



Abstracts from  
**Women's Health 2012:  
The 20<sup>th</sup> Annual Congress**

March 16–18, 2012  
Washington, DC

**JOURNAL OF  
Women's Health**

*In collaboration with*  
**NIH Office of Research on Women's Health  
DHHS Office on Women's Health  
National Cancer Institute**

**VCU** *Institute for* **Women's Health**  
Virginia Commonwealth University  
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# Basic Research

## P1. Correlation between steroid endometrial receptors, Ki-67 and Bcl-2 with insulin resistance after menopause

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**Background:** After menopause, gain weight and fat deposits distribution may be altered, with predominance of abdominal fat. The abdominal fat has been correlated with the surge of metabolic diseases like hyperinsulinemia, and neoplastic diseases like endometrial cancer. The chronic hyperinsulinemia causes decrease of serum IGF-1 binding protein 1 (IGFBP-1) and 2 (IGFBP-2), leading to increased bioavailability of free IGF-1. The IGF-1 exerts its action through the IGF-1R, and has been found to be increased in endometrial tumors. However the hyperinsulinemia may also inhibit the synthesis of SHBG, increasing the free sex hormones in plasma, favoring the appearance of hormone dependent neoplasias.

**Objectives:** The objective of this study was to evaluate the association between steroids receptors (ER and PR), proliferation factor (ki-67) and apoptosis (Bcl-2) and Its correlations with the presence of insulin resistance (IR) in women after menopause.

**Methods:** A cross section study, with 85 postmenopausal Brazilian women that were indicated to gynecological surgery for benign. An endometrial sample was collected and the estrogenic (ER) progestogenic (PR) and insulin growth factor-1 (IGF-1R) receptors, Ki-67 and Bcl-2 were evaluated, and were correlated with IR.

**Results:** There was great expression in the endometrial glands of the ER (94.1%), PR (80%) and IGF-1R (78.8%), and correlation between the HOMA-IR index and the stromal ER ( $p=0.378$ ) and PR ( $p=0.0083$ ). Correlation between ER and PR with Ki-67 and Bcl-2 ( $p<0.05$ ) was observed.

**Conclusions:** The results obtained indicate that IR may stimulate the expression of endometrial receptors, contributing to the increase of the risk of endometrial proliferative diseases.

## P2. Alcohol Use and Expression of HIV-1 RNA in the Female Genital Tract

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**Background:** Cervico-vaginal shedding of HIV can increase the likelihood of sexual and perinatal transmission. Animal models have demonstrated increased expression of SIV in mucosal tissue with alcohol consumption, and alcohol abuse among HIV-infected women is common.

**Objectives:** The purpose of the study was to examine the association between frequent alcohol consumption and expression of HIV-1 RNA in cervico-vaginal lavage (CVL) fluid.

**Methods:** HIV-1 RNA levels were assayed using banked CVL specimens collected from 186 HIV-infected women enrolled in the Chicago site of the Women's Interagency HIV Study (WIHS). Women who reported frequent alcohol use (i.e. greater than or equal to 5 days per week) were compared to those who abstained from alcohol use.

**Results:** Mean age of women was 40.9 years ( $\pm 8.0$ ), 23.7% had detectable levels of HIV in CVL fluid, 19.4% had CD4 cell counts  $<200/\text{mm}^3$ , 35.5% had plasma viral loads  $>10,000$  copies, and 55.9% were not on antiretroviral therapy (ART). Compared to abstainers ( $n=125$ ), frequent alcohol users ( $n=61$ ) were more likely to have had vaginal sex and douched in the past 48 hours. Factors associated with detectable levels of HIV in CVL fluid were: not being on ART, CD4 cell count  $<200/\text{mm}^3$ , and plasma viral load  $>10,000$  copies. Among women not on ART, there was a trend for increased likelihood of detecting HIV in CVL fluid for frequent consumers of alcohol. No trends were noted among women on ART.

**Conclusions:** Frequent alcohol use may increase expression of HIV in vaginal fluids and, therefore, may have a biological influence on HIV infectivity. Larger, prospective studies with more refined measures of alcohol consumption are needed.

## P3. Impaired Folliculogenesis and Meiotic Defects in *Chtf18*-null Female Mice

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**Background:** Although a significant proportion of infertility is accounted for by identifiable causes, the molecular basis of these defects is often not known or well characterized. *CTF18* encodes an evolutionarily conserved protein that is crucial for fertility of fruitfly, and essential for accurate chromosome transmission in yeast. We recently demonstrated that *CTF18*, termed *Chtf18* in mice, is expressed throughout the female germline, suggesting a role for *Chtf18* in female germ cell development.

**Objectives:** Our goal is to determine the roles of *CTF18/Chtf18* in mammalian gametogenesis in females.

**Methods:** Follicle counting techniques were used to evaluate ovaries from age-matched *Chtf18*-null and wild type mice. Surface spread nuclei were prepared from oocytes of *Chtf18*-null and wild type female embryos, and the pachytene and diplotene stages of meiotic prophase I were examined by Immunofluorescence microscopy. Oocytes were cultured and allowed to mature *in vitro* to assess progression of meiosis. Immunofluorescence microscopy was utilized to evaluate congression of chromosomes to the metaphase spindle plate and the distribution of chromosomes along the spindle fibers.

**Results:** *Chtf18*-null ovaries were smaller and morphologically abnormal compared to wild type female mice. Numbers of ovarian follicles in *Chtf18*-null mice were decreased throughout all stages of folliculogenesis. Although chromosomal synapsis

during meiosis was complete, homologous chromosomes separated prematurely during prophase I. In addition, significantly fewer numbers of oocytes progressed to metaphase II, and chromosomes were misaligned at the metaphase II spindle plate in *Chtf18*-null mice.

**Conclusions:** *Chtf18* plays important roles in female meiosis and ovarian folliculogenesis.

#### P4. Activation of the LH receptor differentially regulates the adiponectin receptors in human granulosa cells

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**Background:** Adiponectin is an adipocyte-derived hormone influencing carbohydrate metabolism and energy homeostasis through two receptors, AdipoR1 and AdipoR2. In animal models, adiponectin regulates ovarian steroidogenesis, folliculogenesis, and ovulation. The receptors AdipoR1 and AdipoR2 are present in the human ovary, but their regulation is unknown.

**Objectives:** In these studies we determined the effects of LH receptor activation on the expression and function of the adiponectin receptors in human granulosa cells.

**Methods:** Granulosa cells were isolated and cultured for 48 h prior to change to low serum medium for 12 hours. Cells were treated with hCG (an LH surrogate) or forskolin (an activator of cAMP). mRNA was isolated and RT PCR was performed using standard methods. For immunohistochemistry cells were treated with hCG for 1 to 24 hours and fixed with acetone. IHC was performed with polyclonal primary antibodies followed by fluorescent secondary antibody and fluorescence imaging and analysis. Enzyme activity was determined by measuring the progesterone produced when cells were provided with an excess substrate.

**Results:** AdipoR2 expression increased nearly 4-fold ( $p < 0.05$ ), whereas AdipoR1 was not changed by hCG treatment. Treatment with forskolin had similar effects. Basal AdipoR2 protein was low in granulosa cells in culture, however hCG treatment resulted in a discernible increase in immunodetectable cytoplasmic protein as early as 6 hours after treatment and was maintained for 24h. The number of AdipoR2 positive cells at 6 hours increased from a basal of 20% to almost 60% ( $p < 0.05$ ). Adiponectin treatment of hCG primed cells increased 3-beta-hydroxysteroid dehydrogenase activity by 60% over hCG alone.

**Conclusions:** AdipoR2 is regulated by the LH receptor via a cAMP dependent mechanism. Increased expression of adiponectin in the dominant follicle and corpus luteum may enhance 3 $\beta$ HSD activity and increase progesterone secretion. Dysregulation of adiponectin as occurs with PCOS, may impair normal progesterone production.

## Clinical and Translational Research

#### P5. The Effects of Habitually Low-impact Dance on Dynamic Balance and Torque of Knee

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**Background:** Although the studies reported that the engagement of low-impact dance could have positive influences on cardiovascular fitness and blood lipids, the data with respect to the effect of low-impact dance on dynamic balance, torque of knee, and bone mineral density (BMD) were few. In fact, these factors are associated with the risk of fall for the elder individuals.

**Objectives:** As a result, this study was to examine whether any difference with respect to the aforementioned variables between females who longitudinally engaged in low-impact dance and who were physically inactive existed.

**Methods:** Twenty-six low-impact dance and ten physically inactive females comprised the dance group (DG) and the control group (CG), respectively. All participants were measured for dynamic balance (the stabilometer, Model 16030, Lafayette Instrument Inc., IN), knee extension torque (Jihsense RT-100, Taipei, Taiwan), bone mineral density (GE Bone Ultrasonometer, Madison, WI), and range of motion (ROM) of knees (goniometer, NexGen Ergonomics, Quebec, Canada). The two groups were compared using unpaired Student t-tests (SPSS 15.0). All values were expressed as means  $\pm$  standard deviation (SD).

**Results:** For the balance times in a 30-second of dynamic balance test, the DG group was significantly more than the CG group ( $13.0 \pm 4.7$  vs.  $5.5 \pm 7.8$  times,  $p < 0.05$ ). In knee extension torque, although the DG group was higher than the CG group in both legs, only a significant difference was displayed in non-dominant leg between the two groups ( $57.2 \pm 22.2$  vs.  $40.3 \pm 16.5$  Newton,  $p < 0.05$ ). In addition, the BMD results in both legs showed significantly higher in the DG when compared with the CG ( $p < 0.05$ ). However, the ROMs of both knees did not differ between the two groups.

**Conclusions:** Individuals who habitually engaged in low-impact dance demonstrated positive results in dynamic balance, knee extension torque, and BMD. These benefits may reduce the risk of fall. As a result, the studies for the effect of the intervention of low-impact on fall of middle-aged or elder individuals are warranted in the near future.

## P6. Use of the Sexual Relationship Power Scale in Research: An Integrative Review

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**Background:** The lack of negotiation power is a key factor in unsafe sexual behaviors in couples. It is essential to consider how gender inequalities and power differential between partners play into the dynamics of safe sex negotiation. Finding strategies for reaching out to minority women and couples in prevention of human immunodeficiency virus (HIV) and unintended pregnancy are also important. Strategically approaching both men and women together and separately has been shown to be desirable in achieving optimum reproductive health outcomes and preventing sexually transmitted infections (STIs), including HIV. Pulerwitz, Gortmaker and DeJong (2000) developed the Sexual Relationship Power Scale (SRPS) in English and Spanish to measure this important concept.

**Objectives:** The purpose of this integrative review is to examine the reliability and validity of the scale across published studies as well as to integrate the results and suggest implications for future research and clinical practice with a focus on improving the health of women and couples.

The SRPS was originally developed for use only with women; however, since its development several researchers have now used it for men. Therefore, the studies that used the SRPS for men are also discussed.

**Methods:** Web of Science, Pubmed, CINAHL and PsychINFO were systematically searched using the authors' names and keywords: Pulerwitz J, sexual relationship power, and sexual relationship power scale between year 2000–2011.

**Results:** Out of 178 articles found through the literature search, 11 studies met inclusion criteria. The validity, reliability, type of study and the tendency of the study results are discussed. Six studies where the SRPS was administered to men are also included in the review and discussion.

**Conclusions:** Critical analysis of study results suggests that the scale is valid and reliable, and useful in examining gender power within relationships in various populations in the context of examining risky sex practice and its associated variables.

## P7. Women's Access to and Use of Hormonal Contraceptives, 1995–2006–2010

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**Background:** Three decades ago the only hormonal contraceptive available to women in the U.S. was the oral contraceptive pill. In 1990, the 5-year implant was approved by the FDA, followed by a 3-month injectable in 1992, a 1-month injectable in 2000, a low-dose, progestin-only IUD in 2001, the contraceptive patch and ring in 2002, and a 3-year implant in 2006. Given the relatively recent introduction of these highly effective, long acting, reversible contraceptive methods (LARCs), descriptive work on women's acceptance of and access to the various methods across demographic and community characteristics is essential information for policy makers interested in reducing unplanned pregnancies which account for about half of all pregnancies, by identifying potential unmet need for LARCs.

**Objectives:** To describe trends in and contemporary use of hormonal methods, by selected demographic and community characteristics, because more recently introduced methods are more effective in assisting women to plan their pregnancies, relative to the methods available prior to 1990.

**Methods:** We will use bivariate and multivariate analysis to describe differences in use of LARC across socio-demographic characteristics, such as education, income, insurance, and Hispanic origin and race, as well as metropolitan residence and U.S. region. We will use data from the 1995, 2002, and 2006–2010 National Surveys of Family Growth to look at changes over time and current access to LARCs.

**Results:** Preliminary analysis shows that since 1995 women under 30 are adopting LARCs at increased rates compared with women aged 30–44. Differences are also found across race and ethnicity, education, poverty level income, and metropolitan residence.

**Conclusions:** Women are taking more control of their reproductive health. They are using the pill and other LARCs to delay childbearing and space pregnancies, but there are still disparities in access to LARCs. This has implications for policy makers who are seeking to reduce teen and unplanned pregnancies.

## P8. Relationship quality effect on men and women's psychological adjustment during the transition to parenthood: The Actor-Partner Interdependence Model overtime

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**Background:** Several studies suggest that psychological adjustment during the transition to parenthood may be a difficult task for men and women, attending to the challenges posed to their relationship. However, little is known about the dyadic effects of relationship quality on men and women's psychological adjustment during transition to parenthood.

**Objectives:** This study aimed to analyze the effect of relationship quality on men and women's psychological adjustment during the transition to parenthood.

**Methods:** 260 couples (N=520), recruited in a maternity hospital, completed self-administered questionnaires assessing their psychological adjustment (anxiety and depressive symptoms) and relationship quality (positive and negative) at the first, second and third pregnancy trimesters, childbirth, three and 30-months postpartum. To determine the impact of relationship quality on anxiety and depressive symptoms, the Actor-Partner Interdependence Model (APIM) overtime was used. In APIM, the actor effect is the effect of a person's relationship quality in his/her own psychological adjustment, and the partner effect is the impact of a person's relationship quality in his/her partner's psychological adjustment.

**Results:** Positive relationship quality revealed actor effect of men and women and partner effect of women on anxiety and depressive symptoms. Men and women with better relationship quality had fewer anxiety and depressive symptoms, such as women whose partners had positive relationship quality. Negative relationship quality exhibited actor effect of men and women and partner effect of men on anxiety and depressive symptoms. Men and women with worse relationship quality had more anxiety and depressive symptoms, as did men whose partners had negative relationship quality.

**Conclusions:** Relationship quality showed effects on the psychological adjustment of men and women during the transition to parenthood, not only effects of their own, but also of their



partners' relationship quality. These results reinforce the need to develop dyadic interventions to improve relationship quality during the transition to parenthood.

### P9. Functional Status and Symptoms Severity in Women with Chronic Fatigue Syndrome

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**Background:** Chronic Fatigue Syndrome (CFS) is a condition characterized by unexplained physical and mental fatigue. This condition affects predominantly more women than men (4:1); that have substantial deficits in functional capacity.

**Objectives:** To determine functionality and severity of symptoms in patients with CFS.

**Methods:** 85 female patients were recruited from the CFS Clinic at the University of Miami. Patients were diagnosed with 1994 CDC - CFS case definition. The Short Form General Health Survey (SF-36) was administered to this group; this form gives a profile of functional status and well-being mental health summary. CFS Symptom Checklist was also administered to assess frequency and severity of CFS associated symptoms.

**Results:** The five most common symptoms in our population are: unusual fatigue reported in 94.1% of the patients, non-refreshing sleep 94.1%, muscle pain 93.9%, problems getting to sleep 93.8%, and general weakness 93.8%. In this group 47.7% experiencing Unusual fatigue every day and 56.8% of the patients reported it as severe; 67.6% of patients experienced non-refreshing sleep everyday with 54.1% declaring it severe; 65.9% reported Muscle pain every day and 39% categorized as severe; Problems getting to sleep was reported in 63.9% of the patients every day and 38.5% reported as severe; and finally General weakness was presented every day in 64.1% of the patients and 38.5% reported this symptoms as severe. The SF-36 reported the subscales Vitality (mean: 5.9), Role-Physical (mean: 7.3) and General Health (mean: 9.5) lower than the female population norm in USA.

**Conclusions:** Our study showed marked impairment of the functional status in CFS patients. The scores were significantly lower than the female population norm. The frequency and the severity of the most common symptoms could be related with the functional status of this group. Further investigation is necessary to correlate functionally and distress scores.

### P10. Sexual Function among Women Seeking Care for Sexual Health Concerns at an Academic Medical Center

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**Background:** The Mayo Clinic Women's Health Clinic provides consultative care to women with sexual health concerns. The multidisciplinary team, including providers from internal medicine, gynecology, sex therapy, dietetics and pelvic floor physical therapy, provides care through an integrated approach. Women may be self-referred or referred by their health care providers.

**Objectives:** Characterize sexual function concerns among women presenting for care for sexual concerns at an academic medical center.

**Methods:** Descriptive study of self-reported sexual function in consecutive women reporting for sexual health consultation to the Women's Health Clinic at Mayo Clinic in Rochester, MN, USA between July 2005–2011. All women were administered a Female Sexual Function Index (FSFI) at the time of their visit. FSFI results were entered into a confidential database, for those women providing consent to allow use of their medical records for research.

**Results:** Between July 2005 and July 2011, 1603 women reported for care for sexual concerns and completed an FSFI. Of these, 1537 women provided consent to allow use of their medical records for research. Age range: 21–82 years. Age group most frequently seeking care for sexual concerns: 40–60 years. Of the main domains of sexual function assessed by the survey – desire, arousal, lubrication, orgasm, satisfaction and pain – problems of desire were most frequent. Detailed data describing patterns of sexual concerns and domains of sexual function affected will be reported.

**Conclusions:** Women have sexual concerns throughout adult life. Some domains of sexual function are more common at certain ages and stages, but problems of low desire are common throughout. Care for women with sexual function concerns in the medical setting needs to be able to address all domains of sexual function.

### P11. Sexual Dysfunction during Pregnancy: Occurrence and Assessment of Progression

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**Background:** Sexuality during pregnancy has been studied extensively over the last 61 years, without a clear consensus on the most important related variables.

**Objectives:** The primary objective of this study was to identify changes in the overall sexual experience during pregnancy compared to before pregnancy. Secondary objectives were to study differences in sexual desire, encounters, orgasms, fear of sex, lying to avoid sex, and partner willingness early compared to late in pregnancy. Further, we will assess the effect of marital status on the overall sexual experience.

**Methods:** All participants were from a single center and included women aged 18 to 45 years, who spoke Spanish or English, and were willing to complete 2 questionnaires. The first questionnaire was at 25–28 weeks gestation; a second identical questionnaire was administered at 35–40 weeks. Paired observations were analyzed by agreement procedures and McNemar's tests. A p-value <0.05 was considered statistically significant. Analyses were conducted using SAS version 9.2.

**Results:** Sixty-one participants completed both questionnaires; 82% aged >20, 51% white, 64% >1 pregnancy, and 77% single. Compared to before pregnancy, there was worse overall sexual experience at 25–28 and 35–40 weeks gestation (28% and 43%, respectively;  $p < 0.01$ ). Significance persisted for single subjects when stratified by marital status. The number of sexual encounters weekly was associated with pregnancy stage; a lower proportion of subjects reported >1 weekly encounter at 35–40 weeks gestation ( $p = 0.01$ ). Other variables were not significantly associated with stage of pregnancy. Sixty percent of study participants reported that their doctor had not previously discussed sex.

**Conclusions:** The overall sexual experience during pregnancy worsens compared to before pregnancy, particularly for single women. The frequency of sexual encounters decreases as pregnancy progresses. These results should increase awareness of changes in sexuality during pregnancy and the need to discuss sex during obstetric office visits.

## P12. Ovarian hormone levels and menstrual cycle characteristics in non-contracepting cohort of older women of reproductive age

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**Background:** This analysis comes from a larger study of ovarian tumor marker behavior across the menstrual cycle in a cohort of women, carefully screened to exclude factors known to contribute to CA125 and ovarian hormonal fluctuation. Estradiol and progesterone are the primary hormones that responsible for the menstrual cycle and are indicative of ovarian function. The sample was chosen using strict criteria to minimize fluctuation in all biomarkers including having regular menstrual cycles and no hormonal contraception.

**Objectives:** 1) To describe estradiol (E2), and progesterone (P) levels across the menstrual cycle in a sample of older women of reproductive age, and 2) To describe cycle characteristics across 3 menstrual cycles of the cohort.

**Methods:** Healthy, Caucasian women between the ages of 18 and 39 were enrolled using strict criteria to minimize ovarian hormone fluctuations and menstrual cycle variability. After cycle regularity was determined using calendars maintained by participants for 3 months, demographic data and blood samples were collected at three different phases of the menstrual cycle.

**Results:** The mean age of the sample was 32 years and mean age at menarche was 12.6 years old. Negative binomial regression models showed mean E2 and P levels changed significantly across the menstrual cycle, yet these changes were consistent with known trajectories. However, significant intra-individual variability was observed in the cohort.

Menstrual cycle length ranged from 25 to 35 days (mean = 28 days, SD = 1 day) and bleeding during menses ranged from 3 to 9 days (mean = 5 days, SD = 1.5 days). Over half of the women (56.7%) reported medium flow, 20% reported light flow, 11.7% reported heavy flow, and 11.7% reported variable flow. Twenty-five percent of the women reported spotting (requiring a panty liner) at some time during the month other than menses.

**Conclusions:** Significant ovarian hormone and menstrual cycle variability persist in older women even when the cohort is carefully screened to include those women who were expected to show minimal fluctuations in menstrual cycle, E2 and P levels.

## P13. Racial/Ethnic Differences in Depression Among Young Women: The Role of Intimate Partner Violence, Trauma, and Posttraumatic Stress Disorder

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**Background:** Rates of depression have been found to differ by race/ethnicity among young low-income women in several studies, and the reasons for these differences are unclear.

**Objectives:** To examine whether intimate partner violence (IPV), trauma, or posttraumatic stress disorder (PTSD) can explain racial/ethnic differences in the risk of developing depressive symptoms among young low-income women.

**Methods:** A cross-sectional self-administered survey was completed by 3,181 African American, Hispanic, and white women 16–24 years old who visited one of five publically funded reproductive health clinics in Southern Texas. The self-administered survey included a depression screener that was completed by 2,414 women in addition to questions about PTSD symptoms, IPV, and trauma. Binary logistic regression and Poisson regression were used to determine whether PTSD, IPV, and trauma affected the differences in depression found by race/ethnicity.

**Results:** Twenty four percent of the sample reported symptoms on the depression screener that indicated a need for further evaluation for major depressive disorders. Differences in the risk of developing depressive symptoms in the young women in this study were explained by PTSD symptoms and trauma. White women had elevated levels of depressive symptoms, and were at higher risk of reporting a score  $\geq 4$  on the Beck Depression Inventory-Primary Care (BDI-PC). White women also had higher rates of depressive symptoms, PTSD symptoms, IPV, and trauma than African American or Hispanic women. PTSD symptoms completely attenuated the differences in depression between white and African American women while trauma attenuated the difference in risk of developing depressive symptoms between Hispanic and white women.

**Conclusions:** Elevated levels of trauma and PTSD symptoms may explain some racial/ethnic differences in depressive symptoms. In future studies that examine depression among young women, trauma and PTSD symptoms should be included when examining differences in depressive symptoms.

## P14. A Longitudinal Study of Knowledge, Attitude, and Self-Efficacy in Pregnant Asthmatics

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**Background:** There are more than 100 million asthma sufferers worldwide, including 22 million Americans (NHLBI, 2007). Asthma also affects 8.4% of pregnancies, making it one of the most common medical complications of pregnancy (Kwon, Belanger, Triche, & Bracken, 2006). Pregnant women with asthma have greater risk for premature delivery, pregnancy induced hypertension, and increased rate of premature birth (NIH, 1993; Kallen, Rydstroem & Aberg, 2000). Research on asthma and pregnancy has focused on diagnosis and treatment. However, the

effectiveness of these treatments is based on both the women's knowledge and understanding of asthma in during pregnancy and her ability to carry out the self-management plan.

**Objectives:** The objectives of this study of pregnant women with asthma are 1) to describe their knowledge and attitudes of asthma in pregnancy and 2) to determine if their knowledge, attitudes and self-efficacy changed as their pregnancy progressed.

**Methods:** Sixty-eight pregnant women who had an asthma diagnosis were given knowledge, attitudes and self-efficacy questionnaires initially during the first trimester (Time I) and during the latter part of their pregnancy (Time II). A demographic data form was also administered at both points in the pregnancy. Data was collected in an urban academic medical clinic and analyzed using SPSS 17. Data analysis utilized frequencies and paired samples t tests.

**Results:** There were no significant differences between Time I and Time II in attitudes and self-efficacy. Significant differences were limited to the knowledge questionnaire.

**Conclusions:** Pregnant women with asthma had gaps in their knowledge of asthma in pregnancy, although their knowledge increased as their pregnancy progressed from Time I to Time II. Educational programs for pregnant women with asthma should be tailored to their needs and modified as necessary as their pregnancies progress.

#### P15. Infertility stress: The role of coping strategies, personality trait, and social support

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**Background:** Infertility is one of the most unpleasant experiences of a couple's life. It is referred to as infertility crisis. When someone is diagnosed as infertile they go through a stressful time in terms of their social, familial and personal life. This would create similar symptoms as Post Traumatic Stress Syndrome in the affected couples. Even though it is believed that coping strategies, personality trait and social support play an important role on infertility stress. There has been a few studies to date that test this relationship directly.

**Objectives:** The aim of our study was to investigate the effect of coping strategies, personality trait and social support as the main social and psychological factors on infertility stress.

**Methods:** This study was conducted on 201 infertile Iranian women who were referred to the Vali-e-Asr Reproductive Health Research Center, and completed the following questionnaires: The fertility problem inventory, measuring perceived infertility related stress (Newton CR, 1999), big five factor personality questionnaire (Farahani, 2009), Multidimensional scale of perceived social support MSPS (Zimet 1988), and multidimensional assessment of coping (Endler, 1990). The results were then analyzed using the Pearson Correlation and stepwise regression.

**Results:** Infertility stress has negative and significant relation with problem-oriented coping method, perceived social support and being extrovert. It has a positive, significant relation with emotion-oriented coping method, obsessive compulsive disorder (OCD). The results of stepwise regression showed that emotion-oriented coping method, OCD and being extrovert are suitable predictors of infertility stress.

**Conclusions:** About 22% of the infertility stress variance was explained by coping strategies and personality trait. Therefore our result demonstrates the importance of social and psychological factors on experiencing the infertility stress.

**Key words:** Infertility, Infertility stress, Stress coping strategies, Personalities, Social support.

#### P16. Conservative surgical treatment of breast cancer: Influence of immediate breast reconstruction on sexual function and depression occurrence

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**Background:** Nowadays an increasing number of breast cancer patients have been considered eligible for conservative treatment. This increase has raised concern for the quality of life of these patients. Although conservative surgery is considered to be the least disfiguring surgical option for breast cancer patients, aesthetic results are unpredictable, and the majority of women report breast asymmetry after the operation.

**Objectives:** To evaluate the influence of immediate breast reconstruction on sexual function and occurrence of depression in women who underwent conservative surgical treatment of breast cancer.

**Methods:** One hundred eighteen women were interviewed: 38 had undergone breast cancer conservative surgery with reconstruction, 40 without reconstruction and 40 women without breast cancer. To assess sexual function and depression occurrence two validated questionnaires were used, the Female Sexual Function Inventory (FSFI) and the Beck's Depression Inventory (BDI). Scores for individual FSFI domains (desire, arousal, lubrication, orgasm, satisfaction, and pain) were summed to produce a FSFI-total score, ranging from 2 to 36. A FSFI-total cut-off score  $\leq 26$  was used to identify women with sexual dysfunction. BDI produces one score, ranging from 0 to 63. The following scores were taken into account to classify depression: no depression (score  $< 10$ ), mild (score ranging from 10 to 18), moderate (score ranging from 19 to 29), or severe (score  $\geq 30$ ). Results were statistically compared.

**Results:** Groups were matched for age and body mass index. Patients in the reconstruction group had a better educational level ( $p=0.001$ ). Groups did not differ in regard to sexual function; there was no significant difference between groups in any of the areas of sexual response. The prevalence of sexual dysfunction was 74% in breast reconstruction group, 73% in the group without reconstruction and 60% in control group ( $p=0.348$ ). There was a higher prevalence of moderate depression in the group without reconstruction ( $p=0.010$ ).

**Conclusions:** The conservative surgical treatment of breast cancer, with or without breast reconstruction, did not affect sexual function of patients. Breast reconstruction had a positive influence on the occurrence of depression among patients.



**P17. Increased MicroRNA-221/222 and decreased estrogen receptor  $\alpha$  in uterosacral ligaments from women with pelvic organ prolapse**

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**Background:** Pelvic organ prolapse (POP) is a common gynecological disease with a multifactorial etiopathogenesis, which negatively affects quality of life in women. Studies have reported that ER $\alpha$  protein expression is reduced in POP patients, which indicated that ER $\alpha$  protein deficiency may contribute to the induction or progression of POP. ER $\alpha$  is a target gene for MicroRNA-221/222 (miR-221 and miR-222) and inhibited by miR-221/222. However, the role of miR-221/222 in the regulation of ER $\alpha$  is not known in POP.

**Objectives:** The aim of this study was to investigate the expression profile of miR-221/222 and its target gene ER $\alpha$  in the uterosacral ligaments of women with POP and to assess their clinical significance.

**Methods:** Histologically confirmed full-thickness uterosacral ligament biopsies were procured during hysterectomy surgery from 40 POP patients and 40 women without prolapse as controls. Expression of miR-221/222 was determined by quantitative real-time PCR, and ER $\alpha$  protein expression was analyzed by Western blot and immunohistochemistry, respectively.

**Results:** The results showed that both miR-221 and miR-222 expression are upregulated in POP patients ( $1.98 \pm 0.49$ ;  $2.05 \pm 0.63$ ), when compared with controls ( $1.06 \pm 0.24$ ) ( $p < 0.01$ , respectively). Western blot analysis demonstrated that expression of ER $\alpha$  protein was 2.2 fold lower in POP patients compared with controls. Immunohistochemistry results showed that expression of ER $\alpha$  in non-prolapsed ligaments was 2.5 times greater than in prolapsed ligaments ( $64.2 \pm 15.1\%$  versus  $26.1 \pm 11.5\%$ ,  $P = 0.008$ ). Negative correlations were observed between ER $\alpha$  protein expression and both miR-221 and miR-222 in POP patients ( $r = -0.856$ ,  $p = 0.000$ ;  $r = -0.850$ ,  $p = 0.000$ , respectively).

**Conclusions:** Elevated miR-221/222 expression is associated with, and may be responsible for, reduced ER $\alpha$  expression in the uterosacral ligaments of patients with POP. MiR-221/222 may serve as potential therapeutic targets for POP.

**P18. Urinary retention among elderly women who underwent hip arthroplasty: A prospective evaluation upon admission to rehabilitation**

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**Background:** Acute urinary retention immediately after hip arthroplasty is common among elderly women. However, late urinary retention (LUR), upon rehabilitation admission, has never been studied in this population.

**Objectives:** To assess the incidence of LUR among elderly women who underwent hip arthroplasty.

**Methods:** This was a prospective study conducted between October 2010 and October 2011 at the Geriatric division of Tel-Aviv Sourasky Medical Center. All elderly ( $\geq 65$  years) women who were admitted for rehabilitation following hip arthroplasty of any indication were prospectively enrolled. Women already with urinary catheter and/or women with moderate to severe

cognitive decline were excluded. All women underwent portable ultrasound bladder scan (BVI 3000) in the morning following rehabilitation admission. LUR was defined as post-voiding residual urinary volume (PVR)  $\geq 200$ cc. Clinical and lab parameters were analyzed and compared between women with versus without LUR. Statistical Package for Social Sciences (SPSS), version 15.0, was used for the multivariate analysis.

**Results:** Study population comprised of 99 consecutive women (mean age: 82.3 years), 90 (90.9%) of whom underwent hip fracture repair. The mean surgery-admission interval was  $11.4 \pm 5.9$  days. LUR was diagnosed in 37 (37.4%) women, with mean PVR of  $549 \pm 388$ cc. Of these, 11 (11.1%) women had PVR  $> 700$ cc at diagnosis (mean  $1033 \pm 283$ ). Most women ( $N = 95$ , 96%) were asymptomatic. Of the various clinical and lab parameters, only the use of narcotics was independently associated with LUR (OR 50, 95% CI 14;71). Urinary catheter was inserted in all cases of PVR  $> 700$ cc, but was taken out in 8/11 women by rehabilitation completion. Rehabilitation outcomes and length were similar in women with and without LUR, and in women with versus without urinary catheter.

**Conclusions:** LUR upon rehabilitation admission in elderly women after hip arthroplasty is very common. The main risk factor for LUR among these women is the use of narcotics. Noninvasive portable bladder scan should be used routinely for early detection of this late voiding disorder.

**P19. Ethnic, Racial, Language, and Insurance Differences in Screening Postpartum Women for Depression**

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**Background:** Massachusetts has reduced many traditional barriers to mental health care access through universal health care coverage and zero disparity policies; however, disparities by ethnicity, race, language, and income in postpartum depression (PPD) screening rates may still exist. While PPD affects women from all cultures, low income women and minority women are likely to have higher rates. Early identification can support intervention and treatment.

Cambridge Health Alliance (CHA), a public hospital system, presents an important venue in which to understand disparities in PPD screening in diverse populations. CHA has a universal screening policy and providers currently screen postpartum women for depressive symptoms using the Patient Health Care Questionnaire (PHQ9) at the six-week postpartum visit.

**Objectives:** To identify socio-demographic correlates of being screened for PPD in a sample of women who received post-natal care at CHA from January 2008 to April 2011.

**Methods:** Electronic medical record data on all visits between 2–12 weeks postpartum were accessed for 3,627 women. Bivariate analyses compared screening by race/ethnicity, primary language, insurance status, and age. Multivariate analyses controlled for potential confounding.

**Results:** Seventy-six percent of women were screened for PPD. Analyses demonstrated disparities in PPD screening by race/ethnicity, language, and insurance status. Seventy-eight percent of White and 77% of Hispanic women were screened, while only 68% of Black women were screened ( $p < .001$ ). Women who spoke Haitian Creole were less likely to be screened (62%) than those who spoke English (76%), Spanish (76%), or Portuguese (79%),  $p < .001$ . Women with private insurance were more likely to be screened (79%) than women with public insurance (74%),  $p < .01$ . In multivariate analyses, women with public compared to private insurance had 1.3 (CI=1.1–1.6) times the risk of not being screened. Similarly, women who spoke Haitian-Creole had 1.5 (CI=1.0–2.2) times the risk of not being screened as compared to English-speaking women.

**Conclusions:** Despite high rates of screening for PPD, disparities by race/ethnicity, language, and insurance status still exist in an arena with universal screening policies.

## P20. Predictors of Hospitalizations Among Women Seeking Substance Abuse Treatment in the State of Kentucky

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**Background:** Increasing numbers of women are involved in substance abuse with severe implications including prenatal and child exposure to drugs. The rising demand for inpatient services for these women indicates more adverse conditions or inadequate gender-specific treatment, and it escalates the cost of health care.

**Objectives:** This study looked at factors that predict hospitalization in women seeking treatment for substance abuse in the state of Kentucky.

**Methods:** The 2008 Treatment Episode Data Set (TEDS) was used for analysis. A total of 8,623 women had received substance abuse treatment during that year. Odds ratio for hospitalization were computed using multiple logistic regression.

**Results:** Out of the total women who had received treatment for substance abuse, 89% were White, 75% were unemployed and only 20% were uninsured. Approximately 4% were pregnant at the time of treatment and 35% were found with psychiatric disorders. Overall, 20% of the women were hospitalized. The homeless were 13 times more likely to be hospitalized for substance abuse conditions than those with independent living. Having no employment and having no insurance were associated with increased risk of hospitalization. Individuals with psychiatric problems and treatment repeaters had greater risk of hospitalization (OR=2.03, CI=1.52–2.72 and OR 2.91, CI=2.26–3.75, respectively). Women who reported alcohol use were 36% more likely to be hospitalized. Being pregnant increased the odds of admission though the result was not statistically significant.

**Conclusions:** There is a higher risk of hospitalization for substance abuse in women who are homeless, uninsured and recipient of multiple treatments. Public health programs addressing these factors while applying gender-specific interventions would help in reducing morbidity, mortality and cost associated with substance abuse problems in women.

## P21. Body mass index and breast cancer risk of women in their 40s: Systematic review and meta-analysis

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**Background:** Body mass index (BMI) has a paradoxical relationship with breast cancer risk in epidemiologic studies. Higher BMI has been associated with lower risk for breast cancer in premenopausal women, but higher risk after menopause. Underlying mechanisms for this paradox are unknown.

**Objectives:** To determine the strength of the evidence and quantify the effect of BMI on breast cancer risk of women in their 40s through a systematic review and meta-analysis.

**Methods:** A systematic evidence review was conducted using methods of the AHRQ Evidence-based Practice Centers. Electronic literature searches used MEDLINE (1995 through June 2011), Cochrane, and Scopus. English-language studies were included if they provided data about BMI measured within two years of the study's baseline, and subsequent invasive breast cancer incidence for women aged 40–49 years in populations relevant to screening in the U.S. BMI categories corresponded to World Health Organization definitions of underweight, normal weight, overweight, and obese. A random effects model was used to determine summary estimates of associations using normal BMI as the reference group.

**Results:** Eighteen observational studies enrolling over 341,000 participants met criteria for meta-analysis. Most individual studies did not demonstrate statistically significant relationships between BMI and breast cancer incidence, although point estimates were consistent across studies. Meta-analysis indicated breast cancer risks that were significantly increased for underweight women (RR=1.10; 95% CI 1.05–1.14), and decreased for overweight (RR=0.91; 95% CI 0.87–0.96) and obese (RR=0.79; 95% CI 0.73–0.86) women compared to normal weight women.

**Conclusions:** For women in their 40s, breast cancer risk was increased by 10% for underweight women, and reduced by 9% for overweight and 21% for obese women compared to normal weight women. While this analysis demonstrates an association between BMI and breast cancer incidence, it does not prove causation.

## P22. Cervical Dysplasia Screening and HPV Vaccination Among Women with Crohn's Disease

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**Background:** Human papilloma virus (HPV) is the leading cause of cervical cancer. Crohn's disease (CD) is a chronic inflammatory bowel disease that is frequently treated with immunosuppressive medications, which increase the risk for cervical dysplasia. It is unclear if vaccination and cervical cancer screening are being recommended.

**Objectives:** To assess factors associated with HPV infection, HPV vaccine recommendations, and cervical cancer screening in women with CD and by which medical providers.

**Methods:** An IRB-approved survey was sent by email with an imbedded link to all members of the patient organization Crohn's and Me. Anonymous responses were imported for analysis.

**Results:** 1734 women with CD completed the survey, 53% had a Pap within the past year and 44% reported a previous abnormal Pap. 21% reported that HPV vaccine had been recommended, 1.3% by a gastroenterologist (GI) and 4.9% by a primary care provider (PCP), and was received by 22%. Vaccination was associated with having no sexual partners ( $p < 0.0001$ ), no previous Pap ( $p < 0.0001$ ), previous abnormal Pap ( $p = 0.001$ ), previous sexually transmitted disease ( $p < 0.0001$ ), family history of abnormal Pap ( $p < 0.0001$ ), oral contraceptive use ( $p = 0.0006$ ), vaccine recommendation by any provider ( $p < 0.0001$ ). Among the sexually active immune suppressed women, 29% reported a previous abnormal Pap, only 18% had received the vaccine and 35% were overdue for cervical cancer screening.

**Conclusions:** GIs and PCPs did an equally poor job of recommending HPV vaccination. Not being sexually active and no previous Pap correlated with receipt of the HPV vaccine, likely due to vaccination at a young age. Having risk factors for HPV also correlated with receipt of the HPV vaccine. The majority of women with CD are not getting the HPV vaccine or adequate cervical cancer screening. There is room for substantial improvement in the rates of HPV vaccination and cervical cancer screening.

## P23. Cervical Cancer Screening, Pelvic Examination and Reproductive Health Service Utilization Among Females Ages 15–20

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**Background:** Cervical cancer screening guidelines now recommend that Papanicolaou testing (Pap smear) begin at age 21 regardless of age at sexual debut, and that routine pelvic examinations in asymptomatic adolescents not be offered. Consequences of such changes may impact the delivery of other preventive reproductive health services and have not been addressed in current literature.

**Objectives:** To assess the relationship between cervical cancer screening and utilization of other reproductive health services among females ages 15–20.

**Methods:** Using the 2006–10 National Survey of Family Growth (n = 12,279 females ages 15–44), respondents ages 15–20 who reported ever having sex with a male and were at risk of unintended pregnancy (not currently pregnant, attempting pregnancy, or infertile) were included (n = 1302). Primary exposure was having a Pap smear or pelvic exam in the past 12 months.

**Results:** Bivariate analysis showed that among females ages 15–20 who reported ever having sex and were at risk of unintended pregnancy, those women who received a Pap smear or pelvic examination in the past 12 months were more likely to: receive counseling, testing, and/or treatment for sexually transmitted infections (45.4% vs. 11.2%,  $p < 0.0001$ ), report higher rates of contraceptive counseling (40.6% vs. 16.5%,  $p < 0.0001$ ), receive a birth control prescription (73.9% vs. 31.7%,  $p < 0.0001$ ), and be currently using effective or highly effective contraception (56.4% vs. 23.5%,  $p < 0.0001$ ). Additionally, multivariate analysis demonstrated that those who received a Pap smear or pelvic exam in the past 12 months were more likely to be currently using effective or highly effective contraception (OR 4.35, 95% CI: 2.76–6.88).

**Conclusions:** Utilization of effective and highly effective contraception appears to be linked to receipt of pelvic examination and cervical cancer screening. These results suggest that delaying the initiation and reducing the frequency of cervical cancer screening and pelvic examinations may have an impact on the delivery of other reproductive health services for females ages 15–20.

## P24. Temporal trends in fertility rates among women with schizophrenia: A population-based study

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**Background:** Women with schizophrenia have traditionally had lower birth rates than unaffected women. Advances in community-based care, aggressive treatment of first-episode psychosis and reduced use of fertility-impairing conventional antipsychotic drugs may have created additional child-bearing opportunities.

**Objectives:** The objective of this study was to analyze birth rates over a fourteen-year period among women with schizophrenia and to compare against women without schizophrenia in the same period.

**Methods:** We conducted a repeated cross-sectional population-based study, 1996 to 2009 using population-based linked administrative databases for the entire province of Ontario, Canada. All women aged 15–49 years were classified into schizophrenia and non-schizophrenia groups in each successive 12-month period. Birth was defined by delivery of a liveborn or stillborn infant after 20 weeks gestation. Annual general and age-specific fertility rates were derived. We analyzed the change in fertility rates over time and compared women with and without schizophrenia at each time point.

**Results:** The general fertility rate among women with schizophrenia was greater at the end of the study period (relative risk [RR] 1.17, 95%CI 1.05–1.32) compared to the beginning. Specifically, fertility rates increased among women with schizophrenia aged 20–24 years (RR 1.44, 95% CI 1.09–1.89) and 35–39 years (RR 1.37, 95% CI 1.03–1.82). In 1996, the fertility rate ratio comparing women with and without schizophrenia was 0.30 (95% CI 0.25–0.35), whereas, in 2009 the rate ratio was 0.42 (95% CI 0.37–0.48).

**Conclusions:** Birth rates among women with schizophrenia appear to have increased. A systematic study of reproductive outcomes in this population is needed to identify potential health disparities affecting these women and their children.

## P25. Coronary Artery Disease in Premenopausal Women: A Non-invasive Approach for Investigation

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**Background:** Compared to age-matched men, coronary artery disease (CAD) in premenopausal women has a particularly poor prognosis, and relatively little is known about this group. In particular, the value of non-invasive measures of atherosclerosis to CAD for investigation has not been critically evaluated in premenopausal women.

**Objectives:** To evaluate the relationship between non-invasive carotid intima-media thickness (cIMT) and invasive coronary angiography in premenopausal women.

**Methods:** Twenty-four premenopausal women (mean age  $44 \pm 5$  years) undergoing clinically-indicated coronary angiography were enrolled. Premenopausal status was determined using our published Women's Ischemia Evaluation (WISE) algorithm (based on blood hormone levels and cycling history). All women had cIMT measured by a single trained operator. A core angiography laboratory evaluated the presence of obstructive CAD (defined as at or greater than 50% stenosis) and overall CAD severity score (CSS) using our published methods.

**Results:** Seven (29%) of the women had angiographic evidence of obstructive CAD. Both the presence of obstructive CAD and CSS significantly correlated with cIMT: CAD:  $r = .40$ ,  $p = .06$ ; CSS:  $r = .53$ ,  $p = .02$ . Similar CAD risk factors were associated with cIMT and CSS including diabetes (cIMT: beta (standard error [SE]) =  $85.2(37.1)$ ,  $p = 0.03$ ; CSS: beta(SE) =  $10.1(3.6)$ ,  $p = 0.01$ ), and history of dyslipidemia (cIMT: beta(SE) =  $71.8(32.5)$ ,  $p = 0.04$ ; CSS beta(SE) =  $7.0(3.5)$ ,  $p = 0.06$ ), both respectively.

**Conclusions:** These results suggest that non-invasive cIMT is related to CAD determined by invasive coronary angiography in premenopausal women. We conclude that cIMT may be a useful non-invasive tool for investigation of CAD in premenopausal women.

## P26. Pregnancy outcome in women after Loop Electrosurgical Excision Procedure (LEEP) for cervical intraepithelial neoplasia

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**Background:** Cervical intraepithelial neoplasia (CIN) is a pre-cancerous disease that can be treated effectively with conservative approaches.

Loop electrosurgical excision procedure (LEEP) has become the treatment of choice for the cases.

The incidence of CIN that requires treatment peaks at the reproductive years and the side effects of the treatment on future pregnancies are of great interest.

Preterm delivery, low birth weight and premature rupture of membranes are common after cold knife conization, but the data on pregnancy outcome after are not well understood.

**Objectives:** The objective of this study is to evaluate the pregnancy outcome in women who underwent LEEP and got pregnant after the procedure.

**Methods:** A retrospective study was done in 29 medical records of women who underwent LEEP at the University Hospital Samuel Libânio – Universidade do Vale do Sapucaí - UNIVAS, and got pregnant after the procedure – we analysed the time elapsed between the LEEP and the pregnancy, gestational age at the time of the delivery, delivery type, birth weight, premature rupture of membranes, preterm labor and Apgar score, size of the specimen, time elapsed between the procedure and pregnancy.

**Results:** There were 29 pregnancies whose medical reports were possible to analyse the mean age was 27 years. The mean of time elapsed between the LEEP and pregnancy was of 2,95 years. The mean of volume excised from the cervix was  $2,62 \text{ cm}^3$ . The mean of birth weight was 3203g and the mean of gestational age at birth was 38,5 weeks. The statistical evaluation showed no correlation between weight at birth and volume of the specimen ( $p = 0,026$ ). When compared volume and gestational age ( $p = 0,0478$ ) there was no statistical significance. The grade of the disease (CIN 1, 2 or 3) didn't show any association with birth weight ( $p = 0,8234$ ) or gestational age ( $p = 0,2195$ ).

**Conclusions:** In these 29 patients studied the data didn't point to any adverse effect on pregnancy subsequent to the treatment of pre-invasive diseases of the uterine cervix with LEEP. A larger number of patients is required for the confirmation of these findings.

## P27. Postpartum intrauterine device

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**Background:** The family planning programme includes the promotion of women's health. Choosing a contraceptive method at postpartum can be difficult because the use of the pill and combined injections are not advised.

Advantages of DIU within these conditions:

- It does not interfere in lactation.
- Reversible/long duration (10 years).
- Low cost and subsidy by the Department of Health.
- Cervical dilation is present and patient already under care of doctors.

Therefore DIU seems to be the reversible method chosen to be used in postpartum period. It can be used right after the removal of the placenta, providing long-term protection against unwanted pregnancy.

**Objectives:** Evaluate the efficacy and safety of the DIU inserted in postpartum.

**Methods:** Prospective, descriptive and analytic studies. 193 postpartum women, over 18's took part of the study; births occurred between the 37th and 41st week of pregnancy, rupture of membranes within less than 12 hours and natural placenta delivery. Patients were informed about and signed the term of consent. Cautious asepsis and use of T Cu 380mm. DIU inserted manually in the cervix and after 10 minutes of the placenta removal. After that it was injected 01 ampoule (0,2mg) of intra-

muscular ergometrine. Discharged from the hospital with instructions to look for assistance in case of abnormality. Following up consultation arranged for the 30th and 180th day to evaluate any complications and efficacy of the method. On the 6th month transvaginal US was done and patient was discharged.

**Results:** Puerperium women with DIU. 193 were observed (155 natural births and 38 caesareans). Within 6 months 33 DIUs were removed (all inserted after vaginal births). From the 193 DIUs, 160 (82,90%) were positioned in the correct place at the 6th month check up. No infections or pregnancy occurred.

**Conclusions:** When this study was concluded the use of the intrauterine device postpartum was safe and efficient. These patients will be protected for a 10-year period. In Brazil this adherence is not obtained with any other contraceptive method.

## P28. Sexuality, body image and depression after breast reconstruction

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**Background:** Breast cancer is the second most frequent kind of cancer worldwide, the most prevalent one among women and the one that most causes death. Despite its treatment has improved in the last decades, it still impacts patients' global quality of life.

**Objectives:** To evaluate sexual function, depression and body image after breast reconstruction.

**Methods:** Sixty breast cancer patients (30 who had undergone mastectomy and breast reconstruction and 30 with mastectomy only) and 30 women without cancer (control group) were enrolled in this cross-sectional study. Validated instruments were used. To assess sexual function, it was applied The Female Sexual Function Index (FSFI). The Beck Depression Inventory (BDI) and the Body Dysmorphic Disorder Examination (BDDE) were applied to evaluate depression and body image, respectively.

**Results:** There was a significant difference among the groups regarding the average scores of FSFI ( $p=0.007$ ), the scores of BDI ( $p=0.02$ ) and the BDDE ( $p=0.01$ ), with worse sexual function, worse body image and more depressive symptoms in patients undergoing to mastectomy. It was observed a correlation of sexual function decreasing with age, no steady relationship and high scholar formation. Young patients in the mastectomy group also presented significantly higher scores of BDI and BDDE, what means more depressive symptoms and worst body image, respectively.

**Conclusions:** Sexual function and body image were better in the group of patients who underwent breast reconstruction which allowed observing fewer depressive symptoms.

## P29. Influence of patient sex and gender on medication use, adherence and prescribing alignment with guidelines

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**Background:** Studies have demonstrated significant physiological differences in drug absorption, distribution, metabolism and excretion in women. To date, this knowledge has not been broadly translated into sex-specific dose and guideline development. Although poor adherence to therapies and clinical guidelines is known to be widespread and influenced by many factors, the influence of patient sex and gender is not well documented.

**Objectives:** This study investigated differences between men and women in medication use, adherence, and prescribing alignment with evidence-based guidelines.

**Methods:** A national pharmacy claims database was used to describe medication use, adherence and prescribing alignment with evidence based guidelines in nearly 30 million eligible members, age 18 to 65, between 1/1/2010 and 12/31/2010. Medication Possession Ratio (MPR) was calculated among utilizing members to measure adherence.

**Results:** Women were prescribed more medications across all age bands, an average of 5.0 drugs, compared to 3.7 drugs per eligible male member. During the study timeframe, 68% of female members were prescribed a chronic or acute medication compared with 59% of eligible males. The higher female average persists, even after accounting for prescription contraceptives. In addition to higher medication utilization, itself a risk factor for increased non-adherence, in 25 of 25 clinical measures relating to cardiovascular disease and/or diabetes, women were less adherent to medications and not prescribed medications in alignment with recommended clinical guidelines as often as men.

**Conclusions:** Sex-neutral prescribing may result in women being mis-dosed, potentially leading to suboptimal therapeutic outcomes and avoidable adverse events or side effects. Differences noted between the sexes in medication use, adherence, and prescribing alignment may indicate a need for more personalized dosing and therapeutic management to improve outcomes. These results warrant additional study and reporting of sex-based differences at all levels of basic and clinical research, as well as subsequent translation into more personalized and gender specific treatments, recommended dosing levels, and clinical guidelines.

## P30. Early Start: A Cost Beneficial Perinatal Substance Abuse Program

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**Background:** Alcohol, tobacco and other drug use remains a significant problem in pregnancy leading to preventable morbidity and mortality in more than 400,000 pregnancies annually. Cost effective intervention programs are needed.

**Objectives:** The purpose of this study was to conduct a cost-benefit analysis of Early Start, an integrated, prenatal intervention program for stopping substance use in pregnancy.

**Methods:** A retrospective cohort study was conducted of 49,261 women who completed Prenatal Substance Abuse Screening Questionnaires at obstetric clinics and had urine toxicology screening tests. Four study groups were compared: 1) women screened, assessed positive and followed by Early Start (Screened-Assessed-Followed,  $n=2032$ ); 2) women screened and assessed positive without follow-up (Screened-Assessed,  $n=1181$ ); 3) women who screened positive only (Screened-Positive-Only,  $n=149$ ); 4) controls who screened negative (Control,  $n=45,899$ ). Costs associated with maternal healthcare (prenatal through one year post-partum), infant birth hospitalization care, and pediatric healthcare (through one year) were adjusted to 2009 dollars. Mean costs were calculated, adjusted for age, race, education, income, marital status and amount of prenatal care.

**Results:** Screened-Positive-Only group adjusted mean maternal total costs (\$10,869) were significantly higher than Screened-Assessed-Followed, Screened-Assessed, and Control groups (\$9,430, \$9,230, \$8,282; all  $p<0.001$ ). Screened-Positive-Only group adjusted mean infant total costs (\$16,943) were significantly higher than Screened-Assessed-Followed, Screened-Assessed, and Control groups (\$11,214, \$11,304, \$10,416; all  $p<0.001$ ). Screened-Positive-Only group adjusted mean overall total costs (\$27,812) were significantly higher than Screened-Assessed-Followed, Screened-Assessed, and Control groups (\$20,644, \$20,534, \$18,698; all  $p<0.001$ ). Early Start implementation costs were \$670,600 annually. Cost-benefit analysis showed that the net cost benefit averaged \$5,946,741/year.

**Conclusions:** Early Start is a cost-beneficial intervention for substance use in pregnancy that improves maternal-infant outcomes and leads to lower overall costs by an amount significantly greater than the costs of the program.

### P31. Hormonal Profiles of Women with Chronic Fatigue Syndrome Differ from those of Controls

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**Background:** Chronic fatigue syndrome (CFS), a debilitating condition of unknown pathogenesis, is manifested by fatigue and many other symptoms. Hormones affect energy levels and many biological processes but, except for cortisol, other hormones have been rarely researched in CFS.

**Objectives:** To compare thyroid stimulating hormone (TSH), prolactin (PRL), estradiol, progesterone (P), testosterone (T), dehydroepiandrosterone sulfate (DHAS), and sex hormone binding globulin (SHBG) in women with CFS and controls.

**Methods:** A case-control study of CFS in Georgia, USA. Probable CFS cases and controls were identified by detailed telephone interview and were matched for sex, age, race, and residential area. After a full-day clinical evaluation, CFS case, control, or exclusion status was assigned according to the 1994 case definition. Fasting serum levels of hormones were assayed by a commercial laboratory. Analysis was restricted to women.

For univariate analysis, we used the chisquare test and the Wilcoxon nonparametric test. In a multiple logistic regression model, adjusted for covariates, we calculated odds ratios (ORs) to estimate associations between CFS and hormone levels.

**Results:** CFS cases ( $n=64$  women) and controls ( $n=143$  women) had similar mean age ( $48.0 \pm 9.8$  and  $47.7 \pm 9.5$  years) and racial distribution but cases had higher mean BMI than controls ( $28.9 \pm 5.2$  vs.  $27.0 \pm 5.2$   $p=0.005$ ). Menopause was more common in the CFS group,  $p<0.01$ . In univariate analysis, the CFS group had lower DHAS ( $80.7 \pm 57.5$  mcg/dL vs.  $94.3 \pm 55.2$ ,  $p=0.07$ ), testosterone ( $32.1 \pm 13.4$  ng/dL vs.  $38.2 \pm 35.2$ ,  $p=0.07$ ), SHBG ( $51.8 \pm 41.9$  nmol/L vs.  $57.1 \pm 40.1$ ,  $p=0.19$ ), and TSH ( $1.63 \pm 0.97$  mIU/L vs.  $1.9 \pm 1.4$ ,  $p=0.18$ ). In a multiple logistic regression model of CFS the hormones PRL ( $p=0.08$ ), TSH ( $p=0.11$ ), DHAS ( $p=0.14$ ), P ( $p=0.15$ ), and testosterone ( $p=0.17$ ) were associated with CFS with ORs ranging from OR=0.76 (95% CI, 0.54–1.05) for TSH to 0.98 (95% CI, 0.96–1.01) for testosterone.

**Conclusions:** This exploratory analysis found minor differences in several hormones in women with CFS compared to controls. Because single measurements of hormones with pulse secretion may underestimate actual differences, further research is needed to evaluate whether hormones contribute to symptoms in subgroups of CFS patients.

### P32. Gender-related asthma challenges in a sample of African-American women

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**Background:** African-American women bear a disproportionate burden of asthma among adults. However, there has been limited study of gender influences on asthma control faced by this important group. Baseline data from an ongoing randomized controlled trial allowed an examination of management challenges experienced by 183 African American women with persistent asthma.

**Objectives:** To examine the most common gender-related asthma triggers and asthma-management barriers and to determine whether the frequency of these varies by age and education level.

**Methods:** Women with persistent asthma receiving care at the University of Michigan provided data collected by trained telephone interviewers. The questionnaire asked the frequency of being bothered by 11 gender-related asthma triggers (vacuuming, dusting, cooking, shopping, cleaning products, fragrances, cosmetics, hair products, child care, social activities, sexual activity), and 6 asthma-management barriers (family & work responsibilities, balancing responsibilities, communication with physicians, weight or body image, money worries). Linear regression determined whether these challenges varied by age and education level.

**Results:** Most women were 18–45 years of age (58%); 46–65 (34%); over 65 (7%). 68% did not have a college degree. The most common gender-related triggers were dusting, fragrances, and cleaning products; the most common management barriers were weight, money concerns, and balancing work and family. No differences were found in triggers or management barriers by age. However, women without a college degree vs. those with



one were bothered more frequently by gender-related triggers (mean score 2.22 vs. 1.98;  $p=.03$ ) and management barriers (mean score 2.26 vs. 1.89,  $p=.04$ ), after adjusting for age.

**Conclusions:** Preliminary data suggest gender related triggers and barriers to asthma management may be greater for those African American women without a college degree, possibly because of differences in gender role expectations and fewer resources to manage family responsibilities and health related demands. Future research should expand understanding of within-group variation in gender-related factors influencing disease management, to better target intervention strategies to subgroups of women.

### P33. Does hyperkyphosis predict worse physical function in community-dwelling older women over time?

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**Background:** Maintaining physical function is an important prerequisite for preserving independence in later life. Hyperkyphosis, an increased thoracic curvature, is commonly observed in older persons and has been associated with worse self-reported and objectively measured physical function in multiple cross-sectional studies. However, it is unknown whether hyperkyphosis may predict worse physical function over time.

**Objectives:** We sought to determine whether hyperkyphosis precedes worse self-reported and objectively measured physical function decline over an average follow-up of 15 years.

**Methods:** Digitized Cobb angle (T4-T12) derived from supine lateral thoracic spine plain films was used to calculate the degree of kyphosis in a cohort of 1196 older women aged 65 and older from the Study of Osteoporotic Fractures. Participants were a mean 69.3 years old (SD=4.0), with a mean kyphosis of 44.9 degrees (SD=11.8). Regression models were used to evaluate the association between baseline kyphosis and self-reported functional status and objectively measured gait speed, grip strength and timed chair stands both cross-sectionally and change over 15 years.

**Results:** In cross-sectional multivariate analyses, with each 10 degree larger increment of kyphosis, grip strength was 0.23 kg lower ( $p=.02$ ), but there were no significant associations between kyphosis and functional status, gait speed, or timed chair stand. In longitudinal analysis, with each 10 degree larger increment in baseline kyphosis, there was no longer an association with decline in grip strength, but a 0.32 s greater decline in time to complete 5 chair stands ( $p=.004$ ).

**Conclusions:** These study results support previous study findings of hyperkyphosis and worse physical function, but more importantly, imply that greater degrees of kyphosis may precede long-term decline in physical function, not only in timed chair stand, but also worsening functional status ( $p=.09$ ) and gait speed ( $p=.07$ ). Most women included in this study were high-functioning at baseline, suggesting that early recognition and preventative measures against worsening kyphosis may also help preserve physical function over the long-term.

### P34. Pregnancy Leads to Lasting Changes in Foot Structure

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**Background:** Women are disproportionately affected by musculoskeletal disorders and women who carry pregnancies appear to be at particularly elevated risk. This suggests the potential for musculoskeletal changes that persist following pregnancy. Loss of arch height, for example, may explain increased risk for plantar fasciitis, anterior knee pain, and low back pain. The combination of increased weight on joints known to have increased laxity during pregnancy could potentially lead to permanent changes. Although numerous studies have assessed the arches during pregnancy, none have reported whether changes persist.

**Objectives:** To determine whether arch height loss both occurs and persists postpartum.

**Methods:** Women in their first trimester of pregnancy were enrolled and static (arch height and arch rigidity index) and dynamic (center of pressure excursion index, CPEI) arch height was measured at baseline and approximately 18 weeks postpartum. Participants were categorized by parity level (1<sup>st</sup>, 2<sup>nd</sup>,  $\geq 3^{\text{rd}}$ ). Linear mixed models for repeated measures were used to determine whether outcome measures significantly changed overall or by parity group.

**Results:** Sixty women (mean  $\pm$  SD age =  $29.2 \pm 4.3$  years and BMI =  $26.0 \pm 5.4$  kg/m<sup>2</sup>) were enrolled in the study (35–1st, 20–2nd, 2– $\geq 3^{\text{rd}}$  pregnancy). Women were enrolled at 10 weeks gestation and follow-up visits occurred approximately 18 weeks postpartum. Women carrying their 3rd or greater pregnancy were older ( $p=0.0008$ ), but other characteristics did not differ by parity. There was a significant decrease in arch height and arch rigidity index at follow-up, with concomitant increases in foot length and arch drop. However, there were no significant changes in the CPEI. In the “1<sup>st</sup> pregnancy” group, there was a significant reduction in arch rigidity ( $p<0.0001$ ), with significant increases in foot length ( $p<0.0001$ ), arch drop ( $p=0.0019$ ) and CPEI ( $p=0.0019$ ).

**Conclusions:** Pregnancy appears to be associated with a permanent loss of arch height and the first pregnancy may be the most significant. These changes in the feet could contribute to the increased risk for musculoskeletal disorders in women.

### P35. Subdermal Contraceptive Implant: “Typical Use” in a California Managed Care Setting

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**Background:** One half of all pregnancies in the United States remain unplanned. Pregnancies that are unplanned may be costly to the individual and to health plans whether they result in abortion or birth. Long-acting reversible contraception has been

shown to be more cost effective when comparing all contraceptive methods including permanent sterilization.

**Objectives:** Clinical trials data on the safety, efficacy and acceptability of the single-rod subdermal contraceptive implants (SCI) excluded women that were greater than 130% over their ideal weight. Since BMI is a more clinically relevant characteristic, this study aimed to compare reported side effects and early SCI removal by BMI.

**Methods:** This retrospective observational cohort study included 319 Kaiser Permanente Northern California members with SCI insertion between 2/2007-2/2010. Demographic (age, race) and clinical (BMI, gravidity, parity) characteristics and reported side effects were compared as predictors of early SCI removal. Analysis included Chi-square tests, Cox regression hazard models and survival curves.

**Results:** Survival curves showed SCI retention was 76% at 1 year and 62% at 2 years. Women with BMI <30 were 1.63 times more likely to have an early removal than those with BMI >30 ( $P=.02$ ). Women with 1-2 pregnancies were 1.73 times more likely ( $p=.03$ ) and >3 pregnancies were 2.68 times more likely ( $p=.004$ ) to have early SCI removal compared to those who had never been pregnant. The most commonly reported side effect was unscheduled bleeding. Women reporting bleeding any time during SCI use had higher rates of early removal over 1 and 2 years (22-45% vs. 9-13%;  $p<0.01$ ). Obese women were less likely than non-obese women to report bleeding. No pregnancies occurred in obese or non-obese SCI users.

**Conclusions:** Reported side effects, primarily unscheduled bleeding episodes, were similar between obese and non-obese women but were less likely to be reported by obese women. Early removal was associated with increasing age, gravidity, lower BMI and reported bleeding. No association was found between race and early removal.

### P36. Sex differences in depressive symptoms under conditions of chronic stress

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**Background:** Women experience higher rates of depression compared to men. For both sexes, stressful-life-events play an important role in the etiology of depression. However, the variability in response to stress and the development of depressive symptoms between men and women are unaccounted for in traditional statistical modeling.

**Objectives:** To employ growth mixture modeling to examine the presence of distinct classes of depression trajectories under conditions of stress and identify predictors of class membership.

**Methods:** 3,861 interns from US residency programs were invited to take part in the study and completed online assessments two-months prior to internship and at 3-month intervals throughout internship year. Depressive symptoms were measured via the nine-item Patient Health Questionnaire.

**Results:** 2278(59%) of interns chose to take part in the study. Three distinct classes of depressive symptoms were identified: 1) Stress-Sensitive: 16% of participants report low depressive symptoms before internship stress, but demonstrate a dramatic

increase in depressive symptoms which is sustained throughout internship year; 2)Stress-Neutral: 22% of participants report a moderate level of depressive symptoms before and throughout internship year; and 3)Stress-Resilient: 62% of participants report low depressive symptoms before and throughout internship year. Individuals in the Stress-Sensitive and Stress-Neutral classes were more likely to have a history of depression, difficulty early family environment and high neuroticism compared to individuals in the Stress-Resilient class. Neuroticism and difficult early family environment increased the probability of membership in the Stress-Neutral class and female gender decreased the probability of being in this class compared to the Stress-Sensitive class.

**Conclusions:** Our findings support that men and women have similar depressive symptoms under conditions of low stress but, women are more likely to experience depressive symptoms under conditions of high stress compared to men. A better understanding of women's vulnerability to depression under conditions of stress is key to advancing our understanding of sex differences in depression.

### P37. Intimate Partner Violence (IPV), Factors Influencing IPV, and Maternal Health Status

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**Background:** Intimate partner violence (IPV) is of pandemic proportions as it prevails in almost every society. In Thailand, IPV and the safety of abused women remains a prominent problem. IPV can occur at any time over a woman's life, including during pregnancy. IPV leads to the risk of death for mother and unborn child. Victims of IPV, before or during pregnancy, also face more complications of pregnancy. IPV during pregnancy is associated with posttraumatic stress disorder (PTSD), depression, anxiety, increased rate of cigarettes, alcohol, and drug use, as well as later entry into prenatal care. Additionally, IPV impacts health care delivery, economics, social services, the criminal justice system, and law enforcement.

**Objectives:** The purpose of this research study is to explore the effect of factors influencing IPV, on IPV during pregnancy and the effects of IPV on maternal health status.

**Methods:** A nonexperimental single group design was used. The questionnaire was completed by 304 randomly-selected participants at the Antenatal Care Unit of one hospital in Thailand. Path analysis was used to analyze the data.

**Results:** Fear affects all types of IPV during pregnancy, including emotional abuse (EA), physical abuse (PA), sexual abuse (SA) and controlling behaviors (CBs). Exposure to violence, including child physical abuse (CHA), child emotional abuse (CEA) and witnessing of interparental violence (WV) affect CBs. Also, low self-esteem has a direct effect on EA, PA and fear. Focusing on maternal health status and IPV, EA affects maternal health status including physical health, PTSD, depression, and pregnancy complications (PCs). CBs affect PCs and PTSD. PA has a positive direct effect on depression.

**Conclusions:** Given the severe consequences and high economic and human costs of IPV during pregnancy, these results suggest that many factors can be used to predict IPV during pregnancy. Also, IPV during pregnancy has a huge direct effect

on maternal health status. Strategies need to be developed for effective interventions to reduce the incidence and prevalence of IPV and therefore promote maternal health status.

### P38. Accuracy of optical spectroscopy for the detection of cervical intraepithelial neoplasia and the role of probe placement

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**Background:** Optical spectroscopy has been proposed as an accurate and low-cost alternative for detection of cervical intraepithelial neoplasia. We previously published an algorithm using optical spectroscopy as an adjunct to colposcopy and found good accuracy (100% sensitivity, 71% specificity). Those results depended on measurements taken by an expert colposcopists as well as the colposcopy diagnosis.

**Objectives:** We wanted to determine the impact of colposcopy expertise on the accuracy of spectroscopy, given that there are few highly-trained colposcopists in low-resource settings.

**Methods:** In this study, we trained and tested an algorithm for the detection of cervical intraepithelial neoplasia that did not include the colposcopic diagnosis. Furthermore, we explored the interaction between spectroscopy and colposcopy, examining the importance of probe placement expertise.

**Results:** The colposcopic diagnosis-independent spectroscopy algorithm had a sensitivity of 0.98 [95% confidence interval (CI)=0.89–1.00] and a specificity (correctly identifying those patients who had histology reading CIN 1 or better) of 0.62 [95% CI=0.52–0.71]. The difference in the partial area under the ROC curves between spectroscopy with and without the colposcopic diagnosis was not statistically significant ( $p=0.43$ ). Additionally, spectroscopy accuracy was independent of the placement expertise of colposcopists.

**Conclusions:** This shows promise for the use of spectroscopy in low-resource settings where expert colposcopists are not widely available, and for the possible use of methods of probe placement that rely less on precise identification of abnormalities prior to spectroscopic measurement.

### P39. Motivations to exchange condom, behavioral, injectable or oral contraceptives to IUD TCu380A

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**Background:** A third of 182 million annual pregnancies that occur around the world is undesired. Despite many women are

looking forward to utilize contraceptives methods, those that depend on its users adherence for a perfect functioning generally are not correctly used, causing an eventual unwanted gestation. For these women, efficient and practical contraceptives, as the cooper Intrauterine Dispositive (IUD TCu380A) are available. However, they are not largely used.

**Objectives:** To recognize the motivation of the exchange from condom, combined oral contraceptive (COC), injectable and behavioral contraceptive to IUD TCu380A.

**Methods:** 330 women that used condom, COC, injectable or behavioral methods and exchanged to IUD TCu380A were interviewed by trained professionals using a questionnaire elaborated and tested for this specific purpose. The study was approved by the Institutional Ethics Committee and all volunteers signed an informed consent. A descriptive analysis of the data was performed.

**Results:** The average age, body mass index and gestations of the interviewed women were  $36.3 \pm 8.1$  years,  $27.8 \pm 5.6 \text{ kg/m}^2$  and  $2 \pm 0.9$ , respectively. 61,2% ( $n=202$ ) of women used COC; 17,2% ( $n=57$ ), condom; 17,1% ( $n=56$ ) injectable contraceptive and 4,5% ( $n=15$ ), behavioral contraceptive for an average of  $47 \pm 6.7$  months. Most women indicated more than one reason for changing contraceptives: 37,6% ( $n=124$ ) of women were afraid of getting pregnant; 26,1% ( $n=86$ ) believed that IUD TCu380A would be more secure; 25,5% ( $n=84$ ) did not use to remember to get COC every day; 25,1% ( $n=83$ ) found the IUD TCu380A practical; 20% ( $n=66$ ) had gastric intolerance caused by COC; 18,1% ( $n=60$ ) had doctor recommendation; 16,9% had weight gain caused by the former contraceptive method and at about 30% ( $n=99$ ) of women pointed to other reasons. 74,5% ( $n=246$ ) of women interviewed kept on using IUD TCu380A and are satisfied with the chosen method.

**Conclusions:** The main reason that led women to change their contraceptive method for IUD TCu380A was the fear of getting pregnant, believing that IUD is safer to prevent an undesired gestation. The users of IUD TCu380A are satisfied with the method.

### P40. A Literature Review of CBT and IPT Interventions for Depression, Anxiety and Stress among NICU Parents

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**Background:** Having an infant in the neonatal intensive care unit (NICU) can increase the risk for post-partum depression and anxiety in parents. Cognitive behavioral (CBT) and interpersonal therapies (IPT) are efficacious treatments for postpartum depression.

**Objectives:** The purpose of this poster is to review the literature of CBT and IPT interventions for depression, stress, and anxiety among NICU mothers.

**Methods:** 161 articles resulted from a search through PubMed and PsychInfo databases, and 13 were included in the review based on a-priori inclusion criteria.

**Results:** The majority of the studies were conducted outside of the U.S. ( $n=7$ ) and were randomized control trials ( $n=7$ ). Ten were CBT and 3 were IPT interventions, ranging in length from one to eight sessions. The studies' sample size ranged from 20 to 390 ( $M=101$ ); 11 interventions targeted mothers, and two inter-



ventions included mothers and fathers. Most interventions were conducted in an individual setting ( $n=12$ ). Interventions took place in the hospital ( $n=6$ ), home ( $n=3$ ), and both ( $n=4$ ). Outcomes were measured two days to three months post intervention. Ten interventions resulted in decreased levels of depression, stress and or anxiety for NICU mothers. Three studies showed no significant differences in psychological outcomes measured post-intervention. The interventions that included fathers did not show improved outcomes for the fathers but did demonstrate improved outcomes for mothers.

**Conclusions:** The majority of the interventions tested were effective in reducing psychological distress for NICU mothers. However, effective interventions for fathers have not yet been identified. The psychological well-being of NICU parents has implications for their ability to care for infants who have complex medical and developmental needs and therefore additional research is needed to identify strategies that can be brought to scale in NICUs in the US.

**P41. The effect of a natural S-equol supplement on metabolic parameters in overweight adult Japanese males and females in equol producers and non-producers**

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**Background:** Epidemiological studies suggest that soy consumption have a possible role in prevention of health issues associated with aging. The soy isoflavone daidzein is converted to S-equol by intestinal bacteria, which may have biological potential for reducing risk of metabolic diseases. However, only individuals who host equol producing bacteria can metabolize daidzein to S-equol in the body.

**Objectives:** The study objective was to investigate the effect of natural S-equol supplementation on the parameters for metabolic disease in overweight equol producers vs. equol non-producers (ENP).

**Methods:** A randomized, placebo-controlled, crossover study was conducted with 54 Japanese overweight outpatients (female:  $n=38$ ), having a BMI of  $\geq 25$  kg/m<sup>2</sup>, aged  $59.4 \pm 9.6$  (range: 31–77) yrs. Placebo or natural S-equol (10mg/day) was ingested for 12 weeks, and then switched over to the other treatment during the next 12 weeks. Equol producing status, glycated hemoglobin (HbA1c), lipid profiles and cardio ankle vascular index (CAVI), an indicator of atherosclerosis, were determined prior to and at the end of each treatment period.

**Results:** Of the overweight subjects 67.9% were ENPs. HbA1c, low density lipoprotein levels and CAVI were significantly lower in the natural S-equol treated group vs. placebo ( $-0.2 \pm 0.7$  vs.  $0.1 \pm 0.4\%$ ,  $-7 \pm 16$  vs.  $2 \pm 15$  mg/dL and  $-0.2 \pm 0.5$  vs.  $0.1 \pm 0.6$ , respectively in change from baseline,  $n=49$ ). Furthermore, favorable effects of S-equol were prominent in ENP female subgroup ( $n=25$ ) aged 48–74 yrs (S-equol vs. placebo:  $-0.2 \pm 0.7$  vs.  $0.2 \pm 0.4\%$ ,  $-13 \pm 18$  vs.  $4 \pm 16$  mg/dL and  $-0.3 \pm 0.5$  vs.  $0.2 \pm 0.7$ , respectively).

**Conclusions:** The ratio of ENP in the overweight subjects was higher than previously reported in Japanese, approximately 50%. This study suggested that natural S-equol as a supplement has a potential role in the prevention of metabolic diseases in Japanese overweight subjects. For those ENP females, the data suggest that the benefits of natural S-equol supplementation may be more pronounced.

**P42. Emotional/Verbal Abuse Predicts Severity of Posttraumatic Stress and Depression Symptoms in Post-Abuse Women**

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**Background:** Studies demonstrate that psychological intimate partner abuse predicts variance in posttraumatic stress and depression symptoms beyond variance explained by other intimate partner abuse (IPA) types. Few such studies have differentiated the emotional/verbal (EV) and dominance/isolation (DI) components of psychological IPA, especially among women who have left violent relationships.

**Objectives:** EV and DI were examined as unique predictors of posttraumatic stress and depression symptom severity in women who had left abusive relationships (i.e., no IPA in the past year). Associations were examined after adjusting for three control variables (childhood maltreatment, years divorced/separated, past-year life stress), and for history of three other IPA types (physical, sexual, stalking).

**Methods:** Midlife, community-dwelling women ( $N=189$ ) completed questionnaires assessing intimate relationship history, and current posttraumatic stress and depression symptom severity. Two hierarchical regressions evaluated EV and DI as predictors of posttraumatic stress or depression symptom severity. In the first step, control variables were entered. In the second step, other IPA types were entered. In the final step, EV and DI were entered.

**Results:** For posttraumatic stress symptoms, the control variables were not significant predictors ( $p=.07$ ). Other IPA types explained an additional 9.25% of the variance ( $p<.001$ ). EV and DI explained an additional 3.92% of the variance ( $p=.02$ ). In the full model, significant independent predictors were EV ( $p=.04$ ) and stalking ( $p=.03$ ). For depression symptoms, the control variables were not significant predictors ( $p=.54$ ). Other IPA types explained an additional 5.92% of the variance ( $p=.01$ ). EV and DI explained an additional 3.16% of the variance ( $p=.04$ ). In the full model, significant independent predictors were EV ( $p=.01$ ) and stalking ( $p=.02$ ).

**Conclusions:** Psychological IPA significantly explained variance in posttraumatic stress and depression symptom severity beyond variance explained by other IPA types and control variables. Emotional/verbal IPA individually predicted symptom severity, while dominance/isolation IPA did not. The importance of emotional/verbal IPA for anxiety and depression symptoms in post-abuse women is highlighted.

**P43. Patient's Perception of Improvement with Shared Medical Appointments for Depression and Anxiety Based on the Patient Global Impression of Improvement Scale (PGI-I)**

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**Background:** Shared Medical Appointments (SMAs), also known as group visits, have become a useful vehicle in providing easier access to the physician and increased efficiency in the delivery of care. In 2003, the Department of Psychiatry and Psychology at the Cleveland Clinic created a 90 minute group appointment for medication management. The participants are all women with a diagnosis of depression and/or anxiety.

**Objectives:** The purpose of this paper is to evaluate treatment outcomes, specifically, patient's perception of improvement based on the Patient Global Impression of Improvement (PGI-I).

**Methods:** During the SMA, each participant fills out several screening tools, including the Patient Global Impression of Improvement (PGI-I). This is a validated self-rating scale. The patients are asked to assess their impression of the change in their status since the beginning of treatment. Data from January 2010 through June 2010 was gathered; sixty-two (62) patients completed the PGI-I.

**Results:** Overall, patients' perceptions of improvement were high with 71% of patients reporting improvement (very much improved, much improved or minimally improved), 19% reported no change and 10% indicated worsening of symptoms (minimally worse, much worse or very much worse).

**Conclusions:** SMAs are an efficient method of delivering quality care to patients and have a positive effect on the improvement of depression and anxiety as defined by the PGI-I.

**P44. Are Women Still Missing from Outpatient Cardiac Rehabilitation Programs? A Systematic Review Update (2001–2011)**

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**Background:** Cardiovascular disease continues to be among the leading causes of morbidity, mortality, and health care costs among men and women globally. There is compelling evidence that women are significantly underrepresented in Cardiac Rehabilitation (CR) programs, which have been shown to reduce recurrent cardiac events and related premature death. CR typically includes structured exercise, education, support, and risk reduction to effect positive change in health behaviors. The preponderance of evidence

shows that approximately 15–30% of eligible patients participate in CR, with the rate for women being much lower at 11–20%.

**Objectives:** Building upon a prior systematic review by Benz Scott et al. (JWH, 2002), the aim of this study was to critically appraise published studies that examined health system, patient and provider-level factors as they relate to women's referral, enrollment and completion of outpatient CR. Andersen's Behavioural Model of Health Services Utilization (1995) was used as a guiding framework.

**Methods:** A systematic search of 6 databases (2001–July 2011) was conducted according to the PRISMA reporting protocol, using STROBE (observational) and CONSORT (interventional) guidelines for quality assessment. Selected studies were analyzed by two independent reviewers.

**Results:** The search yielded 6023 abstracts, of which 624 were assessed for eligibility, and 87 met inclusion/exclusion criteria. Five were randomized controlled trials. Preliminary results reveal consistency in factors associated with under-referral and under-utilization of CR in women, while there has been preliminary work in women-only cardiac rehabilitation tailored to meet the barriers identified.

**Conclusions:** Ten years later, women continue to be an underrepresented population in CR. While there has been much growth in the body of research, there remains a dearth of intervention studies. The gender disparity in CR utilization must be addressed, and these findings demonstrate the need for intervention research to successfully overcome identified barriers for women to access and participate in CR.

**P45. Long-Term Efficacy and Tolerability of Milnacipran in Fibromyalgia Patients: Results From A Three-Year, Open-Label, Flexible-Dosing Study**

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**Background:** Fibromyalgia (FM) is characterized by multiple symptoms that include chronic pain, fatigue, impaired physical functioning, sleep disturbances, cognitive dysfunction, and depressed mood. FM has been estimated to affect 2–4% of the US population, more frequently in women (3.4%) than in men (0.5%).

**Objectives:** This open-label study evaluated the effects of milnacipran in patients with fibromyalgia over a period that could exceed 3 years.

**Methods:** Patients completing previous milnacipran studies were eligible. This study comprised 4 periods: 2-week washout, 2-week milnacipran dose-escalation (100 mg/day), 8-week stable-dose (100 mg/day), and flexible-dose (50–200 mg/day) for the remainder of the study. Efficacy outcomes included VAS pain (weekly recall, 0–100 scale), Patient Global Impression of Change (PGIC), Patient Global Disease Status (PGDS), and SF-36 Physical Component Summary (PCS).

**Results:** Patients in this study were primarily women (95.4%). The mean duration of treatment in the ITT population (N=1220) was 18.6 months (566 days). Mean improvement from baseline for this population was 17.6 mm in weekly-recall VAS pain score. Mean improvements in PGIC, PGDS, and SF-36 PCS were also observed. In the subset of patients completing ≥3 years (n=217), pain scores improved by 23.9 mm at the final visit, with consis-

tent pain improvement observed from Month 3 to the final visit. This cohort also experienced consistent mean improvements in PDGS and SF-36 PCS scores throughout the study. At the final visit, 70.3% of patients completing  $\geq 3$  years of treatment had “much improved” or “very much improved” PGIC scores. Adverse events led to discontinuation in 20.5% of patients, most commonly due to nausea (2.7%).

**Conclusions:** In patients completing  $\geq 3$  years of treatment with milnacipran, improvement in pain and other important fibromyalgia domains reached maximum response by 3 months and remained relatively constant thereafter, with neither further improved nor diminished effect, for  $\geq 3$  years of treatment.

#### P46. Loss of Therapeutic Response Following Discontinuation of Long-Term Milnacipran Treatment of Fibromyalgia

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**Background:** Women compose the majority (80% to 90%) of those who are diagnosed with fibromyalgia, a chronic pain disorder accompanied by other symptoms such as fatigue, stiffness, impaired physical function, and cognitive dysfunction.

**Objectives:** Patients completing a 3-year open-label study of milnacipran were eligible for this 17-week double-blind, placebo-controlled discontinuation study, designed to evaluate the effect of discontinuing long-term milnacipran treatment on fibromyalgia symptoms.

**Methods:** After 4-weeks of continued open-label milnacipran treatment at the dose received in the prior long-term, flexible-dose study ( $\leq 200$  mg/day), patients achieving  $\geq 50\%$  reduction in VAS pain from pre-milnacipran exposure and receiving  $\geq 100$  mg/day of milnacipran were considered responders and randomized to milnacipran or placebo for 12 weeks. The primary outcome was time to loss of therapeutic response (LTR), defined as a  $<30\%$  reduction in VAS pain score from pre-milnacipran exposure OR worsening of fibromyalgia requiring alternative treatment. Secondary outcomes were times to worsening in Patient Global Impression of Change (PGIC) and Multidimensional Assessment of Fatigue (MAF). On the PGIC, worsening was defined as a rating of “much” or “very much” worse. On the MAF, worsening was defined as  $\geq 10$ -point increase in MAF global index score.

**Results:** Of the 150 patients considered responders after open-label treatment, 96% were women. For the primary outcome, time to LTR was significantly shorter for patients treated with placebo ( $n=50$ ) versus milnacipran ( $n=100$ ;  $P=.0004$ , log-rank test), with 64% of placebo patients and 35% of milnacipran patients experiencing LTR by the end of double-blind treatment. Time to worsening in PGIC was also significantly shorter for placebo patients versus milnacipran ( $P=.0002$ ). Time to worsening in MAF was not significantly different between groups.

**Conclusions:** In patients receiving long-term milnacipran treatment (up to 3.25 years), loss of therapeutic response upon discontinuation provides evidence of continuing efficacy of milnacipran as a fibromyalgia treatment.

#### P47. Cervical cancer in Nigeria: The case for multidisciplinary action

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**Background:** Globally, an estimated 500,000 cases of cervical cancer are diagnosed and over 288,000 deaths are recorded annually, with 80% of deaths occurring in developing countries (Nwankwo, 2011). In Nigeria, cervical cancer is the second leading cause of cancer death among women with an estimated incidence of 20–30 cases per 100,000 women (GLOBOCAN, 2008). In the United States, since the 1950's, the introduction of cytology-based screening has led to a reduction in the incidence of cervical cancer from 38 to 5 cases per 100,000 people (Parkin 2008).

**Objectives:** Operation Stop Cervical Cancer in Nigeria (OSSCN) developed a comprehensive screening program to provide necessary equipment, training, and data infrastructure to deliver a full range of cervical cancer screening and treatment services to six university medical centers throughout Nigeria.

**Methods:** Six centers throughout Nigeria were identified and underwent a needs assessment of their capacity to engage in cervical cancer control efforts. Healthcare workers from each facility underwent clinical training in cervical cancer screening and treatment, while hospital administrators and registrars were trained in data management and Surveillance Epidemiology and End Results (SEER) cancer registry methodology.

**Results:** From 2006–2008, over 12,000 women were screened, 548 (5.4%) presented with abnormal lesions, and 31 invasive cancers were detected. Additionally, 70 participants including gynecologists, pathologists, midwives, nursing directors, and bioengineers were trained in range of courses of which included colposcopy and LEEP among nurses and physicians.

**Conclusions:** Program efforts have made a significant impact on screening capacity at the six centers and have displayed the feasibility of establishing automated cytology based screening in a resource-poor setting. Despite recent developments to make HPV vaccine affordable to developing countries, there is still a need to develop screening programs to ensure that all women at risk have access to care.

#### P48. An FDA ten year review of clinical trials for approved medical devices for women

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**Background:** Prevalence, progression of disease and health outcomes differ by sex and race/ethnicity. Efficacy and safety differences have been well documented for drugs but not for devices. The US FDA Guidance document “Collection of Race and Ethnicity Data in Clinical Trials” encourages clinical device trials to include demographic data to determine any racial/ethnic differences in safety and efficacy.

**Objectives:** The purpose of this study was to review the participation of females of varying race/ethnic groups in Obstetrics/Gynecological Premarket Application (PMA) pivotal clinical device trials.



**Methods:** All Obstetrics/Gynecological clinical device trials submitted to the FDA in support of PMAs approved from January 2001 to December 2010 were reviewed. Descriptive analyses of demographic features of study participants were conducted using criteria from the US FDA Guidance Document. A total of 16 Obstetrics/Gynecological PMAs were reviewed, and data were analyzed in 12 month intervals.

**Results:** Of the 16 PMA submissions, 10 included race/ethnicity data. The average racial/ethnic participation over the 10-year period was: White (74.4%), Black/African American (11%), Hispanic or Latino (9.4%), Asian (1%), Native Hawaiian or Other Pacific Islander (0%), American Indian/Alaskan Native (0.1%), and Other (2.7%). White women represented the majority of participants across all years. Asian, Native Pacific Islander, and American Indian/Alaskan Native women consistently constituted less than 2% of study participants. No trends could be determined for Black/African American and Hispanic/Latino participants.

**Conclusions:** The representation of different racial/ethnic groups in Obstetrics/Gynecological clinical device trials only reflects the current demographics of the United States population for Whites and Black/African American, but not for other racial/ethnic groups such as Asians and Hispanics. To do clinically meaningful analysis by race, efforts should be made to diversify the recruitment and retention of patients for device trials.

#### P49. A Qualitative Comparison of the Impact of Lymphedema on Sexual Experience Among Breast Cancer Survivors

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**Background:** Breast cancer-related lymphedema (LE) is a chronic condition that can occur in up to 40% of breast cancer survivors due to obstruction and destruction of the lymphatic system from cancer treatment. LE is a syndrome of abnormal swelling and distressing symptoms. LE symptoms include pain, heaviness, firmness, tightness, numbness, and impaired physical functions. It has been well established that LE has exerted tremendous negative impact on breast cancer survivors' health related quality of life. Less well documented is if LE and its time-consuming management have posed extra challenges to the sexual experience of breast cancer survivors with lymphedema.

**Objectives:** Compare the impact of LE on the sexual experience between breast cancer survivors with and without LE using a qualitative approach.

**Methods:** A qualitative research design with a descriptive phenomenological method was used. The sample consisted of 352 breast cancer survivors who were enrolled in a web-based study on the symptom experience of breast cancer related LE. Among the 352 participants, 243 were survivors with LE and 109 without LE. Participants were asked to provide narrative responses to the questions concerning impact of LE on their sexual experience. Thus, data were regarding the women's perceptions on how LE affected their sex activity and sexual/intimate relationships with their spouses or partners. Data were analyzed using thematic analysis in order to identify the essential themes of the participants' experiences.

**Results:** These data suggest that compared to patients without LE, those with LE report far more challenges with their sexual relationships. Of these, patients with LE reported struggles with garments used to maintain fluid pressure on the affected arm with regard to sexual intimacy, negative feelings involving the breast and arm, and feelings of decreased sexual desire.

**Conclusions:** These findings highlight the ways in which LE can have an impact on breast cancer patients' sexual relationships. These findings should be utilized by health care professionals, social workers, and marriage and family therapists to assist patients with LE and their sexual partners in coping with this chronic condition.

#### P50. Inverse association between total bilirubin and metabolic syndrome in rural Korean women

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**Background:** Chronic inflammation and oxidative stress are associated with the development of metabolic syndrome (MetS). Total bilirubin is an anti-oxidant and has a protective effect against cardiovascular disease.

**Objectives:** The purpose of this study was to examine the association between total bilirubin and the prevalence of MetS in rural Korean women.

**Methods:** This cross-sectional study included 5,266 women ( $\geq 40$  years) enrolled in the Korean Genomic Rural Cohort (KGRC). MetS was defined using the AHA/NHLBI guideline. Total bilirubin levels were categorized into quartiles.

**Results:** The subjects in the upper quartiles of total bilirubin were younger and had lower waist circumference, systolic blood pressure, and triglyceride, while they had higher HDL-C. The overall prevalence of MetS was 39.0%. When participants were categorized into quartile groups by total bilirubin level, MetS prevalence according to increasing total bilirubin quartiles was 47.9%, 41.2%, 34.3%, and 32.7%. By comparison to the lowest quartile of total bilirubin ( $< 0.61$  mg/dL), the odds ratio (95% confidence interval) for MetS in the highest quartile of total bilirubin ( $\geq 0.94$  mg/dL) was 0.63 (0.52–0.77), after adjustment for menopausal status, C-reactive protein (CRP) level, insulin resistance, and other covariates.

**Conclusions:** Total bilirubin level was inversely associated with the prevalence of MetS in rural Korean women older than 40 year-old in KGRC, even after adjustment for risk factors of MetS, including BMI, menopausal status, CRP level, and HOMA-IR.

#### P51. Gender differences in psychological adjustment to twin pregnancy: A longitudinal study of spontaneously and ART conceived twins

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**Background:** Little is known about the psychological adjustment of twins' parents to pregnancy and the postpartum and the possible gender differences.

**Objectives:** Our aim was to investigate gender differences in psychological adjustment (depression, anxiety, attitudes to

pregnancy and the baby, attitudes to sex and marital relationship) between mothers and fathers of twins during pregnancy and the postpartum controlling for conception mode.

**Methods:** Using a prospective design, 45 couples expecting twins conceived spontaneously or by assisted reproduction techniques (ART) completed self-administered questionnaires assessing depressive and anxiety symptoms, attitudes to pregnancy and the baby, attitudes to sex and marital relationship during pregnancy (at 13.2, 21.4 and 29.8 weeks of gestation) and postpartum (at twins' 37.4, 40.7 and 44.1 weeks of corrected age). Multilevel modeling was used to explore over time data having the couple as the unit of analysis.

**Results:** Growth curve models revealed that women had higher depressive and anxiety symptoms and more negative attitudes to sex than men at the first assessment after birth. Marital relationship decreased significantly for women both during pregnancy and the postpartum, whereas for men it did not significantly change. No significant gender differences or time by gender interactions were found on attitudes to pregnancy and the baby during pregnancy or postpartum.

**Conclusions:** Mothers of twins seem to have an increased risk of poor psychological adjustment when compared to fathers irrespective of conception mode.

## P52. "Enforcer" E-Coaching and Weight Loss: Preliminary Results

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**Background:** The Internet provides an opportunity for providing individualized health coaching to a wide audience inexpensively. Whether men and women respond differently to e-coaching is not known.

**Objectives:** To examine gender differences in weight and waist circumference change among overweight and obese participants in Enforcer eCoaching, a program in which participants exchange daily emails with a health coaching team that includes direct physician review of each email.\*

**Methods:** Descriptive statistics of changes in absolute and percent weight and waist circumference were calculated, as well as baseline BMI. Changes in weight and waist circumference by gender were analyzed by the Kruskal-Wallis test. Spearman correlations were examined between duration of time enrolled in the program and percent weight loss.

**Results:** 27 male and 49 female participants volunteered and reported weight measurements at program onset and during the program; 24 men and 44 women provided waist circumference measurements. The median (25th, 75th percentile) weight of women at program onset was 210 lbs (180lbs, 240lbs); for men, it was 250lbs (216lbs, 314lbs). Median (25th, 75th percentile) waist circumference at program onset was 41cm (37cm, 44cm) for women; for men, it was 46cm (40cm, 53cm). The baseline mean (SD) BMI of women was 35 (8) and for men, it was 38 (8). There were decreases (intention to treat) in weight of 6% (2%, 13%) and in waist circumference of 2% (1%, 3%) among women and of 6% (2%, 11%) and 1% (1%, 3%), respectively, among men. Duration of program participation was similar among men and women (median of 138 days for women; 145 for men). We did not ob-

serve a significant difference in weight or waist circumference change between men and women ( $P > 0.05$ ). Duration of time enrolled in the program was associated with greater weight and waist circumference change ( $\rho = -0.54$  to  $-0.59$ ,  $P$  value  $< 0.001$ ).

**Conclusions:** e-Coaching may be an effective way to achieve weight loss and reduce waist circumference. Men and women appear to respond similarly to the e-coaching delivery system.

## P53. What midlife women really want at the gynecologist's office: A survey of patients in academic and private practices

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**Background:** Community-based cohort studies of healthy midlife women demonstrate that the majority of women experience vasomotor symptoms but only a small subset experience the gamut of other menopausal symptoms. Women presenting to academic menopause centers likely represent a self-selected subset experiencing this broad range of non-vasomotor complaints.

**Objectives:** Characterize the reason for a single gynecology visit among midlife women in an academic menopause center compared to urban and suburban private practices. We hypothesize that women seeking subspecialty care will report more non-vasomotor concerns.

**Methods:** Three sites were surveyed using waiting-room questionnaires: an urban academic midlife center (MLHC) and urban (A) and suburban (B) locations of the same generalist practice. Eligible women were ages 40–60 and not pregnant. Women weighted the reason for their visit as "very much," "somewhat," or "not at all" for 15 common gynecologic complaints. Comparisons between groups were made using parametric and non-parametric tests as appropriate.

**Results:** Women presenting to the MLHC were significantly younger, and were more likely to present for vasomotor symptoms, moodiness, sexual problems, sleep problems and to learn more about menopause, and less likely to present for annual exams. Site A had significantly more African-American women. There were no differences between the groups in educational attainment or ability to pay for basics, or in visits for vaginal discharge, breast problems or irregular periods.

**Conclusions:** Women seeking care in a menopause subspecialty center had significantly more vasomotor and non-vasomotor complaints than those seeing general gynecologists, and represent a distinct subset of the midlife population. Additional work needs to be done to appropriately tailor therapy to this symptomatic population.

## P54. Sleep quality in women with endometriosis

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\*Cleveland Clinic applied for a patent in 2008 for automated interactive e-coaching that underlies this process.

**Background:** Poor sleep quality is related to the onset of pain, decreased pain threshold, fatigue, and psychological distress, which contribute to a worsening of the overall quality of life.

**Objectives:** To evaluate the quality of sleep in women suffering of endometriosis.

**Methods:** A total of 165 women with surgically and histopathologically confirmed endometriosis (endometriosis group - EG) and 200 women without history of endometriosis and no endometriosis-related symptoms (control group - CG) were included. In the EG group there were 67 women with minimal (I) or mild (II) stage of endometriosis and 98 with moderate (III) or severe (IV) stage. We excluded women who in the last three months previously enter in the study were user of psychotropic drugs, including medication for insomnia or illicit drugs. To assess the quality of sleep it was used the Post-sleep Inventory, composed of 30 visual analog scales of 10cm each. The final score of this questionnaire range from 0 to 10, with 10 being the best score possible. The study was approved by the Institutional Ethics Committee and all volunteers signed an informed consent. For statistical analysis the Mann-Whitney test was used.

**Results:** The average age and body mass index of the two groups were  $34.5 \pm 5.6$  years and  $25.6 \pm 4.4$  kg/m<sup>2</sup> for EG and  $33.1 \pm 6.4$  years and  $25.8 \pm 4.4$  kg/m<sup>2</sup> for the CG, respectively. The final score of the Post-sleep Inventory was  $5.5 \pm 1.6$  for EG and  $5.9 \pm 1.7$  for the CG group ( $p=0.011$ ).

**Conclusions:** The quality of sleep in women with endometriosis is worse than women without the disease.

#### P55. Gender Differences in Health-Related Quality of Life for Patients with Bipolar Disorder

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**Background:** Bipolar disorder is a chronic illness associated with poor psychiatric and medical outcomes. Studies of gender differences health related quality of life (HRQOL) in various populations have found that women report a lower HRQOL than men.

**Objectives:** This study assessed gender differences in health-related quality of life (HRQOL) in a national sample of patients with bipolar disorder.

**Methods:** Recovery-oriented collaborative care (ROCC) is a multisite, randomized controlled study, in which community-based programs (sites) were randomized to receive enhanced versus standard implementation strategies to facilitate the uptake of a chronic care model program for bipolar disorder. We analyzed baseline data from ROCC, including patient factors associated with mood symptoms (measured using the Internal State Scale for manic symptoms and PHQ-9 for depressive symptoms); HRQOL was assessed using the SF-12.

**Results:** The sample comprised 209 women and 100 men with a mean age of  $42.5 \pm 11.3$  years. Three quarters of the sample were Caucasian (N=207 or 69.0%), 16% were African-American (N=48), 9% Hispanic (N=27), and 1.7% Native American (N=5). Twelve percent (N=44) had not completed a high school education, 75.7% (N=234) were unemployed, and 35.6% (N=107) lived alone. In our multivariable analysis of the effect of gender on HRQOL, where we adjusted for age and race, female gender was associated with a higher score on the PHQ-9 ( $B=1.95$ ,  $SE=0.83$ ,  $p=0.05$ ), compared to males. However, there was no

significant gender difference found on the SF-12 components of PCS ( $B=-1.61$ ,  $SE=0.99$ ,  $p=0.11$ ) or MCS ( $B=-0.43$ ,  $SE=1.12$ ,  $p=0.67$ ) after adjusting for depression and patient factors.

**Conclusions:** Depression symptoms may explain the association between gender and HRQOL in the multivariate, which points to the importance of assessing and treating depressive symptoms in bipolar disorder. Further studies are warranted to assess if gender differences exist in bipolar disorder.

#### P56. Ovarian cysts during tamoxifen use may affect the prognostic markers of premenopausal breast cancer

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**Background:** Only a few studies have suggested the association between ovarian cysts and serum estrogen levels during tamoxifen use. However, increased estrogen levels with ovarian cysts would affect the prognosis of breast cancer, this association has not yet been studied.

**Objectives:** We aimed to investigate the association between ovarian cysts and prognostic markers in premenopausal breast cancer patients undergoing tamoxifen treatment.

**Methods:** A retrospective review of sixty-five premenopausal breast cancer patients who underwent tamoxifen treatment was performed. Serum hormone levels were measured either specifically between cycle days 2 and 5 in menstruating patients or at any time in amenorrheic participants.

**Results:** The study population consisted of premenopausal patients with (n=23) and without ovarian cysts (n=42). Serum estradiol (E2) levels and tumor markers were not statistically different based on ovarian cyst status. In the subgroup analysis, serum E2 levels were significantly higher in menstruating women with ovarian cysts, and E2 levels was positively correlated with serum cancer antigen 15-3 and insulin-like growth factor-1 in these women.

**Conclusions:** Ovarian cysts during tamoxifen use may affect the markers associated with the clinical course of premenopausal breast cancer.

#### P57. Bone mineral density and breast cancer risk in the VHM&PP study

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**Background:** Breast cancer is the most frequent cancer and the leading cause of cancer death in females worldwide. Previous reports showed a positive association between bone mineral density (BMD) and subsequent breast cancer. BMD measurements could reflect long-term exposure to estrogens and hence serve as intermediate marker of breast cancer risk.

**Objectives:** To further clarify the association between BMD and breast cancer risk among women in a large prospective study with long-term follow-up.

**Methods:** A cohort study design was used in order to investigate the association between BMD and breast cancer risk. Among 4107 women, BMD was measured by dual energy X-ray absorptiometry (DXA, N=1418) or quantitative computer tomography (QCT, N=2689). Women were on average followed-up for 13.4 (SD 2.8) years. Cox proportional hazard models were applied to estimate breast cancer risk. Adjustment has been performed for body mass index (BMI, kg/m<sup>2</sup>), smoking status (smoker, ex-smoker, non-smoker), HRT use (yes, no), menopausal status (<50, ≥50 years), and leisure time physical activity (none, 30min, 30–60 min, 60–120 min, >120 min/week). For 3306 women serum GGT levels as proxy for alcohol consumption were additionally available.

**Results:** Mean age at recruitment was 55.6 (SD 6.1) years. After follow-up of 13.4 (2.8) years 150 invasive breast cancer cases were identified with mean age at diagnose 63.8 (SD 6.3) years. Mean DXA was 1.00 (SD 0.13) kg/m<sup>2</sup> and QCT was 108.2 (SD 21.8). In the multivariate model, BMD was not associated with breast cancer risk (4th vs. 1st quartile HR 0.97; 95%CI, 0.60–1.55). Further adjustment for serum GGT levels did not change the risk estimates substantially (HR 0.83; 95%CI, 0.40–1.73).

**Conclusions:** The results of our study provide no evidence that BMD is associated with breast cancer risk among women with follow-up over 10 years.

#### P58. Return to Work among Women Hematopoietic Stem Cell Transplantation Survivors

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**Background:** Returning to work is a major cancer survivorship milestone. Survivors of hematopoietic stem cell transplant report that work-related concerns are a primary reason for feeling they have not returned to normal. Compared to male survivors, women have more work-related concerns and return to work later.

**Objectives:** To clarify the nature of women's treatment-related negative work events, the distress they cause, and their impact on women's work outcomes following treatment.

**Methods:** 116 women who underwent SCT 9-months to 3-years prior to the study and were employed at the time of diagnosis or transplant completed a measure of transplant-related negative work events (e.g., being fired, having to take an unpaid leave, having a pay cut), the distress caused by the events, and current work status.

**Results:** Although all women had been working at the time of diagnosis or transplant, currently only 28% were working full-time, 15% were working part-time, and 58% had not returned to full- or part-time work (i.e., they reported being a homemaker or were retired, on sick leave or disability, or looking for work). Most

(76%) reported at least one negative work event. In bivariate analyses, return to full- or part-time work was significantly negatively associated with total number of negative work events (point biserial  $r = -.21$ ,  $p = .03$ ) and work event-related distress burden (the mean distress caused by experienced events; point biserial  $r = -.22$ ,  $p = .02$ ). The more negative events a woman experienced or the greater her work event-related distress burden, the less likely she was to return to work. In two separate logistic regressions predicting return to work, the number of work events (OR 0.809; 95% CI .67, .98) and work-related distress burden (OR 0.932; 95% CI .88, .99) each predicted return to work, but both became non-significant after controlling for fatigue, which independently predicted lower likelihood of return to work.

**Conclusions:** Findings identify negative work-related events women experience because of cancer treatment and suggest the need for further research on fatigue as 1) a correlate of these events and associated distress after cancer treatment and 2) a factor linking these events with ability to return to work.

#### P59. Results From a 24-Week Clinical Trial With Flibanserin in Premenopausal Women With Hypoactive Sexual Desire Disorder

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**Background:** There are currently no approved treatments for Hypoactive Sexual Desire Disorder (HSDD) in premenopausal women. Flibanserin, a centrally acting 5HT<sub>1A</sub> agonist and 5HT<sub>2A</sub> antagonist, has been shown in Phase 3 trials to significantly increase the number of satisfying sexual events (SSEs), while the effect on desire as assessed by patients reporting on an e-diary was marginal.

**Objectives:** To assess the efficacy of flibanserin on SSEs and desire assessed with the Female Sexual Function Index (FSFI) over 24 weeks of treatment in premenopausal women.

**Methods:** This was a randomized placebo-controlled clinical trial in 543 women randomized to flibanserin and 547 randomized to placebo. Co-primary endpoints were change from baseline to study end in the number of SSEs and FSFI desire domain. Secondary endpoints included Female Sexual Distress Scale-Revised (FSDS-R) total and FSDS-R Item 13 scores.

**Results:** Mean (SD) baseline data were: SSE 2.6 (2.7) and FSFI-d 1.9 (0.7). The mean changes from baseline to study end for flibanserin treated women in the efficacy endpoints were 2.4, 1.0, and -1.0 for SSEs, FSFI-d, and FSDS-R, respectively. All changes were significantly different from placebo ( $p < 0.0001$ ). Adverse events leading to discontinuation were experienced by 3.7% of women receiving placebo and 9.6% of women receiving flibanserin (most frequent term: somnolence, 0.4% vs 1.7%, respectively).

**Conclusions:** In premenopausal women with HSDD, flibanserin 100 mg qhs was associated with clinically meaningful and statistically significant improvements in the number of SSEs and sexual desire (FSFI desire domain), and the secondary endpoints for distress associated with sexual dysfunction (FSDS-R total) and distress associated with low sexual desire (FSDS-R Item 13) compared with placebo. There were no significant safety concerns associated with the use of flibanserin for 24 weeks.



# P60. Protracted Postpartum Urinary Retention: Prevalence and Risk Factors in the Third Millennium

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**Background:** Data concerning the prevalence, etiology, and outcomes of protracted postpartum urinary retention, beyond the early puerperium, are limited.

**Objectives:** The present study was undertaken to evaluate the prevalence and risk factors for this clinical situation in a single university-affiliated maternity hospital with approximately 10,000 deliveries per year.

**Methods:** The study population comprised 63,353 consecutive, unselected women who delivered in our hospital from January 2006 to November 2011. Of these, 27,424 (43%) were primiparae. Vaginal deliveries and cesarean sections were performed in 76.5% and 23.5% of the women, respectively. The rate of instrumental deliveries was 4.1%; all were carried out by vacuum extraction. The term "protracted postpartum urinary retention" was defined as the absence of adequate voiding beyond the third postpartum day. Demographic, obstetric and urogynecologic data were prospectively documented and stored in a computerized data base. Details of maternal, fetal and obstetric parameters were obtained and compared to the general obstetric population.

**Results:** 98 women (0.15% of the general obstetric population) aged 23–42 years, developed protracted postpartum urinary retention. Obstetric risk factors included primiparity (78 women, 80%), prolonged second stage of labor (42 women, 43%), and vacuum extraction (31 women, 32%). The initial bladder volumes at the time of diagnosis were 300–3500 ml (1193 ± 538). The residual urinary volumes after 24 hours were 300–2000 ml (792 ± 364). 71 (72%) women achieved normal spontaneous voiding within 4–14 days postpartum. In the remaining 27 (28%) women, normal voiding was achieved 15–45 days after delivery. Further comparison of early versus late recovery failed to reveal any significant differences.

**Conclusions:** Results of our study demonstrate a 0.15% prevalence rate of protracted postpartum urinary retention in an unselected obstetric population. Main risk factors include primiparity, prolonged second stage of labor and vacuum deliveries. With early diagnosis and timely intervention, complete resolution is expected within 45 days postpartum.

# P61. Inflammatory Responses While Anticipating Recall of a Potentially Traumatic Memory

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**Background:** Intimate partner violence (IPV), a traumatic stressor reported by 25% of U.S. women, may lead to posttraumatic stress disorder (PTSD) symptoms, and can alter immune system regulation of inflammation. Inflammation, in turn, has implications for health. It has been suggested that trauma re-

mindings may trigger inflammatory responses. However, few studies have considered if inflammatory responses can be triggered by mere anticipation of trauma reminders, especially IPV-related reminders in abused women.

**Objectives:** This exploratory study examined associations between PTSD symptoms and salivary levels of the proinflammatory cytokine interleukin-6 (IL-6), including levels observed while women anticipated an interview about IPV.

**Methods:** Post-abuse women (N = 64) free of current syndromal PTSD completed two research visits. Visit 1 (baseline) included non-trauma related questionnaires only. Visit 2 (trauma reminder) included trauma-related questionnaires, and diagnostic interviews for current (past month) and lifetime (worst episode) PTSD symptoms. Salivary IL-6 levels were measured at the beginning (pre-visit), and at the end (post-visit) of both visits. Log-transformed pre-visit or post-visit IL-6 levels were predicted from PTSD symptoms (current, lifetime), Visit (baseline, trauma reminder), and Visit x PTSD symptom interactions.

**Results:** For pre-visit IL-6, there was a statistically significant lifetime PTSD symptom x Visit interaction ( $p = .036$ ). For women with few lifetime PTSD symptoms, pre-visit IL-6 was higher at the baseline visit than at the trauma reminder visit ( $p = .031$ ). Women with high levels of lifetime PTSD symptoms showed an opposite pattern: Pre-visit IL-6 was higher at the trauma reminder visit than at the baseline visit, but this was not statistically significant ( $p = .15$ ).

**Conclusions:** Anticipation may trigger inflammatory responses, prolonging exposure to inflammatory mediators. PTSD symptom history alters regulation of these anticipatory responses in the context of trauma reminders. These preliminary results should be replicated in larger samples, in women with current syndromal PTSD, and by studying anticipation of trauma reminders in naturalistic contexts that may offer less support, and less control, than an interview.

# P62. Potential Biomarkers in Chronic Fatigue Syndrome: Elevated INF-gamma and decreased NK cells activity

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**Background:** Chronic fatigue syndrome/Myalgic Encephalomyelitis (CFS/ME) is a complex condition associated with dysregulation of the immune system and characterized by unexplained physical and mental fatigue, and is more prevalent in women. CFS/ME studies from our laboratory and others describe decreased Natural Killer Cell Cytotoxicity (NKCC) as well as elevated level of INF-gamma. However, neither of these findings were ever widely accepted for the diagnosis or prognosis of CFS/ME. We hypothesize that NKCC and INF-gamma level would be useful biomarkers for CFS/ME and may suggest viral origin for this disease.

**Objectives:** The aim of the study was to determine potential biomarkers in patients with CFS/ME.

**Methods:** Participants included 40 female patients, diagnosed with CFS/ME, clinically based on the 1994 CDC case definition. Participants were recruited from the CFS/ME and Related Disorders Clinic at University of Miami. All patients were assessed on Natural Killer (NK) cell cytotoxic activities and INF-gamma level. NK cell function was measured with a bioassay, using K562 cells and (51)Cr release. INF-gamma was measured in plasma using Quansys reagents and instrument.

**Results:** Mean age of our population was 53 (range: 22 to 72). All 40 CFS/ME patients displayed decreased NK cell activity compared to the reference value of our Immune laboratory. Mean NK cell activity of CFS/ME population was 12.7%, which corresponds to less than 10th percentile. (Normal mean: 30% + / - 12). IFN-gamma was elevated in 77.5% patients, with mean value of 25.5pg/mL (Normal mean is 1.88pg/mL). The mean value of IFN-gamma in the CFS/ME population is higher than 90th percentile.

**Conclusions:** This study suggests that high plasma level of INF-gamma and low NK cell activity may be used as potential biomarkers in CFS/ME patients and it may be evidence of a viral origin of CFS. However, these preliminary findings require further investigation and confirmation with healthy controls.

### P63. Delirium and Length of Stay: Does Gender Matter?

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**Background:** Even for an experienced clinician, diagnosing delirium is challenging. As a result, delirium often goes unrecognized and subsequently untreated which may increase morbidity, mortality, and hospital length of stay. Any one of these is devastating for the patient and their family, so it is imperative that we reduce the risk of developing delirium. It has been reported that males are at greater risk of developing delirium but little is known about gender differences within predominantly Hispanic populations, and the effects that gender may have on length of stay.

**Objectives:** The purpose of our research is to identify clinical characteristics of delirium within our inner-city population and determine if length of stay is affected by gender.

**Methods:** A chart review of all Psychiatric consultations for 2010 was undertaken. All geriatric patients (age 65 and older) were identified and the following variables collected: gender, ethnicity, diagnosis (delirium vs. non-delirium as well as etiology of delirium), length of stay (LOS), place of residence prior to admission, discharge location, number of psychotropics, and number of other medications prescribed.

**Results:** There were a total of 157 of gero-psychiatric consultations performed during 2010: 58 males and 99 females. Sixty patients were identified with delirium and 97 patients were given other psychiatric diagnosis. Twenty-five males were delirious and 33 delirious females identified. LOS for delirious females was 10.1 days and 10.6 for non-delirious females. LOS for delirious males was 10.4 days and 12.5 days for non-delirious males.

**Conclusions:** When patients are grouped by gender, there is a notable difference in the length of stay between them. Our findings confirm the current literature that males are more at risk of developing delirium. The unexpected finding that requires further study is that the length of stay of non-delirious males was significantly longer than any other group.

### P64. Knowledge and Attitudes of HIV-Infected and Uninfected Women Regarding HPV and Cervical Cancer

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**Background:** High-risk types of human papillomavirus (HPV), a sexually transmitted infection (STI), cause cervical cancer. Women diagnosed with HIV (HIV+) have a higher rate of HPV infection at the time of diagnosis than uninfected women (HIV-), and they also have increased risk for cervical squamous intraepithelial lesions, which precede invasive cervical cancer.

**Objectives:** This pilot study assessed the baseline knowledge and attitudes regarding HPV and cervical cancer in HIV+ and HIV- women attending outpatient primary care facilities in Philadelphia, PA.

**Methods:** We conducted an anonymous survey of 100 HIV+ and 100 uninfected (HIV-) women.

**Results:** Overall, 64% were ≥35 years old, 61% were non-Hispanic Black and 53% were single. More than 80% of the study participants had ≥12 years of formal education, 34% were employed full-time and 50% had annual income below the poverty line. Most women (85% HIV+; 82% HIV-) reported having had a Pap smear within the last year. More than half (58%) of the HIV+ women reported that they had an abnormal Pap smear compared to 33% of HIV- women. HIV+ women were more likely to have had an abnormal Pap smear (OR: 2.9; 95% Confidence Interval: 1.6, 5.2; p=0.001). Only 16% of HIV+ and 14% of HIV- women received all three doses of the HPV vaccine. Good to excellent knowledge about HPV infection, disease and prevention was lowest among HIV+ women (15% HIV+; 27% HIV-; p=0.01).

**Conclusions:** HIV+ women are significantly less knowledgeable about HPV-infection, cervical cancer and prevention than HIV- women. Cervical cancer is a preventable through education and preventive screening. Therefore, greater efforts are necessary to educate HIV+ women about HPV infection as a causal agent of cervical cancer and the importance of cervical cancer screening. A comparative study is planned in Nigeria.

### P65. Gender and Self-Awareness Following Traumatic Brain Injury (TBI)

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**Background:** Brain injury researchers have found women to have greater executive functions as compared to men post-TBI (Niemeier et al, 2007) as measured by neuropsychological tests such as the Wisconsin Card Sort Test. There is limited informa-

tion about gender differences of self- and family-reported executive functioning after TBI.

**Objectives:** The aim of this study is to examine gender differences in responses to two measures of self-awareness developed for persons who have neurologic declines. We hypothesize that women with acute TBI will be more aware of injury-related deficits than men on individual and family ratings based on self- and family-responses on the Frontal Systems Behavior Scale (FrSBe) and the Patient Competency Rating Scale (PCRS).

**Methods:** This is a retrospective comparative study of 101 male and female patients in an acute neurobehavioral rehabilitation setting. Mean age of patients was 42.27 years (SD=18.60), and the majority had a high school diploma or greater (n=67). Injury severity of the sample was moderate (36) or severe (64). T-tests were completed between the genders on the (PCRS) and the (FrSBe). Self and family rating scales were compared on both of these measures.

**Results:** T-tests revealed that on the FrSBe, women scored significantly higher than men on the disinhibition ( $t(84) = -2.783$ ,  $p=0.007$ ), and apathy ( $t(84) = -2.143$ ,  $p=0.035$ ) subscales post injury. Families of men rated them as being significantly less apathetic ( $t(84) = -2.494$ ,  $p=.015$ ) before their injury compared to females families. Men's families also rated their male family members as less disinhibited ( $t(76)=2.039$ ,  $p=.045$ ) after injury compared to the female's family ratings. PCRS family ratings revealed male patients families found them significantly more impaired ( $t(76) = -2.722$ ,  $P=.007$ ) on practical skills post injury compared to female's families.

**Conclusions:** Women may have greater self-awareness of their behavioral deficits compared to men following TBI during the acute phase of recovery.

#### P66. Pilot Study on Subserosal and Intramural Uterine Leiomyomas and Magnetic Resonance-guided Focused Ultrasound Surgery (MRgFUS): Are there New Predictive Indexes?

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**Background:** Uterine fibroids, found in 20–35% of women over the age of 35, are symptomatic in one-third. From 20 to 50% of cases symptoms are severe enough to justify a treatment. Surgery is the most employed management, with severe morbidity accounting for 3%. Additional semi-invasive approaches were introduced. Magnetic Resonance-guided Focus Ultrasound Surgery (MRgFUS) was presented as a new totally non-invasive leiomyomas thermal ablation.

**Objectives:** Evaluate eligibility, feasibility and outcomes of Magnetic Resonance-guided Focused Ultrasound Surgery (MRgFUS) and find predictive indexes for treatment success.

**Methods:** Single-centre prospective pilot study to evaluate MRgFUS for subserosal/intramural uterine leiomyomas. Post-treatment leiomyomas' volume reduction and symptoms improvement were assessed, with a 3 months apart follow-up.

**Results:** 102 pre-menopausal women with symptomatic uterine leiomyomas were screened in the Gynaecology and Radiology Departments of "Sapienza" University of Rome (August 2010–August 2011). Eligible patients were 36 (35%); 24 women

(23%) performed MRgFUS, 12 refused. Three patients (12%) underwent surgical myomectomy for severe pelvic pain and meno-menometrorrhagia within one month from MRgFUS. For 20 patients, symptomatology decreased of 30% after 3 months, according to Symptom Severity Score (SSS) values ( $p<0.01$ ). Mean volume change ratio was significant ( $p<0.01$ ) at 6 months, with 27% of reduction, reaching 47% at 12 months. Feasibility rate was 35%. A Vascularity Index  $<1$  showed significant positive difference with symptoms improvement ( $p$ -value 0.04), with a decrease of 32% (23% for VI  $>1$ , SSS). Fibroids  $\leq 70$  mm of diameter showed a significant ( $p$ -value  $<0.05$ ) volume reduction ( $-21\%$ ) if compared to greater ones ( $-14\%$ ).

**Conclusions:** Most women with leiomyomas are unsuitable for MRgFUS (anatomical limits and urgent fertility desire). In eligible patients, rapid symptom reduction rates were obtained; otherwise, volume reduction ratio is slower and incomplete. Vascularity Index (VI) and fibroids' size ( $\leq 70$  mm) could be used as predictive indexes. An accurate patient selection is needed for higher success and lower re-intervention rates.

#### P67. Single-incision Trans-Axillary Robotic-assisted (STAR) thyroid lobectomy: Is it safe and feasible in a North American population?

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**Background:** Palpable thyroid nodules have a prevalence of 3 to 7% and are 4–6 times more in women than men. 5% are malignant, another 15% are indeterminate all requiring surgery for diagnosis and treatment. Operative intervention for thyroid nodules is a significant health issue for women.

**Objectives:** STAR thyroid lobectomy, a novel approach to thyroid surgery is evaluated. Factors were assessed to evaluate feasibility of the procedure and completeness of dissection.

**Methods:** We retrospectively reviewed prospectively collected data for all cases of STAR thyroid lobectomy by a single surgeon. Largest diameter of the nodule, nodule and specimen volume, and patient BMI were evaluated. RAI imaging was a surrogate for completeness of dissection.

**Results:** Seventeen STAR thyroid lobectomies were performed on 15 patients. Average total operative time: nodules  $<1$  cm, 1–2 cm, and  $>2$  cm were 246, 200, and 213 min respectively, and for nodules  $<5$  cm<sup>3</sup> and  $>5$  cm<sup>3</sup> were 204.8 and 224 min respectively. By volume of the specimen  $<20$  cm<sup>3</sup> and  $>20$  cm<sup>3</sup>, operative time was 218.1 and 202.3 min respectively. By BMI, normal versus overweight or obese ( $>25$ ), there was an increase in total operative time from 204 to 225 min. Two completion thyroidectomies were done. Pretreatment I-131 scan uptake was 8.1% and 6.3% for these patients. The RAI treatment dose was 52.1 and 86.8 mCi. In patients who had an open total thyroidectomy, I-131 average uptake was 7.4%, and the average dose for RAI therapy was 103.3 mCi.

**Conclusions:** STAR thyroid surgery is a feasible method in select patients. There is no significant difference in operative time related to nodule size or volume, or patient BMI. The RAI treatment parameters for staged STAR thyroid lobectomy were comparable to those for patients who underwent open total thyroidectomy. This indicates that a staged robotic procedure is



comparable to an open procedure and is a reasonable approach for a patient with a suspicious thyroid nodule.

#### P68. The prevalence of metabolic syndrome according to the phenotypic subgroup of PCOS in Korea

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**Background:** Polycystic ovarian syndrome (PCOS) is one of common endocrine disorders in reproductive age, and has been reported to be associated with insulin resistance and metabolic syndrome (MetS).

**Objectives:** The present study is to assess the difference of metabolic parameters and prevalence of MetS according to the phenotypic subgroups of PCOS in Korean females.

**Methods:** This study was conducted from May 2010 to March 2011 as baseline examination for prospective observational study of PCOS in Korea. The females with PCOS were recruited from 12 infertility clinics. PCOS subjects were diagnosed using the 2003 Rotterdam criteria. MetS was defined according to modified NECP ATP III guidelines. Data analysis was done using SPSS19.

**Results:** Among the study population, 309 (51.5%) had polycystic ovary + hyperandrogenism + anovulation/oligomenorrhea (PCO + HA + O), 271 (45.2%) had PCO + O, 6 (1%) had PCO + HA, and 14 (2.3%) had HA + O. Compared to PCO + O group, the subgroup with hyperandrogenism (PCO + HA + O) had higher BMI ( $23.2 \pm 4.4 \text{ kg/m}^2$  vs.  $21.4 \pm 3.4 \text{ kg/m}^2$ ,  $p < 0.001$ ), waist circumference ( $80.2 \pm 13.2 \text{ cm}$  vs.  $76.4 \pm 10.8$ ,  $p = 0.001$ ), fasting plasma glucose ( $91.5 \pm 21.8 \text{ mg/dL}$  vs.  $85.5 \pm 11.5 \text{ mg/dL}$ ,  $p < 0.05$ ), fasting insulin ( $14.2 \pm 19.9 \mu\text{U/ml}$  vs.  $10.5 \pm 10.3 \mu\text{U/ml}$ ,  $p < 0.05$ ). The HOMA-IR index was also significantly high in PCO + HA + O group ( $3.3 \pm 4.5$  vs.  $2.5 \pm 2.5$ ,  $p = 0.02$ ). The total cholesterol and LDL cholesterol levels were also higher in subjects with PCO + HA + O than those with PCO + O. There was a significant difference in the prevalence of MetS between PCO + HA + O group and PCO + O group (23.8% vs. 11.9%,  $p < 0.001$ ). The regression analysis showed that the hyperandrogenism was significantly associated with MetS in our study group (OR 3.263, 95% CI 1.935–5.503,  $p < 0.001$ ).

**Conclusions:** The PCO + HA + O and PCO + O are major phenotype of PCOS in Korean females and, the PCO with hyperandrogenism was significantly associated with MetS.

#### P69. Cardiovascular Risk Prediction Tools in Women with STEMI undergoing PCI

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**Background:** An estimated 82.6 million American adults have cardiovascular disease (CVD). Risk assessment is important for prediction of in-hospital major cardiac events (MCE) in patients with ST segment elevation myocardial infarction (STEMI) with percutaneous coronary intervention (PCI), yet risk prediction tools (CADILLAC Controlled Abciximab and Device Investigation to Lower Late Angioplasty Complications); GRACE (The Global Registry of Acute Coronary Events), and TIMI (The Thrombolysis in Myocardial Infarction risk score) have not been widely comparatively assessed in women.

**Objectives:** The key objectives were to compare existing risk prediction tools on admission in women with STEMI and PCI, to determine comparative efficacy for prediction of in-hospital events in women.

**Methods:** This was a retrospective study of 77 women who were members of a Health Care Maintenance Organization in Northern California and diagnosed with STEMI treated with PCI during 2007–2008. Three risk prediction tools (TIMI, GRACE, and CADILLAC,) were applied retrospectively for prediction of in-hospital MCEs, defined as fatal MI, revascularization, cardiogenic shock, cardiac arrest and retroperitoneal bleeding the hospital. In-hospital death was analysed separately. Risk scores were calculated and predictive ability was analyzed using the area under the curve or C statistic method.

**Results:** The CADILLAC risk score had the highest predictability for in hospital death and major cardiac event with C statistics of 0.860 and 0.718.

**Conclusions:** Among women with STEMI treated with PCI, existing risk assessment tools appear to appropriately risk stratify women for in-hospital MCE and death. Due to our small sample size, further research with a larger numbers of women is needed to confirm that sex-specific risk models are not needed.

#### P70. Discordance between self-report and actual exercise among Americanized Latinas

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**Background:** US Latinas are at risk for not engaging in optimal levels of exercise as well as for being at greater risk than non-Latina Caucasians for being overweight and thus suffering weight-related health consequences. Researchers have linked acculturation levels with amount of exercise among Latinas.

**Objectives:** To determine the relationships between acculturation levels, self-reported exercise and actual exercise among Latinas.

**Methods:** Latinas were recruited for a prospective study. In addition to demographic data, they completed the Bidimensional Acculturation Scale (BAS), and for one week completed a self-reported exercise log and wore a pedometer daily. Americanism was measured using the BAS. Self-reported exercise was measured based on the number of days a participant recorded exercise as one of her daily activities. Actual exercise was measured in average steps per day.

**Results:** Data were collected from 169 Latinas. Days of self-reported exercise was correlated with higher Americanism scores (Spearman's  $\rho = r_s = .205$ ,  $p < .01$ ). The correlation between Americanism and recorded average steps was not significant. After controlling for income, number of children, and education level, there was a significant ( $\beta = -.016$ ,  $p = .04$ ) negative relationship between higher Americanism scores and recorded av-



erage steps (i.e., the more Americanized Latinas took an average of 820 fewer steps per day). The more Americanized participants were likelier to report exercise than their less Americanized counterparts.

**Conclusions:** There was a discrepancy between reported and actual exercise levels for the more Americanized Latinas. This suggests that Latinas have differing perceptions of the concept of exercise depending on acculturative status. Latinas' cultural beliefs regarding exercise perceptions need to be included in future research.

#### P71. African-American Women are Referred for Screening Colonoscopy Later Than Recommended: Patient Compliance Is Not a Factor

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**Background:** Colorectal cancer causes significant morbidity and mortality in the United States. African Americans (AA) are diagnosed earlier and have a greater mortality than others. Screening is recommended at age 50, except in AA in whom it is recommended at age 45. While screening has contributed to a decline in colon cancer deaths, this has not been observed in AA. Access to care and compliance have been speculated to affect screening rate.

**Objectives:** This study evaluated physician referral patterns for and patient compliance with screening colonoscopy at an urban university medical center.

**Methods:** Records of average risk patients referred for a screening colonoscopy during a 6 month period were evaluated. Patient age, gender, race and colonoscopy compliance were obtained. Patients were excluded if their race was not documented. Database, maintaining patient confidentiality, was created. Analysis was performed using Fisher Exact test (significance  $p < 0.05$ ).

**Results:** 344 patients were referred for screening colonoscopy with 287 (177 AA, 110 non-AA) undergoing the procedure. There were 183 (115 AA, 68 non-AA) women and 104 (62 AA, 42 non-AA) men. Mean referral age was 51 years. AA were referred at 52 (women 53, men 50), non-AA at 50 (women 49, men 51). There was no significant difference in referral age ( $p = 0.0882$ ) based on race. AA women were referred significantly later ( $p = 0.0088$ ) than non-AA women. There was no difference in colonoscopy compliance based upon gender ( $p = 0.4547$ ) or race ( $p = 0.2197$ ).

**Conclusions:** AA were referred for screening colonoscopy 7 years later than recommended. AA women were referred later than men and non-AA women. Colonoscopy compliance was not affected by gender or race. There was no difference in compliance when patients had access to care. Efforts to increase awareness of the age at which AA, in particular AA women, should begin screening are necessary to improve outcomes.

#### P72. Pectus Excavatum Repair and Cosmetic Surgery in Women

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**Background:** Pectus excavatum is the most common congenital chest wall abnormality; however, the incidence in women is 5 times less than that of men. Women additionally may have cosmetic issues of hypoplastic or asymmetric breasts. Adult females presenting for repair often have had previous cosmetic or reconstructive breast procedures.

**Objectives:** This study evaluates a female cohort undergoing repair of pectus excavatum.

**Methods:** A retrospective review was performed of females from January 2010 to October 2011 who underwent pectus excavatum repair.

**Results:** Twenty-seven females, ages 7–57 years, were identified (11 pts < 18 years: mean 13.1 years; 16 pts ≥ 18 years: mean 38 years). All patients < 18 years had image-proven cardiac compression with symptoms including exercise intolerance, asthma symptoms, and/or chest pain. All adult patients experienced symptoms and 95% of them had evidence of cardiac compression or abnormal cardiac function. Mean pectus severity index was 6 (range 3.3–9.4) for patients < 18 years and 5.4 (range 3.6–13) for patients ≥ 18 years. Half of adults ( $n = 8$ ) either had prior breast augmentation (5 pts) or simultaneous augmentation (3 pts) with their pectus repair. One patient had exchange of her implants with excavatum repair. Minimally invasive pectus repair was performed in all but one patient who had revision of a previous Ravitch procedure. All patients with implants below the pectoralis muscle had biologic mesh placed between the support bars and breast implants to prevent erosion or adhesion. Implants placed at the time of surgery were positioned above the pectoralis muscle to prevent contact with the bars. One patient experienced the complication of breast hematoma which required operative evacuation. No infections or complications associated with implants occurred.

**Conclusions:** Pectus excavatum is less common in women and these patients present challenges due to additional cosmetic desires. Prior implant placement or wish for breast implants should not preclude corrective pectus surgery.

#### P73. A comparison of chronic, mental health and health service seeking among Asian Americans nationwide

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**Background:** Although the Asian American population is increasing, there is a lack of research that compares the health patterns of their chronic, mental health and healthcare utilization.

**Objectives:** We examined the chronic, behavioral, mental health and health care service seeking of Asian American women and compared to Asian American men.

**Methods:** Using a nationally representative sample ( $n = 2,095$ ) from the National Latino and Asian American Study, the first comprehensive epidemiological survey in the United States, we examined the annual rates of chronic, behavioral and mental healthcare service utilization including general medical,

specialty mental health and any medical services, in three major subgroups of Asian American: Chinese, Filipino and Vietnamese American.

**Results:** Chronic health problems varied with three major subgroups of Asian Americans. In physical health, Chinese-American women reported the highest rates of headache, hypertension and heart disease, while Vietnamese-American women reported the highest rates of ulcer, stroke and diabetes. In mental health, Filipino-American women reported significantly better mental health self-rating compared with Chinese and Vietnamese-American women, while more Chinese-American men reported "fair" mental health status and lower levels of health care seeking patterns compared to Filipino-American men. In behavioral health, Filipino women ranked highest on all types of drug use and cigarette smoking, compared with their counterparts. However, more Vietnamese-American men reported being current smokers and more Filipino-American men reported having ever used drugs and having higher rate of obesity.

**Conclusions:** Asian American women encountered various physical, behavioral and mental health problems and yet had low health care service seeking rates. There are similarities and differences in health service use rates and health issues among Asian American women and men. Therefore, it is critical to further examine factors associated with the underestimation of physical and mental health problems and underutilization of health services in Asian American population.

#### P74. Dietary patterns of women, abdominal obesity, and metabolic syndrome: The Framingham Nutrition Studies

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**Background:** Metabolic syndrome (MetS) significantly increases risk for cardiovascular disease and diabetes. Diet is postulated to be a key etiological factor of MetS and MetS components. The dietary pattern approach may better inform the association of diet and the syndrome; however, data on the relationship between empirical dietary patterns and MetS and its components in prospective studies is limited.

**Objectives:** To evaluate the relationship between empirical patterns and MetS and its components in women.

**Methods:** We examined 1146 Framingham Offspring/Spouse Study women aged 25–77 years and without cardiovascular disease, diabetes, cancer, and MetS at baseline over a 7-year mean follow-up. Diet intake was collected using a 145-item food frequency questionnaire. Five dietary patterns: Heart Healthier, Lighter Eating, Wine and Moderate Eating, and Empty Calorie, were previously identified using cluster analysis. The relationships of dietary patterns and MetS and its components were assessed using logistic regression.

**Results:** After adjusting for potential confounders, Higher Fat (higher in oils, soft margarine, vegetable fats, and refined grains and lower in high-fat dairy and snack foods) and Wine and Moderate Eating (higher in wine and lower in sweetened beverages and desserts) clusters were associated with lower odds for abdominal obesity (Higher Fat: OR 0.3, 95% CI 0.2–0.8; Wine and Moderate Eating: OR 0.2, 95% CI 0.1–0.7) compared to the Empty Calorie cluster (higher in sweetened beverages and desserts). These results were somewhat attenuated after additional adjustment for BMI (Higher Fat: OR 0.4, 95% CI 0.2–1.0; Wine and Moderate Eating: OR 0.3, 95% CI 0.1–1.0). None of the clusters was associated with MetS and other MetS components.

**Conclusions:** We found an inverse association between empirical dietary patterns and measures of adiposity. However, because these reflect existing eating patterns, they do not necessarily represent optimal dietary patterns for disease prevention.

#### P75. Sex and Gender Implications in Health Care Reform

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**Background:** A New Mexico federal planning grant looked at Health Benefit Exchange requirements through a sex and gender lens to analyze barriers to health coverage, participation in a state Health Benefit Exchange, benefits and services, and customer information to assess the differential impact of the design of a Health Benefit Exchange on women.

**Objectives:** Both sex and gender have a profound impact on one's health, access to health care, accessibility of health information, and health outcomes. The study was designed to identify a variety of participant perceptions in relation to health coverage and a Health Benefit Exchange from a sex and gender, woman-centered perspective. Specifically, we explore women's experiences with health coverage, interest in participation in a Health Benefit Exchange, specific benefits and services desired, customer service needed, and specific issues that arise due to gender roles.

**Methods:** Through a statewide stakeholder participant recruitment plan we included input from Native Americans, Hispanic/Latinas, young women, low-income women, monolingual Spanish speakers, rural women and parents of transgendered teens. The methodology includes four key informant interviews, seven focus groups, a policy forum, and a gender analysis of data gathered in New Mexico by Research and Polling, Inc.

**Results:** The recommendations are organized around the core areas studied: health coverage, participation in a Health Benefit Exchange, benefits and services, customer service, and gender roles. We group themes to include cost; family impact; power structures and cultural barriers; information, knowledge and trust; and comprehensive, integrated and co-located services.

**Conclusions:** We found significant differences between male and female respondents, and commonalities and coherence among the female focus groups, key informants, policy forum and data from Kaiser Family Foundation. Areas of overlap include cost of insurance plans, co-pays and specialists; access to information, knowledge and trust; impact on the family; power structures and cultural barriers; and, comprehensive, integrated and co-located services.

**P76. Sexual function and depression outcomes in breast hypertrophy patients undergoing reduction mammoplasty: A randomized clinical trial**

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**Background:** The breast is recognized as an important symbol of femininity and sensuality and its alterations, such as breast hypertrophy, can affect several aspects of women's quality of life. Breast hypertrophy is a prevalent health condition, and the treatment for this condition is the reduction mammoplasty.

**Objectives:** To evaluate sexual function and depression in breast hypertrophy patients undergoing reduction mammoplasty.

**Methods:** This trial has been registered in ClinicalTrials.gov (NCT01020422). Sixty breast hypertrophy patients were randomly allocated to control group (n=30) or to mammoplasty group (n=30). Patients in control group were assessed at the first appointment and three and six months later. In mammoplasty group, patients were assessed pre-operatively and three and six months after reduction mammoplasty. The Female Sexual Function Index (FSFI) and the Beck Depression Inventory (BDI) were used. FSFI provides scores on six domains (desire, arousal, lubrication, orgasm, satisfaction, and pain) and also a total score, used to identify women with sexual dysfunction. BDI score ranges from 0 to 63. The following scores were considered to classify depression: no depression (score < 10), mild (score ranging from 10 to 18), moderate (score ranging from 19 to 29), or severe (score ≥ 30). Results were statistically compared.

**Results:** Twenty seven patients in control group and 29 patients in mammoplasty group completed the 6-months follow-up. The groups were matched for the main demographic data. In the initial assessment, groups did not differ in regard to FSFI and BDI scores. Compared to control group, in the 3rd postoperative month mammoplasty group presented better results for "desire" (p=0.014), "arousal" (p=0.031) and "lubrication" (p=0.025). In 6th postoperative month, mammoplasty group scored better for "desire" (p=0.027), "orgasm" (p=0.016), "satisfaction" (p=0.010). On both postoperative assessments the prevalence of sexual dysfunction was lower in mammoplasty group (p=0.013 at 3rd month and p=0.003 at 6th month). Regarding to BDI scores, mammoplasty group had better results in the sixth postoperative month (p=0.014).

**Conclusions:** Reduction mammoplasty had a positive impact on sexual function and depression levels in breast hypertrophy patients.

**P77. Is abnormal uterine bleeding a reliable indicator of endometrial cancer?**

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**Background:** Endometrial cancer are increasing. In consequence of the modern lifestyle and changes in dietary habits, which result in obesity, anovulation, and reduced number of pregnancies. There is a higher incidence of endometrial cancer in postmenopausal women. About 77% of endometrial cancers are diagnosed at early stages, owing to the early manifestation of symptoms. Abnormal uterine bleeding (AUB), especially in postmenopausal women, is a common complication associated with endometrial cancer. Early symptoms prompt the patient to seek medical care while the disease is in its first stages. Hysteroscopy with guided biopsy has become the gold standard for the diagnosis of endometrial cancer. However, an important question that needs to be answered is which patients should undergo this procedure. Is it possible to identify effective screening methods that would improve epidemiological surveillance for endometrial cancer?

**Objectives:** To evaluate the results of endometrial cancer screening in women with and without abnormal uterine bleeding (AUB) in order to determine whether AUB can be used as a reliable indicator to identify patients who require additional testing for endometrial cancer.

**Methods:** Retrospective review of 2913 women underwent ultrasonography, and hysteroscopy with endometrial biopsy between jul/96-Apr/10. Of the 2913 patients, 852 presented with AUB.

**Results:** No endometrial cancer in the 2061 women without AUB. However, among the 852 patients with AUB, 56 (56/852, 6.6%) had endometrial cancer, of whom 54 (54/56, 96.4%) were postmenopausal and only 2 (2/56, 3.6%) were premenopausal. Although all cases of endometrial cancer were detected in women with a medical history of AUB.

**Conclusions:** The presence of AUB may be used as a risk indicator to identify patients who require further testing for endometrial cancer, while the absence of AUB seems to be a strong indicator of the absence of endometrial cancer.

**P78. The effects of acculturation and discrimination to health service seeking satisfaction for Latina and Asian American women**

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**Background:** There is ample research showing there are health disparities for minorities with respect to seeking mental health services in the U.S. While there are general barriers for minorities in seeking health services, minority women are more vulnerable as shown by their negative experiences and lower satisfaction in receiving care and health treatment, compared to men. The disparity is more pronounced in foreign-born Asian Americans than in U.S.-born Asian Americans, indicating the influence of acculturation.

**Objectives:** We examined Latina and Asian American women's experiences and the effects of acculturation and perceived discrimination in health service seeking. We also identified factors in increasing their satisfaction levels in mental health service.

**Methods:** We used data from the National Latino and Asian American Study, a nationally representative sample of Latinas (n=1427) and Asian Americans (n=1097). Hierarchical regres-



sion analyses were conducted to predict the presence of a major depression diagnosis in the preceding 12 months and evaluation of self-rated mental health. We also calculated rates of mental health service seeking satisfaction across different socio-demographic, ethnic and immigration groups.

**Results:** The results showed that perceived discrimination attributed to gender or race/ethnicity predicts lower levels of satisfaction of mental health service seeking. Older age, higher education levels, longer duration in the United States, and better mental health are positively correlated to higher satisfaction levels for Latina and Asian American women. We also found that higher levels of mental health rating indicate greater satisfaction, but that higher levels of English proficiency do not.

**Conclusions:** Our results provide important information using acculturation variables to increase knowledge with regard to race, ethnicity, and gender-based disparities in mental health care service seeking. Continued attention to acculturation and mental health issues are crucial to understand and increase the satisfaction experiences of Asian and Latina American patients in the U.S.

#### P79. Evaluation of cancer cell implantation method to generate murine metastatic breast cancer model for translational research and drug development

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**Background:** The development of one breast cancer drug costs approximately \$610 million. It requires on average 37 months in animal experiments to screen for safety and efficacy, and the costs continue to rise. The fact that only 11% of new drugs developed that underwent clinical human trials actually enter the market while approved drugs are removed from the market for safety and efficacy reasons, made us wonder whether current commonly used animal models are appropriate for screening purpose. Although the biological and genetic understanding of breast cancer has advanced significantly the last 20 years, there has been limited critical evaluation of mouse breast cancer metastasis models, especially in regards to genetic profiling.

**Objectives:** To evaluate two commonly used cancer cell implantation methods, orthotopic (OS) or subcutaneous (Sq), both morphologically and genetically.

**Methods:** 4T1-luc2 murine breast cancer cells were implanted with either OS or Sq method into immune intact female balb/c mice. Pathology and genome-wide gene microarray was used for analysis.

**Results:** Orthotopic implantation under direct vision (OS) produce more consistent tumor, which mimic human breast cancer metastasis pattern when implanted to the chest mammary fat pad. Further, orthotopic and subcutaneous implantation of the same mouse breast cancer cell line produce tumors with differentially expressed genetic profiles. Supervised cluster analysis of OS and Sq tumors demonstrated that 206 genes were differentially expressed by a 1.5-fold difference with  $p < 0.01$ . A literature search identified 75% of these 206 genes as either known targets of cancer therapy, cancer biomarkers, or tumor antigens. These differences include genes important for cancer research and drug development.

**Conclusions:** Wider use of orthotopic implantation method for syngeneic model, in place of the commonly used subcutaneous method, may provide clinically relevant results for translational research and improve the efficiency of cancer drug development.

#### P80. Breastfeeding Promotion Intervention Program

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**Background:** Exclusive breastfeeding is recommended during the initial six months of life. Studies from diverse socio-cultural contexts show that postpartum depressed mothers tend to breastfeed less or for less time than non-depressed mothers.

**Objectives:** As depression during pregnancy is the best predictor for postpartum depression, we propose to create a Breastfeeding Promotion Intervention Program (BPIP) to be implemented in depressed pregnant women, thus validating this strategy to increase breastfeeding rate and decrease the rate of postpartum depression in women at-risk.

**Methods:** The BPIP combines three factors as to achieve successful breastfeeding: the mothers' decision to breastfeed, successful breastfeeding initiation, and support in maintaining breastfeeding. It consists in several approaches regarding the different moments of implementation.

**Results:** Pregnancy

1: 34th week: Explain the BPIP; Benefits of breastfeeding; Breastfeeding techniques; Importance of support.

2: 36th week: Discussion about breastfeeding feelings, concerns, and attitudes.

Childbirth

Within the first 48 hours after: Mother's feelings and concerns about breastfeeding; Benefits of breastfeeding; Breastfeeding techniques; Support and confidence in mother's ability to breastfeed; Breastfeeding problem solving; Newborn's competences to be breastfed.

Postpartum

1: 1st week after: Collect information about breastfeeding condition; Questions and doubts; Mother's feelings and concerns about breastfeeding; Benefits of breastfeeding; Breastfeeding techniques; Breastfeeding problem solving; Support to breastfeeding continuation; Newborn's competences to be breastfed

2: First 15 days after: the same as 1; Support and confidence in mother's ability to breastfeed; Monitor child's weight to increase mother's confidence.

3: 1st month after: the same as 2.

4: 3 months after: the same as 3; Importance of breastfeeding continuation for at least six months.

5: 5 months after: the same as 4; Design strategies to continue breastfeeding after returning to work.

**Conclusions:** This study will provide empirical evidence to validate the BPIP in decreasing the risk of breastfeeding early termination, improving the breastfeeding rate and preventing postpartum depression.

#### P81. Prevalence Differences Among Predominantly Low Income Women with Controlled and Uncontrolled Type 2 Diabetes: Findings From The North Carolina Neurocognition Risk Reduction Diabetes Study

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**Background:** While it is widely document that uncontrolled diabetes may be associated with increased diabetes health risk complications it is presently unknown if uncontrolled diabetes is associated with increased prevalence of adverse mental health.

**Objectives:** The aim of the study was to characterize differences in key health disparity indicators and adverse mental health among controlled and uncontrolled adults with Type 2 Diabetes.

**Methods:** Patients (n=133) were primarily African American (61%), females (77%) between 26 and 65 years of age (SD + 9.5 years, Average Age=51). Data was obtained through a retrospective chart review. Adverse mental health was confirmed by a diagnosis or health care provider note confirming the presence of depression, anxiety and/or memory problems.

**Results:** Eighty-two percent of women had uncontrolled diabetes. Out of women with uncontrolled diabetes, 58 % had diabetes duration between 6-10 years, 39% up to 5 years and 3% 11 year and above. Women with uncontrolled diabetes had a higher prevalence of hypertension (78% vs. 57%), anxiety (46% vs. 43%), depression (51% vs. 43%) and memory problems (11% vs. 0%) when compared to women with controlled diabetes. Women with uncontrolled diabetes (44%) had a lower prevalence of adverse kidney health when compared to women with controlled diabetes (50%). Both A1C groups had similar prevalence of microalbuminuria (38% vs. 36%); however, women with controlled diabetes had a higher prevalence of macroalbuminuria (13% vs. 8%).

**Conclusions:** This medical record chart review raises several concerns about the health status of women with Type 2 Diabetes in North Carolina. A chief concern is the prevalence of depression, anxiety and high blood pressure among patients with both controlled and uncontrolled Type 2 Diabetes. Ongoing research will benefit from designing research studies that determine the independent associations of common mental health conditions among patients with both controlled and uncontrolled Type 2 Diabetes.

## P82. Cost-utility of reduction mammoplasty in the Brazilian National Public Health Care System

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**Background:** Breast hypertrophy is a common condition among women all over the world, and many of these women do not have access to the treatment of this condition, the reduction mammoplasty. Economic evaluation plays a key role in the decision making process regarding resource allocation. Despite the high prevalence of breast hypertrophy, cost-utility or cost-effectiveness studies on reduction mammoplasty are rare, and no previous study has been conducted in Brazil.

**Objectives:** To determine the cost-utility ratio in reduction mammoplasty in the Brazilian National Public Health Care System (SUS).

**Methods:** This was a randomized controlled trial, which has been registered in ClinicalTrials.gov (Protocol ID: 1788.08). Sixty breast hypertrophy patients were randomly allocated to control group (n=30) or to mammoplasty group (n=30). Patients in both groups were assessed at three moments: initial, after 3 months, after 6 months. All patients in mammoplasty group and 28 patients in control group completed the 6 months follow-up. The utility was assessed by the use of the Short Form Health Survey Instrument 6D (SF-6D). Direct costs were obtained from hospital records.

**Results:** Comparing the both groups in regard to utility, as assessed by the SF-6D, there was no difference at the initial assessment (p=0.410), and mammoplasty group presented better results at 3 months (p=0.001) and 6 months (p=0.008) assessments. When compared to preoperative, patients in mammoplasty group presented improvement in utility at the 6th postoperative month (p=0.000). The average direct cost was US\$ 217.48 per operation, and the ratio direct cost/QALY (quality-adjusted life year) was 0.73.

**Conclusions:** Reduction mammoplasty performed in the Brazilian National Public Health Care System provided a cost-utility ratio equivalent to US\$ 297.92 per 1 QALY.

# Community and Public Health Research

## P83. Obesity and Weight Gain During Pregnancy as a Risk for Preterm Birth

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**Background:** Obesity in pregnant women is becoming a major problem affecting both the mother and her infant. Literature on the interaction between pre-pregnancy BMI and weight gain during pregnancy is limited.

**Objectives:** This study examines the effect of maternal pre-pregnancy BMI and weight gain during pregnancy on preterm birth.

**Methods:** Data from the Collaborative Perinatal Project (CPP) on 52,574 pregnant women with singleton, live-born infants was

analyzed. The main outcome variable, gestational age, was dichotomized as preterm (<37 weeks) or full-term (>= 37 weeks) pregnancy. Maternal BMI was categorized into underweight (BMI < 18.50), normal weight (18.50 – 24.99), overweight (25.00 – 29.99), and obese (BMI >= 30.00). Multiple logistic regression was conducted and OR and 95%CI were calculated.

**Results:** This study reported a statistically significant interaction between pre-pregnancy BMI and weight gain during pregnancy. Among overweight and obese women, the odds of preterm birth decreases with decreasing weight gain during pregnancy. Among obese women who gained 36lbs or more during pregnancy, the odds of preterm birth was 1.64 times higher than normal weight women [OR=1.64, 95%CI=1.04–2.60].

**Conclusions:** Excessive weight gain during pregnancy among overweight and obese women is associated with preterm birth.

Health care professionals and public health workers should be aware of this risk and educate pregnant women on the appropriate amount of weight gain for their BMI.

#### P84. Gender Differences in Human Papilloma Virus Awareness by Demographics Among Korean

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**Background:** Public awareness in relation to HPV has been increasing in Korea in recent years. However, the majority men and women are still not familiar with HPV. To widen HPV understanding for public in the Korean society, it is necessary to explore the level of HPV awareness among men and women.

**Objectives:** This study examined to identify the gender differences in human papilloma virus (HPV) awareness of men and women according to demographic characteristics in Korea. Ultimately this study is able to understand the gender differences in general awareness in HPV to establish the effective strategies HPV education for Korean.

**Methods:** A survey design was utilized to collect cross sectional and retrospective data. A convenient sample of 1890 Korean men and women living in Korea were recruited to the study. Using the questionnaires, assessment was done including HPV awareness with 7 items and age, income, education, living area as a socio-demographics. HPV awareness are following; heard of HPV, HPV as a STD, HPV as a causing factor of cervical cancer, HPV infection is a few. Only women get HPV infection, condom is able to prevent HPV, vaccine can prevent HPV. Data analysis procedures included descriptive analysis, Chi square test using SPSS 18.0 version computer program.

**Results:** Of the 1890 Korean recruited in this study, 763 male (46.7%) and 905 female (54.3%). HPV awareness in men and women are very low in general. Also there were significant differences in all 7 HPV awareness. Men showed differences in HPV awareness according to age, education, and living area. In contrast, women showed age, education, income, and living area.

**Conclusions:** Koreans begin to understand HPV, so their awareness of HPV should be increased gradually. This study provided the necessity of gender specific, multi-tailored HPV education led by professionals in the various setting in Korea.

**Key word:** HPV, Sex, Gender specific, Sexually Transmitted Diseases.

**Acknowledgement:** This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (2009-0071483).

#### P85. An Inventory of Avon Foundation for Women Breast Cancer Patient Navigation Programs

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**Background:** Avon Foundation for Women grantees provide breast cancer services through patient navigation (PN) in an effort to alleviate barriers among underserved women.

**Objectives:** To gain a better understanding of how different PN programs function, this study explores variations in the use of navigators, types of services offered, description of clients they serve, tracking of treatment completion, and evaluation mechanisms.

**Methods:** Fifty-six Avon PN programs funded since 2008 throughout the United States were contacted. An online survey was distributed to the grantees of which 44 (81%) complete responses were collected and analyzed.

**Results:** All programs offered PN services. Clients were racially and ethnically diverse, mostly in the 40–64 year old age range (64%) and 91.6% with an average income of less than \$30,000. Women were either uninsured (50.7%) or receiving Medicaid (32.4%). PN programs were both community and hospital-based (22.5%); many hospitals (35.2%) were described as safety-nets (e.g. provides a significant level of care to low-income, uninsured, vulnerable populations). On-site services included: breast screening (e.g. mammography and breast ultrasound) and treatment (e.g. breast surgery and radiation therapy). Some barriers to care identified by the programs included transportation, access to appointments, language barriers, and financial issues (e.g. cost of screening and treatment specifically for those uninsured). Over 39% of programs provided care across the cancer continuum.

**Conclusions:** Many Avon PN programs incorporated navigation services that span the cancer care continuum. They addressed disparities by offering navigation and onsite medical services to reduce multiple systems barriers and social issues related to breast care.

#### P86. Second Wave Adjunct Project

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**Background:** The Second Wave (SW) project, completed in 2009 by experts in bioethics and women's health policy, raised concern that pregnant women are systematically excluded from clinical research, thus making little evidence-based medicine available for treating pregnant women. This project explored what progress has been made in the years since SW toward including pregnant women in medical research.

**Objectives:** 1) Develop a database to catalog publications of research on medical interventions addressing maternal illness in pregnant women, 2) contribute to that database by entering relevant publications, and 3) review the findings and summarize what progress has been made toward including pregnant women in research.

**Methods:** Systematic review of literature referencing research on measuring medical outcomes or interventions for diseases or conditions affecting pregnant women; frequency analysis of key words in identified literature; and creation of visual images representing key word frequencies.

**Results:** 32 articles published between April 2010–2011 were identified in a targeted review of PubMed - those reporting empirical findings relevant to the medical treatment of maternal illness in pregnant women. Among the articles identified, detailed descriptions of methods for including pregnant women in research were lacking. A substantial portion of the research studies apply to resource-poor settings and few address paradigmatic acute illnesses. Papers often indicate that they will report on a health problem that affects both maternal and infant health, but only include a discussion of the effect on infants and the implications of maternal illness on fetal and infant health.

**Conclusions:** Based on our work, there continues to be a paucity of research on maternal illness in pregnant women, especially as part of larger representative population. As was concluded by SW in 2009, more research and innovative methods are needed to improve the evidence base for medical care of pregnant women and fetuses.

**P87. Go Red for Women Cardiovascular Health Screening Evaluation: The Dichotomy Between Awareness and Perception of Cardiovascular Risk in the Community**

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**Background:** Cardiovascular (CV) disease remains the leading cause of death in American women and affects more than one in three in the United States. Research shows that women are becoming more aware of their existing and potential CV disease burden as well as the preventive actions to reduce CV risk. However, there remains a dichotomy between awareness and perceived risk.

**Objectives:** We sought to further characterize this awareness gap in women attracted to an annual CV health screening and educational event in order to improve strategies to increase CV health and reduce risk.

**Methods:** During an annual CV health screening event in Rochester, Minnesota, 294 women were surveyed over four years. Surveys collected detailed information from participants regarding knowledge of CV disease, their CV risk factors, and their perceived risk. Biochemical (lipids, glucose), morphometric (BMI) and hemodynamic (BP) measurements were also obtained. Levels of risk were determined from the recently published 2011 American Heart Association Effectiveness-Based Guidelines for Women.

**Results:** Ninety eight percent of the participants were white and the average age was 52 years (SD 15.3 years). The majority of the participants were aware that CV disease is the leading cause of death among women (99.3%), while just over half (53.1%) perceived themselves to be at risk for heart disease. However, 84% were determined to be "at risk" for CV disease, while 16% were "high risk". Of those "at risk" and "high risk," 48% and 20%, respectively, did not perceive themselves to be at any risk of developing heart disease.

**Conclusions:** Women attracted to a health screening event are aware that CV disease is the leading cause of death among women. However, the magnitude of this awareness does not translate into a perception of personal risk or an understand-

ing of the degree of actual risk. In order to reduce the rate of CV disease in women, continued efforts are needed to focus on and personalize the importance of CV risk factors, so women may take concrete steps to improve their individual CV outcomes.

**P88. Breast cancer knowledge, attitudes, beliefs, and screening practices among first-generation immigrant Muslim women**

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**Background:** Immigrant Muslim women in the US represent a fast-growing and under-studied population whose healthcare behaviors, including breast cancer screening practices, are influenced by religious and cultural beliefs. Although evidence indicates Muslim women underutilize mammography, a critically important early detection tool, there is a paucity of rigorous theory-based descriptive and intervention research on this population.

**Objectives:** To establish screening practices and to explore predictors, including religious and cultural factors, associated with mammography use by first-generation immigrant Muslim women in Chicago.

**Methods:** A culturally-adapted survey was developed from existing instruments with input from key informants via focus groups. A committee translation approach was employed for translating the survey which was administered in-person in Urdu, Hindi, Arabic, or English to a community sample of 215 participants (Middle Eastern 51%; South Asian 49%). Factor analysis and internal consistency tests were used to establish scale psychometrics. Associations between enabling, predisposing, and need variables and the primary outcome, mammography use were explored with logistic regression analysis.

**Results:** Each of the established scales was internally consistent (alpha coefficients ranged from .64 to .91). Screening rates were higher for ever having a mammogram (71%) than adherence (52%) - mammogram within the last two years. Three factors were significant predictors of ever having a mammogram: length of stay in the US (AOR=1.08 95%CI=1.03–1.14); self-efficacy (AOR=1.83 95%CI=1.00–3.31), and self-perceived importance of screening (AOR=1.38 95%CI=1.16–1.57). Two factors were significant predictors of mammogram in the past two years: having a primary health care provider (AOR=2.36 95%CI=1.01–5.01), and self-perceived importance of screening (AOR=1.25 95%CI=1.09–1.44).

**Conclusions:** These findings provide guidance for reaching out particularly to new immigrants, empowering patients, and reinforcing the importance of screening through patient education and provider recommendations.

**P89. Breastfeeding is negatively affected by prenatal depression and reduces postnatal depression**

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**Background:** Breastfeeding has been associated with numerous positive health-outcomes for both the child and the mother. However the mother's psychological well-being benefits need more supportive empirical evidence.

**Objectives:** This study explored the effects of prenatal and postpartum depression to determine if they were significant predictors of exclusive breastfeeding.

**Methods:** The Edinburgh Postnatal Depression Scale was administered to 145 women at the 1st, 2nd and 3rd trimester, and at the neonatal period and 3-months postpartum. Data regarding exclusive breastfeeding were collected at 12-months postpartum.

**Results:** The results showed a significant decrease in depression symptoms from childbirth to 3-months postpartum in women who initiated breastfeeding, while no significant difference was observed in women who did not initiate breastfeeding. Depression symptoms at the 3rd trimester, but not at 3-months postpartum, were the best predictors of the length of exclusive breastfeeding.

**Conclusions:** This study suggests that breastfeeding may reduce symptoms of depression from childbirth to 3-months postpartum, and that screening for depression symptoms during pregnancy could help identify women at risk for early cessation of breastfeeding.

#### P90. Association of folate supplementation, birth weight and infant mortality in the United States

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**Background:** Folate supplementation peri-conception has been demonstrated to improve birth outcomes by reducing the risk of neural tube defects (NTDs). Further evidence indicates a positive association between maternal folate consumption and birth weight.

**Objectives:** We sought to estimate the impact of increasing folate supplementation on infant mortality and cost per life saved in the United States.

**Methods:** We developed a simulation model of annual birth outcomes in the U.S. Using 2007 and 2008 data from the CDC, we modeled the proportion and annual distribution of birth weight and birth-weight specific mortality. Data on the current prevalence (66%), cost and efficacy of folate supplementation in the U.S. was used to simulate an increase (5%) in peri-conceptual folate consumption and its subsequent impact on birth weight and survival. The survival benefits of improved birth weight were computed as the difference between the birth-weight specific first year mortality with and without additional folate supplementation. We conducted sensitivity analyses on all model parameters.

**Results:** A total of 4.25 million live births and 27,092 infant deaths were identified in the US Vital Statistics database and included in the model. We estimate that a 5-percentage point increase in peri-conceptual folate exposure decreases the proportion of low birth weight deliveries by 0.26 percent. This translates into a reduction in mortality of 602 infants at a cost of \$635 per infant death avoided. Sensitivity analyses suggest these findings are sensitive to the rate of folate consumption and the expected benefit of folate on infant birth weight.

**Conclusions:** The U.S. Public Health Service has recommended that efforts be undertaken to increase the rate of peri-conceptual folate consumption. Our analysis shows that programs or tech-

nologies designed to increase folate supplementation are likely to improve birth-weight associated survival at reasonable cost.

#### P91. Nutritional Status of and Prevalence of Iron Deficiency Anemia (IDA) in Adolescent Girls (11–21 Years) Residing in Urban Slum Areas of Dharavi, Mumbai

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**Background:** The nutritional status of adolescent girls contributes significantly to the nutritional status of the community. IDA is a widespread condition in adolescents of developing countries.

**Objectives:** The present research is an attempt to study the Nutritional Status and Prevalence of IDA in girls residing at Dharavi.

**Methods:** 174 girls (11–21 years) who are beneficiaries of ICDS and Kishori Project were selected, using Purposive Sampling. Anthropometry, biochemical markers and dietary assessment were used for assessing nutritional status and KAP of the girls.

**Results:** Only 104 attended anemia detection camp of which 48% were anemic, 28% were severely anemic, 64% were moderately anemic and 8% were mildly anemia. 38% of the entire sample had normal BMI and body fat percentage of 81% was in acceptable range. Iron, folic acid, calcium, vitamin C, protein, carbohydrates and calories were prominently inadequate when compared to RDA. Cereals, pulses and root vegetables were consumed daily, meat/fish/poultry were consumed weekly and fruits and vegetables were rarely consumed. KAP showed that 52% of the adolescents were aware of foods which could help prevent anemia. Common complaints of adolescents were weakness and headaches followed by stomach cramps, poor concentration, and loss of appetite. 97% of adolescent girls had not undergone deworming.

**Conclusions:** Subsequent to this study, ICDS has implemented supplementation of Iron-folic acid tablets to adolescent girls in various parts of India from November 2010. Apart from this milestone, there is still a need to improve the nutritional status through nutrition education; and formulation of more policies by the Government for the well-being of adolescent girls.

#### P92. Effects of Occupation, BMI, Age, Parity, and Ethnicity on Hypertensive Disorders of Pregnancy

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**Background:** Hypertensive disorders in pregnancy (HDP) are leading causes of maternal and fetal morbidity, and have been rising in incidence in recent decades. Studies demonstrate that HDP risks increase with nulliparity, advanced age, high BMI, and Black ethnicity. Little is known about the effects of worker classifications on HDP.

**Objectives:** This is the first large scale study of potential associations between occupational classification and HDP. Interactions between work classification and other known HDP risk factors also are examined.



**Methods:** Birth certificates from the 2005 Texas Electronic Registrar Birth Registration were examined. Maternal occupations were coded using the Standard Occupational Classification (SOC) system. HDP risks among categories of employed women were compared with risks of homemakers and students.

**Results:** Employed mothers are at higher HDP risk than homemakers or students. Although some interactions between work status and well-known risk factors are present, the higher risks associated with employment remain significant when controlled for parity, BMI, age, and ethnicity. Overweight employed women at all BMI levels are at higher HDP risk than overweight homemakers at similar BMI levels; normal weight employed women generally are not at higher risk than normal weight homemakers, although elevated risks appear in some work categories. Women employed in business and the legal, teaching, and healthcare professions are at higher risk than women employed in support industries such as food preparation, house-keeping, and personal care services. These patterns emerge within both lower risk (multiparous, normal weight, age < 35 years, non-Black) and higher risk (nulliparous, overweight, age > 35 years, Black) populations.

**Conclusions:** Employment status as well as high BMI, advanced age, nulliparity, and Black ethnicity are independent risk factors for HDP. Risks associated with high BMI affect women in business and professional occupations more pronouncedly than homemakers or women working in support occupations. More work is needed to understand the causes of these associations.

### P93. Compliance with Alcohol Guidelines for Pregnant Women: Using Data from the Australian Longitudinal Study on Women's Health

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**Background:** Heavy prenatal alcohol consumption can have detrimental effects; however evidence regarding the impact of low to moderate consumption is inconclusive. Australian guidelines reflect the inability to define a safe level of prenatal alcohol consumption. 1992 guidelines promoted abstinence, 2001 guidelines condoned low levels of consumption, and most recent guidelines (2009) claimed, 'not drinking is the safest option'. There has been no examination of pregnant Australian women's compliance with 2009 guidelines.

**Objectives:** The purpose of this project was to assess pregnant Australian women's level of compliance with the 2009 alcohol guidelines, and to examine factors associated with that compliance. This was done by using population-based data from the Australian Longitudinal Study on Women's Health (ALSWH).

**Methods:** Data analysis was conducted on the fifth survey (2009) of the 1973–1978 cohort from the ALSWH. Survey four data (2006) was used to determine previous behaviors. Descriptive statistics were utilized to identify compliance with alcohol guidelines. Pearson Chi-square tests and logistic regression were used to examine associations between level of compliance and sociodemographic and health-related factors.

**Results:** Of 837 pregnant women, 72% drank alcohol, therefore were noncompliant. Of those drinking, 84% usually drank one to two drinks per day, and 37% consumed alcohol on a weekly basis.

In multivariate analysis, low income, previous compliance with alcohol guidelines, pre-pregnancy alcohol use, never bingeing prior to pregnancy, and drinking less often than once a week before pregnancy were predictive of compliance to alcohol guidelines.

**Conclusions:** The majority of pregnant Australian women consumed alcohol during pregnancy. Previous compliance with alcohol guidelines and pre-pregnancy alcohol behavior were strong predictors of compliance to alcohol guidelines during pregnancy. It is important to assess alcohol use for women of childbearing age before pregnancy. Prevention strategies aimed at increasing pregnant women's compliance with alcohol guidelines are needed.

### P94. The Association of Back Pain and Urinary Incontinence: Results from the Kentucky Women's Health Registry

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**Background:** There are numerous factors associated with the development of back pain, yet little consideration has been given to the pelvic floor musculature and dysfunction of this musculature which may cause urinary incontinence.

**Objectives:** To investigate the association between chronic back pain and urinary incontinence.

**Methods:** Data from a sample of 2475 Kentucky Women's Health Registry (KWHR) participants were used for this analysis. The primary variables of interest were self-reported urinary incontinence (UI) and chronic back pain (CBP). Urinary incontinence (as well as urge UI and stress UI) served as the dependent variable. Simple comparisons were performed using chi-square tests and multivariable associations were assessed using logistic regression.

**Results:** Reports of urinary incontinence were higher in women reporting CBP than those not reporting CBP; for general UI (50% vs 40%,  $p < 0.01$ ), urge UI (30% vs 19%,  $p < 0.01$ ), and stress UI (46% vs 33%,  $p < 0.01$ ). The estimated adjusted CBP odds ratio was 1.21(0.87, 1.69) for UI, 1.43(1.02, 1.99) for stress UI, and 1.35(0.94, 1.94) for urge UI, but only stress UI was significant at the 0.05 level.

**Conclusions:** Our data indicates that women who report CBP have an increased observed odds of also having UI and a significantly greater odds of SUI. The importance of the influence of postural muscles in both SUI and CBP provides insight into potential interventions for prevention and treatment of both.

### P95. Lived Experiences of Australia's Street-Based Sex Workers: The Impacts of Stigma and Discrimination

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**Background:** Sex workers experience stigma and discrimination and are subjected to violence, are reluctant to access services and are susceptible to mental health issues. In Victoria, Australia street-based sex work is illegal and negatively impacts sex workers by exacerbating stigma and discrimination and can lead to social exclusion. Legislation has forced street-based sex workers underground thus exposing them to violence, harassment and all forms of abuse.

**Objectives:** The aim of the study is to investigate the perceptions, experiences and impacts of stigma and discrimination on female street-based sex workers.

**Methods:** A methodological framework of feminism and ethnography was adopted. An ethnographic study design was employed using participant observation, unstructured interviews and in-depth interviews with 12 women who were working the streets in St. Kilda, Victoria Australia. Women were recruited from the St. Kilda Gatehouse, a support drop in centre for street-based sex workers. All women were from Caucasian backgrounds. Ten of the twelve women worked on the streets to support a heroin addiction or were on methadone at the time of the interviews. Ten women had children and one woman was pregnant. Seven women were looking for stable housing and three were homeless.

**Results:** Street-based sex workers experience stigma and discrimination on a daily basis by the general public and at times are victims of violence and abuse by clients. Workers are subjected to stigma and discrimination from service providers such as mental health services, judicial services and police. Women also experience violence and abuse in their inter-personal relationships.

**Conclusions:** Legislative reform, such as the introduction of tolerance zones for street sex workers is needed to address violence currently experienced by street-based sex workers. Tolerance zones would result in increased visibility and reduced stigma and discrimination. Support organisations need to be judgement free in order to improve women's social inclusiveness and provide a sense of community.

#### P96. Assessing Factors of Breast Cancer Risk and Perceptions of Mammography Age Among Young American Women

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**Background:** As more young women are being diagnosed with breast cancer it has become increasingly important to address just how young women perceive their breast cancer risk and breast cancer detection methods such as mammography for future education efforts. This study tested which socio-demographic variables (race, education, income and marital status) and perception variables (perceived susceptibility and perceived severity) affected young women's thoughts on mammography age (the age at which a woman should get her first mammogram).

**Objectives:** To use a modified version of the Health Belief Model (HBM) to test a statistical model that predicts which socio-demographic factors influence the attitudes and beliefs young American women have about initial mammography age.

To study a population often overlooked in behavioral breast cancer research, of young American women who participated in the 2003 Health Information National Trends Survey (HINTS).

**Methods:** A 5-step multinomial logistic regression was used to assess a subset of the HINTS survey population (N=950) for the purpose of identifying how this population of young American women perceived mammography age. The study also tested the HBM variables of perceived susceptibility and perceived severity along with the control variables of race, level of education, income, and marital status. It was hypothesized that race would be a significant predictor of mammography age among the sample population.

**Results:** Findings from this study revealed that perceived severity, education, and income were significant predictors of perceptions of mammography age among young American women.

**Conclusions:** This research has resounding implications for policy and for efforts to design health communications targeted toward young American women and to gain information about their perspectives, attitudes, and beliefs related to breast health.

#### P97. Common Beliefs and Misconceptions About Gynecologic Cancer: A Qualitative Study of U.S. Women

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**Background:** The Centers for Disease Control and Prevention (CDC), in collaboration with the U.S. Department of Health and Human Services' Office on Women's Health, developed the Inside Knowledge: Get the Facts About Gynecologic Cancer campaign. This initiative supports the Gynecologic Cancer Education and Awareness Act of 2005, or Johanna's Law.

**Objectives:** The principal objectives of Inside Knowledge are to: 1) increase awareness among women and health care providers about signs, symptoms, risk factors, screening, and prevention strategies related to the five main gynecologic cancers (cervical, ovarian, uterine, vaginal, and vulvar); 2) promote discussion of gynecologic cancers between women and providers; and 3) encourage women to ask about gynecologic cancers when faced with warning signs.

**Methods:** CDC conducted formative research in 2009 with women in seven cities across the United States. In 48 focus groups with 408 women aged 40–60, we explored knowledge, attitudes, beliefs, and behaviors related to gynecologic cancer and tested creative approaches to ensure effectiveness of campaign materials.

**Results:** Our research revealed knowledge gaps and misconceptions about gynecologic cancers, such as a common misunderstanding about the purpose of the Pap test, a lack of familiarity with vaginal and vulvar cancers, and a generally poor understanding of the female anatomy. Our research also showed that creative approaches using testimonials, woman-to-woman communications, and women of diverse racial and ethnic groups were most appealing to women in our target audience.

**Conclusions:** Gynecologic cancer educational resources should address knowledge gaps and misconceptions common among women. While this study was undertaken to guide development of CDC's Inside Knowledge campaign, it also may help inform similar public health efforts to reach women aged

40–60. In addition, our findings suggest that health care providers can play an important role in educating their female patients about gynecologic cancers.

**P98. The mistrust endures: Attitudes and beliefs about participation in biobehavioral research among urban adolescent females and their parents**

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**Background:** Vulnerable communities have historically been abused by research. Resultant mistrust negatively affects biobehavioral research participation. Without adequate representation of marginalized and vulnerable communities in scientific inquiry, health advances from these integrated approaches may be hindered for these populations.

**Objectives:** This study aimed to: 1) explore attitudes and beliefs among urban adolescent females (aged 12 to 19) currently receiving outpatient mental health treatment, and their parents/guardians, about participating in biobehavioral research, and 2) determine the acceptability of collecting biomarkers via blood, saliva and/or urine specimens.

**Methods:** A survey and one 2-hour focus group were conducted with members of the target demographic. Descriptive statistics describe the sample demographics, and frequency counts explore reported attitudes and beliefs. Focus group transcripts were analyzed through thematic content analysis. A total of 37 adolescents and 23 parents/guardians participated in the study.

**Results:** A large degree of skepticism and mistrust for research exists, with particular concern for “guinea pig” studies that involve the collection of blood and genetic information. The legacy of experimentation and doubt related to the inadequacy of protection was a predominant theme. During a portion of the focus groups, as the discussion progressed, it was discovered that many of the participants had not encountered positive views of research. However, as the discussion progressed, the focus groups appeared to facilitate positive changes in the attitudes about research and stimulated thoughts of altruism. Altruism emerged with beliefs that research participation could “save a life” in the future, and was a method to learn new information about health.

**Conclusions:** Even without personal experience of research mistreatment, negative research perceptions are still prominent in the minds of those who are most vulnerable. However, with purposeful discussion surrounding research, beliefs can change from negative to positive. Researchers and communities must partner together to stimulate a dialogue about the need for diverse populations participating in biobehavioral research and ways to facilitate involvement.

**P99. The effect of an unwanted pregnancy on smoking behavior**

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**Background:** Many women quit or cut back smoking during pregnancy. Given that half of all pregnancies in the United States are unplanned, we investigated whether pregnancy intention influenced smoking behavior.

**Objectives:** The main outcome was a change in smoking behavior defined as either cutting back or quitting. Women who stated that the pregnancy had been unwanted were contrasted with those for whom it was desired (even if unplanned or mistimed).

**Methods:** The National Survey of Family Growth female pregnancy data file (2006–2008) was used. The data were restricted to women with completed pregnancies who had smoked prior to conception. Bivariate analysis using the proper survey and weight functions was performed as was logistic regression. Confounding was assessed via manual backwards elimination with a change-in-estimate criteria of 0.10% being significant.

**Results:** Women in the sample were young (mean age of 25.2), white (81.2%), high school educated (65.5%), employed (63.39%), lived in rural or suburban areas (74.93%), and had Medicaid insurance (64.6%). Over half (53.01%) of women state they did not use any method of contraception prior to becoming pregnant. Eighteen percent of the pregnancies were classified as unwanted. The overwhelming majority knew of their pregnancy in the first trimester (95%) and 88.1% of women initiated prenatal care in the first trimester. A small minority of women (3.2%) increased smoking in pregnancy, compared with 11.6% who reported no change and 85.3% who decreased or quit. Smoking decrease was associated with maternal employment, whereas unwanted pregnancies were associated with being non-white and having had no prenatal care. Both were associated with being unmarried. When controlling for marital status, women with an unwanted pregnancy had 0.59 times the odds of decreasing smoking (95% CI: 0.34, 1.00) compared to women with desired pregnancies.

**Conclusions:** Although pregnancy is a favorable time for behavioral change, women with unwanted pregnancies are less likely to quit or cut back their smoking.

**P100. Philadelphia Ujima coalition for a healthier community: A needs assessment of girls and women using a gender analysis framework**

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**Background:** Gender disparities in health continue to persist. Differences exist in mortality and morbidity rates as well as quality of care received and experiences with social determinants of health. Moreover, the unique needs and experiences of girls and women must be considered.

**Objectives:** The Philadelphia Ujima Coalition for a Healthier Community funded by the Office on Women's Health, utilized a community participatory framework to conduct a gender informed needs assessment of priority areas in girls and women's health.

**Methods:** A four tiered approach was utilized in this needs assessment. Coalition members identified and ranked priority areas. Data was analyzed from the 2010 household health survey in order to identify gender differences in health outcomes. Key informant interviews, using a gender analysis framework, were conducted with stakeholders identified through a participatory



process. A community health assessment was implemented with partner sites. A participatory process was used to identify and rank priority areas.

**Results:** Gender disparities in health outcomes and health care practices were observed. Four key priority areas were identified including nutrition, sexual health, healthy relationships and gender informed health care providers. Data from the community health assessment and key informant interviews were used to identify priority areas as well as gender informed barriers, norms, available resources and approaches to programming.

**Conclusions:** A gender informed needs assessment of girls and women can reveal important priority areas to be addressed as well as highlight specific gender related objectives to be included in subsequent health promotion programming for girls and women.

#### P101. Metabolic syndrome and cervical cancer in the Metabolic Syndrome and Cancer Project (Me-Can)

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**Background:** Little is known about the association between the metabolic syndrome (MetS) and cervical cancer carcinogenesis.

**Objectives:** To assess the associations between metabolic factors (both individually and combined) and the risk of cervical cancer by subtype in the large prospective Metabolic syndrome and Cancer project (Me-Can).

**Methods:** The Me-Can cohort includes 288,834 women. During an average follow-up of 11 years 425 invasive cervical cancer cases were diagnosed. Hazard ratios (HRs) were estimated by use of Cox proportional hazards regression models for quintiles and standardized z-scores (with a mean of 0 and a SD of 1) of body mass index, blood pressure, glucose, cholesterol, triglycerides and a MetS score. Risk estimates were corrected for random error in the measurements.

**Results:** The MetS score was associated with increased risk of cervical cancer (per 1SD increase, HR, 1.26; 95% CI, 1.08–1.47). Among individual metabolic factors, associations were observed for BMI (per 1 SD increase, 1.12; 1.01–1.25), blood pressure (1.25; 1.04–1.49), and triglycerides (1.39; 1.15–1.68). In models including all metabolic factors simultaneously, the associations for blood pressure and triglycerides persisted. Stratification by morphology showed stronger association of triglycerides with squamous cell carcinoma (SCC) (1.42; 95% CI, 1.09–1.84) than with adenocarcinoma (ADC) (0.97, 0.53–1.75). Among older women cholesterol (50–70 years HR, 1.34; 95% CI, 1.00–1.81), triglycerides (50–70 years HR 1.49, 95% CI, 1.03–2.16 and ≥70 years HR 1.53, 95% CI, 1.08–2.17) and glucose (≥70 years HR 1.87, 95% CI, 1.12–3.12) concentrations were associated with cervical cancer.

**Conclusions:** The results of this large prospective study provide evidence for an association between cervical cancer and the

MetS as well as the individual MetS factors including BMI, blood glucose and triglyceride levels.

#### P102. Consistency of Pregnancy Labeling Across Different Therapeutic Classes

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**Background:** Pregnancy labeling is an essential source of information to address the potential risks that pregnant women and their developing fetus may face while taking prescription drugs. The current pregnancy labeling system uses five letter categories: A, B, C, D and X. The current system often does not adequately reflect the potential reproductive and developmental risks associated with medication use during pregnancy.

**Objectives:** The objective of this study is to evaluate the consistency of pregnancy labeling across different therapeutic drug classes for the top 10 drugs by pharmaceutical sales and other general therapeutic classes.

**Methods:** The top 10 drugs by sales from 2010 were obtained from Drugs.com and were classified into 7 therapeutic classes. DailyMed was used to obtain drug labeling. Each subgroup was evaluated for the consistency of labeling based on the letter categories and other available pregnancy label information including the presence of animal and human data for a particular drug. The other general therapeutic classes were assessed using the same approach.

**Results:** Advair® (Fluticasone/Salmeterol) was excluded from this study since it is a combination product that can be classified under 2 therapeutic drug classes. For the remaining 9 drugs, 7 therapeutic classes were analyzed and 5 classes were consistent across the entire therapeutic class subgroups. Five of the six proton pump inhibitors were classified as category B and one was labeled category C. All statins were consistently labeled category X. Six of the seven therapeutic classes had adequate studies conducted in animals. Similar trends were seen in terms of the presence of animal studies, lack of adequate human studies, and the consistency of the letter labeling for the insulins, SSRIs, vaccines, macrolides, and benzodiazepines.

**Conclusions:** Some differences exist with pregnancy labeling across therapeutic classes, which should be improved by the implementation of the FDA's new proposed rule for Pregnancy and Lactation labeling. The new labeling will eliminate the letter category and emphasize the need to make updates as new data on drug use by pregnant women become available.

#### P103. Knowledge and attitudes towards breastfeeding in the African-American male population

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**Background:** The American Academy of Pediatrics recommends that mothers breastfeed exclusively for 6 months after their infant's birth. Although human milk provides optimal nutrition for infants, less than one-third of US infants are breastfed exclusively for 6 months or more. Breastfeeding rates are particularly low among the African American population. Compared to all women, African American women have the lowest rates of breastfeeding initiation (54%) and duration at 6 months (27%). There are many factors which influence a woman's choice to breastfeed, however the father's role is one of the most important that determine the infant feeding method.

**Objectives:**

1. To assess the African American males knowledge about the benefits of breastfeeding
2. To examine African American males attitudes toward breastfeeding by age, socioeconomic status and family composition.

**Methods:**

1. Design: non-experimental cross sectional.
2. Setting: 5 Barber shops in Dallas, Texas.
3. Participants: African American Males over 18 years of age.
4. Instrument: Questionnaire which will evaluate for a number of knowledge and attitudinal variables.

**Results:** Expected Results: African American Men preferred if their offspring were breastfed. They were not informed about the benefits of breastfeeding and the risks of formula feeding. African American males of lower socioeconomic and educational status were more likely choose formula feeding. Men who had witnessed breastfeeding exhibited positive attitudes towards breastfeeding and were more likely to choose breast feeding as an infant feeding method.

**Conclusions:** Inclusion of African American males in the education and the decision making will help to provide greater familial support for breastfeeding mothers. Confrontation of misperceptions about breastfeeding will help to overcome barriers to the initiation and maintenance of breastfeeding.

**P104. Overall health and health service seeking among Latino Americans nationwide**

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**Background:** Despite the increasing Latino American population, Latina American women's health is understudied. In particular, there is a lack of research on the overall pattern of their health and healthcare utilization.

**Objectives:** We examined the chronic, behavioral, mental health and health care service seeking of Latina American women and compared it to that of Latino American men.

**Methods:** Using a nationally representative sample (n=2,554) from the National Latino and Asian American Study, the first comprehensive epidemiological survey in the United States, we examined the annual rates of chronic, behavioral and mental healthcare service utilization including general medical, specialty

mental health and any medical services, in three major subgroups of Latino American: Cuban, Mexican and Puerto Rican American.

**Results:** Chronic health problems varied with three major subgroups of Latino Americans. In physical health, Puerto Rican American women reported the highest rate of allergies and asthma, while Puerto Rican American men reported high rates of cardiovascular disease. All three subgroups of Latina American women reported having high body mass indices, while both male and females of all groups reported having similar rates of major depression diagnosis. Cuban American women saw their general practitioner most frequently (7%), while Puerto Rican American men visited other health care providers (such as nurses, counselors, mental health provider) most frequently (6.7%) in the past 12 months.

**Conclusions:** Latino American women encountered various physical, behavioral and mental health problems and yet had low health care services seeking rates. Both Latino women and men have similar and different rates in various health issues. Therefore, it is critical to further examine factors associated with the underestimation of physical and mental health problems and underutilization of health services in Latina/o American population.

**P105. Content and Quality of Prenatal Care on Preterm Birth and Maternal Postpartum Behaviors**

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**Background:** Health policies that seek to improve pregnancy outcomes focus on increasing the availability and access to prenatal care (PNC) services based on studies that support an association between insufficient PNC and adverse birth outcomes. These studies employ PNC utilization indices that measure the adequacy of PNC use but these indices fail to account for content or specific components of care.

**Objectives:** The purpose of this study was to utilize PRAMS and birth certificate data to evaluate the content and quality of PNC in Virginia, and its impact on preterm birth and maternal postpartum health behaviors.

**Methods:** Data was from the 2007 Virginia Pregnancy Risk Assessment Monitoring System (PRAMS). This population-based data is representative of all Virginia women who have had a live birth recently and included 1,236 female participants.

**Results:** Inadequate PNC was associated with nearly a three-fold increase in risk of low birth weight (OR=2.8, 95% CI=1.5, 5.2). Women with adequate plus PNC were more likely to deliver infants who were preterm (OR=10.2, 95% CI=4.3, 24.4) and low birth weight (OR=6.3, 95% CI=4.2, 9.4). After adjusting for method of payment, income, and reported problems during pregnancy, women with lower income and no private insurance were more likely to have inadequate PNC (OR=1.4, 95% CI=0.5, 4.1) and (OR=8.8, 95% CI=1.3, 59.8), respectively. Provider discussions did not differ based on adequacy of PNC. Among women who received adequate PNC, those whose providers discussed postpartum birth control use were 4.5 times more likely to use birth control after delivery compared to women who did not receive education (95% CI=1.7, 11.8).

**Conclusions:** The lack of strong associations between adequacy of PNC and birth outcomes indicate that there are other factors (intergenerational, stress, cultural) that may play a more prominent role in predicting maternal and infant health.

### P106. Physical Inactivity and Age at Natural Menopause: The North-Trøndelag Population Based Health Study

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**Background:** Age at menopause may affect women's subsequent morbidity and mortality. The possible effects of physical activity on age at menopause have not been extensively investigated.

**Objectives:** To assess the relationship between leisure time physical activity (LTPA) and age at menopause.

**Methods:** Premenopausal women participating in a population-based Norwegian health survey reported their physical activity in the period of 1995–1997. Age at menopause was reported during 2006–2008 (HUNT 3). Hazard ratios (HR) for menopause were estimated with Cox proportional hazards models. Odds ratios (OR) for early menopause (<45 years of age) were estimated with logistic regression with 95% confidence intervals (CIs). Analyses were adjusted for age at menarche, parity, use of oral contraceptives prior to the 6 months preceding participation in HUNT 2, symptoms of depression, smoking status, and education.

**Results:** Women aged 40–49 at baseline who participated in any light LTPA had lower adjusted HR's for menopause compared with women with no activity ( $p < 0.05$ ) and similar results were observed in 19–39 year olds. In 50–59 year old women the results varied greatly and did not reach statistical significance. Lower levels of activity were associated with higher adjusted odds ratios for early menopause compared with higher activity levels although the CIs were wide.

**Conclusions:** The effects of LTPA on age at menopause may be age-dependent. Physical inactivity was associated with younger age at natural menopause in women with baseline age between 19 and 49 years.

### P107. Qualitative Evaluation of the Safe Motherhood Initiative-Demand Side

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**Background:** 11 percent of maternal deaths in 2005 occurred in Nigeria. Nigeria has an estimated maternal mortality rate (MMR) of 545 maternal deaths per 100,000 live births (NDHS 2008). Northwest Nigeria also shows MMR of 1024/100,000 live births (Adamu et al., 2003).

In 2003, Partnership for Transforming Health Systems (PATHS) was commenced by DFID in Jigawa state, Northern Nigeria that is associated with high MMR. PATHS supported the state to roll-out the Safe Motherhood Initiative-Demand side (SMI-D). The SMI consisted of two components: a supply side of health systems strengthening and a demand side of addressing barriers to accessing care.

PATHS-2 assessed the SMI-D in Jigawa state between December 2010 and March 2011 to determine its impact.

**Objectives:** To evaluate the processes and outcomes of the Safe Motherhood Initiative – Demand Side for future programming and scaling-up of programmes and activities.

**Methods:** A qualitative methodology was used to enable the team describe the process of SMI-D implementation especially at the community level. The Rapid Participatory Ethnographic Evaluation, Research and Focus Group Discussions etc. were also used to collect information.

**Results:** In the communities where SMI-D existed there was:

1. Increased attendance at ANC over the years
2. Signs of Labor and Danger Signs were generally well known.
3. SMI-D was also well known in the project communities
4. Emergency maternal care (EMC) teams also led to increased tendency of pregnant mothers to seek for care during emergencies.
5. Drivers of the emergency transport scheme helped reduce delay in seeking care within the project communities.
6. Certain harmful practices did not change even within the project communities.

**Conclusions:** SMI-D can improve maternal care and should be scaled to other communities.

### P108. Analysis on Gender Dimensions of HIV/AIDS Epidemic and Response in China

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**Background:** Sexual contact has gradually become a primary mode of HIV transmission in China. However, there is a dearth of quantitative data and analysis on relationships between HIV/AIDS and gender.

**Objectives:** To explore the impact of HIV/AIDS upon women and women's access to related services in China.

**Methods:** A set of gender indicators was established based on available data from existing HIV/AIDS information system for case reporting, sentinel surveillance, interventions and ART in the six most AIDS affected provinces in China. Gender difference in the risk and vulnerability of HIV infection, and the access to HIV/AIDS prevention, testing, and treatment services, were evaluated.

**Results:** Among annual reported new HIV infections, the ratio of men to women decreased from 5:1 in 1990s to 2.3:1 in 2009. The proportion of women infected with HIV via sexual transmission has increased from 30.1% in 2000 to 77.4% in 2009. 31.7% of women infected with HIV via heterosexual transmission reported they got the virus from spouses/regular partners, while the proportion was 6.8% among men. 7.1 % of female and 8.6% of male drug users ever received methadone maintenance therapy. Women accounted for 51.9% of the clients receiving VCT. The coverage of ART among eligible HIV patients was 61.9% for female and 47.8% for male, and 69.8% of female and 39.7% of male HIV/AIDS cases had ever received a CD4 test.

**Conclusions:** Significant change in the patterns of HIV/AIDS epidemic affected more women than men. Sexual transmission within marriage posed a greater threat to women than men. The indicators to measure accessibility of prevention and treatment services for most-at-risk populations and people living with HIV either showed no significant difference between men and women, or were higher among women than men. However, the overall coverage rate of HIV related services was low.

**P109. "It Was Very Scary": The Theme of Fear in Young Adult Women's Accounts of Experiencing Adolescent Dating Abuse**

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**Background:** Prevalence rates of abuse in adolescent dating relationships range from ten to almost ninety percent. Mental and physical health outcomes of adolescent dating abuse are numerous and many are well-documented, but the experience of fear related to abusive relationships has not been well described. We report on fear as a theme in young women's descriptions of adolescent dating abuse.

**Objectives:** The purpose of this mixed method study was to develop better understanding of the experiences and health consequences of abusive dating relationships for young women. Specific aims were to discover how young women defined and described abuse in the context of adolescent dating relationships and to identify physical and mental health impacts of adolescent dating abuse.

**Methods:** Quantitative data collection via questionnaires was combined with qualitative data collection via extended, semi-structured interviews. A sample of community-based women (N=100) ages 18–35 who self-reported experience of an abusive adolescent dating relationship was used, with a purposefully selected, representative subsample (n=10) of interviewees. A thematic analysis technique was applied to interview data.

**Results:** Quantitative and integrated results are reported elsewhere. Fear was a consistent, resonant theme across interviews. Three types of fear emerged: fear for self, fear for other relationships, and fearful expectation. Fear for self involved fear of injury or loss during the relationship. Fear for other relationships described concerns about how survivors would be viewed if the abusive relationship were exposed. Fearful expectation described fear of things that might yet occur.

**Conclusions:** The fears described by young women survivors of abusive adolescent dating relationships offer important insights into the health effects of these relationships. Both physical and mental health may be affected by ongoing experiences of fear. Increased knowledge in this area can inform the development of intervention and prevention strategies for young women at risk for adolescent dating abuse.

**P110. The Impact of Stress Level on Metabolic Parameters and Behavioral Risks for Cardiovascular Disease in Women**

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**Background:** Chronic stress evokes an unrelenting threat to homeostasis leading to a wide range of diseases. Chronic stress causes HPA activation resulting in prolonged elevated cortisol levels causing disarray in crucial metabolic pathways. The metabolic syndrome is an example of disrupted metabolic homeostasis characterized by central obesity, dyslipidemia, insulin resistance and hypertension.

**Objectives:** This cross sectional study addressed that risk factors for CVD in women are significantly influenced by a woman's self-reported stress. We hypothesized that perceived stress and modifiable behaviors are positively linked to the metabolic syndrome.

**Methods:** Participants in the study completed surveys within the Kentucky Women's Health Registry from 2006–2009 (n=11,331). Self-reported cardiovascular parameters were examined against perceived stress. Demographic variables, depression, anxiety, interpersonal violence, smoking and sedentary lifestyle were compared among groups using chi-square tests. Logistic regression provided adjusted odd ratios to establish an association between perceived stress and clinical indicators of cardiovascular disease.

**Results:** Increased stress was directly associated to higher prevalence of obesity, insulin resistance, high risk CVD behaviors and CVD rates. Increased stress and a higher incidence of anxiety, depression and interpersonal violence was also observed. Using four separate variable logistic regression models, increased stress was directly associated with higher incidence of obesity, insulin resistance and CVD while controlling for demographic variables, mood disorders and interpersonal violence.

**Conclusions:** We demonstrated strong associations between higher stress and the incidence of obesity, insulin resistance, CVD as well in higher risk behaviors for CVD with smoking and sedentary lifestyle. The proposed mechanism of increased stress leading to CVD risk factors is dysregulation of the HPA axis and increased cortisol levels. To our knowledge, this is the largest cohort study to examine the relationship between self-report stress and cardiovascular risk.

**P111. Personal Breastfeeding Behavior of Physician Mothers Is Associated with Their Clinical Breastfeeding Advocacy**

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**Background:** Despite excellent breastfeeding initiation rates, physician mothers as a group are at risk of premature breastfeeding cessation. The main obstacles and reasons for breastfeeding cessation among physician mothers are work-related.

**Objectives:** To explore physician mothers' personal infant-feeding decisions and behavior as well as their clinical breastfeeding advocacy.

**Methods:** We interviewed 80 physician mothers, mainly affiliated with University of Florida College of Medicine (Gainesville,



FL), using a questionnaire. Descriptive statistics were calculated with SPSS software version 16.

**Results:** The 80 mothers had a total of 152 children. While physician mothers intended to breastfeed 57% of the infants for at least 12 months and 97% of infants were breastfed at birth, only 34% continued to receive breastmilk at 12 months. In 43% of cases, physician mothers stated that breastfeeding cessation was due to demands of work. Furthermore, physician mothers who report active promotion of breastfeeding among their female patients and housestaff have significantly longer personal breastfeeding duration compared to physician mothers who deny active breastfeeding promotion.

**Conclusions:** Our findings not only support the importance of work-related factors in breastfeeding maintenance among physician mothers, but also highlight the association between physicians' personal breastfeeding success and their breastfeeding advocacy. These findings support developing and implementing workplace strategies and programs to promote breastfeeding duration among physician mothers returning to work and ultimately improve their clinical breastfeeding advocacy.

#### P112. The association between *Mycoplasma genitalium* and preterm delivery at an urban community health center

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**Background:** Preterm delivery (PTD) is a leading cause of neonatal morbidity and mortality, yet the majority is idiopathic. Reproductive tract infections are associated with PTD, and data suggest the cervical bacterium *Mycoplasma genitalium* (MG) may play a role. We evaluated this hypothesis at an urban community health center serving women with an elevated incidence of PTD and sexually transmitted infections.

**Objectives:** The objectives were to determine the prevalence of cervical MG colonization among pregnant women and to compare PTD incidence among women with and without cervical MG colonization during early pregnancy.

**Methods:** This was a pilot prospective cohort study. We collected cervical samples at the first prenatal visit and followed women throughout pregnancy. Samples were tested for MG with a validated PCR protocol. Data are presented as median (interquartile range) or proportion.

**Results:** We enrolled 100 women and could not obtain MG results for 5 (5.0%), who were excluded from analysis. The median maternal age was 25.0 (22.0–30.0) years; 53.7% were Black, 28.4% were Hispanic, 8.4% were Caucasian and 9.5% were of other/unknown ethnicity. The median gestational age at initial prenatal visit was 8.1 (7.1–9.9) weeks, and the prevalence of MG colonization was 8.4%. Delivery outcomes were not available for 12 (12.6%) women who transferred care. Among 83 remaining women, MG prevalence was 9.6%. There were 9 (10.8%) spontaneous and 6 (7.2%) induced abortions. The incidence of PTD among the remaining 68 women was 17.6%. There was no difference in PTD incidence among women who tested positive for MG in early pregnancy (16.7%) and those who tested negative (17.7%;  $P=1.0$ ).

**Conclusions:** In this cohort of women at high risk of PTD, the prevalence of MG colonization was similar to what has been previously reported in low-risk women. Our results do not support the hypothesis that MG colonization increases PTD risk. However, our study had minimal power to detect a difference at the outset. Coupled with a large proportion of missing outcomes due to women who transferred care and an overall low incidence of MG colonization, we cannot draw conclusions about the association between early pregnancy MG colonization and PTD.

#### P113. Use of Current CAC Guidelines and CAD Risk Evaluation in Asymptomatic Adult Women

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**Background:** The 2010 ACCF/AHA Guideline for the Assessment of Cardiovascular Risk in Asymptomatic Adults recommends that Computed Tomography for Coronary Artery Calcium (CAC) is reasonable in intermediate risk patients (10 to 20% 10-year risk) with a Class IIa indication. Therefore, adults with a Framingham or Reynolds Risk score in the low risk category are not felt to benefit from CAC screening. Many studies, however, have reported the usefulness of CT for CAC in risk assessment and many studies have reported that Framingham and Reynolds underestimates risk in younger aged women. The Guidelines also give a Class IIb indication for low to intermediate risk adults (6 to 10% 10-year risk) and a Class III indication for low risk adults.

**Objectives:** We wanted to determine if the new guidelines for screening asymptomatic adults would appropriately identify women at risk for cardiovascular disease. We also wanted to determine if CAC testing improved risk stratification in the low risk women.

**Methods:** An outpatient cardiovascular screening program in a suburban area of a major city evaluated 500 asymptomatic women between 2007 and 2011. All women had testing to determine Framingham Risk Score, Reynolds Risk Score and AHA Women's Risk level. The age range was 40–65 years old, mean 52 yrs and SD 9. Women were offered CAC assessment as part of the program. All women with positive CAC scores were referred to cardiologists for further evaluation and medical treatment when appropriate.

**Results:** Of the women screened, one-hundred sixty women elected to have CT for CAC. 33% of the women with a Framingham risk score in the low risk range and 34% of the women with a Reynolds score in the low risk range had a CAC score greater than or equal to one.

**Conclusions:** None of these women who were low risk by Framingham and Reynolds Risk Scores would have been reclassified to a higher level of risk without the CT for CAC. Based on this information, the current guidelines for cardiovascular risk in asymptomatic adults underestimate risk in women age 40–65.

#### P114. Long-Term Mental Health Consequences of Childhood Abuse: Gender, Age and Type of Abuse

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**Background:** A growing number of empirical evidence shows different effects on adult psychological adjustment accordingly to the type of abuse (e.g., sexual vs. physical abuse), as well as the age in which the abuse occurred. Different effects accordingly to gender were also pointed out.

**Objectives:** The present study aims to identify possible effects of: gender, type and age of childhood abuse on the adult psychological adjustment. We also aimed to test if gender influences the effect of the type and age of abuse on the anxiety and depression symptoms in adults.

**Methods:** The sample was composed by 499 men and 420 women randomly selected in urban residential areas of Northern Portugal. Type and age of child abuse was assessed by the Childhood History Questionnaire (Milner et al., 1990) and anxiety and depression by the Brief Symptom Inventory (Derogatis, 1992).

**Results:** Independent sample T-test revealed a significant effect of gender on depression symptoms ( $t(944)=7.44$ ,  $p<0.001$ ) and on anxious symptoms ( $t(942)=7.10$ ,  $p<0.001$ ), with women expressing higher scores for depression and anxiety than men. Physical abuse before and after 13 years old was significantly related to high depression ( $t(919)=4.21$ ,  $p<0.01$ ;  $t(860)=5.94$ ,  $p<0.001$ , respectively) and anxiety scores ( $t(914)=4.01$ ,  $p<0.01$ ;  $t(857)=4.26$ ,  $p=.002$ , respectively). Nevertheless, only sexual abuse before 13 years old influenced significantly depression and anxiety symptoms at adult ages ( $t(916)=3.47$ ,  $p=0.02$  and  $t(914)=3.69$ ,  $p=0.01$ , respectively).

Hierarchical linear regressions were computed to assess the moderator effect of gender on the effect of type and age of abuse on adult depression and anxiety symptoms. Findings shown that 11% of the variance in depression scores was marginally predicted by the gender X physical abuse after 13 years model ( $F(7,849)=14.65$ ,  $p<0.001$ ;  $t=-1.88$ ,  $p=0.06$ ,  $\beta=-2.41$ ).

**Conclusions:** Physical abuse in childhood and adolescence and sexual abuse in childhood higher the risk of psychological symptoms in adult. Women presented higher psychopathological scores than men. However, the proposed moderation model was not consistent. In this study gender seems do not better explain long-lasting consequences of abuse at early stages on psychological assessment.

#### P115. Gynecological Health Care Service Utilization in Respect to Habits and Lifestyles of the Female University Students in Serbia

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**Background:** Modern lifestyles, which very often involve health-threatening habits, are largely present among the student population. On the other hand, gynecological healthcare as well as the awareness of the necessity to have regular gynecological examination are of great importance for the healthcare of the female university students.

**Objectives:** To determine the frequency of gynecological examinations among the female university students in Serbia as well as a potential association with certain habits and lifestyles.

**Methods:** The research was conducted at the three Serbian state universities in the period January-June in the academic year 2009/10 and included 1.164 female university students using a

method of random sampling. The mean age of the female student population was 22,39 (SD 1.98) years, while arithmetic mean of the year of the study was 3.10 (SD 1.69).

**Results:** In total, 18% female university students said that they had never visited the gynecologist. The least concerned about their health when making the choice of food they eat and the least physically active are the females who have never visited the gynecologist. The females who had visited the gynecologist less than two times estimated themselves as healthier ( $p<0.05$ ), as well as the girls who had the first gynecological examination before the age of 20. The girls who visited the gynecologist for the first time before they reached 20 years of age, use condoms more consistently. Of the total number of the examinees 23.2% stated that they had never had a sexual experience. However, 70.4% students reported to be sexually active in the year prior to the polling. Sexually active females mostly visited the gynecologist before turning 20, while sexually inactive girls have never visited the gynecologist or have for once.

**Conclusions:** Planning and organization of a broad spectrum of activities arranged at the faculties, should focus the students' attention on the gynecological healthcare and adequately solve them. The recommended activities could significantly influence the behavior of the university students, as similar experiences from abroad have already demonstrated.

#### P116. Breastfeeding Characteristics of Lawyer Mothers

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**Background:** It has been suggested that mothers employed in professional positions are more likely to continue breastfeeding after return to work. However, despite being professionals and having great breastfeeding initiation rates, physician mothers seem to be at risk of premature breastfeeding cessation. Breastfeeding intentions and behaviors of other professional mothers have not been investigated.

**Objectives:** To explore infant feeding intentions and behavior of lawyer mothers and to compare them to physician mothers, an already identified group at risk for premature breastfeeding cessation.

**Methods:** A questionnaire was used to interview physician mothers. The same questionnaire was sent via a list-serv to lawyer mothers on-line. We report data gathered from physician mothers and lawyer mothers with one child. Descriptive statistics were calculated with SPSS software version 16.

**Results:** The 27 lawyer mothers had similar infant feeding intentions and behavior as the 47 physician mothers. While 100% initiated breastfeeding at birth and 55% wanted to breastfeed for at least a year, only 55% were breastfeeding at 6 months and 17% at 12 months. Among lawyer mothers who stopped breastfeeding, 35% stated that breastfeeding cessation was work-related. There was a positive correlation between breastfeeding duration of lawyers and supportive work environment as well as availability of time and place at work for milk expression.

**Conclusions:** In conclusion, while the majority of lawyer mothers intended to breastfeed for at least 12 months, only a minority achieved that goal. These results underline the critical

role of work-related factors in breastfeeding maintenance and importance of development of workplace strategies to promote breastfeeding duration among mothers. Protected time and space for milk expression are modifiable factors that might influence lawyer mothers' breastfeeding duration.

**P117. Is there anything you would like to add?  
Responses to open-ended survey questions  
as research data**

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**Background:** Arguably, one of the largest untapped data sources is the content of freetext responses to generic survey questions (eg Is there anything you would like to add?). While frequently used for quality assurance, these data are rarely utilised as research data.

**Objectives:** This study aimed to assess the content of freetext responses to the survey item: Have we missed anything in order to determine the utility and content of these data?

**Methods:** The Australian Longitudinal Study on Women's Health has been collecting postal survey data from three cohorts of women born 1921–26 (N=12432), 1946–51 (N=13715) and 1973–78 (N=14247) approximately every three years since 1996. Descriptive analyses were undertaken to determine demographic and health differences between those women who responded to the freetext item and those who did not. Freetext data were then analysed using Leximancer, which uses word-association information to elicit emergent concepts from the text. Word frequency and location are used to generate taxonomies, which are presented as maps showing the relationships between common concepts.

**Results:** In all, 17720 responses from 8108 (65%) of the 1921–26 cohort, 13878 responses from 6706 (49%) of the 1946–51 cohort, and 10990 responses from 6739 (47%) of the 1973–78 cohort were analysed. Poorer physical and mental health and higher education levels were associated with an increased likelihood of responding to the freetext item.

Results clearly showed differences between cohorts- for example, the youngest cohort wrote frequently about time and work, the middle cohort about time and life, and the oldest cohort about husbands. All cohorts wrote about health related concepts, as would be expected in a health survey. Differences across time were noted, for example, the youngest cohort did not write about children in early surveys but these topics became quite prevalent as they reached their early thirties. The concept themes and taxonomy maps for each cohort will be included on the poster, along with quotes that elucidate and define the emergent concepts.

**Conclusions:** Freetext responses offer a rich source of data suitable for content, thematic and narrative analyses, particularly when data are collected over time.

**P118. America's State of Mind – A Decade of Drug Trend and Sex Differences**

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**Background:** Psychotropic drug utilization and trends over time exploring differences between women and men has received minimal attention. Sex differences in psychotropic drug utilization may offer useful insights into clinical practice and identify unmet public health needs.

**Objectives:** This study examined trends in the utilization of psychotropic medications and compared prevalent use between sexes.

**Methods:** De-identified prescription drug claims of over two million Americans from a national pharmacy claims database were analyzed to assess the use of antidepressants, antipsychotics, psychostimulants, and anxiolytics between 2001 and 2010.

**Results:** Psychotropic medication use has substantially increased since 2001; more than 20% of adults took at least one psychotropic medication in 2010, up 22% from ten years earlier. Women are more likely to take a psychotropic drug than men, with more than 25% of women on these drugs as compared to 15% of men. Although boys are higher utilizers of psychotropics overall, girls' use has been increasing at a faster rate. From 2001 to 2010 the number of women on an antidepressant grew 29%; the most significant increases were among women 65 and older. Men's use grew at nearly the same rate but remained almost half that of women. 11% of women were on an anxiolytic drug in 2010, nearly twice the rate observed in men. Although boys were the most prevalent users of psychostimulants, use in girls increased by nearly 40%. Among adults, more women used psychostimulants than men. Women between 20–44 years of age had the highest use of psychostimulants in 2010 among adults and had the highest spike in trend, increasing 264% from 2001–2010. For atypical antipsychotics, women had higher use prevalence than men although the trending rate increased more dramatically among men than women over the past decade.

**Conclusions:** Psychotropic drug utilization in America has been on the rise. More than 1 in 4 American women used one or more psychotropic drugs in 2010 and trending use for most classes of psychotropics was higher for women than for men. Sex differences in psychotropic drug use have important psychosocial and public health implications.

**P119. Adherence to Mammography and Pap Smear Screenings in Women With Limited Health Literacy**

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**Background:** The influence of limited health literacy (LHL) on adherence to breast and cervical cancer screening guidelines in women is inconsistent.

**Objectives:** This study evaluates the impact of LHL on cancer screening among women in an outpatient clinic setting.

**Methods:** A randomly selected cohort (N=861) from an urban, hospital-based clinic were screened for health literacy (HL) using REALM-R (October 2009- May 2010). Medical records were reviewed for the previous three years for retrospective collection of mammography and papanicolaou (pap) smear screenings and other pertinent variables. All patients were categorized into two groups: limited or adequate HL. Two independent multivariate

logistic models were used to examine the association between LHL and adherence to breast and cervical cancer screening (based on US Preventive Task Force guidelines) using SPSS software.

**Results:** Among 31.5% (271/861) women who had LHL, older age, African-American race and having public insurance were significantly associated with LHL ( $P$  value < 0.01). A total of 38% of women (155/406) were non-adherent to breast cancer screening; whereas, 33% (150/455) were non-adherent to cervical cancer screening. Cancer screening considerably varied among women with and without LHL: breast (37% versus 63%) and cervical (30% versus 70%). After adjustment for age, race, insurance, primary care provider (PCP) visit and comorbidity index, LHL was not an independent predictor of screening adherence.

**Conclusions:** While LHL was not an independent predictor of screening adherence in this outpatient clinic population, clinically meaningful differences in LHL suggest other unmeasured confounding factors are relevant. These differences in screening prevalence may be larger in a general population without a regular PCP. Future studies should focus on understanding the relationship between LHL and adherence to mammogram and pap screening guidelines.

#### P120. Voices from the Community Faces of Utah: Gender-Based Perspectives on Obesity and Healthy Weight Promotion

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**Background:** Among Utah women, the rates of obesity are elevated among racial/ethnic minority and other disparity groups. Obesity affects 42.4% of Pacific Islander women, 39.5% of African American/Black women, 27.4% of American Indian/Alaskan Native women, and 24.2% of Hispanic/Latina women, compared to 20.6% of non-Hispanic White women (Utah BRFSS Data, 2006–2010).

**Objectives:** A community-based participatory research approach was used to understand fundamental cultural and gender issues contributing to the high rates of obesity and to identify community challenges and strengths related to promoting healthy weight.

**Methods:** With funding provided by the Office of Women's Health, the Utah Women's Health Coalition partnered with Community Faces of Utah (CFU) to conduct focus group discussions with five diverse, underserved communities. CFU is a community coalition representing African American, African Refugee, Pacific Islander, American Indian/Alaskan Native, and Hispanic/Latino communities. Five two-hour focus group discussions were co-facilitated by an academic researcher and community representative. Twelve women from each community participated in each focus group, for a total of 60 participants.

**Results:** Common themes that emerged across all groups included: (1) health is multidimensional and must be considered in

an ecologic manner; (2) lack of resources and time influence physical activity behaviors and food choices; (3) norms about healthy weight vary across community groups, with some communities preferring heavier women; (4) women and men have important but different influences on diet and physical activity practices within households; (5) women have an influential role on the health of families; and (6) opportunities exist within each community to improve weight-related health.

**Conclusions:** Seeking input from diverse community members helped identify common cultural and gender themes related to obesity. These findings are being used to tailor interventions so they may be effective across diverse communities in promoting women's healthy weight. Intervention effectiveness will be evaluated in a follow-up study.

#### P121. Cross-Sectional Investigation to Design a Prospective Occupational Cohort Study of Women's Health in Korea

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**Background:** Although many large-scale epidemiological studies of women have contributed to women's health, those kinds of researches have been rare in Korea. Reporting findings from western cohort studies may not necessarily be generalized for Korean women, because lifestyle, working environment, and healthcare practice are different from those of western countries.

**Objectives:** Korea NIH conducted to design a prospective occupational cohort study of women's health. To design the large cohort, a cross-sectional survey initiated for 10,000 female registered nurses from Oct, 24th, 2011.

**Methods:** We used a computer assisted self interview system. Korean Nurses Association sent invitation e-mail to their members, and this e-mail had a link with web based questionnaire for an easy assess. The present study analyzed results of 7,346 women's respond during one and half month survey period.

**Results:** The responder's mean age was  $31.4 \pm 8.5$  years. The average BMI was  $20.9 \pm 2.5 \text{ kg/m}^2$ . The proportion of BMI was different from western cohort. Less than 2% had obesity ( $\text{BMI} > 27.5$ ) and 15.7% of responders were underweight ( $\text{BMI} < 18.5$ ). The prevalence of metabolic (DM 0.4% and hyperlipidemia 7.1%) or cardiovascular disease (hypertension 0.2%, stroke 0.05%, myocardial infarct 0.05%, and angina 0.2%) was low but thyroid disease (hyperthyroidism 1.2% and hypothyroidism 2.1%) was relatively high. Most common cancer was thyroid cancer (0.6%).

**Conclusions:** The survey result showed the baseline characteristics were quite different from western women's cohort. Korean occupational cohort study of women's health will provide valuable epidemiological evidence of life style and health care among Korean women.

#### P122. Experience and attitude of rural women to IPV in Southwestern Nigeria

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**Background:** Intimate Partner Violence (IPV) is a pandemic problem deeply ingrained in many cultures with serious impact on women's health. In Nigeria, the few studies that have addressed IPV to women have been carried out in urban settings. However, two-thirds of the Nigerian populace resides in the rural area.

**Objectives:** To determine the prevalence, types and factors associated with experience of IPV among rural women in Akinle Local Government Area, Oyo State, Nigeria. The women's attitude to wife beating and coping strategies were also assessed.

**Methods:** 300 rural women aged between 15 and 49 years selected using multistage sampling method were interviewed using semi structured interviewer administered questionnaire.

**Results:** Lifetime and last one year prevalence of IPV was 64.0% and 63.7% respectively. Prevalence of controlling behavior was 42.0%, psychological violence- 34.7%, physical violence- 28.0%, and sexual violence- 11.6%. Predictors of controlling behavior were higher monthly income (>\$67) and young age of partner ( $\leq 34$  yrs) (OR=2.3; 95%CI 1.2–4.3 and OR=5.1; 95%CI 1.7–15.6 respectively). Respondents who had been in the relationship for more than 9 years were more likely to experience psychological violence (OR=3.1; 95%CI 1.1–8.3). Predictors of physical violence were being in relationship for >9 years and partner consuming alcohol (OR=4.6; 95%CI 1.3–17.0 and OR=2.3; 95%CI 1.2–4.4 respectively). Having a partner with history of involvement in physical fights was a predicted experience of sexual violence (OR=3.9; 95%CI 1.2–12.3). About 16% of women justified wife beating. The commonest reason for justification was woman been unfaithful (28%). Only 16.1% of women sought for help and relatives (12.5%) were the commonest source of help.

**Conclusions:** IPV and its different types is a common experience among Nigerian rural women. Partners need education on dangers of alcohol use and involvement in physical fights. Different strategies are needed to prevent and reduce IPV.

#### P123. Reaching Out to Men in Ending Intimate Partner Violence: A Qualitative Study among Male Civil Servants in Ibadan, Nigeria

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**Background:** Intimate Partner Violence is a global public health problem with adverse effect on women, children and men. Understanding men's perception and factors associated with this silent epidemic is essential in developing the intervention to reduce it.

**Objectives:** The aim of this study was to assess the perception and factors associated with perpetration and experience of intimate partner violence among male civil servants in Ibadan, Nigeria.

**Methods:** A purposive sampling technique was used to select 36 participants in 4 focus groups discussion. A pretested focus group guide was used to facilitate the discussion. Responses were tape-recorded, transcribed and analysed thematically.

**Results:** Majority of the respondents perceived Intimate Partner Violence (IPV) as a common health problem in our society. Physical and psychological abuse were the most common forms of IPV mentioned across the groups. Only a few mentioned sexual abuse and controlling behaviour as a form of IPV. All the respondents agreed that women experience IPV more in relationships but that men also experience it. Societal and cultural norms, lack of awareness, financial issues, immaturity, negligence of gender roles, infidelity, western civilization and lack of conflict resolution skills in relationships were the commonest factors influencing the occurrence of IPV that were highlighted. Most of the respondents agreed that physical, psychological and sexual violence are not justifiable in any circumstances in relationships but some were of the opinion that they are justifiable in some circumstances. All the discussants agreed that IPV has negative effects on physical, mental and social well being of the individual, families and the society. The discussants suggested ways of preventing and reducing IPV.

**Conclusions:** It is necessary to reach out to men and develop preventive and supportive intervention strategies for women, men and families. Research on intimate partner violence should be expanded to include the experiences of both genders for appropriate educational intervention.

#### P124. A qualitative study of language and provider-patient communication in breast and cervical cancer care among low-income women

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**Background:** Language barriers have been associated with inadequate receipt of cancer-related care among ethnic minority and low-income women. Spanish-speakers experiencing language-concordant care have reported more positive provider communication experiences than their language-discordant counterparts. However, the literature suggests that language concordance does not solve all communication problems between patients and providers.

**Objectives:** Qualitative research methods aimed to explore language barriers to care in the context of provider-patient communication among Spanish- and English-speaking women.

**Methods:** Semi-structured interviews were conducted among low-income women receiving care through federally qualified health centers or free clinics in Chicago or a collar county of Chicago, respectively. Transcripts were coded and analyzed for themes. Patients were grouped by language of interview, and within each, by level of language agreement between patient and provider(s): language-concordant, discordant, or mixed-concordant.

**Results:** Among a sample of 79 women, half were interviewed in Spanish (Spanish-speakers) and half in English (English-speakers). All English-speakers spoke English with providers. Of Spanish-speakers, 13 were categorized as language-concordant, 14 language-discordant, and 13 mixed-concordant. While interpretation services were reported to alleviate language barriers, language-discordant communication remained challenging. Preference for Spanish-



speaking providers and security in Spanish language use emerged as themes among Spanish-speakers. English-speakers discussed poor clarity in providers' delivery of health information and difficulty understanding medical terminology.

**Conclusions:** Among low-income women receiving care at safety net clinics, Spanish-speakers' communication difficulties were rooted in language discordance while English-speakers' were related to the style in which providers relayed medical information. These findings indicate that translation of medical information, regardless of the language spoken between patient and provider, remains a priority for health communication. Clarity in the delivery of health information is as crucial to provider-patient communication and patient comprehension as language concordance.

#### P125. Patient Reports of Provider and Clinic-related Factors Influencing Cancer Care Across Healthcare Settings

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**Background:** Relative to other populations, low-income, minority women are less likely to resolve abnormal screenings. Patient reported differences in health care service experiences depend largely on the type of healthcare setting where patients seek care. Care received in safety-net clinics is often discontinuous, deterring from receipt of adequate breast and cervical cancer care. Understanding factors that contribute to positive experiences with receipt of cancer care is a crucial step to improving cancer care for these women.

**Objectives:** To examine patient-reported provider and clinic-related factors that promote and hinder receipt of cancer care across healthcare settings.

**Methods:** Semi-structured interviews were conducted in English and Spanish at an urban academic cancer center, federally qualified health centers (FQHCs), or free clinics in Chicago and a collar county of Chicago, respectively. Topics discussed in interviews included access to medical care, sources of support, financial difficulties, language barriers, relationship with provider, and satisfaction with clinic.

**Results:** Of the 138 enrolled women, 41% received care at the academic cancer center, 36% at FQHCs, and 22% at free clinics. The majority of patients were between the age of 41–65, African American (43%) and English speaking (70%). Interviews were translated, transcribed, and reviewed to assess determinants of receipt of cancer care across healthcare settings including provider-related factors and clinic-related factors.

**Conclusions:** Despite vast differences in care settings, provider-related factors associated with cancer care were consistent across clinic type and were greater determinants of receipt of cancer care than clinic-related factors. Across healthcare settings, commonly reported provider-related factors included: health information exchange, positive treatment of patient and continuous relationship with provider. Clinic-related factors influencing cancer care varied across care setting. Greater research related to provider and clinic-related experience factors should be explored to identify potential areas to improve women's experiences with receipt of cancer care.

#### P126. Barriers to Mental Health Care for the Somali Community in Minnesota

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**Background:** Minnesota is home to the largest Somali refugee community in the United States. The latest report from the U.S. Census Bureau's American Community Survey found about 25,000 Somalis live in Minnesota; however, community surveys indicate that the number is closer to 40,000. Although the Minnesota Refugee Initial Health Assessment does not include mental health screening, the Department of Health recognizes a tremendous need for these services especially among Somalis arriving from war and violence. Somalis with mental health illness may go undiagnosed and have untreated post-traumatic stress disorder (PTSD), depression, and other cases of psychological disorders. Among this vulnerable population, the most affected are women who do not understand the need for mental health care or think they will be stigmatized if they seek mental health care.

**Objectives:** To design and implement a mental health needs assessment in the Somali community in the Twin cities regarding barriers to mental health care.

**Methods:** NACS recruited 30 participants (14 females, 16 males) for three 1 ½ hour focus groups, one female-only, one male-only, and one mixed focus group. Each group was held at a community center in Minneapolis and facilitated in Somali by a facilitator provided by NACS. The focus groups were transcribed, translated, and analyzed.

**Results:** Four main themes emerged from the focus groups. They were 1) symptoms that bothered participants, 2) presumed causes, 3) stigma and denial, and 4) accepted methods of treatment. Mothers were suggested as being more prone to have mental health problems because they were less resilient and stressed from the household responsibilities including childcare.

**Conclusions:** Some recommendations to combat the issues that emerged from the focus groups include culturally competent health care professions; competent interpreter services; and creating and sustaining collaborative partnerships between Somali community agencies and health care organizations, especially mental health clinics.

#### P127. Rationales for breast or cervical cancer care compliance: Understanding views from underserved urban and suburban women

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**Background:** Despite access to free cancer screening services in safety net clinics and tertiary care centers, racial/ethnic and socioeconomic disparities in cancer outcomes exist. The develop-

ment of patient-centered interventions targeting changes in health behavior requires an in-depth understanding of patients' motivation to comply with screening and follow-up.

**Objectives:** We sought to identify, from the patient's perspective, reasons why low-income women pursued or delayed cancer care following an abnormal breast or cervical cancer screening test or cancer diagnosis.

**Methods:** Semi-structured qualitative interviews were conducted among women at an urban academic medical center or federally qualified health centers in Chicago, or free clinics in a collar county of Chicago. Transcripts were coded and analyzed for major themes related to rationale for follow-up.

**Results:** Among 133 enrolled women, most were African-American (45%), English-speaking (69%), and between the ages of 41 to 65 (64%). Primary drivers of non-compliance included lack of knowledge of resources, denial or fear of a cancer diagnosis, schedule conflicts, and embarrassment. Facilitators of compliance included identification of an abnormality, patients' proactive approach, provider-directed actions, and motivation from family and friends. Denial or fear was discussed at various points throughout the cancer continuum. Physician referrals and self-detected abnormalities influenced participation in cancer screenings, whereas family and friends were often cited as motivation for treatment compliance. Few thematic differences were found across racial/ethnic groups besides embarrassment being uniquely expressed among Latinas.

**Conclusions:** Individual behavioral beliefs and attitudes and external motivation affected compliance with cancer care among our sample. Recognizing the heterogeneity of women even within their own racial/ethnic group, interventions promoting adherence to care among underserved minority women should be tailored and consider directing efforts to culturally-sensitive education on self-screening, addressing misconceptions about cancer, and leveraging patients' social support network.

#### P128. Attitudes about Medical Mistrust and HPV Vaccination among Young Women of Color

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**Background:** There is growing evidence that medical mistrust is a barrier to health care participation and adherence to recommended health behaviors, including HPV vaccination uptake. Studies have reported that mistrust in the health care system is associated with fewer visits, less willingness to seek medical care, non-adherence to medical recommendations, lower medication adherence, and negative health-related attitudes. Due to the disproportionate burden of HPV-related disease among racial/ethnic minority women, studies are needed to understand medical mistrust as a barrier to HPV vaccination uptake.

**Objectives:** To examine differences among racial/ethnic minority women on medical mistrust and HPV vaccination.

**Methods:** Women at a southeastern university completed a web-based survey assessing HPV vaccine uptake and mistrust of the health care system (n=693). The 12 mistrust items were summed to create a Medical Mistrust Scale (theoretical range 0–48) with higher scores indicating higher mistrust. Wilcoxon tests were employed to compare differences among participants.

**Results:** The mean score on the Medical Mistrust Scale was 14.4 (SD=7.8; range 0 to 40). Self-identified Black women scored significantly higher ( $p<0.01$ ) on the mistrust scale (mean=18.3) compared to Hispanic (mean=13.7), Asian (mean=13.6), or White (mean=10.6) women. Black women who reported receiving at least one dose of the HPV vaccine had significantly lower mistrust scores compared to Black women who had not received the vaccine ( $p=0.02$ ).

**Conclusions:** More prevalent mistrust beliefs among Black women may explain low HPV vaccine uptake among this population. These findings suggest that unique educational strategies need to be developed, based on the needs and perceptions of the targeted audience, in order to achieve higher HPV vaccine uptake.

#### P129. Maternal Childbirth Experience and Symptoms of Post-Traumatic Stress Disorder

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**Background:** Although women often expect childbirth to be a joyous and happy experience, it can be disappointing or even frightening and traumatic, particularly if it does not follow the ideal course. However, little research has focused on women's experience of first childbirth and risk factors for the subsequent development of symptoms of post-traumatic stress disorder (PTSD) longitudinally.

**Objectives:** To investigate the impact of mode of delivery and other covariates on women's first birth experience and the development of symptoms of childbirth-related PTSD.

**Methods:** More than 3,000 women aged 18 to 36 were enrolled in 2009–2011 and interviewed before and 1 month after first childbirth as part of a longitudinal study called The First Baby Study (FBS). A 20 item adjective rating scale was used to measure birth experience and an 11 item funneling scale was used to measure childbirth-related PTSD symptoms.

**Results:** Birth experience was most positive for women who had spontaneous vaginal delivery (SVD), followed by those who had planned cesarean section (PCS), instrumental vaginal delivery (IVD), and least positive for women who had unplanned cesarean section (UCS),  $p<.0001$ . In particular women who had UCS were most likely to report feeling disappointed, sick, like a failure, upset and least likely to feel proud of themselves (all  $p<.0001$ ) than women who had SVD. Overall, 7.6% of the participants met DSM-IV criteria for symptoms of childbirth-related PTSD one month after delivery with highest rates among the UCS group (14.3%), followed by IVD (10.0%), PSC (5.3%) and SVD (4.8%),  $p<.0001$ .

**Conclusions:** Mode of delivery plays an important role in how women view their birth experience and risk for the development of childbirth-related symptoms of PTSD. Clinicians need to help women prepare for potentially disappointing or traumatizing birth events and cope with the emotional sequelae.

#### P130. Limited Understanding of Cervical Cancer Screening Among a Racially Diverse Sample

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**Background:** Although current rates are encouraging, many women undergoing cervical cancer screening lack appropriate understanding of the purpose of this testing, and new guidelines may have caused more confusion about Pap tests. Studies are needed to evaluate knowledge of Pap testing; limited research is available regarding knowledge about Pap testing among racial/ethnic minority women.

**Objectives:** To explore differences between white and minority women's understanding of the Pap test.

**Methods:** Findings from a web-based Study (Study 2, 2011) assessing Pap smear knowledge among minority college women (n=693) were compared to similar results from mostly white college women (n=276) surveyed prior to the current Pap test guidelines (Study 1, 2009). Frequencies and chi-squares were employed to compare differences between studies.

**Results:** Most women in Study 1 were white (73%) with a mean age of 19 years; most women in Study 2 were Hispanic (46%) or black (25%), mean age=23. Knowledge of the purpose of Pap smear testing was low overall. Although women in both studies reported that the Pap smear tested for cervical cancer (75% and 82% for Study 1 and Study 2 respectively), women also thought it tested for HIV/AIDS (29% and 14%), Herpes (51% and 30%), Gonorrhea (54% and 31%), HPV (73% and 64%), yeast infections (66% and 49%), and vaginal infections (74% and 59%). After stratifying by age, women in Study 2 were significantly more likely to correctly report that the Pap smear did not test for HIV/AIDS, Herpes, Gonorrhea, HPV, yeast infections, and vaginal infections.

**Conclusions:** Although minority women had a better understanding of Pap testing, these studies reveal that there is still confusion among college women about the purpose of cervical cancer screening tests. Results from this study indicate the need for intensive patient education among women undergoing annual exams, Pap smear testing, and STI testing.

### P131. Women's Perceptions of Reproductive Control: Personal Agency and Its Limits

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**Background:** In a mixed methods study of pregnancy intention, quantitative results indicated that low perceived reproductive control was associated with unintended pregnancy.

**Objectives:** Qualitative data from this study were analyzed to explore how women understand the concept of reproductive control.

**Methods:** Data were collected via semi-structured interviews with African-American women (n=143) between 15 to 25 years old and at risk for pregnancy.

**Results:** Participants described reproductive control in terms of personal agency (e.g. ability to use contraceptives or abstain from sex.) In contrast, participants described the lack of reproductive control not as difficulty in executing these behaviors, but

rather as the result of phenomena beyond their control, such as the fallibility of contraceptive methods and "God's will." There was surprisingly little difference in notions of reproductive control at baseline between women who did or did not go on to experience a pregnancy during the study. Few participants described control as being negotiated (e.g. in interactions with a partner.)

**Conclusions:** A clearer understanding of how women conceptualize reproductive control can inform improvements in family planning interventions.

### P132. Women Face Increased Risk of Contracting HIV from Intimate Partner in China

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**Background:** In China, both the percentage of sexual transmission of HIV and the proportion of female HIV patients has increased dramatically. The role which intimate partners played in the increase of HIV infection among women is not clear.

**Objectives:** To explore the risk of HIV/AIDS among women from intimate partners in China.

**Methods:** The prevalence of HIV transmission within intimate partners, along with the risk and vulnerability of women in intimate relationships, was evaluated in the six most AIDS affected provinces in China, based on available data from the existing HIV/AIDS case reporting database, and sentinel surveillance databases among MSM population and migrants.

**Results:** 31.7% of women infected with HIV via heterosexual transmission reported they got the virus from intimate partners, while the proportion was just 6.8% among men. In addition, the percentage of transmission within intimate partners increased, from 7.15% in 2001 to 49.75% in 2009 in Guangdong, from 16.67% to 42.39% in Guangxi and from 42.86% to 60.77% in Henan respectively. Between 14.6% and 33.6% of MSM reported to be married or live with female partners, while the rate of consistent condom use with female partners was 4.5%–41.4%. 15.75% and 11.9% of male migrants had commercial sex or casual sex in the last year, while the rate of consistent condom use was only 35.2% and 27.2% respectively. Furthermore, the condom use rate at last sex within migrants' marriage was only 22.3%. With the rapid increase of HIV prevalence in MSM and migrants, their female spouses are at a greater risk.

**Conclusions:** HIV transmission from intimate partners has gradually become the primary mode of HIV transmission among women in some areas. In addition a large number of women are at risk of contracting HIV infection from intimate partners. Effective intervention measures like ART and condom promotion are urgently needed to stop intimate partner transmission.

### P133. Development of a Pamphlet to Improve Understanding of Mammography

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**Background:** Effective communication of results is an important part of efforts to improve follow up after an abnormal



mammogram. Unfortunately, current notification practices are flawed at many centers. A body of research has found that many women incorrectly state their mammogram results when surveyed. Federal law requires centers send every woman a letter explaining her results, but recent analyses suggest these letters may be written at a level too difficult for much of the U.S. population to understand.

**Objectives:** To develop and pilot test an informational brochure explaining what happens after a routine screening mammogram, in order to improve knowledge of how common it is to have an abnormal test and why it is important to keep a follow-up appointment. We targeted our intervention to urban black English-speaking women because they are at increased risk of presenting with advanced stage breast cancer at time of diagnosis.

**Methods:** Focus groups of black women recruited from the community were convened to refine a brochure that had been developed in response to earlier focus group comments. Pilot testing of the brochure's efficacy in enhancing understanding of results through a clinical trial targeting 60 black, English-speaking women with a BIRADS 0 (incomplete, requiring additional follow up) at a large urban mammography center. Chi-square analysis of the women's responses to a telephone questionnaire assessing understanding of personal results and follow up plan and anxiety level regarding mammography.

**Results:** Focus group members responded positively to the brochure's incorporation of photographs depicting smiling, realistic-appearing minority women with testimonials. They found icon arrays to be confusing and preferred absolute numbers stated simply. They also expressed strong approval of the brochure's incorporation of a 1 800 number to call for more information. Pilot testing of the brochure is currently under way.

**Conclusions:** Women in our groups were receptive to clear, uncomplicated, culturally targeted messages regarding breast cancer risk and the importance of follow up after an abnormal mammogram. More culturally targeted educational materials are needed to reduce anxiety about mammogram results and promote follow up among ethnic minority women.

#### P134. The WISEWOMAN Program's Focus on Women at High Risk for Cardiovascular Disease: Individuals, Clinical Care Systems, and Community Partnerships

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**Background:** The CDC's Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) Program focuses on providing preventive health services to low-income, uninsured, and underinsured women to reduce risk factors for Cardiovascular Disease (CVD).

Currently WISEWOMAN funds a total of 21 programs in 19 state health departments and two tribal organizations. Out of every 10 women who die of CVD, 9 have at least one major risk factor for it. Of WISEWOMAN participants 89% have at least one modifiable risk factor and 46% percent belong to at least one minority racial/ethnic group.

#### Objectives:

1. To demonstrate the progress of WISEWOMAN's CVD modifiable risk factor reduction efforts (at the end of Year 3 out of 5).
2. To create awareness of how WISEWOMAN addresses modifiable CVD risk factors in women through evidence-based Lifestyle Intervention (LSI) after screening.
3. To create awareness of WISEWOMAN's population level impact on health care and communities.

**Methods:** The WISEWOMAN focus is on high blood pressure, high cholesterol, high levels of blood glucose, and being overweight, and smoking. They can be affected by changing health behaviors such as physical inactivity, poor nutrition, and smoking.

LSI are the hallmark of the WISEWOMAN program and are provided to women who have had a baseline screen.

Population level success focus is through creating community partnerships, enhancing clinical systems of care, health care provider training, and aligning programs with national clinical care guidelines.

**Results:** From July 2008 to June 2011, WISEWOMAN has provided 124,797 total screenings and 132,099 LSI sessions to 101,504 participants. In this period, 40% of the priority population, women 40 to 64, have been hypertensive, 31% had high cholesterol, and 73% of women were classified as either overweight or obese. Highlights of population level success will be inserted in poster tables.

**Conclusions:** WISEWOMAN addresses the disparate impact of CVD on low-income and racial/ethnic minority groups through individual impact on women as well as population level success in healthcare and the community. The LSI contributions in reducing CVD risk factors may be meaningfully highlighted as more women return for follow-up screenings through the last 2 years.

#### P135. An Assessment of Gender Equitable Norms in South Sudan

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**Background:** Following decades of conflict, South Sudan gained independence from North Sudan in 2011. Prolonged conflict, which included gender-based violence, exacerbated gender disparities and disrupted family and community structures. While the 2011 Constitution targets customs that undermine the status of women and seeks to promote gender equality and women's empowerment, limited data exist to inform programming.

**Objectives:** Measure attitudes towards gender equitable norms in South Sudan.



**Methods:** Applying a community-based participatory approach, 326 adult men (48%) and 352 adult women (52%) were interviewed in seven sites in South Sudan in 2009–2011. Sites were selected based on program catchment area for a non-governmental organization, American Refugee Committee. Respondents were selected by quota sampling. The verbally administered survey assessed attitudes using the Gender Equitable Men scale.

**Results:** Among respondents, 82% of women and 81% of men agreed that 'a woman should tolerate violence in order to keep her family together'. The majority of women (68%) and men (63%) also agreed that 'there are times when a woman deserves to be beaten'. Women (47%) were more likely than men (37%) to agree that 'it is okay for a man to hit his wife if she won't have sex with him' ( $p=0.005$ ). Women (59%) also were more likely than men (51%) to agree that a 'man should defend his reputation, with force, if he has to' ( $p=0.01$ ). Women (32%) were more likely than men (25%) to state that women should have 'more' power in the community than they currently have ( $p=0.02$ ).

**Conclusions:** This study reveals an acceptance of gender inequitable norms and a tolerance of violence against women among sampled communities in South Sudan. While women seek more power in the community, our findings suggest that women may perpetuate gender inequitable norms. Programming should address the attitudes of both women and men. Development of a Gender Equitable Women scale and defining a 'gender equitable woman' could enhance future studies and programming. South Sudan, the world's newest nation, has the unique opportunity to implement policies that promote gender equality.

#### P136. Determinants of Healthy Behaviors in Korean Women

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**Background:** The development of chronic diseases is largely associated with healthy behaviors. In order to promote healthy behaviors, it is essential to understand what factors potentially determine the choices individuals made regarding healthy behaviors. This was not studied systematically in Korean females.

**Objectives:** This study examined prevalence and predictors of healthy behaviors in Korean women.

**Methods:** The fourth Korean National Health and Nutrition Examination Survey provided national health data based on population-based random sampling of individuals and households across 600 districts. Logistic regression models with income, marital status, age, education, working status, and presence of chronic conditions as independent variables were used to identify predictors of healthy behavior choices such as smoking, alcohol consumption, and physical activity in Korean females.

**Results:** The KNHANES sample consisted of 7,649 participants and among those 50% were females. Among females, the average age was 45.5 years old, and 50% were in middle income class. 37% received less than 12 years of education, 65% were married and 48% were employed. Non-smoking was predicted by high income level, being married, age > 60, high education and unemployment. For physical activity, only younger age (18–40) and single status showed the increased odds ratio. Alcohol consumption was predicted by low income level, age > 60, and high education. Married women were 1.3 times more likely to have a healthy lifestyle (no smoking, and no alcohol consumption, and

physical activity), and people in a low income level showed 30% increased odds of healthy behaviors. Seniors (age > 60) were 5 times more likely to practice healthy behaviors than the younger generation. Unemployment status and presence of chronic conditions also predicted the healthy lifestyle in Korean women.

**Conclusions:** The determinants of healthy behaviors were identified in Korean females. This information may be useful for tailored interventions to promote healthy behaviors in Korean females.

#### P137. Are double actions a major exposure to "invisible" stress for women?

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**Background:** Women normally perform tasks considered traditionally "natural" for them although outside the formal work assignment. Examples for such "invisible" tasks are: taking care and supporting others, putting order and cleaning the living and working environment, etc. In order to focus the "invisible" portion of women's work we need to observe and register all the work activities that were performed.

**Objectives:** In this paper we discuss the analysis and evaluation of the double tasks performed in an hospital setting as a case study.

**Methods:** The MOC (Method of Organizational Congruences) is an observational method involving the detailed recording of each technical action performed. We applied the MOC in three high stress units of a major public hospital in Rome, Italy. We have observed the nurses' technical actions including their "invisible work" involved in the direct patients care. For example the nurse takes care of the hair of a leukemia patient under chemotherapy (formal action) and, at the same time, reassures the patient that her hair will grow back "better than before" (double action).

**Results:** We recorded an overall of 802 technical actions in the three Units. Thirty per cent of the technical actions were direct patient's care and 62 (26%) double actions were observed. This "invisible work" was carried out while performing the "formal" work actions, while administering therapy, for example or measuring vital parameters, the nurses also provided support, answered questions, listen to the patient, etc. We considered these "double technical actions" of nurses as the main organizational constraints affecting their mental and emotional load.

**Conclusions:** In our case-study we show how non visible-informal work (the psychological support of the patients) is not visible because nurses performed it contemporarily to the "visible (formal)" part of their work (double actions) and they perform it "naturally." The mental, emotional organizational constraints related to this part of the work are therefore not formally recognized with an balanced ergonomic assessment of health dimension. The paper also discusses the double actions exposure taking dual task paradigm into account and its consequences on the stress of women.

#### P138. Prevalence and Causes of Early Termination of Breastfeeding in First-Time Mothers

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**Background:** The health benefits of breastfeeding to both mother and child are well-established. Human milk has been shown to decrease the incidence and severity of many infectious diseases, including bacterial meningitis, bacteremia, diarrhea, respiratory tract infection, necrotizing enterocolitis, otitis media, urinary tract infection, and sudden infant death syndrome (SIDS). While it is well-known that socioeconomic factors are associated with initiation of breastfeeding, little data exists to address why women who plan to breastfeed terminate their breastfeeding efforts prematurely.

**Objectives:** To investigate factors associated with breastfeeding 1 month postpartum among first time mothers who plan to breastfeed.

**Methods:** More than 3,000 women aged 18 to 36 were enrolled in 2009–2011 and interviewed before (in the 3rd trimester) and 1 month after first childbirth in a longitudinal study called The First Baby Study (FBS). In the baseline interview women were asked about their plans for breastfeeding, and at 1 month postpartum how breastfeeding was going.

**Results:** Among the 3,006 study participants, 2772 (92.2%) reported that they intended to breastfeed. Among these 2772 women, 75.2% were still breastfeeding 1 month after delivery. Based on logistic regression we found that pre-pregnancy BMI was most strongly associated with breastfeeding success, followed by maternal education, age and having taken one or more breastfeeding/childcare classes during pregnancy (all  $p < .0001$ ). Among those who planned to breastfeed, those who were normal weight prior to pregnancy were most likely to still be breastfeeding 1 month after delivery (81.5%), followed by underweight (74.2%), overweight (74.1%), and obese (60.4).

**Conclusions:** Women who are normal weight prior to pregnancy are most likely to succeed with plans to breastfeed at first childbirth. Some women, particularly those who are obese prior to pregnancy, may need additional support, encouragement and help to be able to achieve their goal of breastfeeding their first child.

### P139. Sex and Age Variations in Quality of Life Indices Among Alcohol Drinking Population

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**Background:** Adverse effects of alcohol abuse are largely recognized with various measures chiefly age, sex, health status, diagnostic criteria and drinking patterns. Present reports from National Epidemiologic Surveys on Alcohol and Related Conditions (NESARC) WAVE 1 (2001–2002 yr.) and Wave 2 (2004–2005 yr.) epidemiological surveys have well-documented age and sex based quality of life differences.

**Objectives:** To characterize the relationship in the quality of life measures with the age and sex differences among light, moderate and heavy drinking groups and Alcohol Use Disorder (AUD) categories.

**Methods:** NESARC epidemiological data for quality of life measure differences from wave 1 to Wave 2, by norm-based scores from the “Short Form 12 Health Survey Version 2 (SF-12v2)” was statistically analyzed. Significant association among the norm-based 12 components of physical (NBPCS) and mental survey (NBPCS) were evaluated.

**Results:** Females with AUD show three times lowered NBPCS scores and three times higher NBPCS scores than males in Wave 2. Females demonstrated significant lowering in the NBPCS scores from Wave 1 with the largest in the moderate drinking group. Females also have more adverse effects in NBPCS scores when they transition from light to moderate drinking patterns. Lowering of NBPCS and NBPCS scores with age from wave 1 to Wave 2 is significant across the age groups. NBPCS lowered by 11.7% since the Wave 1, particularly in the group 65+ yrs. group. NBPCS scores were all below the norm of 50 for all age groups from wave 1; with 45–64 yr. group having the lowest score (43.87). Negative NBPCS effect size is observed in the moderate and light drinking 18–24 yr. age groups though heavy drinking group shows slightly elevated scores. Decline in NBPCS scores is most evident in the heavy drinking 65+ yr. age group. NBPCS values also suggested further deterioration than the NBPCS values across every drinking pattern group within the 65+ yr. group; mostly in the light drinking group.

**Conclusions:** Females, 18–24 and 65+ age groups show substantial vulnerability with reduced mental and physical quality of life scores with time. These findings may provide further understanding of gradual adverse changes in functional capacities in various drinking and AUD categories.

### P140. Body Mass Index, Smoking, Age and Cancer Mortality among Women: A Survival Tree Analysis

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**Background:** Although obesity is an established risk factor for cancer mortality among women, little is known about how BMI is interacting with other lifestyle behaviors and sociodemographic characteristics to increase the risk of cancer mortality.

**Objectives:** The purpose of this study was to use classification and regression trees (CART) to examine possible interactions between BMI, smoking, age, poverty level and marital status in identifying high-risk subgroups for all-cause cancer mortality in women.

**Methods:** Data from the U.S. National Health Interview Survey linked with the National Death Index from 1990–2004 were used in this study. The data were restricted to females with complete information on all risk factors considered in the analyses. The data were analyzed using CART for survival data.

**Results:** We found underweight, current/former smokers who were 55–62 years of age, and living below poverty levels to have the highest mortality rate and lower likelihood of survival in this sample. High BMI (obese) was a protective factor among 25–66 year old women who were primarily never/former smokers. The highest survival was observed among women who were at least 67 years old, had a normal BMI, lived at or above poverty level and were married.

**Conclusions:** CART analysis confirms and extends current knowledge about the role of obesity and smoking on cancer mortality by providing preliminary risk profiles. The findings indicate that it is imperative for cancer related studies to examine BMI and smoking within age-specific groups and in the context of several sociodemographic factors that are known to independently affect cancer mortality.

**P141. Measuring Urinary Incontinence in a Population of Women in Northern Mexico: Prevalence, Severity and Help-Seeking Behaviors**

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**Background:** In Mexico, due in part to this emphasis on life-threatening diseases, gynecological morbidities such urinary incontinence have been traditionally neglected in research and service delivery programs targeting women.

**Objectives:** This study was designed to estimate the prevalence of urinary incontinence and its associated risk factors in a population of women in Northern Mexico. The type and severity of incontinence as well as help-seeking behavior were also determined.

**Methods:** This cross-sectional population-based study assessed self-reported urinary incontinence in a random sample of 1,307 women aged 25–54 years. Logistic regression was used to assess the association of urinary incontinence with socio-demographic, reproductive characteristics and other medical conditions.

**Results:** Overall, 18.4% of participants reported having involuntary loss of urine at some time within the last 12 months (95% CI, 16.4–20.7%), with 13.6% of the overall sample reporting loss of urine during the last 30 days (95% CI, 11.8%–15.6%). Among women reporting urinary incontinence, stress incontinence was the most common (56.8%) followed by mixed (31.1%) and urge incontinence (10.0%). Approximately half of the women with urinary incontinence symptoms reported a severity index of moderate (25.8%) to severe (26.2%). One-fourth stated that their leakage was somewhat bothersome, 18% very and 30% extremely bothersome. Two-fifths of incontinent women reported use of some sort of protection although only 28% had ever talked with a physician about their urinary incontinence symptoms. In adjusted analyses, high body mass  $\geq 25$  kg/m<sup>2</sup> (BMI), chronic urinary tract infections and history of hysterectomy or uterine leiomyomata were associated with increased odds of reporting

incontinence symptoms. Increased odds of reporting severe urinary incontinence was associated with chronic urinary tract infections, current smoking and high BMI.

**Conclusions:** To our knowledge, this study is one of the first population-based studies addressing the prevalence of urinary incontinence in young and middle-aged Mexican women.

**P142. Care Seeking for Gynecologic Cancer Symptoms**

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**Background:** With limited available screening options, early detection of gynecologic cancers can depend on women recognizing the potential significance of symptoms and seeking care. Little is known about how women respond to gynecologic cancer symptoms.

**Objectives:** To investigate U.S. women's care seeking in response to gynecologic cancer symptoms.

**Methods:** Fifteen focus groups with women aged 40–60 years were conducted in four U.S. cities: Miami, New York City, Chicago, and Los Angeles. Participants were asked what, if anything, they would do if they experienced various symptoms associated with gynecologic cancers such as unusual vaginal bleeding or discharge, back or abdominal pain, and bloating. During this discussion, the moderator did not use the term "symptoms" or mention gynecologic cancer.

**Results:** Actual and predicted responses to symptoms reported by some women involved waiting extended periods before seeking care or not seeking care at all. Few women were aware that the symptoms described could be associated with gynecologic cancers. The exception to that was unusual vaginal bleeding, which several women noted could be indicative of cervical cancer. Concern that a symptom might signal a serious condition was the most common reason given for timely care seeking. Strategies that participants reported using to supplement or replace consultation with health care providers included Internet research and self-care.

**Conclusions:** Public education about gynecologic cancer symptoms may increase opportunities for earlier detection and improved survival. However, care must be taken to explain that symptoms can be indicative of many benign conditions and the only way to know what is causing them is to see a health care provider.

# Innovations in Health Professions Education and Career Development

## P143. Influence of the experience and the perception of gender-based career obstacles on the working status of women physicians: Alumni survey of 13 medical schools in Japan

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**Background:** Previously literatures suggest that gender disparity in medicine still exists which may exert an adverse psychological effect on working status of women physicians.

**Objectives:** The purpose of this study is to investigate whether the experience and the perception of gender-based career obstacles among women physicians in Japan are associated with their working status.

**Methods:** The present cross-sectional study is based on surveys of alumni of 13 private medical schools sequentially conducted between June 2009 and May 2011. Of those who agreed to participate in this study, 1684 answered a self-administered questionnaire (overall response rate 83%).

**Results:** Approximately 20% of the study participants answered that they had ever been overlooked for opportunities of professional advancement based on gender. The scores for perception of gender-based career obstacles were higher among part-time workers than among full-time workers (mean difference=1.20, 95% CI: 0.39–2.00). Adjusting for board certification, holding a PhD degree, clinical department, overall satisfaction with being a physician, and household income, stepwise logistic regression models showed that physicians who were older ( $p=0.001$ ), single ( $p<0.001$ ), childless ( $p<0.001$ ), working for hospitals or clinics ( $p<0.001$ ), and those who had the lowest perception of gender-based career obstacles ( $p=0.02$ ) tended to have full-time rather than part-time positions.

**Conclusions:** This study suggests that women physicians in Japan experience gender-based career obstacles, and those who have the highest perception of such obstacles are more likely to be working part time.

## P144. Women's Health in the Dental School Curriculum: An Update

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**Background:** Appreciating the imperative that women's health issues must be fully integrated into the dental school curriculum and learning of dental professionals, ADEA revisited a survey on Women's Health in the Dental School Curriculum.

**Objectives:** The survey specifically sought to examine whether women's health and gender-related content is covered as part of the required or elective curriculum. For material that is a part of the curriculum, the survey sought to assess: in which academic period of the pre-doctoral dental program these issues are covered; how this material is presented; by which disciplines the

material is covered, and; which methods of assessing the outcomes are used.

**Methods:** The survey was sent electronically to US dental schools in March 2011 and received a 60.0% response rate.

**Results:** Respondents reported the integration of women's health and gender-related topics in multiple disciplines including oral pathology, operative dentistry, pediatric dentistry, geriatric dentistry, molecular biology, anatomy, histology, infectious diseases, prevention, oral health management, prosthodontics, geriatrics, developmental biology, radiology, biomaterials and pain management. Often instruction of these topics were blended into the curriculum where topics were either covered as a part of a lecture, seminar or other instruction and may not necessarily be stand-alone topics in the curriculum. Topics were also taught in a number of formats and assessed in various ways, including either single methods or combinations of methods over the course of all 4 years. Schools did report that there were not particular guidelines delineating which areas of content should be taught during certain years, and how that content should be assessed.

**Conclusions:** Curriculum guidelines for women's health are needed for didactic indicators that allow for comparisons of levels of instruction across institutions.

## P145. OB/GYN based Women's Health Fellowship: A five-year summary

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**Background:** The University of Michigan was honored as a National Center of Excellence in Women's Health in 1997. Using the interdisciplinary and comprehensive women-centered services and resources created, the department of OB/GYN started a flexible fellowship in Women's Health starting in 2007. Physicians from family medicine, internal medicine, Obstetrics and gynecology, pediatrics and psychiatry may apply.

**Objectives:** To provide excellent, broad-based training in women-focused clinical medicine and to foster academic leaders in women's health.

**Methods:** A Fellowship advisory committee was formed; comprised of physicians from ob/gyn, family medicine, internal medicine, and psychiatry. Fellow applications are reviewed, candidates interviewed, and a fellow chosen by the committee. The fellowship director and fellow create an individualized program addressing the fellow's clinical, academic and research objectives. Interdisciplinary faculty participate in clinical training and research projects. The following disciplines have been included: Obstetrics, Gynecology, Endocrinology and Metabolism, Eating Disorders, Cardiology, Gastroenterology, Mental Health, Sexual Health, Geriatrics, and Research. Additional training and degrees in public health, clinical design and statistical analysis or MHSA are available on a case-by-case basis. As a non-ACGME fellowship, fellows provide patient care as a clinical instructor, in addition to fellow responsibilities.

**Results:** Five fellows have been trained since 2007. Individual curricula were developed on a part time basis for one fellow and fulltime for the other four. Fellows have been able to increase technical and procedural skill competence. The intrinsic flexibil-



ity permits fellows to explore personal interests and specific goals during their training. Feedback from fellows sites the flexibility, breadth of experience, and clinical opportunities as strong components of the program.

**Conclusions:** The Women's Health fellowship at the University of Michigan offers a unique opportunity to recent graduates and currently practicing physicians to obtain additional training in women's health and advance as clinical and academic leaders. Previously trained fellows remaining at the University, participate in the education of current fellows; serving on the fellowship advisory committee, providing clinical education and mentoring. Future directions involve a track for graduating residents coming directly to fellowship and a separate track for currently practicing physician with the goal of training one to two fellows annually.

#### P146. Sex and Gender-Specific Women's Health in Medical Education: From Rhetoric to Action

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**Background:** Despite significant scientific evidence on sex and gender differences in health at all levels of function; gaps remain in incorporating this critically important dimension in teaching, research and practice. Suboptimal health outcomes for women stem from barriers at multiple levels. The recent Institute of Medicine report Women's Health Research: Progress, Pitfalls, and Promise notes that although strides have been made in research on women's health issues, challenges remain in translating research into practice.

**Objectives:** The Women's Health Working Group (WHWG), conceived in 2009 by the American Medical Women's Association and collaborating with the American College of Women's Health Physicians, has a mission to institutionalize sex and gender-specific data in medical education and facilitate translation of sex and gender-specific women's health research into policy and practice.

**Methods:** The WHWG is raising awareness of the need for sex and gender-specific medical education, as well as facilitate this education, initially by disseminating sex and gender-specific educational and research resources through an online, free-of-charge repository of resources -the Advancing Women's Health Initiative (AWHI). This digital library, housed on Medpedia, has an accompanying blog. The group is working with the National Board of Medical Examiners (NBME) to assess the presence of sex and gender-specific competencies in testing materials. The group also is collaborating with the NBME to address the identified gaps.

**Results:** Results to date, the AWHI has 150 contributing members and 14 official collaborating organizations. The digital library has 49 folders, more than 270 documents, including journal articles, curricula, PowerPoint presentations, and other

teaching materials. The blog has had over 22,500 visitors, both national and international.

**Conclusions:** The efforts of the AWHI are building the infrastructure that is vital to addressing gaps at all levels -teaching, research and clinical practice-to advance the sex and gender-specific women's health agenda.

#### P147. Development of a Longitudinal Curriculum in Gender-Specific Women's Health: Translating Sex and Gender-Specific Science into Medical Education

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**Background:** There is a growing body of scientific knowledge on sex and gender differences as it relates to all levels of human function. Medical students must be prepared to provide health-care that incorporates the question and application of answer of the question "Does Sex/Gender Matter?" at the earliest stages of clinical evaluation.

**Objectives:** With support from the Dean and collaboration with the Laura W. Bush Institute for Women's Health at Texas Tech University Health Sciences Center, the TTUHSC School of Medicine is developing a longitudinal 4-year curriculum in Gender-Specific Women's Health (GSWH).

**Methods:** Sex and gender are basic human variables which all humans have without exemption. While the GSWH curriculum content will focus on sex and gender differences across the life-cycle including differences in manifestations and processes of pathology and treatment; it is the goal of this project to assimilate sex and gender awareness throughout the entire medical school curriculum through the creation of an ongoing gendered learning environment for both faculty and students.

**Results:** Innovations such as a longitudinal "family" case series in problem-based learning cases will be utilized throughout the 4-year curriculum. A web-based monthly CME module for faculty, residents and students, will focus on sex and gender differences across the "Top 20 Health Topic" addressing gender issues in patient communication, diagnosis, prognosis, and treatment of major common health issues. Our current curriculum has been assessed for sex and gender content of YR1 and YR2 through a model Student Scholars real-time audit as well as cross-referencing content with the textbook of Gender-Specific Medicine (Legato 2nd ed.)

**Conclusions:** This poster outlines accomplishments in years 1 and 2 of the TTUHSC School of Medicine GSWH Longitudinal Curriculum development including curriculum audit results, and ongoing plans for Years 3-5 including curricular initiatives, learning activities, and evaluation strategies, while providing opportunities for peer institutions to collaborate.

#### P148. Women physicians' reflections on choosing an academic medicine career

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**Background:** Academic medicine(AM) is a career paths physicians can pursue. Despite a recent literature review to answer the question, "How, when, and why do physicians choose an academic career in medicine?", it remains unanswered. Gender patterns was an area where large voids in the literature exist.

**Objectives:** This current research was performed to better understand how, when and why women choose an academic medical career.

**Methods:** We conducted a qualitative study on women physicians in AM from 7 medical schools in the US to answer, "How, when, and why do women physicians choose an academic career in medicine?". 53 individual phone interviews were conducted with a stratified sample of women physicians in AM based on ethnicity, geographic location, specialty, and academic rank. All recorded interviews were transcribed and qualitatively evaluated by project investigators individually and then collectively to identify emerging themes in the data.

**Results:** Thematic analysis revealed the following:

Why AM? 5 main themes- Aspects of Academic Health Center Environment (9 subthemes); Fit (4 subthemes); People (4 subthemes); Exposure (2 subthemes) and Clinical Medicine.

How was the decision to enter AM made? 5 main themes- Change in Specialty; Parental Influence; Dissatisfaction with Former Career; Decision-Making Styles (4 subthemes); Emotionality (2 subthemes).

When was the decision to enter AM made? 4 main themes- Practicing Physician; Fellowship; Resident; Medical Student.

**Conclusions:** Choosing a career in AM appears to be greatly influenced by the environment in which one trains and by people. Having an interest in teaching is a primary theme associated with women choosing a career in AM. Most of the women physicians entering AM chose this career path during fellowship or after. Many of them became more aware of AM during residency and their decision solidified during fellowship. For the most part, medical students know very little about AM as a career path. For many women, entering a

career in academic medicine was serendipitous or circumstantial.

#### **P149. The expected role of medical school for career development by graduate investigation**

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**Background:** The percentage of women faculty of medical school remains quite low in Japan and the gender difference exist of career development.

**Objectives:** The survey was conducted to clarify the career path of doctors and the expected role of medical school for career development by the graduate investigation.

**Methods:** Postal questionnaire was sent to graduates of a medical school of 1980 ~ 2009.

**Results:** The response rate was 25.1% (536/2125). The number of women was 186 (men 350), the average age was 37.8 (men 42.7), marriage rate was 64.5% (men 84.6%) and the rate of having children was 54.3% (men 74.3%). Fewer women doctors worked at academic hospital compared to men. Working hours and the salary of women doctors was less than those of men doctors. Most of career change of women doctors was occurred by the childbirth and childrearing. The expected role of medical school for career development was having facilities of childcare in campus or hospitals (men, women: 91.9%, 91.7%), proper headcount and salary for academic medical doctors (91.9%, 91.7%), regulation of working hours (90.9%, 87.1%), information distribution of reality of medical doctors including work-life balance (90.3%, 89.1%), variation of employment (90.3%, 87.4%), measures of maternity leave and childrearing (88.2%, 88.6%), re-education system (87.6%, 90.9%), career education (81.7%, 84.6), change of consciousness of gender role of men medical faculties (71.5%, 55.1%).

**Conclusions:** There existed gender differences of career development. However gender difference of expected role of medical school for career development by graduate investigation was small except change of consciousness of gender role men medical faculties.

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