor Assessment Toolkit, or PLAT, at Prisma Health Richland Hospital to standardize the assessment and management of patients presenting to Labor and Delivery (L&D) triage with complaints of preterm labor. By streamlining the triage process, it was hypothesized that it would allow for more efficient evaluation and management of patients presenting with complaints of preterm labor in an effort to improve quality and outcomes of both mothers and neonates. In addition, the aim of the study was to evaluate the current practices between obstetrics providers in regards to the triage and management of patients presenting with complaints of preterm labor both before and after the implementation of PLAT.

Methods: A retrospective chart review was conducted on patients presenting to L&D triage over a two month time period with signs and symptoms of preterm labor, both before and after the implementation of the PLAT protocol. A total of 46 patients were included in the pre-implementation data from the months of October and November 2017. A total of 37 patients were included the post-implementation data from the months of November and December 2018. In addition, pre-implementation and post-implementation surveys were sent to all practicing obstetrics providers at Prisma Health Richland Hospital, including all OB/GYN resident and attending physicians, family medicine resident and attending physicians, as well as L&D nurses. The purpose of the survey was to evaluate the providers' knowledge about the assessment and management of patients presenting with preterm labor symptoms before and after the PLAT protocol was implemented.

Results: Following the implementation of the PLAT protocol, patients presenting to L&D triage with complaints of preterm labor were less likely to receive antenatal corticosteroids and magnesium for fetal neuroprotection during the assessment period prior to the diagnosis of preterm labor. The number of patients admitted for preterm labor, who were eventually discharged home undelivered was not statistically significant between the two groups. There was also no difference in the examination tools used to evaluate for preterm labor.

Discussion: Implementation of the PLAT protocol on L&D at Prisma Health Richland Hospital led to a statistically significant decrease in the amount of unnecessary medications patients received prior to the diagnosis of preterm labor, presumably leading to decreased cost. In addition, the study revealed that even though less medications were provided, there was no difference in the number of patients that were admitted and discharged home eventually undelivered. Thus, by streamlining the evaluation and management of patients presenting with preterm labor may be more efficiently and appropriately triaged.

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ASSOCIATION OF MATERNAL GESTATIONAL DIABETES AND RISK OF ABNORMAL BLOOD GLUCOSE IN CHILDREN IN EARLY LIFE.

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Background: Gestational diabetes mellitus (GDM), a common pregnancy complication, affects 4-8% of pregnant women. The hyperglycemic intrauterine environment significantly impacts the developmental health and wellbeing of the offspring extending from infancy through adulthood. Yet the evidence is mostly focusing on late childhood or adulthood, few studies have examined the abnormality that occurs in early childhood among offspring born to mothers with diagnosis of GDM. **Objective:** The objective of this study is to examine whether offspring born to mothers with GDM diagnosis had higher abnormal blood glucose levels in early childhood (i.e. birth to 5 years of age), and whether this relationship varied by mother's age and offspring's gender. **Methods:** A retrospective cohort was established using electronic medical records from two large hospitals in South Carolina, restricting to women aged 15 to 45 years who delivered a singleton live birth between January 2007 and April 2017, and offspring who had at least one laboratory test done during the five-year follow-up period starting from the delivery. In addition to demographic characteristics for mothers and offspring, the database also included hospital visit, medical diagnosis and laboratory results for both mothers and offspring over the follow-up. Maternal diagnosis of GDM during the index pregnancy was assessed using ICD-9-CM or ICD-10-CM codes. Abnormal blood glucose for the offspring was defined as blood glucose level being above standardized normal level. Offspring were classified into three groups based on glucose testing: 1) children who were tested for glucose and had at least one abnormal glucose testing results, 2) children who were tested for glucose but had a normal glucose testing reading, and 3) children who completed a lab test other than blood glucose testing (reference category). Multinomial logistic regression models were used to examine the association between maternal GDM diagnosis and offspring's glucose testing results. **Results:** Out of 7910 mother-infant dyads, around 13% of the mothers diagnosed with GDM. Around 43% of these children were tested for blood glucose, and a majority of these children (73%) were followed up less than 1 year after delivery. The risk of children having an abnormal blood glucose was higher in children born to mothers had a diagnosis of GDM compared to those whose born to mothers without a GDM diagnosis after adjusting child's gender, maternal race, urban or rural and type of insurance [AOR: 1.35 (95% CI: 1.15-1.56)]. The association was similar among boys [AOR: 1.43 (95% CI: 1.14-1.78)] and girls [AOR: 1.27 (95% CI: 1.03-1.57)]. The association was significant among younger mothers (< 30 years old) [AOR: 1.67(95% CI: 1.29-2.15)] but not among older mothers (≥ 30 years). **Discussion:** Our findings suggest that maternal diagnosis of GDM was associated with increased risk of abnormal glucose in offspring's early childhood. **Public Health Implications:** We recommend that the blood glucose level of children born to mothers with GDM should be tested early in life. Early diagnosis can help prevent future complications associated with abnormal blood glucose in children in their adolescence or adulthood.

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This has been presented at DHEC Health Data Symposium, 2019.

DOES PRENATAL PHYSICAL ACTIVITY MODIFY ASSOCIATION BETWEEN STRESS DURING PREGNANCY AND POSTPARTUM DEPRESSION?

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Background: Due to the major life transition that accompanies pregnancy, 70% of pregnant women experience at least one stressful life event during their pregnancy. Prenatal stress is an important risk factor for postpartum depression. Prior studies suggest that physical activity during pregnancy may have protective effects on postpartum depression. Yet, it is not clear whether prenatal physical activity modifies the association between prenatal stress and postpartum depression.

Objective: This study aims to evaluate the possible modifying role of prenatal physical activity on the association between maternal stress and postpartum depression.

Method: Data came from the 2009-2011 South Carolina Pregnancy Risk Assessment Monitoring System restricting to women without a history of depression and those with a singleton birth (n=2455). Maternal stress was defined as reporting of ≥ 3 stressful life events out of 13 events occurring in the 12 months before her baby was born. Women were categorized as being physically active if they reported exercising ≥ 3 times a week during pregnancy. Women who scored ≥ 10 points on a three-item depression scale were considered as being depressed. Multiple logistic regression models were used to examine the associations between stress, physical activity during pregnancy, joint categories of these two on postpartum depression. Results were adjusted for race, insurance, BMI before pregnancy and gestational diabetes.

Results: In South Carolina, 34 % pregnant women were physically active during pregnancy. Over 10% of our sample reported postpartum depression, which was the highest among women who reported stress and were not physically active in pregnancy (39%), and the lowest among those who reported stress and were physically active in pregnancy (12%). Maternal stress was associated with a significant higher odds of postpartum depression (AOR 2.13, 95%CI 1.32-3.44). Compared to women who reported no stress in pregnancy and not being physically active, maternal stress was associated with higher odds of postpartum depression among women who were not physically active during pregnancy (AOR: 2.37, 1.39, 4.05). The odds of postpartum depression was reduced among women who reported both stress and being physically active (AOR: 1.27, 0.60-2.71) and among women who reported no stress but being physical active during pregnancy (AOR: 0.75, 0.38-1.50).

Discussion: Our study confirms maternal stress is a significant risk factor for postpartum depression. The results also indicate physical activity might potentially attenuate the harmful effects of prenatal stress on postpartum depression.

Public health implication: Future studies with a larger sample size and objective measurement (e.g. using accelerometer) of physical activity and standardized assessment of PPD are warranted to verify our findings. Promoting physical activity during pregnancy might possibly reduce the incidence of postpartum depression.

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LONGITUDINAL ASSOCIATIONS BETWEEN SYMPTOM DOMAINS OF ATTENTION DEFICIT-HYPERACTIVITY DISORDER AND BODY MASS INDEX FROM LATE CHILDHOOD TO EARLY ADULTHOOD

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Introduction: Overweight and obesity are disproportionately affecting individuals with Attention Deficit Hyperactivity Disorder (ADHD) resulting in poor health outcomes. It is currently unknown how this co-occurrence develops. We examined if changes in ADHD symptom domains predict changes in Body Mass Index (BMI) and vice versa from late childhood across adolescence up to early adulthood. **Methods:** Participants were adolescents ($n=2773$, 52.5% males, mean age=11 years at baseline, 5 waves up to mean age 22) from the Tracking Adolescents' Individual Lives Survey (TRAILS) cohort. ADHD symptom domains (hyperactivity/impulsivity & attention problems) and BMI from five measurement waves were used to examine their stable association as well as within-person reciprocal longitudinal effects, using the Random Intercept Cross-lagged Panel Model. We adjusted for medication effects, pubertal stage, and socioeconomic status, examined the possible role of depressive symptoms and family functioning, as well as sex differences. **Result:** A modest stable association between hyperactivity/impulsivity & BMI was found in males and females ($r = 0.102$ in females and $r = 0.086$ in males, $p < 0.05$). At the within-person level, virtually no longitudinal effects were found between ADHD symptom domains and BMI over time. This was not due to depressive symptoms or poor family functioning being better predictors of ADHD and weight change. **Conclusion:** This study found no evidence of a causal cycle where ADHD symptoms led to greater BMI and/or high BMI leads to enhanced persistence or deterioration of ADHD symptoms during adolescence and young adulthood. Rather, the association between mostly hyperactive/impulsive symptoms and BMI was stable in this developmental period, pointing to a shared genetic or familial background and/or direct causal effects between hyperactivity/impulsivity and BMI already established earlier in childhood.

Keywords: ADHD, BMI, Obesity, Overweight

Specific Category: Clinical Science

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Note: This abstract is selected to be presented on February 1, 2019 on DHEC/USC Health Data Symposium.

THE ORGANIZATIONAL IMPACT OF RURAL SUBSTANCE USE DISORDER AGENCY CAPITAL EXPENDITURES IMPROVEMENTS

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Background and Significance: Substance use disorders (SUD) are a public health crisis and impact social work practice in all settings. This is a particularly significant concern in the rural Southern United States, which has the greatest substance use services rural-urban disparity in the country. Rural substance use treatment agencies are often unable to adequately invest in long-term, fixed assets such as property and equipment, also known as capital expenditures, due to lack of resources or sustainable infrastructure. This impedes evidence-based SUD social work interventions in rural areas. To improve policy, social work practice, and research in this area, this study explored the organizational impact of capital expenditure (CAPEX) improvements in rural substance use treatment agencies.

Methods: Group and individual interviews were conducted with 28 key stakeholders and employees at 6 substance use treatment agencies serving rural communities in a southeastern state. Qualitative analyses were used to identify the organizational impact of CAPEX improvements in these agencies. Fourteen qualitative interview transcripts and 6 sets of program-specific researcher field notes about each of the agencies were analyzed using MaxQDA software. First-cycle coding was performed using provisional codes derived from interview prompts, with additional open coding to further categorize the data and provide analytic leads for exploration. After discussion and consensus about the findings as related to the impact of CAPEX improvements, second-cycle axial coding was then performed to differentiate and organize codes used to identify the most salient themes related to the impact of these improvements.

Results: Among the CAPEX improvements made at these substance use treatment agencies, new internet access, internet systems, computer and phone system upgrades were the most common. Access to adequate internet and auxiliary services was a common barrier in these rural agencies. The qualitative data analysis resulted in the identification of two overarching themes reflecting the organizational impact of CAPEX improvements: 1) enhanced morale of SUD practitioners, and 2) improved client interventions. Stakeholders and employees identified subthemes related to these benefits: reduced agency cost, time saving, employee retention, improved clinical telecommunications, enhanced & diversified client resources and interventions, enhanced client satisfaction, and improved client-counselor relations.

Discussion: This study identifies the organizational impact of capital expenditure improvements in rural SUD treatment agencies related to policy, social work practice, and research. This study also highlights essential areas for consideration to improve SUD outcomes in these underserved geographic regions. These findings can be used to inform client-centered social work care to individuals with substance use disorders living in rural communities.

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LEISURE-TIME PHYSICAL ACTIVITY BEFORE AND DURING PREGNANCY AND PRETERM BIRTHS IN SOUTH CAROLINA, 2009-2015

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Background and significance: Few studies have examined the association between leisure-time physical activity during pregnancy and preterm birth after controlling for physical activity (PA) levels before pregnancy.

Methods: Data came from the 2009-2015 South Carolina Pregnancy Risk Assessment Monitoring System, restricting to singleton pregnancies after excluding births <500g, born <22 wks, those with a history of preterm births, being advised for bedrest, and having missing data (n=5107). Being physically active before or during pregnancy was defined as exercising ≥ 3 x/wk for the respective period. For those who were physically active during pregnancy, the months and types of PA were asked. Multiple logistic regression models were used to examine the association after adjusting for maternal age, education, race, gestational weight gain, pre-pregnancy weight, smoking status, parity, and infant's sex.

Results: Overall, 8.2% of SC births were born preterm (<37 wks), 46.1% of women were physically active before pregnancy, and 32.5% were active during pregnancy. Compared to the women who were not physically active, women who were active during pregnancy had lower odds of preterm births (OR: 0.44, 95% CI: 0.25-0.78). Activity before pregnancy was not associated with preterm births (OR: 1.13, 95% CI: 0.87-1.45). Walking during pregnancy was associated with preterm births (OR: 0.73, 95% CI: 0.55-0.96), while other non-walking types of PA was not. Women in the top quintile of PA index score (a product of metabolic equivalent of task (MET) score for exercise type and months of being active) had lower odds of preterm births (0.69, 95% CI: 0.50, 0.96). All results were similar when restricting to women without chronic hypertension.

Conclusions or Discussion: We found that physical activity during but not before pregnancy was significantly associated with a reduced odds of preterm births in a diverse and representative sample of South Carolina pregnant women.

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This work has not been presented elsewhere so far.

IMPROVING HEALTH OUTCOMES AND CONTRACEPTIVE ACCESS BY ADDRESSING REPRODUCTIVE COERCION IN INTIMATE PARTNER VIOLENCE

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Abstract

Background and Significance: Intimate partner violence has considerable impact on health, contributing to higher levels of chronic pain, headaches, asthma, irritable bowel syndrome, poor mental health outcomes, STIs, and unintended pregnancy. Healthcare providers are in a unique position to improve health outcomes by screening for relationship abuse and addressing relationship health. Furthermore, domestic and sexual violence service providers are in a similar position when they screen for reproductive coercion and address reproductive health. The goal of the project is to increase access after coercive sex or relationship abuse to healthcare services, including emergency contraception, and increase access to community-based sexual and domestic violence support services.

Methods: Thirty-two healthcare providers in South Carolina responded to a survey on healthcare provision in situations of reproductive coercion or relationship abuse by an intimate partner. Twenty-nine domestic and sexual violence (DV/SV) direct service providers responded to a survey on reproductive healthcare access for clients. SCCADVASA conducted interviews with eight healthcare professionals and a small focus group with domestic and sexual violence advocates.

Results: Healthcare providers recognized the ways in which relationship abuse and reproductive coercion impact their patients and acknowledged the opportunity to address those issues in healthcare settings. However, barriers such as competing priorities and finding appropriate situations for discussing relationship health, as well as lack of assurance or knowledge about how to appropriately discuss or refer patients to community resources can all serve as stumbling blocks to patients receiving information about relationship abuse. Despite these challenges, healthcare providers and DV/SV service providers shared promising practices that can easily be adopted throughout the state. 53% of healthcare providers surveyed had an established relationship with a sexual or domestic violence organization in their community. 55% of DV/SV providers were very or moderately confident healthcare providers were giving survivors reproductive healthcare that took into account their trauma and abuse experiences. Of domestic violence organizations offering emergency shelter, 38.5% were open to offering emergency contraception in their shelter, 46.2% were unsure.

Discussion: Results indicate a desire among healthcare professionals and domestic and sexual violence providers to improve collaboration to better provide linked services to patients. Strengthened collaborations and simple tools will equip healthcare providers to recognize reproductive coercion or relationship abuse and to support patients to autonomously make decisions about their reproductive lives. Improved collaboration will further allow domestic and sexual violence organizations to effectively guide survivors through healthcare systems and improve access to reproductive healthcare services. Addressing these issues in healthcare settings and community-based organizations will improve overall health and safety and decrease unintended pregnancy in the state.

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Category: Social Science

RETROSPECTIVE REVIEW OF ETONOGESTREL IMPLANTABLE DEVICES

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Abstract

Background and Significance: The South Carolina Department of Health and Human Services (DHHS) changed its policy for reimbursement of long acting reversible (LARC) birth control devices in 2012. This change allowed for reimbursement of devices provided to patients in an inpatient hospital setting. Intrauterine devices and etonogestrel implant systems (Nexplanon®) were now covered services. Both devices offer patients high efficacy in preventing pregnancy with failure rates of less than 1%. Etonogestrol exerts its primary contraceptive effect through ovulation suppression. One side effect of the implant is unscheduled bleeding. A subset of women with changes to their bleeding pattern request to discontinue the implant. Our study aimed to look at Nexplanon® retention rates after the changes to DHHS reimbursement.

Methods: A retrospective review of Medicaid billing records was performed. Records were obtained securely from the South Carolina Revenue and Fiscal Affairs office and all patients in which a Nexplanon was placed, removed or reinserted from March 1, 2012 to December 31, 2016 were examined. This project was approved by the IRB and a waiver was granted from the South Carolina Revenue and Fiscal Affairs office for access to confidential Medicaid billing data. The data was transferred via secure file-sharing and analyzed in Excel spreadsheets. The final data then underwent various statistical analyses to determine data significance.

Results: Medicaid billing data included patient age, ethnicity, diagnosis codes, and procedure codes. Placement, removal, and reinsertion codes were tracked using Medicaid procedure codes. These procedure codes were linked to a patient identifier that was associated with the patient's ethnicity and age. The patient identifiers linked with these codes were unable to be linked to removal codes. This prohibited linkage of insertion to removal codes and made continuation rates unable to be determined. We were able to examine demographic data and there were no statistically significant correlations. Several trends were noted showing that there was an increase in placement of Nexplanon in women aged 21-25. More women aged 25-30 had a Nexplanon reinserted after removal. African American women were more likely to have a Nexplanon placed. An increase in Nexplanon placement was shown until 2015, with a plateau in placement rate lasting until 2017.

Discussion: Approximately half of all pregnancies in the US are unintended. Institution of postpartum LARC reimbursement offers women more reliable contraception with the intention of reducing the unintended pregnancy rate. Our study aimed to evaluate Nexplanon retention rates in order to better counsel future women about postpartum LARC options. This data would also aide implementation of postpartum LARC programs at other hospitals by showing that LARCs continue to be safe, effective and desired forms of contraception. Unfortunately, our database did not allow the linkage of insertion to removal codes so retention rates were unable to be obtained. Our data did show that Nexplanon placement increased rapidly in 2015 and 2016, then came to a plateau in the following years showing a continued desire by patients for placement. It also shows that Nexplanon continues to remain a popular choice for long-acting

contraception particularly amongst women aged 21-24 and African American women. Further studies are needed and in particular a prospective study aimed at determining Nexplanon retention rates prospectively is planned in the future.

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PRE-PUBERTAL GENITAL BLEEDING: EXAMINATION AND DIFFERENTIAL DIAGNOSIS IN PEDIATRIC FEMALE PATIENTS

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Abstract

Background and Significance: Pre-pubertal genital bleeding can be caused by a variety of etiologies including trauma, infection, structural, hematologic disorders, precocious puberty, and malignancy. Urethral prolapse can be seen in prepubescent girls due to a relative estrogen deficiency. Urethral prolapse classically presents with urethral mass and vaginal bleeding, often associated with constipation.

Case Report: A healthy 6-year-old Caucasian female presented to the Pediatric Emergency Department (ED) with vaginal bleeding for one day preceded by a few months of constipation. In the ED the patient's physical exam was remarkable for a tender, non-mobile mass at the vaginal introitus. Transabdominal pelvic and renal ultrasounds were unremarkable. The emergency physician's working diagnosis was a vaginal mass concerning for sarcoma botryoides. Pediatric and Adolescent Gynecology (PAG) was consulted. They performed an examination under anesthesia (EUA) with cystoscopy and vaginoscopy. The EUA confirmed a urethral prolapse approximately 2 cm in diameter. The patient was treated with conjugated estrogen vaginal cream. At her 1 month follow-up the urethral prolapse had resolved.

Discussion: Performing a proper pelvic examination of a prepubescent girl presenting with vulvovaginal bleeding is crucial to form an accurate diagnosis in the emergency department setting. By placing the young girl in the frog-leg or knee-chest position and using both lateral and downward traction of the vulva, one can adequately visualize the external genitalia and outer 1/3 of the vagina. This can help streamline diagnosis and avoid unnecessary examinations and anxiety.

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Category: Clinical Science

DOES MARRIAGE, EMPLOYMENT, AND HAVING CHILDREN MATTER? A SECONDARY ANALYSIS ON PHYSICAL ACTIVITY LEVELS AND SOCIAL ROLES AMONG WOMEN IN THE UNITED STATES

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Background and Significance: Physical inactivity is one of the most important health issues worldwide, responsible for an estimated 3.2 million deaths annually. In the U.S., over 50% of women do not meet the physical activity (PA) recommendation level of at least 150 minutes of moderate to vigorous PA per week. Across the lifespan women are less likely to exercise than their male counterparts, in addition, social roles, such as employment, marriage, and motherhood are independently associated with decreased levels of PA among women. However, few studies address the association of these social roles on objectively measured levels of physical activity, such as moderate to vigorous physical activity (MVPA) and whether MVPA guidelines are met. To implement effective policies and programs in this population, policy makers need objective data that examines the association between MVPA, recommended physical activity levels, and social roles among women. This study compares objective MVPA levels of a national sample of women by working status, marital status, and age range of youngest child.

Methods: Women's (18-60) accelerometer data from the 2003–2006 National Health and Nutrition Examination Survey (NHANES) were analyzed in 2018 (n=947). Bi-variate analysis was conducted to determine the association between the daily average means of MVPA and the independent variable(s): employment status (employed or homemaker), marital status (married or unmarried), and age range of youngest child (under 6 years of age, 6 through 13, and 14 and over) and whether there is a significant association between the independent variables and meeting MVPA guidelines.

Results: Marital status ($p=0.0117$), employment status ($p=0.0254$), and age range of youngest child ($p=0.0001$) were found to be statistically significant for MVPA minutes per day among sample participants. Accelerometer data analysis found that married women (19.9 minutes) and employed women (19.49 minutes) had statistically significant higher MVPA levels than their unmarried (17.23 minutes) and homemaker (16.77 minutes) counterparts. In addition, women with children under the age of 6 (19.87 minutes) and women with children ages 6-13 (22.25 minutes) had statistically significant higher MVPA levels than women with children over the age of 14 (17.02).

For meeting recommended MVPA guidelines, statistically significant differences between were found within groups of married women, unmarried, and employed women. Married women who were employed and had children under six years of age were most likely to meet physical activity guidelines (48%), while employed and homemaker women with children over the age of 14 were least likely (32% and 29%, respectively). Among unmarried women, those who were employed with children over 14 were least likely to meet physical activity guidelines (22%) while homemaker and employed unmarried women with children ages 6 through 13 were most likely (60% and 48%, respectively). Among employed women, those who had children ages 14 and over, unmarried or married, were least likely to meet MVPA guidelines (77% and 68%, respectively).

Conclusion: This study highlights the need to objectively measure physical activity among groups of women by social roles to accurately assess how programs and policies can target specific groups. Researchers and policy makers would benefit from using objective data to develop and evaluate policies and programs. In addition, the efficacy of strategies targeting specific groups can improve by taking into consideration the social role makeup of that specific group as well as demographic makeup.

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MiR-155 IN THE REGULATION OF MAST CELL MEDIATOR RELEASE BY RESVERATROL

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Abstract

Background and significance: Allergic disease is the 6th chronic diseases in the U.S which affects 8.4% of U.S. Population. Allergy is more common in women than men in adulthood. Resveratrol is a natural polyphenol found in the skin of red grapes and other fruits. Resveratrol can protect against allergic asthma, but the exact mechanism is not known. Many studies have shown that miR-155 plays an important role in allergic disease, and could be a target in allergic asthma. **Method:** We used human *in situ*-matured skin mast cells that were isolated from normal breast tissue from women as our experimental model, and bone marrow-derived mast cells (BMMCs) from wild type (WT), miR155 knockout (KO), miR-155 transgenic (Tg) mice to explore the role of miR-155 in mast cells function. **Results:** MiR-155 expression was induced in human skin mast cells upon FcεRI crosslinking, but inhibited with Resveratrol. Additionally, we demonstrated that Resveratrol at low concentrations preferentially inhibited the FcεRI-induced biosynthesis of inflammatory Prostaglandin D2 (PGD₂) in human skin mast cells. We showed that Resveratrol had no effect on the FcεRI-proximal Syk pathway leading to degranulation, but significantly inhibited the induced expression of cyclooxygenase-2 (COX-2), which is directly involved in PGD₂ production. Similarly, we found that miR-155 had no effect on degranulation of BMMCs, whereas FcεRI-induced COX-2 expression was significantly inhibited in miR-155 KO BMMCs compared with wild type. Furthermore, the levels of FcεRI-induced inflammatory cytokines, including IL-6, IL-13, and TNF-α, were significantly inhibited in miR-155 KO BMMCs. **Conclusion:** these findings demonstrate that Resveratrol inhibits FcεRI-induced PGD₂ production by blocking COX-2 expression by a mechanism that involves miR55 in mast cells.

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Category: Basic Science

RECRUITING MEDICAID MEMBERS FOR A RANDOMIZED INTERVENTION TRIAL

Madeline Moran and Bryn Davis

Background: Nearly 75 million US adults have hypertension (HTN),¹ a known risk factor in the development of cardiovascular disease.² Anti-hypertensive medications are often needed to manage blood pressure,³ with an estimated 36 million US adults have uncontrolled HTN.⁴ Few studies have looked at the management of HTN among adults with intellectual and developmental disabilities (IDD). One study used Kansas Medicaid data and found that 9.1% of adults with IDD had HTN, but only 55% were adherent to their anti-hypertensive medication.⁵ Effective strategies for improving adherence to HTN medications have involved patients, caregivers and healthcare providers working together.⁶

Study Objective: The aim is to test the effectiveness of an educational intervention to increase adherence to HTN medication in a population of adult Medicaid members (ages 18-64), living in South Carolina with dual diagnosis of IDD and HTN. Our study sought to recruit individual with IDD and HTN or their helpers or caregivers.

Methods: A list of potential Medicaid participants (adults ages 18-64, with IDD and HTN) was generated by the South Carolina Department of Health and Human Services. Contact information was provided so that recruitment letters could be mailed to explain the study and included an opt out clause. Calls were made to participants seeking verbal consent, as well as to confirm participants' use of hypertension medication within the last two years. Participants who met the criteria and consented to the study were randomly assigned to the case or comparison group for their age - younger (<45 years) or older (≥45 years). A baseline survey was then administered.

Results: From a pool of 21,788 Medicaid members in SC with IDD, 2,332 met initial study criteria. We were unable to contact 1,802 potential participants due to unusable contact information, non-responsiveness, and HIPPA guidelines surrounding individuals living in a group homes. With 259 individuals declining to participate, our final participant pool included 371 consented adults, 279 of whom are caregivers/helpers. Student t-tests were performed with no significant differences seen for baseline mean test scores between the case (mean score = 59.67%) and comparison (mean score = 58.51%) groups. Moreover, there is no significant difference in the proportion helpers versus adults with IDD or older versus younger participants in the case and comparison groups.

Discussion: Our initial recruitment effort had a 20% success rate. During the next phase of the study, researchers will implement the educational intervention to those in the case group each month, while continuing to administer the knowledge-based surveys every six months for all participants.

Possible Public Health Implications: This study seeks to test the effectiveness of an educational intervention to increase HTN medication adherence for adults with IDD. HTN medication adherence is important in disease management; moreover, hypertension control can prevent the development of secondary diseases like myocardial infarctions and stroke. If effective, the proposed intervention provides an inexpensive tool for disease control and progression.

Previous presentations: DHEC Health and Data Symposium 2019.

Category: Clinical Science

References:

1. Merai, R., Siegel, C., Rakotz, M., Basch, P., Wright, J., Wong, B., ... Thorpe, P. (2016). CDC Grand Rounds: A Public Health Approach to Detect and Control HTN. *MMWR. Morbidity and Mortality Weekly Report*, 65(45), 1261–1264. <https://doi.org/10.15585/mmwr.mm6545a3>
2. Fryar, C. D., Chen, T.-C., & Li, X. (2012). Prevalence of uncontrolled risk factors for cardiovascular disease: United States, 1999-2010. *NCHS Data Brief*, (103), 1–8. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/23101933>
3. Munger, M. a, Van Tassell, B. W., & LaFleur, J. (2007). Medication nonadherence: an unrecognized cardiovascular risk factor. *MedGenMed : Medscape General Medicine*.
4. Wang, T. J., & Vasan, R. S. (2005). Epidemiology of uncontrolled HTN in the United States. *Circulation*. <https://doi.org/10.1161/CIRCULATIONAHA.104.490599>
5. Vacek, J. L., Hunt, S. L., & Shireman, T. (2013). HTN medication use and adherence among adults with developmental disability. *Disability and Health Journal*, 6(4), 297–302. <https://doi.org/10.1016/j.dhjo.2013.02.003>
6. Mendys, P., Zullig, L. L., Burkholder, R., Granger, B. B., & Bosworth, H. B. (2014). Medication adherence: process for implementation. *Patient Prefer Adherence*, 8, 1025–1034. <https://doi.org/10.2147/ppa.s65041>

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RURAL-URBAN ZCTA-LEVEL SOUTH CAROLINA OB/GYN PROVIDER ANALYSIS

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Background and Significance

It is unknown what the current obstetrics (OB) provider workforce looks like in South Carolina (SC) and where needs exist. It is also not known if there is a rural-urban disparity in OB provider rates, if the workforce is aging, and if programs like the J-1 visa program have brought OB providers to SC.

Methods

Licensure data for every provider in SC was obtained from the SC Revenue and Fiscal Affairs office. This included physicians (MD and DO), nurse practitioners, and physician assistants. After combining the datasets, only providers that had an active license and indicated their specialty as either obstetrics, obstetrics/gynecology, or gynecology were included in the analysis. Variables based on their country of birth, those over 55 years old, whether the provider worked full-time, and gender were created using information provided by each licensee.

The dataset did not include office addresses for all providers, so zip code tabulated area (ZCTA) was used to summarize provider characteristics. Data from the Census Bureau was used to calculate the number of childbearing age women (ages 10-55) in each ZCTA; from that, the rate of OB providers per 1,000 women was calculated. After all summary statistics were obtained or calculated, the mean and median for all rural and urban ZCTAs was calculated. Rural was defined using the Rural-Urban Commuting Area codes. The means were tested for normality, of which none were normal. The Kruskal-Wallis test was used to compare the means of rural and urban ZCTAs in six categories: rate of OB providers, percent OB providers (of all providers in ZCTA), percent full-time OB provider, percent OB providers over age 55, percent OB providers of foreign birth, and percent OB providers that are male. The rate of OB providers was tested using all ZCTAs; provider characteristics used only the ZCTAs that had providers.

Results

The mean rural-urban difference in rates of OB providers per 1,000 women of childbearing age was the only statistically significant difference found. It is important to also note that about 50 percent of all OB providers are over the age of 55, which means they are nearing retirement age and will need replacements in the pipeline. Out of 93 rural ZCTAs, only five rural ZCTAs have an OB provider.

Discussion and Conclusions

Rural women in SC face increased burdens when it comes to finding an OB provider. Only five ZCTAs have an OB provider; while some women might see their primary care physician for some OB care, they should still have access to an OB provider if necessary. SC needs to increase the number of OB providers in both rural and urban areas in order to fully meet the population's needs but must focus on rural areas. Recruitment of foreign physicians through the J-1 visa program could help reduce the need.

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Category: Social Science

IMMEDIATE POSTPARTUM UPTAKE OF LEVONORGESTREL IUD AFTER INTRODUCTION OF THE CHOOSE WELL INITIATIVE

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Abstract

Objectives: To evaluate for change in uptake of postpartum 52mg levonorgestrel intrauterine device (IUD) in an immediate postpartum population after the initiation of the Choose Well Initiative

Methods: After the introduction of the Choose Well Initiative at our institution in January 2018, our delivering patients became eligible for dedicated, individual contraceptive counseling that focused on all birth control methods, beginning with the most effective methods first. All patients also became eligible to receive a long-acting reversible contraceptive method if they desired, regardless of their ability to pay. These methods included immediate postpartum insertion of a 52mg levonorgestrel IUD with either Mirena, which is approved for 5 years of use or Liletta, which is approved for 4 years of use. Women whose insurance would not cover levonorgestrel IUD insertion or who were uninsured were offered Liletta at no cost under the Choose Well initiative. Data from January-December of 2017 for immediate postpartum levonorgestrel IUD insertions was compared to January-April 2018 insertions.

Results: In 2017, a total of 155 52mg levonorgestrel IUDs were placed inpatient over 12 months. In January, 6 devices were placed (4 Mirena, 2 Liletta), in February, 16 devices were placed (12 Mirena, 4 Liletta), in March, 30 devices were placed (23 Mirena, 7 Liletta), and in April 22 devices (21 Mirena, 1 Liletta) were placed. Compared to 2017, this constitutes a 47% increase in levonorgestrel IUDs overall, and placement of 14 immediate postpartum Liletta under the Choose Well initiative for women who otherwise would not have coverage for the device.

Conclusions: In the first four months of increasing education and access to immediate postpartum LARC contraception, and eliminating financial barriers, overall uptake of immediate postpartum levonorgestrel IUD has increased by almost half. There is a trend towards an increase in IUD insertion since the start of the initiative. Allowing all women to attain highly effective contraception with levonorgestrel IUDs increases patient reproductive autonomy and equality in contraceptive access.

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Category: Clinical Science

Previously presented at the NC/SC Perinatal Partnership Conference October 29-30, 2018

RECURRENCE RISK OF PREGNANCY COMPLICATIONS IN TWIN AND SINGLETON DELIVERIES

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Aim: To estimate and compare the recurrence risk of preterm birth (PTB), gestational diabetes (GDM), gestational hypertension (GH), and preeclampsia (PE) in three groups of women with: (1) singleton following singleton (N=49,868); (2) singleton following twin (N=448); and (3) twin following singleton pregnancy (N=723).

Methods: We studied women from NICHD Consecutive Pregnancy Study (2002-2010) with ≥ 2 singleton or twin deliveries. Adjusted relative risks (RR) and 95% confidence intervals (CI) of subsequent PTB, GDM, GH and PE were estimated using separate Poisson regression models with robust variance estimators. Women without each respective pregnancy complication in the prior pregnancy formed the reference group.

Results: For women with two singleton pregnancies, the recurrence risks were increased for subsequent PTB (RR_{PTB vs no PTB} = 5.1, 95% CI: 4.8, 5.5), subsequent GDM (RR_{GDM vs no GDM} = 22.7, 95% CI: 20.8, 24.8), subsequent GH (RR_{GH vs no GH} = 5.8, 95% CI: 5.1, 6.6) and subsequent PE (RR_{PE vs no PE} = 8.1, 95% CI: 7.0, 9.3). Similarly, for women where a singleton followed a twin pregnancy, the recurrence risks were increased for PTB (RR_{PTB vs no PTB} = 2.5, 95% CI: 1.1, 5.9); GDM (RR_{GDM vs no GDM} = 5.2, 95% CI: 2.3, 11.8); GH (RR_{GH vs no GH} = 7.6, 95% CI: 2.8, 20.5); and PE (RR_{PE vs no PE} = 9.2, 95% CI: 2.9, 28.6). For women where a twin followed a singleton pregnancy, the recurrence risks were increased for subsequent PTB (RR_{PTB vs no PTB} = 1.4, 95% CI: 1.3, 1.6); GDM (RR_{GDM vs no GDM} = 20.8, 95% CI: 11.6, 37.2); GH (RR_{GH vs no GH} = 2.8, 95% CI: 1.0, 7.7); and PE (RR_{PE vs no PE} = 3.2, 95% CI: 1.2, 8.2).

Conclusion: Women who had history of PTB, GDM, GH and PE compared to those without had increased risk of recurrence. Increased risks persisted in all three groups of women. However, recurrence risk magnitude particularly for GDM, varied whether a singleton pregnancy followed a singleton or a twin pregnancy. This information can be used for managing subsequent pregnancies.

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EFFECT OF GESTATIONAL AGE ON SUBSEQUENT PRETERM BIRTH

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Purpose: To examine the relationship between gestational duration in the first pregnancy and odds of subsequent preterm birth

Methods: We studied 27077 nulliparous women from National Institute of Child Health and Human Development Consecutive Pregnancy Study in Utah (2002 - 2010) with ≥ 2 singleton pregnancies. Gestational duration in the first pregnancy (exposure) was categorized into four groups: before 32, 32 to 36, 37-38 and 39 and more (reference) weeks of gestation. Outcome variable was subsequent preterm birth (gestational age < 37 weeks). Odds Ratios (ORs) and 95% Confidence Intervals (CI) were estimated using multivariable logistic regression. Models were adjusted for important socio-demographic, obstetric characteristics and mother's clinical conditions.

Results: Women with preterm compared to term birth were more likely to be non-Whites, were smoking and using alcohol during pregnancy, had diabetes, chronic hypertension, gestational diabetes and hypertension, thyroid disorders, depression, renal diseases and urinary tract infection.

Women with early preterm birth compared to those with ≥ 39 weeks gestation were 11 times more likely to have subsequent preterm birth (OR_{before 32 weeks vs 39 weeks or more}=10.89, 95% CI: 8.45, 14.03). Similarly, women with gestational duration of 32 to 36 weeks in the first pregnancy had about 7 times higher odds of subsequent preterm birth (OR_{32-36 weeks vs 39 weeks or more}=7.11, 95% CI: 6.17, 8.18). Importantly, even women with early term compared to those with ≥ 39 weeks gestation have almost three-fold increased odds of subsequent preterm birth (OR_{37-38 weeks vs 39 weeks or more}=2.86, 95% CI: 2.55, 3.20).

Conclusion: Mothers with first preterm birth are more likely to have subsequent preterm birth. The shorter the gestational duration in first pregnancy, the higher the odds of subsequent preterm birth. Importantly, even women with early term birth (37-38 weeks) have increased odds of subsequent preterm birth.

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DISPARITIES IN NON-HISPANIC BLACK MATERNAL MORTALITY: A LITERATURE REVIEW

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Abstract

Background: Death and pregnancy do not seem like words that go together. However, in the United States, the mortality rates of pregnant women are on a steady incline. Among those women who suffer a pregnancy-related death, non-Hispanic black women disproportionately die more than all other women.

Significance: The objective of this literature review is to describe the current state of the science on interventions aimed to improve maternal outcomes of pregnant non-Hispanic black women.

Methods: PubMed, Cinhal and Web of Science were searched to identify peer-reviewed articles published between 2013 to 2018 that examined interventions on non-Hispanic black maternal mortality outcomes.

Preliminary Results: Five peer-reviewed articles met study criteria. The included studies varied in study designs: one randomized controlled trial, two quasi-experimental, two non-experimental (e.g., retrospective) and one qualitative study. Intervention strategies found to significantly improve maternal outcomes were group prenatal care, prenatal nurse home visits, and implementation of maternity safety bundles.

Conclusions and Next Steps: Few intervention studies focused on reducing maternal mortality among non-Hispanic Black women have been conducted and published in the peer-reviewed literature. Next steps include expanding and updating the existing search strategy to ensure we have identified the best available evidence.

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Category: Social Science

This work has not been presented elsewhere.

VULVOVAGINAL IRRITATION IN A PEDIATRIC PATIENT: USE OF PREMARIN TO TREAT KERATIN PEARLS

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Background: Epithelial keratin pearls are clusters of squamous cells that are trapped within their cell layer to form microscopic masses. When found in the epithelium of the female genital tract, these pearls can become irritated and erythematous, sometimes causing significant pain for those that are affected. In adult women, they have been associated with vulvodinia and sexual health complaints, and in children, have been noted in the setting of painful clitoral phimosis and/or labial adhesions. Resolution of the pain caused by these pearls is usually performed in the operating room, and is typically achieved with lysis of surrounding clitoral and labial adhesions with subsequent removal of the pearl manually.

Case: Two cases have been noted within the past year of prepubertal females, ages 2 and 6, presenting with complaints of persistent vulvar irritation and pain over the course of several months. On physical exam, no notable phimosis or genital adhesions were present; however, in both cases small keratin pearls were discovered just between the prepuce and clitoris under a thin layer of tissue. Both patients were treated with short courses of topical Premarin cream to lyse the suspected layer of adhesions overlying the pearls in order to facilitate spontaneous evacuation of the pearl. In both cases, the patients had resolution of their pain with no keratin pearls noted on subsequent exams. Use of short courses of Premarin cream in pediatric and adolescent females can be a treatment alternative to operative management of vulvovaginal irritation due to keratin pearls.

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Category: Clinical Science

TRENDS IN GESTATIONAL WEIGHT GAIN IN SOUTH CAROLINA, 2004-2015

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Abstract

Background and Significance: Increasing rates of obesity and excessive gestational weight gain among reproductive aged women in recent years is a growing public health issue. Few studies have examined the secular trends in gestational weight gain and findings are inconsistent. Estimates for gestational weight gain are inconsistent when gestational age, an important source of bias, is not accounted for. This is important for examining racial differences in gestational weight gain due to the fact that African American women may be more likely to have pre-term births. Consistent with increasing trends in pre-pregnancy obesity, we hypothesized similar increasing trends in gestational weight gain when accounting for important variables, such as gestational age and pre-pregnancy weight status. We also hypothesized that increasing trends in gestational weight gain would be more pronounced among high risk groups, such as among African American women, or those who were considered overweight or obese prior to pregnancy.

Methods: Data came from South Carolina birth certificates (n=525,411). We converted gestational weight gain to weight gain-for gestational age z-scores using referent values accounting for gestational age at delivery and pre-pregnancy BMI. The reference values were developed using serial, measured weights in pregnancy from a representative cohort of women who delivered a singleton live birth and had no health or pregnancy complications. Adjusted quantile regression was used to examine trends in gestational weight gain Z-scores.

Results: From 2004 to 2015, the gestational weight gain increased by 0.67 z-score units in the lowest 5th percentile and decreased by 0.04 units in the 95th percentile of gestational weight gain. Gestational weight gain Z-scores increased in women at the 75th percentile or less and decreased in women at the 90th and 95th percentiles. Results varied by race/ethnicity and pre-pregnancy weight status. In women at the 5th percentile, gestational weight gain Z-scores increased in all racial groups. However, at the 95th percentile, non-Hispanic Whites and Blacks showed a decrease while Hispanics showed an increase in gestational weight gain Z-scores. Underweight women showed decreasing trends over time at all percentiles of gestational weight gain Z-scores.

Discussion: Our study demonstrated overall increasing GWG trends at or below the 75th percentiles with a slightly decreasing trend in higher percentiles in women in South Carolina in the last decade. The differential trends by race/ethnicity and pre-pregnancy weight status are useful to identify high risk groups for future intervention programs.

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