The Abstracts in the pages that follow were submitted and accepted for the 2018 Gender-Specific Medicine & Women’s Health Symposium in Lubbock, Texas.

Here are the three categories for submissions:

- Basic Research (# BR-1 – BR-9)
- Clinical and Translational Research ONE (# CR1-1 – CR1-6)
- Clinical and Translational Research TWO (# CR2-1 – CR2-19)

For more information on the Laura W. Bush Institute for Women’s Health, visit:

www.laurabushinstitute.org
OBJECTIVE
The objective of the present study was to investigate whether a physical therapy intervention known as transverse friction massage or soft tissue mobilization can improve third trimester pregnancy related lumbopelvic pain.

METHODS
Lumbopelvic pain is one of the most common complaints in pregnancy; as increasing hormone levels cause joint laxity, and the gravid uterus weakens abdominal muscles which increases lumbar muscle strain. Obstetricians often recommend rest, exercise, heating pad application, acetaminophen, or pelvic support belts. However, patients often complain of minimal relief from these recommendations and many experience recurrent lumbopelvic pain in a subsequent pregnancy. Additionally, lumbopelvic pain can contribute to disability and sick leave during the pregnancy.

RESULTS
Early study results suggest that the soft tissue mobilization technique known as transverse friction massage decreases lumbopelvic pain in the third trimester of pregnancy. The first report of such treatment in the literature.

CONCLUSIONS
For pregnant patients who do not already have an underlying musculoskeletal disability prior to pregnancy and who develop isolated low back pain in the third trimester of pregnancy, the soft tissue mobilization technique known as transverse friction massage appears to offer a valuable clinical tool to reduce lumbopelvic pain in the third trimester of pregnancy.
OBJECTIVE
The objective of this study is to determine if a Specific Gravity Device (SGD) can predict bovine embryo sex.

DESIGN
Lab based trial of experimental device

MATERIALS AND METHODS
Bovine oocytes were collected from ovaries and fertilized in vitro. Six hundred embryos developed into grade 1 or 2 blastocysts and were individually passed through SGD. Embryo descent times were measured and recorded in seconds and then used in an Embryo Prediction Algorithm (EPA) to predict embryo sex. Embryo sex was also determined by Polymerase Chain Reaction (PCR). Comparisons were made between EPA prediction and PCR values to assess the ability of the SGD to predict embryo sex.

RESULTS
PCR data was obtained on 463 embryos. The EPA demonstrated significant differences between male and female embryos (P<0.05). The EPA demonstrated 65.3-78.4% accuracy selecting for female embryos. This suggests SGD can predict sex of preimplantation bovine embryos.

CONCLUSIONS
The SGD can detect embryo sex based on differences in embryo buoyancy. Theoretically, buoyancy reflects differences in chromosomal weight of X and Y sex chromosomes or developmental differences between male and female embryos. Data suggest a high degree of correlation between SGD and the PCR results suggesting the technology can provide a noninvasive means to differentiate female pre-implantation embryos without the use of pre-implantation genetic testing or sexed semen. On-going studies are assessing if improvements will allow predictive values for male embryos as well.

SUPPORT
The authors would like to thank the J.R. Simplot Company for funding of this project.
OBJECTIVE
Limited research has suggest that microfluidic culture can enhance embryo development. However, to date devices for inducing the effect have proven both expensive and complicated to use. Previous research from this laboratory has suggested that the modified specific gravity chamber (MSGC), which was designed as a non-invasive means of assessing embryo quality, has the added benefit of inducing a short-term microfluidic effect which appears beneficial to embryo development. The objective of the present study was to further explore the effect and determine if processing method had any impact embryo outcome.

DESIGN
A laboratory based study on embryo development following exposure to a microfluidic field.

MATERIALS AND METHODS
A series of MSGD were prepared with varying chamber lengths as described in a previous study (33, 66, 99 mm). Sixteen mice were then superovulated using standard techniques to produce single cell embryos/unfertilized oocytes (N=176). The recovered cells were then randomly assigned to one of four treatments, the three chamber length or a non-dropped control. In a previous study, embryos had been allowed to move through the observation zone (10 mm) by the force of gravity and then the chamber released inducing a mass flow effect (potential excessive shear force). Here embryos were given time to descend to the length of the holding chamber solely under the effects of gravity. Embryos were then place in standard culture and development followed for 6 days.

RESULTS
A total of 98 embryos developed past the single cell stage and were used in the final statistical analysis. Embryos were assessed for both cellular divisions and stage of embryo development. Only embryos dropped through the 33 mm chamber appeared to have significantly higher cell numbers than the control embryos at the end of the study (P < 0.001). However, as in the previous reported study, embryos exposed to the MSGD of any length demonstrated better development rates to the morula and blastocyst stage than those embryos in the control group (P < 0.001).

DISCUSSION
As in the previous studies, the MSGD appears to a induce microfluidic effect beneficial to embryo development. The effect appeared to be unaffected by the more gentle technique of allowing embryos to traverse the MSGD simply in response to gravity, suggesting a robustness to the benefit. Further study is needed to determine the mechanisms in play which result in better embryo development.
INTRODUCTION

Current medical communities have an urgent need to develop rapid point-of-care techniques that effectively provide diagnostic information in a short period of time and allow instant analyses and distribution of data among providers. However, the most commonly used diagnostic modalities in clinical settings either lack easy accessibility, or take considerable time to provide results. We recently reported an application of Mira M-1 (Metrohm, CA, USA), a hand-held Raman spectrometer, for rapid diagnosis of placental hypoxia (JRS. 2017; 48(12): 1896-1899.)

OBJECTIVE

Evaluate Mira M-1 as a diagnostic tool for separating normal and abnormal pregnancy patterns.

MATERIALS AND METHODS

Maternal serum samples were collected from 7 obese women and 8 non-obese women in the 1st and 2nd trimesters of pregnancy (IRB protocol # L17-136). Each sample was aliquoted in 2-5 cryogenic vials (approximately 1 ml per each vial), which were stored at -80°C. The Raman spectra of each aliquot were obtained with Mira M-1, and the spectra was analyzed with MiraCal software (Metrohm, USA).

RESULTS

We detected several notable Raman spectroscopic patterns and corresponding peaks. In addition, we found differences in serums between the 1st and 2nd trimester of pregnancy in the obese women, whereas the non-obese women did not display Raman spectroscopic differences during these pregnancy windows.

CONCLUSION

Our study indicates that obese pregnant women have Raman spectroscopic “fingerprints” that differ from the ones of non-obese pregnant women. This result implies possible future application of Mira M-1 for identifying pathological conditions in obese pregnant women in macromolecular levels. This finding, in turn, implies that Mira M-1 can be further utilized to obtain useful diagnostic information about other diseases, in a faster and more accessible fashion than other current diagnostic modalities do.

ACKNOWLEDGEMENT

Authors are thankful to Clinical Research Institute for the help with this study.
INTRODUCTION
Maternal obesity (MO) defined as pre-pregnancy body-mass index (BMI) >30 kg/m², is the strongest risk factors for preeclampsia (PE). Information regarding cardiac changes in MO as well as the role of inflammatory biomarkers in PE pathogenesis is conflicting.

OBJECTIVE
Evaluate echocardiography changes in normal/overweight pregnant (NP) (BMI 18.0-30) and obese pregnant women (OP) (BMI>30) and to correlate them to dynamics of biomarkers (leptin, TNFa, BNP, pentraxin-3, IL6) and mRNA.

MATERIALS AND METHODS
There were 11 OP (BMI 33.6±2.9) and 13 NP (BMI 25.5±2.3) enrolled into this study in the first trimester of pregnancy. All patients were nulliparous. There were no differences between OP and NP according to age and number of previous pregnancies. Patients with pre-pregnancy cardiovascular pathology were excluded. The 2D echocardiography with Doppler was performed in each pregnancy trimester. Echocardiography results, leptin and TNFa in the first trimester are available for now.

RESULTS
Left ventricular (LV) mass was significantly higher while ejection fraction (EF) and ratio of the early (E) to late (A) ventricular filling velocities (E/A ratio) appeared to be lower in OP, compared to NP (Table). Leptin was higher in OP. TNFa inversely correlated with stroke volume (SV), MO positively associated with leptin levels and negatively with E/A ratio (p<0.05).

CONCLUSION
Differences in systolic and diastolic heart function between OP and NW are being evident already in the first trimester. Involvement of leptin and TNFa; might be suggested. Identifying biochemical mechanisms driving cardiac changes in MO are crucial for PE prevention.
<table>
<thead>
<tr>
<th></th>
<th>Obese (n=11)</th>
<th>Non-obese (n=13)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBP, mmHg</td>
<td>125 ± 12.6</td>
<td>109 ± 9.3</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>DBP, mmHg</td>
<td>79.7 ± 12.7</td>
<td>68.8 ± 6.73</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>LVEDD (cm)</td>
<td>4.54 ± 0.25</td>
<td>4.41 ± 0.2</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>SV (ml)</td>
<td>60.4 ± 4.9</td>
<td>57.4 ± 6.3</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>EF (%)</td>
<td>71.0 ± 2.6</td>
<td>73.7 ± 1.8</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>LV mass (g)</td>
<td>122.6 ± 29.5</td>
<td>97.4 ± 21.6</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>RWT (cm)</td>
<td>0.35 ± 0.04</td>
<td>0.33 ± 0.05</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>E/A</td>
<td>1.5 ± 0.2</td>
<td>1.83 ± 0.19</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Leptin, ng/ml</td>
<td>73.1 ± 14.7</td>
<td>48.9 ± 14.0</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>TNFa pg/ml</td>
<td>37.0 ±14.5</td>
<td>21.6 ± 9.2</td>
<td>&gt;0.05</td>
</tr>
</tbody>
</table>
INTRODUCTION
Extracellular vesicles (EV) are mediators of intra- and inter-organ communication. EV are the derivatives of cellular membrane, comprised phospholipid bi-layer, containing RNAs, micro-RNAs, lipids, proteins, DNAs. According to their size, EV are classified as exosomes (Exs) (40-120 nm), microvesicles (100-100 nm), apoptotic bodies (50-2 µm) and oncosomes (1-10 µm), which can influence proliferation, invasion and angiogenesis. The inter-organ communication via exosomes represents a novel field. The aim of this research was to establish effect of fetal, placental – derived EV on MCF-7 (breast cancer cell-line) proliferation.

MATERIALS, METHODS AND RESULTS
EV were isolated, with total exosome isolation kit (Cat.No. 4478359, Waltham, MA, USA), from perfusate, from dually perfused ex vivo placentas, collected according to approved protocol. Morphometric measurements were taken on microscope slides. Label-free, real-time analysis was carried out, using xCELLigence and iCELLigence systems, ACEA biosciences, Inc, as per manufacturer’s instruction. The EV (density 2x10^8/well) were added to MCF-7 cells (density of 3x10^4/well); heparin (hep: 10 µg/ml) or Genistein (Gen: 200 µg) were added to appropriate control wells as uptake inhibitors. Data was recorded for 48 hours. Titration of MCF-7 cells, demonstrated cell-number-dependent growth; with optimal cell density of 3x10^4– 4x10^4/well, indicated by slopes at 0.0215±0.0002 (1x10^3cells/well), 0.2117±0.0033 (4x10^4cells/well) in exosome depleted (ED) media, and a slope of 0.4534±0.0023 in normal media 4x10^4cells/well. MCF-7 cells in ED media, affected cells’ adhesion and morphology. Maximal CI for: MCF-7 cells+EVs was 2.35±0.002 (slope: 0.330±0.026), MCF-7+EV+hep was 3.01±0.12 (slope: 0.508±0.030), MCF-7+Gen was 1.2±0.05 (slope: 0.511±0.009), MCF-7+EV+Gen was 0.49±0.06 (slope: 0.336±0.012).

CONCLUSIONS
Our data is in line with published apoptosis-inducing activity of soy isoflavone genistein in cancer. Potentiation of genistein-induced apoptosis by fetal placental EV and partial blockage of this effect by heparin confirmed specificity of the effect. This data provide the mechanism of maternal health programming by pregnancy.
INTRODUCTION

Obesity-driven changes in the microbial landscape of pregnancy may represent a basis for epigenetic programming of obesity in offspring. Increase in Lactobacilli spp. has been demonstrated in maternal obesity and dietary modulation of Lactobacilli strains has been reported to restore metabolic balance and attenuate inflammatory responses, hence might be a target for microbiome-related intervention in pregnancy. We extensively described changes in Endogenous cannabinoid system (ECs) in maternal undernutrition and maternal obesity. ECs plays critical role in the gut-host interaction in metabolic disorders. Probiotics, containing Lactobacilli, stimulated ECs in vivo and in vitro.

OBJECTIVE

To evaluate effect of endogenous cannabinoid (Anadamide) on the growth of L. Plantarum –component of probiotics and of gut microbiome.

MATERIALS AND METHODS

L. plantarum (Louis Pasteur institute, Paris, France) was plated on 40 ml of MRS (De Mann, Rogosa, and Sharpe) agar containing a 30 µM AEA for 24 hours at 37°C, subsequently lawn was transferred to MRS media and exposed to spatula, which was subsequently placed in the continuous-flow culture system. A Nikon D3200 digital camera and timer set to 2.5 minutes was utilized to capture a time-lapsed video for capturing the dynamic phases of growth of L. plantarum biofilm. Biofilm was collected, weighed, flash frozen, and stored at -80°C until further analyses, e.g. RNA seq. Additionally the real time cell analyzer (RTCA) xCELLigence (ACEA Bioscience Inc., San Diego, CA) equipment, based on impedance measurement, was used to monitor the formation of L. biofilm.

RESULTS

The weight of the AEA modified biofilm was 4.29 ± 0.7 g (n=4) vs control (CTR) 3.42 ±0.3 g (n=6), p=0.077), with weight of the attached phase 0.56 ± 0.05 g (n=4) (vs. 0.46 ± 0.09g, n=5, p=0.56) and the weight of the detached phase 3.73±0.6 g (n=4) (vs. 3.13 ± 0.24 g (n=4), p=0.19).

CONCLUSIONS

AEA stimulates biofilm growth of L. Plantarum in vitro. Considering presence of the fetal ECs deficiency in maternal obesity, these study might provide link between neuro-endocrine and microbial milieu as a mechanism of fetal programming.
INTRODUCTION

Environmental influences on fetal and placental development are well documented and include solar radiation, air pollution, stress environment, soil composition among others. The link between heavy metal content in soil and placental composition has been described and the pathophysiological placental changes, associated with region-specific soil microbial contamination (e.g. coccidioidomycosis) have been published. However, the link between placental and soil microbiome has not been studied yet. The aim of this study was to evaluate and compare soil and placental microbiome.

MATERIALS AND METHODS

Six placentas were collected under sterile conditions after obtaining informed consent from patients. Six soil samples from the area of interest, where patients were residing, was collected. DNA was isolated using soil microbiome extraction KIT. DNA from these samples, negative (water) and positive controls were isolated, using soil DNA isolation KIT. Additionally three de-identified placental samples were collected from the different geographic location. DNA was sequenced using an Illumina Miseq sequencer, samples were prepared according to the protocol supplied by Illumina (Illumina 16S metagenomics library). The 16S amplicon sequence data was analyzed using the DADA2 package. The negative control genera were subtracted before identifying differences between placental and soil microbiome.

RESULTS

There were 64 bacterial genera abundant in placenta and 380 bacterial genera abundant in soil. Of these 17 bacterial genera were common to both placenta and soil such as Bradyrhizobium, Chthoniobacter, Devosia, Gordonia, Kocuria, Lysinimonas, Mesorhizobium, Mycobacterium, Niastella, Nocardioides, Novosphingobium, Opitutus, Paracoccus, Paucimonas, Pseudarthrobacter, Rhodococcus, and Sphingobium.

DISCUSSION

Bradyrhizobium is a root-colonizing bacteria, which are along with genera Rhizobium are nitrogen-fixing bacteria. Interestingly, human placental 17β-Hydroxysteroid Dehydrogenase is homologous to NodG protein of Rhizobium meliloti, involved in the polyols recognition and is also involved in the ROS responses. Chthoniobacter belongs to phylum Verrucomicrobia, which along with Mycobacterium has been described in placental microbiome of fetal macrosomia and preterm birth. Some of the common genera have been described in oil/diesel contaminated and farm soils, which is typical for the geographical region of residency. Some genera like Devosia also play an important role in enzymatic detoxification processes.

CONCLUSION

Human placenta contains soil microbiome with distinct functions which include anti-oxidant and anti-toxic activities.
INTRODUCTION
Poor nutrition during pregnancy is a major public health problem in the United States. The endogenous cannabinoid system (ECS) is a pharmacological target for the treatment of obesity, inflammation, cardiovascular and neuronal damage. The level of endogenous cannabinoid AEA in fetal brain is regulated by endocannabinoid receptor (CB1R) and ECS metabolic enzymes FAAH (Fatty acid amide hydrolase), DAGLα (Diaacylglycerol α) and COX-2 (Cyclooxygenase-2). The aim of this study was to evaluate temporal changes in CB1R and ECS metabolic enzymes (FAAH, DAGLα, and COX-2) in male and female offspring of maternal nutrient restricted baboon (Papio spp.) model.

MATERIALS AND METHODS
Pregnant baboons underwent global dietary reduction by 30% (MNR group). Fetal brain tissue samples were collected at 165 dGA (days of gestational age) (CTR n=4 to 9; MNR n=4 to 5). Western blot analysis was performed to detect endocannabinoid and metabolic enzymes using commercially available antibodies. Protein expression was normalized using β-actin.

RESULTS
Protein expression of CB1R, FAAH, DAGLα, and COX-2 did not differ between CTR and MNR group at 165 dGA in male and female fetuses.

DISCUSSION
We previously reported increased fetal cerebral 2-AG related pathway in the baboon model of maternal nutrient restriction. Our data is in line with published differential responses of 2-AG and AEA pathways to nutrient restricted humans and pregnant rodents.
INTRODUCTION

Breastfeeding has been shown to contribute beneficial health outcomes for children and mothers. Despite evidence that individual-level support and education interventions positively impact the rates of any and exclusive breastfeeding more so during the post-partum period when the demands for medical and emotional help are high, rates of any and exclusive breastfeeding drop steadily from birth through infancy. Individual-level support and education interventions are associated with higher rates of any and exclusive breastfeeding from 0 to 6 months. There is no association with breastfeeding education and initiation of breastfeeding, but the impact on those that begin breastfeeding is quite significant. Individual-level interventions are associated with a 16% higher likelihood of exclusively breastfeeding at the 6 month mark. Overall, for every 30 individual-level interventions, one more woman will breastfeed to 6 months of age. Our previous study found that breast feeding education and support provided by our physicians at our regional campus clinic varied based on gender, age, and race (female providers performed better p=0.004). This inspired us to look at the data of the regional campuses and compare the breastfeeding support offered by male and female physicians.

OBJECTIVE

To expand upon our previous study to compare the trends in breast feeding support offered by health care providers to mothers during their post-partum period in hospital affiliated ambulatory clinics based on physician characteristics including gender and year of graduation.

METHODS

We performed a retrospective chart review of 817 doctor visits from 0 to 8 weeks of life. Our study included 51 doctors over a 6 month period: 35 female physicians and 16 male physicians. We compared each provider's patient population based upon patient ethnicity and sex, mother's age, parity status, mode of delivery, and type of feeding. We also compared the frequency with which each provider discussed breastfeeding. For each predictor, crude (OR) and adjusted (AOR) Odd Ratios were calculated and presented together with their 95% confidence intervals (CI) and p values. Significance level was set at 0.05. All calculations were made using Stata 13.1 (StataCorp, College Station, TX). The retrospective nature of the study presents some limitations. The most notable being that sampling could not be probabilistic and it is possible that data collection produced unbalanced groups that might bias the results.

RESULTS

Table 1 presents a summary of the observations recorded per physician based on graduation year category and gender. A larger number of female recently graduated physicians (28) were included in the sample compared to males (9), or old graduated females (7) and males (7). The records showed significant deviation from an even distribution by gender and graduation year category (p<0.001). No significant differences were found between physician groups in newborn's gender and ethnicity proportions, maternal age, and c-section rate. However, multiparity was more frequent in old graduates’ records (p=0.045).
None of the predicting factors showed statistically significant association with breastfeeding discussion (Table 2). From the analysis on breastfeeding behavior, we found that multiparity was significantly associated with lower odds for using breastfeeding and the effect size of this factor was small (AOR=0.61, 95% CI = 0.42-0.89). No other factors were found to predict breastfeeding behavior.

The odds for exclusive breastfeeding were larger in white ethnicity patients compared to Hispanic patients, showing a moderate effect size (AOR=2.32, 95% CI = 0.42-0.89). Although C-section was not shown to have a significant unadjusted association with exclusive breastfeeding, after adjusting for other factors we found a small yet statistically significant association (AOR=0.60, 95% CI = 0.38-0.93).

**DISCUSSION AND CONCLUSION**

This study was performed as a continuation of a previous chart review comparing the breastfeeding education rates of health care providers. In our expanded study with 51 providers, there was not a statistically significant difference in a physician's gender and the presence of breastfeeding education among patients. Neither was there a significant difference between physicians who had practiced for less than 10 years and those who practiced more than 10 years. Stronger breastfeeding education is needed among all ethnicities, with emphasis on non-Caucasians with lower levels of exclusive breastfeeding. Improvement in breastfeeding education to all mothers, no matter their parity, will greatly benefit both the mothers and their children's health. This study is the first of its kind to consider the effects of clinician gender and age on breastfeeding education.

Limitations of our study: The retrospective nature of the study presents some limitations. The most important one is the fact that sampling could not be probabilistic and it is possible that data collection produced unbalanced groups that might bias the results. The statistical analysis techniques used in this study have attempted to control the potential effect of an unbalanced sampling by incorporating the number of observations per physician to the random effects model (adjusted estimates). However, as in any other retrospective study, there are other sources of bias that cannot be controlled because these studies rely on data availability.
### TABLE 1. Sample description (n=756).

<table>
<thead>
<tr>
<th></th>
<th>Old graduate (≥11 y)</th>
<th>Recent graduate (≤10 y)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male physician</td>
<td>Female physician</td>
</tr>
<tr>
<td>Physicians (n=51), n</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Observations, n (%)</td>
<td>174 (48.6)</td>
<td>184 (51.4)</td>
</tr>
<tr>
<td>Obs. per Physician, mean</td>
<td>24.9</td>
<td>26.3</td>
</tr>
<tr>
<td>Obs. per Physician, min</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Obs. per Physician, max</td>
<td>48</td>
<td>59</td>
</tr>
<tr>
<td>Patient gender, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>85 (48.85)</td>
<td>91 (49.46)</td>
</tr>
<tr>
<td>Female</td>
<td>89 (51.15)</td>
<td>93 (50.54)</td>
</tr>
<tr>
<td>Patient ethnicity, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>96 (55.17)</td>
<td>86 (46.74)</td>
</tr>
<tr>
<td>White</td>
<td>16 (9.2)</td>
<td>48 (26.09)</td>
</tr>
<tr>
<td>Black</td>
<td>12 (6.9)</td>
<td>7 (3.8)</td>
</tr>
<tr>
<td>Other</td>
<td>3 (1.72)</td>
<td>5 (2.72)</td>
</tr>
<tr>
<td>Not disclosed</td>
<td>47 (27.01)</td>
<td>38 (20.65)</td>
</tr>
<tr>
<td>Mother’s age (years), mean (SD)</td>
<td>26.2 (5.6)</td>
<td>26.7 (5.8)</td>
</tr>
<tr>
<td>Multiparity, n (%)</td>
<td>121 (69.54)</td>
<td>120 (65.22)</td>
</tr>
<tr>
<td>Cesarean Section, n (%)</td>
<td>28 (16.09)</td>
<td>39 (21.2)</td>
</tr>
</tbody>
</table>

### TABLE 2. Association between having a discussion on breastfeeding with the physician and the predicting factors.

<table>
<thead>
<tr>
<th></th>
<th>Discussed</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=620)</td>
<td>(n=197)</td>
<td>No</td>
<td>Yes</td>
<td>p</td>
<td>AOR</td>
</tr>
<tr>
<td>Physician gender (female), n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>376 (60.6)</td>
<td>134 (68)</td>
<td>1.19</td>
<td>0.42, 3.38</td>
<td>0.745</td>
<td>1.56</td>
<td>0.57, 4.26</td>
</tr>
</tbody>
</table>
### TABLE 3. Association between having a discussion on breastfeeding.

<table>
<thead>
<tr>
<th></th>
<th>(n=275)</th>
<th>(n=534)</th>
<th>OR</th>
<th>95% CI</th>
<th>p</th>
<th>AOR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breastfeeding</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physician recently</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(female), n (%)</td>
<td>376 (60.6)</td>
<td>134 (68)</td>
<td>1.19</td>
<td>0.42, 3.38</td>
<td>0.745</td>
<td>1.56</td>
<td>0.57, 4.26</td>
<td>0.388</td>
</tr>
<tr>
<td>Physician recently graduated, n (%)</td>
<td>144 (52.4)</td>
<td>314 (58.8)</td>
<td>1.15</td>
<td>0.75, 1.77</td>
<td>0.516</td>
<td>1.35</td>
<td>0.89, 2.04</td>
<td>0.159</td>
</tr>
<tr>
<td>Patient ethnicity, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>132 (59.46)</td>
<td>239 (54.94)</td>
<td>reference</td>
<td>reference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>61 (27.48)</td>
<td>147 (33.79)</td>
<td>1.17</td>
<td>0.78, 1.75</td>
<td>0.438</td>
<td>1.35</td>
<td>0.88, 2.08</td>
<td>0.175</td>
</tr>
<tr>
<td>Black</td>
<td>23 (10.36)</td>
<td>28 (6.44)</td>
<td>0.63</td>
<td>0.34, 1.17</td>
<td>0.143</td>
<td>0.62</td>
<td>0.33, 1.17</td>
<td>0.139</td>
</tr>
<tr>
<td>Other</td>
<td>6 (2.7)</td>
<td>21 (4.83)</td>
<td>1.84</td>
<td>0.70, 4.81</td>
<td>0.213</td>
<td>1.88</td>
<td>0.72, 4.91</td>
<td>0.196</td>
</tr>
<tr>
<td>Patient female, n (%)</td>
<td>131 (47.6)</td>
<td>262 (49.1)</td>
<td>1.07</td>
<td>0.79, 1.45</td>
<td>0.643</td>
<td>1.15</td>
<td>0.81, 1.63</td>
<td>0.446</td>
</tr>
<tr>
<td>Multiparity, n (%)</td>
<td>180 (69.5)</td>
<td>292 (57.5)</td>
<td>0.60</td>
<td>0.43, 0.84</td>
<td><strong>0.003</strong></td>
<td>0.61</td>
<td>0.42, 0.89</td>
<td><strong>0.010</strong></td>
</tr>
</tbody>
</table>

OR = Individually calculated Odds Ratio for each predictor; AOR = Adjusted Odds Ratio; 95% CI = 95% confidence interval.
<table>
<thead>
<tr>
<th>Exclusive Breastfeeding</th>
<th>(n=442)</th>
<th>(n=367)</th>
<th>OR</th>
<th>95% CI</th>
<th>p</th>
<th>AOR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(female), n (%)</td>
<td>277 (62.7)</td>
<td>230 (62.7)</td>
<td>0.98</td>
<td>0.61, 1.57</td>
<td>0.937</td>
<td>0.90</td>
<td>0.61, 1.32</td>
<td>0.576</td>
</tr>
<tr>
<td>Physician recently</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>graduated, n (%)</td>
<td>244 (55.2)</td>
<td>214 (58.3)</td>
<td>0.98</td>
<td>0.61, 1.58</td>
<td>0.944</td>
<td>1.31</td>
<td>0.9, 1.93</td>
<td>0.163</td>
</tr>
<tr>
<td>Patient ethnicity, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>229 (61.89)</td>
<td>142 (49.48)</td>
<td>reference</td>
<td>reference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>88 (23.78)</td>
<td>120 (41.81)</td>
<td>2.04</td>
<td>1.40, 2.98</td>
<td>0.000</td>
<td>2.32</td>
<td>1.55, 3.47</td>
<td>0.000</td>
</tr>
<tr>
<td>Black</td>
<td>33 (8.92)</td>
<td>18 (6.27)</td>
<td>0.84</td>
<td>0.45, 1.56</td>
<td>0.578</td>
<td>0.80</td>
<td>0.42, 1.53</td>
<td>0.499</td>
</tr>
<tr>
<td>Other</td>
<td>20 (5.41)</td>
<td>7 (2.44)</td>
<td>0.53</td>
<td>0.21, 1.31</td>
<td>0.168</td>
<td>0.50</td>
<td>0.20, 1.24</td>
<td>0.132</td>
</tr>
<tr>
<td>Patient female, n (%)</td>
<td>208 (47.1)</td>
<td>185 (50.4)</td>
<td>1.20</td>
<td>0.89, 1.61</td>
<td>0.225</td>
<td>1.16</td>
<td>0.83, 1.63</td>
<td>0.387</td>
</tr>
<tr>
<td>Multiparity, n (%)</td>
<td>270 (64.6)</td>
<td>202 (57.9)</td>
<td>0.77</td>
<td>0.56, 1.06</td>
<td>0.105</td>
<td>0.81</td>
<td>0.57, 1.14</td>
<td>0.222</td>
</tr>
<tr>
<td>C-section, n (%)</td>
<td>84 (19.8)</td>
<td>56 (15.6)</td>
<td>0.76</td>
<td>0.51, 1.12</td>
<td>0.164</td>
<td>0.60</td>
<td>0.38, 0.93</td>
<td>0.024</td>
</tr>
</tbody>
</table>

OR = Individually calculated Odds Ratio for each predictor; AOR = Adjusted Odds Ratio; 95% CI = 95% confidence interval. Statistically significant p-values are in bold.

**ACKNOWLEDGEMENTS**

The authors wish to acknowledge the contribution of the Texas Tech University Health Sciences Center Clinical Research Institute for their assistance with this research.
BACKGROUND

Eye-tracking is a research tool that is more accessible than ever. Eye movement recordings can provide dynamic measurement of a person's visual attention and focus. We performed a prospective analysis on physician focus and attention before and after a shift utilizing EyeGuide Focus, a low-cost, visual tracking device.

OBJECTIVE

To identify whether focus is adversely affected during shift work.

METHODS

Single institution prospective study was performed on surgical residents and attending physicians (APs). Eye Guide Focus visual tracking device was utilized to compare differences in attention before and after 12 and 24 hour surgical residency shift to assess for possible neurological impairment. The test stimulus is a target that moves clockwise in a circular trajectory for 10 seconds. Pupil tracker is utilized to measure focus and attention. Classifications of the test results ranged from 1-4 (Low Average (1.0), Average (2.0), High Average (3.0), Superior (4)). Paired t-test was used to assess for statistically significant difference.

RESULTS

A total of 21 subjects were tested before and after a 12 or 24 hour shift of clinical duties. Females comprised 61.9% of the population. The mean age was 33.7 (SD9.5). PGY-1 accounted for 52.4% of population, PGY-2 (9.5%), PGY-3 (4.8), PGY-4 (19.0%) and APs (14.3%). Focus score overall decreased by a mean of 0.62 or 22.8% for all physicians. APs had the biggest score drop (49.8) %, followed by PGY-4 (25%). There was no statistically significant difference in focus between a 12 and 24 hour shift. Clinicians over age 30 had a mean score decrease of 0.786 (28%) (p=0.010) while those younger than 30 had a decrease in focus score of 0.289 (10.9%) (p=0.456).

DISCUSSION AND CONCLUSION

Senior surgical residents and attendings appeared to be impacted by shift work the most while junior residents displayed resilience in focus during call. There may be a trend in decline of focus and attention span with increasing age. Future work will focus on correlating physician burnout with declining attention scores.
BACKGROUND

In the United States, the gender pay gap in medicine is a topic of much debate. This gap has rarely been discussed in the context of the physician–industry relationship. We evaluated the gender disparities in compensation from pharmaceutical manufacturers to physicians.

OBJECTIVES

To evaluate gender disparities in compensation by pharmaceutical companies.
To evaluate the effect of the physician–industry relationship toward the gender pay gap.

METHODS

Gender differences in fees for promotional and educational speaking were examined between August 2013 to December 2015 per ProPublica database. In 2010, the Physician Payments Sunshine Act (PPSA) was added as a part of the Affordable Care Act. The PPSA requires all payments made to providers of healthcare services, identified by National Public Identifiers (NPI) numbers, by pharmaceutical manufactures be disclosed. After the payment data is released from the Centers for Medicare and Medicaid services, it is compiled into the ProPublica Dollars for Docs Database. We matched the Dollars for Docs database based on NPI number (common identifier) to include gender. Gender was obtained from CMS National Plan and Provider Enumeration System (NPPES) database.

We confirmed our match with a second custom data set provided from ProPublica. We examined only payment information associated with physicians. We specifically examined the data for gender disparities in compensation. The effect of frequency of educational and promotional speaking on this gender disparity was assessed. Apart from gender we subdivided these two groups into three frequency-based educational and promotional speaking categories, these were one payment, between two and ten payments, and eleven or more payments. We analyzed the distribution of mode, median, and mean payments for any statistical difference between genders.

RESULTS

We found that male physicians (n=22,723) were compensated more for promotional speaking activities than female (n=5,117) physicians (p<0.0001). The results remained significant favoring male physicians (regardless of using either the median or the mean). The data shows that the gap narrows from a median difference of $265 in the single speaking category to only $50 in the frequent speaking category (11+).

CONCLUSION

Female physicians were compensated less than their male counterparts for educational and promotional speaking. However, the gender compensation gap decreased as the number of speaking activities increased. There are many possible reasons for the gender disparity in pay for education and promotional speaking by pharmaceutical companies. These explanations may include lack of mentorship, family responsibilities, and a lack of interest in creating relationships with industries. We had no way to control for such characteristics. However, studies have demonstrated that even after adjusting for years of experience and productivity the gender pay gap is still present. To further understand the dynamics of the gender wage gap future studies are indicated looking at the breakdown among the different physician specialties and pay source.
BACKGROUND
Cardiovascular disease (CVD) is the leading cause of death in both men and women in the United States, accounting for one third of all deaths. Studies have shown that women with acute coronary syndromes (ACS, aka heart attack) have more unfavorable outcomes compared to men. Women’s mortality rates after acute myocardial infarction (AMI) or ACS are higher than men, for instance, women (9.6%) were almost twice as likely as men (5.3%) to die within 30 days of onset. Understanding those disparities is important to help improve the quality of care for women suffering from heart attack.

OBJECTIVE
We aim to use the existing information from University Medical Center (UMC) Data to explore gender differences in clinical outcomes associated with heart attack among the patients admitted in UMC between 2013 to 2016.

METHODS
UMC collects extensive data on patient demographics, relevant clinical care and outcome information for quality control purpose. In our study, independent variables included demographics (e.g. age, gender, and race) and clinical factors related outcome (e.g. Principal Diagnosis, Discharge Status, Standard Payer, Principal Procedure, and Length of Stay). Outcome variables included discharge status and readmission status. During 2013 to 2016 period, based on UMC Records, a total of 1,348 patients were admitted for AMI. Frequency tables and cross-tabulations of those variables were generated to describe the findings.

RESULTS
Male AMI admissions during the time period made up approximately 71% (N=959) compared to 29% for females (N=389). Despite higher male AMI incidence, females experienced a significantly higher 30-day mortality of about 10.8% compared to 6.7% for males (p=0.01). The most prevalent diagnosis for AMI was subendocardial infarction as initial episode of care (38.7%). Males and females received this diagnosis roughly equally, and no significant gender differences in 30-day mortality existed for this diagnosis.

Thirty-nine percent of AMI admissions received percutaneous transluminal coronary angioplasty (PTCA), with significantly more males (41.6%) receiving the procedure than females (33.2%) (p=0.004). Thirty-day mortality for females receiving PTCA (9.3%) was significantly higher than for males (4.3%) (p=0.03). Among 379 diagnoses given an ICD10 code labeled as AMI of differing types, female 30-day mortality was 19.6% compared to 9.4% for males (p=0.009).

Gender differences in mortality were not observed for diagnosis categories of subendocardial infarction, STEMI, or non-STEMI, but females exhibited over twice the 30-day mortality for AMI-specific diagnoses. Controlling for age, female patients over age 65 exhibited approximately twice the odds of mortality as males (OR=1.98, 95% CI: 1.19, 3.32, p=0.009).
CONCLUSION
Females exhibited higher 30-day mortality for AMI over a four-year period (2013-2016) compared to males, although type of diagnosis did not differ by gender. Our findings suggested that the clinical procedure PTCA appeared to save significantly less women than men who were admitted for AMI. The observational nature of this study does not allow strong interpretation of reasons for gender differences in mortality. Available data does not provide context on whether women's AMI episodes are more severe, whether they wait longer to seek treatment, or other confounding information. Future research should explore additional reasons for higher female mortality in hospital AMI admissions.

SUPPORT
This study is a part of the project funded by 2017 LWBIWH/UMC Women's Health research grant program.
BACKGROUND
A 19 yo female with a history of 4 sports related concussions (SRCs) over a span of 6 years presented in July for refills on medications. The meds were started after her most recent concussion two years ago to treat chronic headache, insomnia, and mood disorder. During the visit she complained of being very dehydrated despite what she felt was adequate hydration. When asked to clarify this statement she complained of recurrent episodes of dizziness, feelings of near syncope, and exercise intolerance with palpitations and shortness of breath, even with short amounts of running.

OBJECTIVES
The objectives of this case presentation are to highlight the following:

1) There is a growing awareness of the potential for head trauma and rapid deceleration injuries to be a stimulus for autonomic dysregulation of the nervous system.
2) Autonomic nervous system dysregulation may cause orthostasis and activity intolerance.
3) Postural Orthostatic Tachycardia Syndrome (POTS) is increasingly recognized, as a complication, after mild traumatic brain injury (mTBI) with women being affected more than men by 4.5:1.
4) Post mTBI POTS and resultant exercise intolerance may be mistaken for lack of motivation for return to activity, anxiety or even conversion disorder.
5) Given the patient’s autonomic dysfunction, return to activity and exercise training must be individualized, requiring initial recumbent aerobic and strength training in order to transition back to typical training. Resources for development of an individualized plan are readily available.

METHODS
The patient had tachycardia (110) upon initial intake vitals. Given the patient’s complaints of dizziness, near syncope and palpitations, orthostatic vital signs were requested

Those were significant for supine resting values normal for blood pressure and pulse of 72 with no significant change when moved to seated position. However, when moved from seated to standing her pulse increased by 46 bpm from 72 to 118. The patient felt some dizziness with this position change.

The patient was then felt to be experiencing post concussive POTS and was referred to cardiology for verification of the diagnosis and assistance in patient management.

RESULTS
Male AMI admissions during the time period made up approximately 71% (N=959) compared to 29% for females (N=389). Despite higher male AMI incidence, females experienced a significantly higher 30-day mortality of about 10.8% compared to 6.7% for males (p=0.01). The most prevalent diagnosis for AMI was subendocardial infarction as initial episode of care (38.7%). Males and females received this diagnosis roughly equally, and no significant gender differences in 30-day mortality existed for this diagnosis.
Thirty-nine percent of AMI admissions received percutaneous transluminal coronary angioplasty (PTCA), with significantly more males (41.6%) receiving the procedure than females (33.2%) (p=0.004). Thirty-day mortality for females receiving PTCA (9.3%) was significantly higher than for males (4.3%) (p=0.03). Among 379 diagnoses given an ICD10 code labeled as AMI of differing types, female 30-day mortality was 19.6% compared to 9.4% for males (p=0.009).

Gender differences in mortality were not observed for diagnosis categories of subendocardial infarction, STEMI, or non-STEMI, but females exhibited over twice the 30-day mortality for AMI-specific diagnoses. Controlling for age, female patients over age 65 exhibited approximately twice the odds of mortality as males (OR=1.98, 95% CI: 1.19, 3.32, p=0.009).

CONCLUSION
Cardiology agreed with the presumptive diagnosis of POTS and ordered an echocardiogram, event monitor and tilt table testing. The echocardiogram was within normal limits.

The event monitor showed symptomatic tachycardia to the 170’s. Upon initiation of the test, the patient’s pulse went from 72 to the 170’s very quickly after tilting and the patient became symptomatic.

The diagnosis of post-concussion POTS was confirmed. The patient was started on atenolol and did not tolerate it. She was then started on metoprolol 12.5 mg po bid and fludrocortisone 0.1mg po daily. Medication warnings were given. The patient was instructed to do light aerobic activity. If she did not tolerate this, we would consider restarting with recumbent exercise and progress from there. She was to follow up in six weeks.

It is hoped as her POTS is treated, her chronic headaches, insomnia and mood disorder will all improve and she may be able to discontinue the medications she is on for those. Hopefully, her exercise tolerance will also continue to improve.
BACKGROUND
Sex differences in pain and disorders such as depression and anxiety are now being recognized. Pain and fear may share neurobiological mechanisms such as plasticity in emotional networks that include the amygdala. The amygdala plays a key role in fear conditioning and has emerged as an important node of emotional-affective aspects of pain modulation. Impaired fear extinction learning, which involves prefrontal cortical control of amygdala processing, has been linked to conditions such as posttraumatic stress disorder (PTSD).

OBJECTIVE
We aim to illuminate any potential differences regarding pain-related behavior in male and female rats. Sex differences in response to pain should be further investigated and made aware to clinical investigators when developing future studies for the treatment and management of acute and/or chronic pain.

METHODS
Here we tested the hypothesis that fear extinction learning ability can predict certain aspects of pain-related behaviors of rats and that these may be different in female and male rats. We correlated fear extinction learning in adult male and female rats with behavioral outcome measures (sensory thresholds, vocalizations, and anxiety-like behaviors) before and >6h after induction of an arthritis pain model (kaolin/carrageenan-induced knee joint arthritis). Auditory fear conditioning, extinction, and extinction retention tests were conducted using two chambers. On Day 1 rats were habituated to context A followed by fear conditioning (2 US-CS pairs). On Day 2, rats were habituated to context B followed by extinction training (30 CSs). On Day 3, rats were habituated to context B followed by extinction retention measurement (5 CSs).

RESULTS
There was no difference in fear learning between male and female rats. The majority of rats (78% male, 73% female) showed a quick decline of freezing level during extinction training and retention (FE+) whereas a smaller group of rats (22% male, 27% female) maintained a high freezing level (FE­). Male and female FE­ rats had lower open-arm preferences in the elevated plus maze (EPM) or shorter center duration in the open field test (OFT) than FE+ rats, reflecting anxiety-like behavior, but there were no significant differences in sensory thresholds and vocalizations between FE+ and FE­ types under normal conditions. In the arthritis pain model, male and female FE­ rats developed higher levels of vocalizations and anxiety-like behavior than FE+ rats, but there were no differences in mechanical reflex thresholds. Female FE­ rats had stronger vocalizations than FE­ males.

CONCLUSION
The data may suggest predictive value of fear extinction ability for emotional-affective pain aspects in male and female rats, and greater vulnerability of female than male rats with lower extinction ability.

SUPPORT
NIH Grant NS038261  NIH Grant NS081121  NIH Grant NS106902
Depression is a common psychiatric disorder that will affect ~1.5% of US population at least once during their lifetime. Graduate students face considerable mental strain during their education, and as such have a significant increase in mental health issues, including depression. We set out to quantify prevalence of major and other types of depression in TTUHSC graduate students using the well-established PHQ-9 survey.

We hope that our study will rectify these shortcomings, as well as provide a platform for future P3 Honors projects in collaboration with TTUHSC graduate student population. This project evaluated gender differences in responses from a survey of students in the Graduate School of Biomedical Sciences at TTUHSC.
Hypertension, diabetes, and other chronic illnesses have increased the mortality rates of chronically homeless individuals. Although the rates of incidence of these disorders at present time are the same when comparing the homeless and general populations, the gap between the two is expected to widen due to the additional risk factors that the homeless are susceptible to. Alcohol abuse, smoking, and sodium consumption are just a few of the factors that can contribute to an increased risk of developing hypertension.

Some of these activities are seen to occur in higher rates in the homeless, in comparison to the general population. Therefore, in this study, we focused on the health disparities and current health status among Lubbock’s homeless population, including differences between men and women. We examined the prevalence of hypertension in this community and the residents’ family history of hypertension to evaluate the extent of their risk for hypertension, as well as its prevalence.
BACKGROUND
CPRIT’s Evidence-Based Cancer Prevention Services grants seek to fund projects that offer effective and efficient evidence-based cancer prevention services to nonmetropolitan (rural) and medically underserved counties in ways that exceed current performance in the area. The Laura W. Bush Institute’s ABC4WT-CV in San Angelo was an Evidence-Based Cancer Prevention Services project funded by CPRIT to serve the Concho Valley area between 2012 and 2017.

OBJECTIVE
This poster combines data from the ABC4WT-CV project with a parallel dataset from Texas outpatient facility records to test the proposition that the CPRIT-funded ABC4WT-CV project exceeded the performance of the health care marketplace in providing prevention services to rural and medically underserved populations of the region.

METHODS
Researchers will conduct a retrospective analysis of breast cancer screening services funded by CPRIT through the ABC4WT-CV project, as well as services funded by individuals and third party payers participating in the health care marketplace. The analysis will compare the odds of rural and medically underserved Hispanic populations acquiring services through the two mechanisms to test the proposition that ABC4WT-CV service exceeds the performance of the health care marketplace.

RESULTS
The poster reports the distribution of screening services delivered to urban/rural and Hispanic/non-Hispanic patients through ABC4WT-CV and through market mechanisms. The odds ratios manifest from the distribution of screening services will be examined to test the hypothesis that the ABC4WT-CV project exceeds the performance of the marketplace in providing prevention services to rural and Hispanic residents in the region.

The poster will assess the extent of evidence supporting the proposition that the ABC4WT-CV project exceeded the performance of the health care marketplace in providing prevention services to rural and medically underserved Hispanics in the Concho Valley.
BACKGROUND
Cervical pregnancy is a rare but life-threatening form of ectopic pregnancy with an incidence of <0.1 % of all ectopic pregnancies (1). Management options include dilation and curettage, angiographic uterine artery embolization, hysteroscopic excision of the gestational sac and hysterectomy. Despite improvements in diagnostic and management techniques, a standard form of treatment has not been established (2, 3).

OBJECTIVES
To report the successful treatment of a cervical ectopic pregnancy using a single direct injection of methotrexate.

METHODS
We present a 28 year old G1P0, at uncertain gestational age, after spontaneous conception who presented with an episode of heavy bleeding that later resolved. Quantitative ßhCG was 45,114 mIU/mL. Transvaginal ultrasound showed a suspected cervical ectopic pregnancy which was confirmed by MRI. MRI reporting showed a 5 x 3 x 3 cm cervical pregnancy bulging into the posterior fornix (Ultrasound and MRI Images available). The patient was counseled on treatment options and was consented for direct Methotrexate injection. She received conscious sedation with Versed and Fentanyl.

Transvaginal ultrasound revealed a cervical gestational sac, yolk sac and fetal pole without cardiac activity. A 16 gauge cyst aspiration needle was inserted into the gestational sac and approximately 5 mL of dark, non-coagulable blood was removed. Methotrexate (100 mg in 4mL) was injected, 2mL each to the sac and the site of implantation, respectively. Ten days after the injection, as the ßhCG was decreasing, the patient had an episode of vaginal bleeding and passage of tissue. Five weeks and six days after the initial injection, the ßhCG finally became <5 mIU/mL. Hysteroscopy was performed 8-weeks later and revealed a normal cervical canal and changes consistent with implantation site where the ectopic pregnancy was located. (Images available).

RESULTS
A cervical ectopic pregnancy was successfully managed by transvaginal ultrasound guided methotrexate injection. The treatment maintained the integrity of the cervical canal.

CONCLUSION
Transvaginal ultrasound guided injection of methotrexate to the gestational sac and the implantation site is an option in the management of cervical ectopic pregnancy.
Migration of an IUD outside the uterine cavity is a potential complication of IUD use. The incidence of uterine perforation of an IUD is < 0.1 % in clinical trials of the levonorgestrel-releasing IUD in non-lactating women but is much higher in lactating women.

**OBJECTIVE**

We present a case of a transvaginal ultrasound guided robotic removal of an embedded IUD.

Our patient is a 24 year old Gravida 2 Para 1011 who presented with pelvic pain. She had a history of a levonorgestrel-releasing IUD placement 7 months prior. Transvaginal ultrasound showed that the IUD was embedded in the lower uterine segment at the area of the patient’s previous Cesarean section scar. At attempted removal of the IUD, the IUD strings detached but the device remained in the wall of the uterus. The IUD was not visible by hysteroscopy. The patient was referred to Reproductive Endocrinology for further evaluation.

**METHODS**

At laparoscopy, the IUD was not visible when looking at the uterus externally. It was also not visible from inside the uterine cavity by hysteroscopy. The IUD was embedded within the muscular wall of the uterus. Simultaneous transvaginal ultrasound was performed during laparoscopy with robotic assistance. The IUD could be visualized by ultrasound. Transvaginal ultrasound imaging allowed guidance for precise incision placement at the lower uterine segment of the uterus where the IUD was located. A 1 cm horizontal incision was made with the robotic scissors at the lower uterine segment. A robotic ProGrasp was then used to grasp the IUD and remove it in its entirety through the 1 cm uterine incision. The myometrium was closed with V-lock suture and the serosa was closed with 3-0 vicryl suture. The patient was dismissed home same day without complication.

**RESULTS**

Simultaneous transvaginal ultrasound guidance of laparoscopic removal of a malpositioned IUD can provide precise guidance for optimal incision placement for an embedded IUD that is not visible hysteroscopically or laparoscopically.

**CONCLUSION**

Migration of an IUD is uncommon but is a known risk of IUD placement. An embedded IUD contained without the myometrium is a treatment challenge as it is not visible by laparoscopy or hysteroscopy. Our case describes successful removal of an embedded IUD through a precisely placed 1 cm horizontal myometrial incision with the help of simultaneous transvaginal ultrasound guidance and laparoscopy with robotic assistance.
BACKGROUND
The current American Academy of Pediatrics (AAP) and American College of Obstetricians and Gynecologists’ (ACOG) guidelines regarding frequency of prenatal care visits for women of no heightened prenatal risk recommend an average of 14 visits over the course of a 40 week pregnancy (1). This model appears to be based largely on convention, and has been the subject of several studies that seek to investigate the benefits of alternative schedules. Previous studies have indicated that reduced visit schedules may be as effective for low risk women as a traditional schedule (2, 3).

OBJECTIVES
We evaluated women’s attitudes and opinions regarding the frequency of their prenatal care visits, as well as the aspects of their prenatal care that they value most. We critically assessed patient views of their prenatal care experience to identify patient priorities, and to describe the ideal prenatal care plan from the patient perspective. We hope that this study can shed greater light on women’s priorities in prenatal care and how any changes would affect patients.

METHODS
Data was obtained from women seeking care at the TTUHSC OB/GYN Clinic. Each subject completed a written survey of 20 questions that covered demographic information, obstetric history, and a Likert scale regarding their prenatal care visits. Subjects then completed a 4 question audio-recorded interview. Interview transcripts were coded by themes of discussion using MAXQDA12 to facilitate qualitative analysis.

RESULTS
Currently, we have collected and preliminarily analyzed data from 130 patients. At this point, we have observed that overwhelmingly women enjoy coming to their prenatal care visits, are satisfied with the care they have received, and do not wish to come less frequently. Although we have not yet formally analyzed the qualitative data (interviews), some priorities that we have observed thus far include receiving more information, getting answers to their questions, hearing their babies’ heartbeats, and seeking reassurance from their physicians. So many women reported hearing the fetal heart beat as an incentive for coming to the office that a possible future research venture could be investigating the impact of fetal Doppler self-monitoring on maternal anxiety. Women also reported having reservations about a reduced visit schedule due to fear of possible complications arising between visits.

CONCLUSION
As we have not yet completed data collections, we are unable to draw conclusions at this time. We look forward to including a full analysis and conclusions with our poster.
SUPPORT

(1) Guidelines for Perinatal Care, 7th Edition; by the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists. 2012; 106-107

We would like to thank the TTUHSC Clinical Research Institute, the staff of the TTUHSC OB/GYN Clinic, and the Institutional Review Board for their support in this project.
INTRODUCTION
Breastfeeding has been shown to reduce the risk of breast cancer by 4.3% for every 12 months a woman breastfeeds, although the mechanism is unknown. One possible mechanism is higher turn-over of breast cellular composition and sloughing off of pre-cancerous/cancerous cells during lactation.

OBJECTIVES
For this study, a comprehensive microarray gene expression of breast milk was carried out comparing high risk to low risk individuals for breast cancer. Our goal is to identify Differentially Expressed Genes (DEGs) and map them to gene pathways in which to identify potential cancer biomarkers.

MATERIALS AND METHODS
Breastfeeding women were screened based on their risk assessment for breast cancer using Tyrer-Cuzick model. Accordingly, their milk samples were collected and analyzed for gene expression on an Affymetrix Clariom D microarray chip. DEGs were identified using Affymetrix Transcriptome Analysis Console Software and analyzed for gene ontology classification, pathway analysis and to identify genes in predicted cancer pathways using IPA, DAVID, and PANTHER software.

RESULTS
Individual breast milk donors grouped into 4 distinct clusters based on their gene expression. Heat Map analysis showed very distinct expression patterns between clusters for High Risk and Low Risk individuals. Several identified DEGs mapped to known breast cancer pathways. Gene network analysis showed the cells found in breast milk had an overall decrease in gene expression in the high risk cluster. Interestingly, the androgen receptor (AR), cancer-testis antigen-45 (CTA-45) family and many olfactory genes showed increased gene expression in the high risk group which could potentially be used as predictive markers.

CONCLUSION
Our preliminary observations suggest that breastfeeding may lower the risk of breast cancer by down-regulating the expression of cancer genes. Breast milk cell analysis identifying early events in carcinogenesis potentially could be used to generate a gene signature for identifying women at a higher risk for developing breast cancer.

SUPPORT
Marshal Vern Ross Foundation and Department of Pediatrics.
BACKGROUND

Adenomyosis is “defined by the presence of endometrial glands and stroma within the myometrium” (Oh et al., 2013). Women most often complain of heavy menstrual bleeding and dysmenorrhea (Struble, Reid, & Bedaiwy, 2016). Adenomyosis is a fairly frequent condition, affecting about 30% of the female population (Morassutto, Monasta, Ricci, Barbone, & Ronfani, 2016), however there is no known etiology, although some correlations and potential comorbidities, have been studied. Looking into comorbidities might reveal a potential contributing factor for the development of adenomyosis.

One factor could be an excess of estrogen in obese women, arising from increased peripheral conversion of androsteriodione. This could potentially link adenomyosis and obesity, but this has not been well documented in the literature. In addition, obesity, a criteria for metabolic syndrome, is associated with diabetes, hypercholesterolemia, hyperlipidemia, so one might conclude that adenomyosis may also be positively correlated with these conditions (Teng et al., 2016). Indeed, research has shown a correlation between comorbidities with adenomyosis, including patients with adenomyosis also being diagnosed with cardiovascular disease. (Choi et al., 2017).

Hysterectomy remains the “gold standard” therapy and histopathology the ultimate diagnosis of adenomyosis. Because there is no conservative treatment for a woman with a diagnosis of adenomyosis, identifying predisposing factors potentially promoting the development could provide a plan to prevent excess exacerbation of the condition and consequent need for hysterectomy.

OBJECTIVE

• Evaluate patient charts who were presumptively diagnosed with adenomyosis via ultrasound and compare to a group that has not been diagnosed with adenomyosis via ultrasound.
• Evaluate charts for metabolic panel, past medical history/comorbidities in search values, to determine correlation with incidence or absence of adenomyosis

METHODS

We performed a retrospective chart review of pelvic ultrasounds and corresponding electronic clinical charts on female patients who were between 21-65 years old. We separated ultrasound reports into groups of presumptive diagnosis of adenomyosis (AM) and normal (CON), with 100 patients for each category. Charts were excluded if they were referred to a different ultrasound facility for an ultrasound, outside the age range, were diagnosed with endocrine or autoimmune disorders, and blatant anatomical abnormalities on ultrasound. We reviewed corresponding clinical charts to extract parameters that could be suggestive of a correlation between metabolic syndrome such as weight, height, BMI, DM2, HbA1c, total cholesterol, triglycerides, LDL and HDL. Age was also reported. Continuous data were summarized as mean (SD) and categorical data were summarized as n (%).

We used t-test and chi-squared to assess differences between groups for means and frequencies, respectively. Unadjusted and adjusted association of adenomyosis with the predictors was calculated using univariate and multivariate logistic regression analyses, and presented as Odds Ratio and 95% CI. Effect sizes (Cohen’s d) were calculated for significant predictors and a subsequent power analysis was conducted assuming a significance level (α) of 0.05 and a power (1-β) of 0.80.
RESULTS

Preliminary data of 200 total patient charts, 100 in each group, showed that there was a statistically significant difference in weight and BMI between CON and AM patients, with those in the AM group having a higher weight and BMI (Weight: t(197)=3.62, p<0.001, d=0.51; BMI: t(197)=3.62, p<0.001, d=0.51). Differences in LDL and HDL values between the two groups were not statistically significant, and showed small effect sizes (d=0.32, d=0.31, respectively).

Prior pregnancy (60% vs. 85.9%, p<0.001) and hysterectomy (17% vs. 31.6%, p=0.016) also presented statistically significant differences between groups, with AM being more likely to have been pregnant and had a hysterectomy performed. Moderate and small adjusted Odds Ratios were found respectively for past pregnancy aOR=3.51 (95%CI=1.71–7.23) and hysterectomy 2.11 (95%CI=1.02–4.36). Each unit increase in BMI showed significantly higher odds of adenomyosis aOR=1.07 (95%CI=1.03–1.11). No statistically significant differences were found in other lab values between the two groups.

CONCLUSION

The comorbidities associated with obesity are well documented in many aspects of medicine. However, there is no significant literature that supports a connection between adenomyosis and metabolic syndrome (which includes obesity, dyslipidemia, high blood pressure, high blood sugar, etc.). The preliminary results from our study have shown that increased BMI is significantly associated with the presence of adenomyosis. On average, women with presumptive adenomyosis on ultrasound scan had a BMI, 3.62kg/m² higher than those without adenomyosis and those in the AM group were more likely to have been pregnant. We hypothesize that pregnancy, a time of remodeling in the uterus, may be the inciting event that allows for endometrial tissue to be embedded in the myometrium. The endometrial tissue embedded within the myometrium, a hallmark of adenomyosis, is sensitive to estrogen. Literature has shown that women with increased BMI have higher levels of circulating estrogen (Lukanova A et al.2004). Therefore, it is possible that the increased estrogen levels in obese women functions as an exacerbating factor in adenomyosis, contributing to the worsening of symptoms such as heavy menstrual bleeding and dysmenorrhea.

Our preliminary data showed a trend of lower HDL and higher LDL being associated with adenomyosis. However, the use of lipid lowering agents was not taken into account in patients with hyperlipidemia. While these results were not statistically significant, a post hoc power analysis revealed that a sample size of 330 subjects would produce significant results with the correlation of disease with HDL and LDL levels. While there were limitations to our study, such as regionality of patients and small sample size, our preliminary data indicate that these findings could guide preventative measures for the development of adenomyosis by targeting progression of metabolic syndrome.

SUPPORT

This study was supported in part by the TTUHSC Clinical Research Institute.
INTRODUCTION
Morbidly adherent placenta as a cause of postpartum morbidity is increasing in incidence and maybe as high as 1 per 1000 deliveries. The wide range of complications may include severe postpartum hemorrhage, postpartum curettage, uterine perforation, shock, infection, loss of fertility, and also death. One conservative option is use of methotrexate as an adjuvant therapy for the conservative management of placenta accreta. It has been hypothesized that methotrexate acts by inducing placental necrosis and expediting a rapid involution of placenta. There is concern that use of methotrexate in a lactating mother could potentially expose her neonate to harmful effects of this medication.

CASE REPORT
Here we report a 29-year-old woman (180 lbs body weight) was subjected to methotrexate treatment for retained placenta. Her child was delivered at 32 weeks weighing 3 pounds. Postpartum day 5 this patient was diagnosed with retained placenta and advised for intramuscular methotrexate for 3 consecutive days. She was administered 92 mg methotrexate intramuscularly daily, she was recommended not to breastfeed. She collected samples at 0 hour before the second dose, 1, 2, 4, 8, 12 and 24 hours after the dose. A high-performance liquid chromatography mass spectrometry (HPLC-MS) method was developed to measure methotrexate and its metabolite 7-OH methotrexate levels in milk samples.

DISCUSSION
Very low levels were determined for both methotrexate and 7-OH methotrexate in the milk samples obtained. For methotrexate we observed the area under the curve to be 205.9 ng.hr/mL and the average concentration to be 8.6 ng/mL. Maximum concentration was estimated as 16.9 ng/mL, which peaked at 2 hours after the consumption of the dose. The relative infant dose was calculated to be 0.11 %. The metabolite of this drug 7-OH methotrexate was also found at very low concentrations as compare to methotrexate. The area under curve was observed to be 36.5 ng.hr/mL and its average concentration was calculated to be 1.5 ng/mL with the relative infant dose to be 0.02 %. The results indicate that methotrexate or its metabolite do not get accumulated or deposited in the body over a period of 24 hours.

CONCLUSION
Methotrexate is a dangerous and potentially toxic antifolate drug that is commonly used in the treatment of arthritis, ectopic pregnancy and now placenta accreta. Conservative management of placenta accreta is emerging as a viable and in some cases optimal option for some patients. Methotrexate is an option but little has been known about transfer of intramuscular methotrexate into human breastmilk. Thus feeding an infant postnatal was controversial. This case report found the relative infant dose (RID) of methotrexate to be 0.11%. Accordingly the mothers should be advised to breastfeed the infant since the levels detected are very low and should be subclinical. However, caution should be used in counseling mothers regarding breastfeeding with this toxic drug.
INTRODUCTION

Idiopathic hypersomnia is one of the central sleep disorders characterized by excessive daytime sleepiness in the absence of disturbances in circadian rhythm or sleep-wake cycle. Treatment options are similar to those of narcolepsy, with modafinil as first line. As many patients diagnosed with these conditions are of reproductive age, it is a worthwhile endeavor to measure modafinil levels in human breast milk.

CASE REPORT

In May of 2017, 27 yr old woman delivered an infant at 37 weeks gestational age by normal spontaneous vaginal delivery. The mother had been diagnosed with idiopathic hypersomnia over ten years prior to delivery after reporting instances of falling asleep while driving and during other activities, with significant disruption of her daily tasks. Her diagnosis was confirmed during a sleep study demonstrating a lack of SOREMPs. Since her diagnosis she was maintained on a daily dose of 250 mg of modafinil to control her symptoms. Due to the lack of published information regarding drug transfer into human milk, the mother agreed to provide samples of her breast milk. She had taken 250 mg of modafinil daily prior to, during, and after her pregnancy as prescribed and was therefore at steady state. Samples were collected at 0, 1, 2, 4, 6, 8, 10, 12, and 24 hours. The mother ultimately decided against breastfeeding her infant and she weaned off gradually thereafter.

RESULTS

Following the 250 mg of dose, the maximum concentration measured of the drug in milk was 2.3 µg/mL. The peak concentration was observed at 2 hour and these levels decreased gradually over 24 hours. The patient was in steady state as we observed 0.43 µg/mL at 0 hour that is just before she took her daily dose. The area under the curve calculated was 28.96 mg.hr/L. The infant dose calculated was 0.181 mg/kg/day based on the assumption of infant’s daily intake of 150 ml/kg/day. The relative infant dose calculated to be 5.3%, which is below the recommended range.

CONCLUSION

To our knowledge this is the first quantitative description of modafinil transfer into breast milk. Levels of modafinil were found to be low, with an RID of 5.3%, below the theoretical level of 10% where there is concern for medications in breastmilk. As an infant receives medication via breast milk, the medication undergoes first pass metabolism as it moves through the gastrointestinal tract. Though it is below threshold it is still worth watching the infant for problems such as insomnia, jitteriness, poor weight gain, or anorexia. In case of these events we recommend the mother either discontinue the drug, or discontinue breastfeeding. This is the first known case report detailing the level of modafinil transfer into human milk. As modafinil is used for a number of disorders characterized by excessive daytime sleepiness, not limited to idiopathic hypersomnia as in this case, further studies regarding the infant dose to confirm the results stated in this case report as well as elucidate the effects of modafinil in exposed infants.
INTRODUCTION
Cyclobenzaprine, a skeletal muscle relaxant, is one of the most commonly prescribed medications for musculoskeletal pain in breastfeeding women. Its transfer into human milk is unknown.

CASE REPORT
We report two cases of lactating women who were prescribed cyclobenzaprine. Case 1 was a 35 year-old woman prescribed 5 mg cyclobenzaprine daily for chronic temporomandibular joint pain. Case 2 was a 25 year-old woman prescribed 10 mg cyclobenzaprine twice daily for fibromyalgia. Milk samples were obtained at 0, 1, 2, 4, 6, 8, 12, 24 hours from case 1 and obtained at 0, 1, 2, 4, 6, 8, 12 hours for case 2 elected at 0, 1, 2, 4, 6, 8, 10, 12, and 24 hours.

METHODS
Quantification of cyclobenzaprine was performed using an Agilent 6120 LC/MS mass spectrometer. A simple protein precipitation method was used for extracting the analyte from the milk sample and a linear calibration curve was prepared.

RESULTS
Exceedingly low levels of cyclobenzaprine were determined for both the patients. The relative infant dose (RID) for a 5 mg dose in 24 hours was approximately 0.56% (<10% below the theoretical level of concern) and for a 10 mg dose in 12 hours was 0.53%.

CONCLUSION
This is the first case series determining levels of cyclobenzaprine present in breastmilk. A low RID (<10%) was observed in both samples, unlikely to cause any adverse effects in a breastfed infant. While analysis of additional samples in the future could account for physiological differences in drug metabolism, this study provides preliminary insight into the safety of breastfeeding while using cyclobenzaprine.
INTRODUCTION
Aspirin has antipyretic and anti-inflammatory properties and is frequently used by pregnant and lactating women. However, its transfer in human milk when administered at low dose has not been reported.

OBJECTIVE
To evaluate the transfer of acetylsalicylic acid and its metabolite, salicylic acid, into human milk following the use of low dose aspirin.

MATERIALS AND METHODS
In this study, milk samples were collected at 0, 1, 2, 4, 8, 12 and 24 hours from 7 breastfeeding women after a steady-state daily dose of 81 mg of aspirin. Milk levels of acetylsalicylic acid and salicylic acid were determined by liquid chromatography tandem-mass spectrometry.

RESULTS
Acetylsalicylic acid levels were below the limit of quantification (0.61 ng/mL) in all the milk samples, whereas salicylic acid was detected at very low concentrations. The average concentration of salicylic acid observed was 24 ng/mL and the estimated relative infant dose was 0.4%.

CONCLUSION
Acetylsalicylic acid transfer into milk is so low it is undetectable even by highly sophisticated methodology. Salicylic acid does appear in the human milk in comparatively low amounts, which are probably subclinical in infants. Thus the daily use of 81 mg dose of aspirin should be considered safe during lactation.
INTRODUCTION

Multiple sclerosis (MS) is a chronic, autoimmune, inflammatory, neurological disease of the central nervous system (CNS). It is the most common immune-mediated disorder, affecting more than 2 million people worldwide. Cyclophosphamide is an alkylating agent commonly used to treat both malignancies and immune-mediated, inflammatory, non-malignant processes. At present, there are no data available on its use in breastfeeding mothers.

CASE REPORT

Here we report a 33-year-old mother who was suffering from MS. To treat her MS, stem cell transplantation protocol required preparation with multiple doses of cyclophosphamide. She had been exclusively breastfeeding for six months prior to undertaking this regimen. She voluntarily collected her milk samples at critical time points following the intravenous doses of 2.8 gm cyclophosphamide for each of 4 days. Quantification of cyclophosphamide was determined using liquid chromatography coupled with tandem mass spectrometry.

DISCUSSION

Low levels in milk were determined for cyclophosphamide as the area under the curve was 364.1 µg.hr/mL on day 1 and 113.9 µg.hr/mL on day 4. Maximum concentration of cyclophosphamide was observed on Day 1 at 40.82 µg/mL, which peaked at 4 hours. Over 24 hours, the levels gradually receded to minimum concentrations. The average relative infant dose over a period of 4 days varied from 4.7% at day 1 to 0.9% at day 4.

CONCLUSION

Cyclophosphamide is transferred into breast milk in measurable quantities. This case report found relative infant dose of cyclophosphamide to be relatively low. However, great caution should be used in counseling mothers regarding breastfeeding with this toxic drug.
INTRODUCTION
Legalization of recreational cannabis use in several states has caused growing unease in the medical community regarding the health risks associated with this drug, especially in pregnant and breastfeeding women. Although cannabis is one of the most widely used phytocannabinoid (Delta-9-tetrahydrocannabinol (THC), the most psychoactive) drugs in the world. Small to moderate secretion of delta-9-THC into breastmilk has been reported; however these reports may not adequately represent concentrations of THC found in breast milk today with newer commercialized cannabis products.

OBJECTIVE
The objective of this study was to evaluate the transfer of delta-9-tetrahydrocannabinol (THC) and its metabolites into human breastmilk after maternal inhalation of 0.1 g of cannabis containing 23.18% delta-9-THC.

MATERIALS AND METHODS
In this pilot pharmacokinetic study, breastmilk samples were collected from mothers who regularly consumed cannabis, were 2-5 months postpartum, and were exclusively breastfeeding their infants. Women were anonymously recruited for the study. After discontinuing cannabis for at least 24 hours, they were directed to obtain a baseline breastmilk sample, then smoke a pre-weighed, analyzed, standardized strain of cannabis from one preselected dispensary, and collect breastmilk samples at specific time points: 20 minutes, 1, 2, and 4 hours. Quantification of delta-9-THC and its metabolites in these collected breastmilk samples was performed by high-pressure liquid chromatography tandem mass spectrometry.

RESULTS
A total of nine women were enrolled. Most were occasional cannabis smokers and one a chronic user. Delta-9-THC was detected at low concentrations at all the time points and its metabolites at none of them. Delta-9-THC was transferred into mother’s milk such that an exclusively breastfeeding infant ingests 2.4% of the maternal dose (the calculated relative infant dose = 2.4%). The average infant dose was estimated at 7.8 µg/kg/day.

CONCLUSION
This study documents inhaled delta-9-THC transfer into the mother’s breastmilk. Low concentrations of delta-9-THC were detected. The long-term neurobehavioral impact of exposure to delta-9-THC on the developing brain is unclear. Mothers should be cautious using cannabis during pregnancy and breastfeeding.
BACKGROUND
The association of surgical and natural menopause (SM and NM, respectively) with cardiovascular disease (CVD) outcomes remains unclear. Some studies have proposed that estrogen deficiency may explain the elevated CVD risk among women with SM especially women with bilateral oophorectomy (BSO), however, evidence suggests that women who undergo SM tend to have adverse cardiovascular disease risk factors (CVDRF) long before the onset of menopause, which may account for their elevated risk of CVD events in later life.

OBJECTIVE
To evaluate the association between surgical (SM) versus natural menopause (NM) in relation to later left ventricular (LV) structure and function, while taking into account the LV parameters and other cardiovascular disease risk factor (CVDRF) levels that predates the menopausal transition.

METHODS
We studied 825 premenopausal women from the CARDIA study in 1990-1991 (baseline, mean age: 32 years) who later reached menopause by 2010-2011 and had echocardiograms at these two time points.

RESULTS
During 20 years of follow up, 508 women reached NM while 317 underwent SM (34% had BSO). At baseline, women who later underwent SM were more likely to be black, younger, have greater parity and higher mean values of systolic blood pressure, body mass index as well as lower mean HDL cholesterol and physical activity than women who reached NM. No significant differences in LV structure/function were found between groups at baseline. In 2010-2011, SM women had significantly higher LV mass, LV mass/volume ratio, E/e’ ratio, and impaired longitudinal and circumferential strain than NM women. SM women with BSO had adverse LV measures than women with hysterectomy with ovarian conservation. Controlling for baseline echocardiographic parameters and CVDRF in linear regression models eliminated these differences between groups. Further adjustment for age at menopause/surgery and hormone therapy use did not change these results.

CONCLUSION
In this study, the adverse LV structure and function observed among women with SM compared to NM were explained by their unfavorable presurgical CVDRF profiles, suggesting that premenopausal CVDRF rather than gynecologic surgery predispose SM women to elevated future cardiovascular disease risk.

SUPPORT
The Coronary Artery Risk Development in Young Adults Study (CARDIA) is supported by contracts HHSN268201300025C, HHSN268201300026C, HHSN268201300027C, HHSN268201300028C, HHSN268201300029C, and HHSN268200900041C from the National Heart, Lung, and Blood Institute (NHLBI), the Intramural Research Program of the National Institute on Aging (NIA), an intra-agency agreement between NIA and NHLBI (AG0005). Dr. Appiah was supported by NHLBI training grant T32HL007779.
Human trafficking, especially in Texas, has become both a public health crisis and a women’s health issue. Physicians are on the front line and interact with victims, but they are ignorant to the realities of the situation. Even if they are aware, many health professionals believe that they can do nothing to alleviate the problem. The purpose of this study is to assess medical students in their clinical rotations in terms of their knowledge regarding human trafficking and victim identification.

This includes gathering their own self-reported levels of knowledge, taking an actual assessment of their knowledge, and determining whether they can correctly identify potential victims, and asking if they believe they may have previously encountered a patient whom they believe may have been a victim of human trafficking.
We sought to investigate the effect of pregnancy and childbirth on medical students and residents, including both males and females. We were also interested in identifying what additional health issues and stressors that women encounter if they become pregnant during their medical training.

Our study population included third and fourth-year medical students and residents. We focused on women who have been or are pregnant during residency and/or medical school at TTUHSC. This includes TTUHSC School of Medicine medical students, medical residents, graduate students and School of Medicine faculty.
Every year, there are 79,000 children who are sex trafficked in Texas, and 25% of these cases are filed in Lubbock County. This study investigates how educated the public is about sex trafficking, and how comfortable they are recognizing and reporting it. The study population were women, predominately undergraduate students between the ages of 18-25, who attended Texas Tech University’s Women’s Night at the Rec. Although many people may not realize it, sex trafficking is a major problem in the United States and in Texas, specifically.

The purpose of our study was to gauge public awareness of the problem and determine how comfortable someone might be recognizing and reporting an incident of sex trafficking. We found that while people are generally aware of the problem, they do not necessarily see it as “major” issue in the United States and cannot recognize all of the risk factors. Furthermore, while the majority of participants stated they would be comfortable recognizing a victim of sex trafficking, most went on to state they would not report the incident. This also warrants more education.
This project sought to understand the factors and conditions physicians consider when deciding whether or not to volunteer their medical expertise in the community. After speaking with local nonprofit organizations that expressed a need for physician volunteers, the importance of assessing physician interest in medical volunteering became apparent, as well as a way to investigate barriers and motivating methods involved. We interviewed the Lubbock County Medical Society (CMS) to determine how to move forward with implementing a way to decrease the gap between physician volunteering and community need.

A lack of awareness of the need present in the community served as the largest barrier to physician volunteering. Therefore, we are creating a resource to identify specific organizations and their needs and then disseminating it to the Lubbock CMS. Our first resource will target organizations that address women’s health needs.
Finances, social life, academic performance, sleep and study time are all important factors contributing to a student’s quality of life. Having a pet has been shown to have both positive and negative impacts on quality of life (Rijken & Beek, 2011); therefore we investigated the effects of pet ownership on the aforementioned metrics among Texas Tech University (TTU) women.

We also assessed the level of interest in pet therapy sessions during times of high stress. Due to a gap in research studies, Texas Tech University women (undergraduates and graduates) were selected for our survey.
Although it is obvious to many that women have some specific healthcare requirements such as pap smears and screenings for breast and cervical cancer, many do not realize that there are differences between males and females in mutual medical problems, such as heart attacks and mental health. Consequently, women are often being treated for these medical issues as if they were men. Historically, much of medical research was performed exclusively on white male subjects and has shaped common medical practice accordingly. As a result, it goes assumed that men and women are treated the same way medically.

The general public and even many medical professionals remain ignorant on the differences of presentation of illness in women versus men. It is quite common for a female to be misdiagnosed because her symptoms are unlike the “classic” presentation. The current push for women’s health is not only tackling factious common knowledge of female care, but also learning about the differences between male and female medical presentations and treatments. Our project focuses on the disparity in the general population’s knowledge of women’s health. Is the average person able to recognize a woman in crisis? If we first become more aware of the gaps in the literacy of men and women’s health, then we may begin to take steps to correct these in the future.