Identifying Preeclampsia through Patient Education:

A Quality Improvement Initiative

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Abstract

Preeclampsia is a major problem in the United States that increases the risk of neonatal and maternal morbidity and mortality. Will educating patient and support persons that accompany patients to clinic visits increase awareness of early signs and symptoms of preeclampsia? This quality improvement initiative will consist of a pretest on preeclampsia, followed by an educational sheet on preeclampsia, and then a posttest to confirm successful education. This confirmation should result in a sample size of 80 with an 80% power to detect a mean of paired differences of 0.2 with an estimated standard deviation of differences of 0.6 and with a significance level of 0.05 using a two-sided paired t-test. Validation of success is measured by an increase of 20% on the posttest. The findings will suggest that educating patients and support persons should result in seeking early medical attention when signs and symptoms of preeclampsia arise.

Keywords: *preeclampsia, preeclampsia management, and preeclampsia prevention.*

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Chapter 1. Problem

Preeclampsia has been categorized among the third top cause of severe maternal morbidity, maternal mortality and adverse neonatal outcomes, both in the United States and globally (Ghulmiyyah & Sibai, 2012). In the United States, preeclampsia accounts for 18.2% of maternal mortality (Janani & Changaee, 2017). Preeclampsia is a condition experienced by women during pregnancy and/or the first six weeks after delivery (Sibai, 2016). It accounts for over 70,000 maternal deaths per year and over 500,000 infant deaths per year worldwide (English, Kenny, & McCarthy, 2015).

Preeclampsia is described as a pregnancy-induced disorder characterized, by hypertension and noticeable proteinuria after twenty weeks gestation (Avci, 2016). However, preeclampsia can occur without necessarily having proteinuria. In the event where proteinuria is absent, hypertension can be accompanied by some systemic organ involvement, such as liver involvement, abnormal coagulation or even manifest through some cerebral symptoms- such as headaches, dizziness, or vision changes (Rich-Edwards, Ness & Roberts, 2015). The primary criterion of diagnosing hypertension is the persistent elevation of blood pressure of more than 140/90 mmHg (English et al., 2015). The condition is sometimes referred to as pregnancy-induced hypertension, toxemia or preeclampsia toxemia (Bell, 2010; Gupte & Wagh, 2014).

Definitions of Terms

Normal Blood pressure

According to National Heart, Lung, and Blood Institute (NHLBI) (2015), blood pressure is defined as the force of blood within the arteries of the body that circulates through the whole

body to major organs. A normal blood pressure is systolic <120 or diastolic <80 (American College of Cardiology (ACC), 2017).

Elevated Blood Pressure

Elevated blood pressure is a systolic blood pressure greater than 120 mmHg but less than 130mmHg and a diastolic less than 80 mmHg (ACA, 2017).

Stage 1Hypertension

Stage 1 hypertension is also known as high blood pressure (ACA, 2017). It is defined as a systolic blood pressure between 130-139 mmHg or diastolic blood pressure between 80-89 mmHg (ACC, 2017).

Stage 2 Hypertension

Stage 2 hypertension is described as a systolic blood pressure $\geq$ 140 mmHg or a diastolic $\geq$ 90 mmHg (ACA, 2017).

Preeclampsia

According to ACOG (2013), preeclampsia is described as a pregnancy disorder after twenty weeks gestation with high blood pressure and/or protein in urine.

Severe preeclampsia

Severe preeclampsia is defined as high blood pressure greater than 160/100, eclampsia, elevated hepatic labs, papilledema, clonus, liver tenderness, and/or platelets <100 x 109 (Townsend, O'Brien, & Khalil, 2015).

Eclampsia

Eclampsia is described as the same signs and symptoms of preeclampsia along with seizures (ACOG, 2013).

Over the past three decades, the incidence of preeclampsia has risen steadily from about 2.4 % in the 1990s to more than 3.7% by 2010 (ACOG, 2013). Based on trends and lack of proper management strategies developed for the management of the condition, the percentages are anticipated to have increased at the moment. One of the triggering factors to the increased incidences of preeclampsia is the trends to delay pregnancies to an older age by the current generations due to other life commitments. The prevalence of cases of obesity has also been determined to be a cause (O'Gorman et al., 2016).

Preeclampsia is a dangerous pregnancy complication characterized by hypertension, extracellular fluid retention, and/or proteinuria (Screening for preeclampsia, 2017). Complications of preeclampsia include eclampsia, congestive heart failure, renal failure, acute pulmonary edema, stroke, and death (Cursino, Katz, Coutinho, & Amorim, 2015). Around ten to fifteen percent of maternal deaths are due to preeclampsia and eclampsia (Avci, 2016). Throughout the third trimester of gestation, preeclampsia is one of the most common problems that affect 1 out of 20 pregnancies (Nordqvist, 2017). If preeclampsia is not treated, eclampsia can develop quickly which may lead to seizures, coma, or death (Nordqvist, 2017). Delivery of the infant and placenta is the cure to preeclampsia (Williams & Craft, 2012). "Management of preeclampsia centers on early recognition and timely delivery to prevent serious morbidity and mortality" (English, Kenny, & McCarthy, 2015, p.8). According to United Sates Preventative Services Task Force (USPSTF) (2017), blood pressure measurements should be taken with every visit throughout the pregnancy assessing for any abnormalities.

Clinical Needs Assessment and Specific Aim

There are significant numbers of expectant women who were affected by preeclampsia. Most of those affected who suffer the associated severities are those who lack early diagnosis of

the condition (ACOG, 2013). Research findings have suggested that the maternal deaths that are associated with preeclampsia are often exceedingly preventable when there is timely and effective care according to the patients, and this can be achieved best through education of the patients and their closest family members (O'Gorman et al., 2016). The main issue appears to be how patient education can be achieved in order to ensure the reduction of cases associated with preeclampsia.

During prenatal visits, blood pressure measurements are routinely taken and screened for preeclampsia (USPSTF, 2017). Preeclampsia risks factors include nulliparity, obesity, chronic hypertension, ladies in early teens, women over forty years old, multiple gestations, new partner, and preexisting diabetes (ACOG, 2013; D'Souza & Kingdom, 2016). The pathophysiological hallmarks that are characteristic to this condition include: an altered immune adaptation, dysfunction of the endothelium, an over triggered and exaggerated immune response, increased oxidative stress, increased rate of coagulation characterized by the abnormal production of thrombin and reduced production of the essential proangiogenic factors (Pennington, Schlitt, Jackson, Schulz, & Schust, 2012). Systemic lupus erythematosus, renal disease, and antiphospholipid antibody syndrome are other less-common medical conditions related to preeclampsia (Crotegut, 2016).

According to Crotegut (2016), there is a need to identify women at risk for preeclampsia and develop some effective preventative/therapeutic strategies for this disease. "It is demonstrable that early identification and close monitoring of high-risk women produces better maternal and fetal outcomes, so effective screening is an urgent research priority" (Townsend, O'Brien, & Khalil, 2015, p. 254). One way of identifying women at risk for preeclampsia is by

educating the patient and support persons on recognizing the early signs and symptoms of preeclampsia.

Background and Clinical Significance of Proposed Project/Intervention

From the state-level analysis statistics of managing preeclampsia, it was presented that enhancing a proper understanding of the condition and its signs and symptoms by patients is a crucial step towards ensuring improved early seeking of medical attention, improved treatment outcomes and consequentially preventing maternal death (Vata, Chauhan, Nallathambi, & Hussein, 2015; English et al., 2015). The same research suggested that lack of knowledge regarding the severity of the condition and delays in seeking medical attention accounts for more than 60% of associated mortality due to delay with treatment (Vata et al., 2015). Therefore, patient education is the best strategy for ensuring the condition is well controlled by awareness.

Preeclampsia affects about 2-8% of the total pregnancies worldwide (ACOG, 2013; English et al., 2015). In 2014, the U.S. had the highest recorded frequency of preeclampsia. Most of the cases were recorded in Texas. African American women are at the greatest risk for developing preeclampsia than any other races (Breathett, Muhlestein, Foraker, & Gulati, 2014). However, in 2013, the condition reportedly accounted for about 25% of maternal deaths among Latin American women (Abalos, Cuesta, Grosso, Chou & Say, 2013).

An effective educational program will be one that is meant to answer four main questions; (a) What is preeclampsia? (b) What are the risk factors that predispose one to acquire preeclampsia? (c) What are the associated signs and symptoms of preeclampsia? (d) What action should be taken by the patient if they experience any signs and symptoms of preeclampsia? The purpose of the project is to increase awareness of knowledge of the signs and symptoms of preeclampsia by educating the patient and support system in an effort to identify it sooner so

morbidity and mortality associated with preeclampsia can be avoided and/or reduced. Through education, would there be an increase of knowledge of early signs and symptoms of preeclampsia in pregnant women and their support system?

PICOT Statement and Question of Inquiry

In a Southwest County of the United States hospital, will educating patients and support persons that accompany patients to clinic visits increase awareness of early signs and symptoms of preeclampsia?

The PICOT for this research question is as follows:

- Population (P) – Pregnant female patients receiving services in a Southwest Hospital clinic, between 18-45 years old; Support person who accompanies the patient to clinic visits
- Intervention (I) – education strategy on signs and symptoms of preeclampsia
- Compare (C) – Baseline knowledge of preeclampsia compared to knowledge gained after educational strategy
- Outcome (O) – a measure of knowledge of signs and symptoms of preeclampsia as reflected in a 20% increase in posttest scores
- Time (T) – 1-2 week implementation process

Innovation/Objectives

This initiative began with a 5-question pretest on preeclampsia, followed by an educational sheet on preeclampsia. The provider spent 3 minutes educating the patient on

preeclampsia and rereading the preeclampsia education sheet to English speaking patients and/or support persons. The women's health educator (WHE) reviewed this information with the patient and/or support person who spoke Spanish. Once the patient was seen by the provider, the provider administered a posttest and the medical assistant collected it before the patient and/or support person left the exam room.

The objectives were:

- To identify the population that is commonly affected by preeclampsia
- To determine the most effective identification method for sign and symptoms of preeclampsia
- To investigate the relationship between patient regarding signs and symptoms of preeclampsia and incidences of admissions
- To determine the benefits of patient education as a method of identifying the symptoms of preeclampsia.

Chapter 2. Review of Literature

Background

Preeclampsia is a complication of pregnancy that includes cardiovascular issues such as high blood pressure and other organ damage involving the liver and kidneys. Researchers have shown that if this condition is left untreated, it can not only harm the mother but also the baby. According to ACOG (2013), the best and most effective method of treating preeclampsia is delivering the unborn baby. However, it has been a challenge for providers to diagnose this condition at an early stage of the pregnancy. Educating women on the signs and symptoms of preeclampsia can help women become aware of the early signs and symptoms of preeclampsia so they can seek help. Some of these symptoms include but are not limited to severe headaches, nausea and vomiting, shortness of breath, swelling of upper/lower extremities, and pain in the upper abdomen. Various research in this area has concluded that one solution to identify this condition is through patient education.

Methodology of Review of Literature

A systematic literature review regarding the topic of early signs and symptoms of preeclampsia and management was initiated by searching for keywords through the online university library services. The databases reviewed in this literature search included: CINAHL Complete, EBSCOhost, and Pub Med. The search omitted research studies with males and pediatric patients. Keywords included: *preeclampsia, preeclampsia management, and preeclampsia prevention.*

A search with the key term, *preeclampsia* with the CINAHL Complete database yielded 986 articles. The use of BOOLEAN operators “AND” was applied along with the key term *prevention* and the inclusion criteria- of full text and studies published between 2013-2018 in the

English language, resulted in 75 articles. When EBSCOhost was explored, the key term *preeclampsia* resulted in 41,810 articles. After applying the BOOLEAN operators "AND," the key term *management* and inclusions to the CINAHL Complete search, 110 articles resulted with EBSCOhost. A Pub Med search utilizing the term *hypertension in pregnancy*, yielded 3,956 articles. After inclusions were applied 31 articles were assessed.

A comprehensive literature review concerning preeclampsia management, patient education, and patient awareness was completed. A synopsis of the literature on preeclampsia management and patient education was the main focus of the research. After reviewing the titles and abstracts from the review of the literature, the results were narrowed down to 30 articles. These articles focused on preeclampsia treatment and excluded, any article dealing with chronic hypertension and teen pregnancy with females less than 18 years old. Ten articles were finally selected due to their relevance to preeclampsia education and management of this project. Articles that focused on preeclampsia signs and symptoms, early recognition of preeclampsia, and treatment of preeclampsia were all included. Of these articles, five themes were chosen: 1) medical treatment of preeclampsia; 2) education and training of the midwives in an attempt to manage this condition; 3) cytokines and preeclampsia; 4) the known preexisting conditions that cause or lead to preeclampsia and lastly; 5) the effects of preeclampsia on the unborn babies. Appendix A provides a synthesis matrix of the results.

Medical Treatment of Preeclampsia

There has been a challenge on getting the proper medication to treat preeclampsia. One challenge involved the fear of drug toxicity associated with magnesium sulfate (Lotufo et al., 2017). Another challenge involved identifying a treatment that would accommodate both the lower and middle class in Brazil society. Evidence shows worldwide that preeclampsia is more

prominent in lower class or social economic level than any other class due to barriers such as lack of training, inadequate time of drug prescription, fear of toxicity, and no evidence-based protocols for treatment (Lotufo et al., 2017). A qualitative study implemented in Brazil focused on one drug, magnesium sulfate (Lotufo et al., 2017). While the researchers assessed the effectiveness of this drug in preventing or managing preeclampsia, it also addressed why some providers are underutilizing magnesium sulfate in treating preeclamptic patients. After using interviews with open-ended questions conducted by obstetricians of public healthcare systems within a southeastern Brazilian city, there was a consensus associated with the underutilization of this drug. The fear of drug toxicity played a significant role in why this medication was not prescribed. The concern was justified from the unplanned structural, technical and organizational resources of the healthcare facilities that limit the drug use. There was a need for skill development and more training for providers and the integration of good working conditions that would drive that fear way. The researchers concluded a magnesium sulfate protocol would ensure the safety of using magnesium sulfate with a medication of the adverse outcomes from preeclampsia.

Education and Preeclampsia

Education is a vital aspect in the identification of preeclampsia. There is a need to create awareness on the prevention of the preeclampsia. In general, knowledge could be attained through training and mass media by different groups of individuals in need of reducing preeclampsia risk among pregnant women. An experimental study with 70 midwife participants who were working in a town in Iran compared the impact of mobile-based training and training based on lectures (Rahmati et al., 2017). They used questionnaires during different time intervals. The questionnaires consisted of 30 true or false items that were retrieved from

scientific books and reliable reading articles. They took one weekend and one month after they had an intervention for each participant. They analyzed the data using the t-test and later using the SPSS presentation. At one week, the study showed that there were no significant difference between the mobile-based and lecture based groups learning about preeclampsia. In the next month, the data from the study showed a substantial difference at the end of the study.

The findings from both of the two groups were significant. The mobile-based group had a higher mean score before and after the intervention and with the increase of knowledge. Both groups also showed an increase in awareness and understanding of preeclampsia. Although mobile-based learning showed the highest amount of knowledge obtained when compared to the lecture-based learning, there was a suggested need to implement more mobile-based education to increase awareness and management of preeclampsia.

Cytokines and Preeclampsia

Udenze, Amadi, Awolola, and Makwe (2015) conducted a study to determine the concentration levels of cytokines, which consist of C reactive protein (CRP), interleukin 6 (IL6), and tumor necrosis factor alpha (TNF a), in women with severe preeclampsia. These levels were compared with pregnant women of gestational age matched normotensive pregnant women to associate CRP levels with indicators of organ damage (Udenze et al., 2015). The study evaluated fifty gestational age matched women with normal blood pressure and fifty women with severe preeclampsia. The study took place at an antenatal clinic of Lagos University in Nigeria (Udenze et al., 2015). The findings of the study showed that there was a significant difference in social demographic and systolic blood pressure. It also revealed that TNF, CRP, and IF6 are the inflammatory cytokines that are elevated in severe preeclampsia (Udenze et al., 2015). The

researchers concluded that patients benefited from taking anti-inflammatory drugs for the management of preeclampsia.

Preexisting Conditions Leading to Preeclampsia

All pregnant women should be screened for preeclampsia. Koual et al., (2013) did a prospective cohort study aiming at evaluation of the outcome of patients at a short period. The study consisted of 150 patients, who were identified to have preeclampsia between 2005 and 2010 in a hospital in Sureness, France. All the patients experienced a standard and clinical follow up within three months. The standard and clinical follow-up consisted of blood pressure screening, complete blood count, hepatic enzymes, proteinuria, and uricemia immediately after delivery. Then, three months later, the patients were reassessed for the same labs mentioned earlier and by nephrologic evaluation by 24 hour urine collection.

The evaluation of the lab test indicated those risk factors of 3% thrombophilia, 4% autoimmune, 14% gestational diabetes, 46% obesity, and 2-5% preeclampsia. After three months, 16% of the preeclamptic patients had elevated arterial blood pressures and 22% had proteinuria. A proper evaluation or early diagnosis will help to improve in managing the risk of preeclampsia.

Crombag et al. (2017) conducted a qualitative study on early detection of preeclampsia in Dutch women. The goal was to improve research on the prediction models and to improve early identification within pregnancy. The research used the Danish national birth group with hospital data on discharged patients. Two-thousand, one-hundred and seventeen cases of preeclampsia were observed; four-hundred and forty-nine were in their early pregnancy less than 37 weeks, and 426 diagnosed with severe preeclampsia. Two-hundred and twenty-eight pregnant women exhibited both severe preeclampsia and early preeclampsia. Some of the preexisting conditions

that were evident included hypertension, obesity, multiple gestations, and diabetes (Crombag et al., 2017; D'Souza & Kingdom, 2016; Koual, Abbou, Carbonnel, Picone, and Ayoubi, 2013).

According to this study, 53% of those with preeclampsia were among the multiparous women (D'Souza & Kingdom, 2016). Sixteen percent of the women, both multiparous and the nulliparous who had early preeclampsia were also obese or overweight. In conclusion, preexisting obstetric and maternal conditions were associated with a more significant proportion of early or severe cases of preeclampsia. Overweight and obesity have contributed in an independent way to the risk of early preeclampsia, a finding which will have more significant impact to the public health.

Effects of Preeclampsia to Unborn Babies

Preeclampsia is known to affect up to almost 10% of the world's pregnancies and has been the main cause of fetal mortality and morbidity (Nicolás et al., 2016). This condition is usually linked to developmental delays in children. However, the long-term effect on the neurological development in children has had the greatest impact. Nicholas et al. (2015) aimed at evaluating whether the severity of this condition and its possible obstetric management correlated to the degree and extent of disability among infants. The design used was an observational and descriptive study which was performed on a population consisting of 96 women and their 111 infants. Evaluation of the mother was based on a pertinent medical history, medical records of the management of preeclampsia, and the markers of their renal function.

While children were assessed on the measurements of fetal growth period, the acute distress of the fetus was the principal diagnosis at birth. The results were that Pediatric Evaluation Disability Inventory (PEDI-CAT) percentages were lower in the social/cognitive domain than any other area. In conclusion, if the condition of preeclampsia in women is not

looked into, a large number of innocent unborn infants could end up suffering from social and or cognitive poor outcomes on the Pediatric Evaluation of Disability Inventory Computerized Adopted Test (PEDI-CAT) and Preschool Children Quality of Life (TAPQOL) (Nicolas et al., 2016).

Synthesis of literature

Overall, the research on preeclampsia had more to do with the causes of the disorder and how to predict it. All the selected studies showed that there is a need to identify preeclampsia early and to provide appropriate management strategies to decrease mortality rates with mothers and infants (ACOG, 2013). There were also several articles that suggest the following: that there is a gene that places patients at risk for preeclampsia, different medications can treat preeclampsia, and there are negative effects of preeclampsia on the fetus or child. Ultimately, the research seems to indicate the best weapon in the battle against preeclampsia is knowledge – in the hands of the healthcare workers (Shukla, 2016) and in the hands of pregnant women and their support systems (Prathima, 2014; Perera & Abeysena, 2011; Luchian, Neagu, Luchian & Vladareanu, 2016).

Chapter 3. Methods

Projected Setting

This quality improvement (QI) initiative will take place in an urban clinic in a large metropolitan area of a southern state in the U.S. that provides services to over 40,000 women annually, over 150 patients per day. The clinic is staffed with six Women's Health Nurse Practitioners who provide obstetrics, gynecology and family planning care to women. The clinic is also staffed with six medical assistants (MA) and four women's health educators (WHE) that support providers in this clinical setting.

Sampling and Data Collections Plans

The target population for this initiative was pregnant women between ages 18-45 years old in their second or third trimester of pregnancy and the support person that accompanied them to their clinic visits. Inclusion criteria also included the support persons. Support persons can be male or female over age 18 who speak English or Spanish. Exclusion criteria for the target population is any patient in the first trimester, any patient under the age of 18, individuals that do not speak English or Spanish, and support persons under the age of 18 years old. A sample size of 80 achieves 80% power to detect a mean of paired differences of 0.2 (pre: 0.20 post: 0.40) with an estimated standard deviation of differences of 0.6 and with a significance level (alpha) of 0.05 using a two-sided paired t-test.

An in-service was held with the staff at this facility during a regular weekly staff meeting. The nurse practitioners, women's health educators and medical assistant were given instructions to conduct this quality improvement initiative. The first step was to get a verbal consent for any

pregnant woman in the second or third trimester of their pregnancy and/or their support person. A verbal consent form was read to each person who qualified for this quality improvement initiative. In this verbal consent, the patient was informed that their quality of care would not be affected if they did not participate in this quality improvement initiative (Refer to Appendix B for verbal consent). Demographic information that was recorded included language, age, sex, educational status, race/ethnicity and the demographics of the support person. All of the data collection was completed prior to the pretest being administered. The patient was de-identified, meaning no demographic or medical record information was kept with their name so that the information could not be tracked back to any particular patient. The patients were given a number starting with 001 in sequential order as the patients agreed to participate.

Secondly, the MA administered a pretest to the patient and/or support person to see what information was known about preeclampsia (Refer Appendix C for pre and posttest). The pre and posttest consisted of the same questions, which were three true and false questions with two multiple choice questions that were rearranged in a different order.

Then, the patient and/or support person was given a preeclampsia pamphlet to read while they waited for the provider (Refer Appendix D for preeclampsia pamphlet). When the patient saw the provider, the provider read the preeclampsia pamphlet to them. If the patient was Spanish speaking, the patient was sent to the WHE so that the preeclampsia pamphlet could be read to them and/or the support person. After the Spanish speaking patients or support person went to the WHE, the nurse practitioner completed their visit and then administered the posttest. Once the posttest was done, the provider collected the posttest and scored it. The project manager recorded the test scores later that same day before logging the information in the computer.

Statistical Analysis

The information that was collected and entered in the Microsoft excel sheet by the project manager was given to the statistician along with a data dictionary with data codes for the demographics, which included trimester of pregnancy, age, sex, relationship to the patient, language and etc. For example, the language the patient spoke had a code associated with it, like English=1 and Spanish=2 (Refer to Appendix E for data dictionary).

An interprofessional collaboration with a statistician that was employed with the urban hospital in Southwest of the U.S. assisted with the data analysis. The descriptive analysis used percentages and means with standard deviations to describe demographic data, such as patient, age, sex, educational status, trimester, language, race, and relationship to patient. Categorical variables were analyzed using Chi-square test between the pre and post exams. Continuous variables were calculated using paired t-test between the pre and post proportion of responses correct. At the end of the project, there was an expected outcome of 20% increase in the knowledge of preeclampsia signs and symptoms.

Characteristics to Influence Improvement

The characteristics that were likely to influence this QI project was a (a) lack of interest in the information provided, (b) support persons with the patient, and (c) other important issues that patients face daily, like other stressors-such as paying rent, bills and the patient's employment. Specific obstacles related to solutions regarding preeclampsia within this population were anticipated to be lack of knowledge about the illness, inability to obtain healthy foods, lack of family support, stress from working 2+ more jobs, decreased perceived susceptibility and severity, and lack of motivation (ACOG, 2013). The interest of the support

persons were expected to influence improvement of pre and post-test results. The providers (nurse practitioners), WHEs, and MAs eagerness and readiness were expected to also impact the outcome of this project. Other influences included readings levels, reading comprehension, time for the patient and time for the provider to provide adequate care.

Identification of the Intervention

According to ACOG (2013), a Presidential Initiative has been acknowledged and implemented to help reduce maternal and perinatal morbidity and mortality. The Presidential Initiative was the guidelines from ACOG (2013) to help diagnose and manage preeclampsia. There is also a Safe Motherhood Initiative that was introduced in collaboration with ACOG and the Task Force to assess for preeclampsia and other issues during postpartum period (ACOG, 2013). There are currently no new policies at this Southwestern urban facility dealing with preeclampsia or postpartum depression. This intervention was initiated to improve awareness to this condition so that patients would seek early medical attention and to help reduce morbidity and mortality rates among pregnant women.

Planning of the Intervention and Its Components

An educational tool from the Preeclampsia Foundation was utilized in this project. This tool has signs and symptoms of preeclampsia along with pictures and is also available in Spanish. The validity of the test was validated by administering the questions to 6 nurse practitioners in the clinic to rate the significance of the test items related to the topic. The readability of the test was aimed at a seventh grade reading level or below. The test readability was evaluated using the Flesch-Kincaid grade level using Microsoft Word. The test readability level was 3.3, which is on a third grade reading level (Refer to Appendix F for test readability).

The tool was given to both the patient and support person at the visit. The preeclampsia tool was read by the women's health educators and/or the providers during their clinic visit and followed by a posttest. A pretest was administered by the medical assistant when vital signs were assessed. The medical assistant then gave the test to the provider, who scored each test and gave documentation to the project manager so it could be recorded into an excel document with the demographic characteristics. The nurse practitioner or the women's health educator read the preeclampsia document to the patient. After this information was read, a posttest was administered by the nurse practitioner. At the end of the day, the project manager collected all the data so it could be documented within an excel document.

Study and Evaluation Plans

Permission for this project was requested on January 28, 2019 and had to be reviewed by the Institutional Review Board (IRB) within the hospital system. This project was approved January 31, 2019 (Refer to Appendix G). Permission for patient education was also submitted for the preeclampsia handout purchased from Preeclampsia Foundation on March 18, 2019 and was granted approval the same day (Refer Appendix H for approval). The information used to validate success was measured by an increase of knowledge regarding signs and symptoms of preeclampsia based on the posttest, which was collected manually.

Study Design and Approaches for Implementation

The QI intervention consisted of a 1-2 week patient education strategy on preeclampsia. When an obstetric patient comes in for their obstetric visit during second or third trimester, the patients were given a pre-test to complete when vital signs were to be assessed by the MA. After the pre-test was administered, these patients were handed a pamphlet that they could read or

review while waiting to see the practitioner. Once the patient was in the room with the provider, the provider educated the patient on the early signs and symptoms of preeclampsia and the efficacy of recognizing the signs to be seen as soon as possible by their provider or emergency department. If the patients were Spanish speaking, they were sent to the WHE so the WHE could read the preeclampsia pamphlet to them. Once seen by the WHE, they were placed in an exam room by the MA and the provider completed their exam. After the provider finished the physical exam and education, the provider instructed the patient to get dressed and stay in the room. Then, a post-test was administered to the patients and or the support person to evaluate the new education that was provided at the visit. Once the posttest was complete, the MA collected it and gave the posttest to the nurse practitioner, where she/he entered the information into an excel spread sheet and secured all data.

Project Objectives

The objectives of this preeclampsia educational QI project are listed below:

1. To educate pregnant women between 14 weeks gestation and 42 weeks gestation and their support persons on the early signs and symptoms of preeclampsia.
2. To increase the knowledge of signs and symptoms of preeclampsia in pregnant women and support persons by an average of 20% measured by a pretest and posttest.

SWOT Analysis

The strengths to the project include educating the population on the early signs and symptoms of preeclampsia to decrease the maternal and infant mortality rate through early identification. This strategy to educate the patients and their support person was of little cost to

the facility. The education was provided during routine patient care and teaching. A weakness would be the patient or support person's inability to learn about preeclampsia or willingness to participate. Opportunities included educating patients about preeclampsia at every visit, starting in the second trimester. Threats included the patient's inability to read English or Spanish and lack of motivation to participate in this program among staff members.

Congruence of Project to Organization Strategic Plan

This facility is one of the largest integrated facilities in the area that provides the highest quality health care. The goal of the facility is to "demonstrate national leadership as an academic safety by focusing on efficiency, patient experiences, outcomes, excellence in research and education" (Parkland, 2015). This intervention is congruent with the organization's strategic plan to improve patient care. This was achieved by educating patients on information that informed when they needed to seek earlier medical attention. Another way this intervention was congruent with this facility's strategic plan is that it provided an opportunity to teach improved care for the patient population. Lastly, this intervention was delivered in the community where it was easily accessible for patients to retrieve the information if needed.

Cost- Benefit Analysis

The project was perceived as a move to meet the goals of ACOG and at the same time to enhance health awareness in this community about preeclampsia. The pamphlets used were purchased from the Preeclampsia Foundation for the total amount of $23.65 for 250 pamphlets or less than ten cent per pamphlet in English and Spanish. The cost-benefit analysis projects a positive return on the investment as this intervention proceeds. This intervention tool has the potential to save lives and also decrease ER visits and hospital stays. Early identification and

treatment of pre-eclampsia will also have a positive effect on the family unit as the mother will not have to be confined to the hospital as much. The beneficiaries here include the hospitals, insurance companies, and employers, since mothers will not need to be on disability for bedrest.

Guiding Framework

The two QI practice models that were utilized for this project are the Health Belief Model (HBM) by Morton (1950) and the Plan-Do-Study-Act (PDSA) by Shewhart (1924).

Health Belief Model

The Health Belief Model (HBM) describes how to lead people by implementing health education (McEwen & Willis, 2011). This HBM would integrate well with the change theory when a patient is ready to change, when the goal is to educate patients on their overall health and the impact of preeclampsia on their health. Morton (1950) thought that educational programs would deliver health information that would increase the growth of knowledge in individuals regarding their risk for health disorders and receive benefits of health stimulating behaviors (McEwen & Willis, 2011). The HBM is an effective evidence-based model for identifying signs and symptoms of preeclampsia through patient education.

"The HBM is one of the first models that adapted theories from the behavioral sciences to predict health behaviors" (McEwen & Willis, 2011, p. 290). The concept of HBM consists of perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action and self-efficacy (McEwen & Willis, 2011). With preeclampsia management through patient education, the provider is in a position to enlighten the patient of recognizing the early signs and symptoms of preeclampsia. This leads to one of the concepts of HBM, which is perceived susceptibility. In order for someone to make a change, that person would have to see that he or

she has some type of risk. If the risk is not seen, this person is less likely to make a change. If this person feels a physical threat may happen to them, that person may want to increase their knowledge of a certain illness, like preeclampsia, to make a change.

Another concept in this model is perceived severity. A person who perceives "concern related to the seriousness of a health condition and understanding of potential difficulties the condition might cause" in order to make a change (McEwen & Willis, 2011, p. 292). So, in this instance, when a health care provider educates a pregnant patient on co-morbidities, as an outcome from this preeclampsia, he or she will comprehend the risk of death if he or she does not make a lifestyle change.

When a person envisions a benefit by making a lifestyle change, such as eating healthy and exercising to experience a healthy delivery, another concept, which is perceived benefits, will be achieved (McEwen & Willis, 2011). The third concept of the HBM is benefit. When a patient is educated on the early signs and symptoms of preeclampsia to achieve a healthy pregnancy, they may tend to make small changes.

The final concept of HBM is barriers. When educating patients on preeclampsia, providers should also discuss barriers. "Perceived barriers are the perception of obstacles to changing behaviors" (McEwen & Willis, 2011, p. 292). Some barriers to preeclampsia may include- physical inability, inability to obtain healthy food, lack of access to exercise facilities, lack of support, lack of time, stress, and a lack of motivation (Cursino, Katz, Coutinho, & Amorim, 2015). Cues to action are a stimulus that can be internal or external factors that makes one aware of their health (McEwen & Willis, 2011). This stimulus may include a death of a family member, infant, or both due to preeclampsia. The stimulus could also be that the individual is pre-hypertensive or has hypertension. These examples may help someone to watch

their diet and exercise to become healthier. Self-efficacy is when one believes that they can do anything they want in life, including losing weight (McEwen & Willis, 2011). Patients that reach self-efficacy begin to make lifestyle changes and adhere to the changes.

Plan-Do-Study-Act (PDSA) Model

The Plan-Do-Check-Act (PDCA) model was founded on the Shewhart Model (Scoville & Little, 2014). Shewart combined the Shewart Cycle Learning Model and the Improvement Cycle to come up with the PDSA model. A man named Deming helped revise and popularize this model, while always giving credit to the creator, Walter A. Shewhart (Scoville & Little, 2014).

PDSA Model is used to test a change, by planning it, doing it, studying it and acting on what was learned (Scoville & Little, 2014). Three questions connected with PDSA Model are: a) What are you trying to accomplish? b) How will it be known if the goal is reached? and c) What can be done to accomplish the goal?

The Plan-Do-Study-Act is a continuous, systematic model that is easily adaptable with changes over time (White, Dudley-Brown, & Terhaar, 2016). For this intervention, the PDSA is the best model to choose because one will be able to answer "who, what, how" questions for this professional project. Who is the target population? Pregnant women and families are the target population. With PDSA, one will be able to answer, "What am I trying to accomplish?" (Scoville & Little, 2014, p. 6). During this intervention, pregnant mothers and the family will be educated about the signs and symptoms of preeclampsia. With PDSA, the change is educating patients about preeclampsia, which leads to “how.” One will be able to tell if a change happened by doing a pretest and posttest. If there is an increase or decrease in the score, one will know that a change has occurred.

Chapter 4. Results/Outcomes

The Study Question

Will educating patient and support persons who accompany patients to clinic visits increase awareness of early signs and symptoms of preeclampsia?

Implementation of the Intervention

Phase 1- Approval of the intervention. This scholarly QI project proposal was presented by the project manager on March 1, 2019 to the DNP scholarly project committee. Changes to this QI initiative were determined. The project was submitted to a Southern University QI Panel in March of 2019. The Chair approved the QI initiative proposal on March 8, 2019 for data collection to begin.

Phase 2-Data collection. On March 4, 2019, the QI initiative in-service was given to the staff at this facility. The staff included, six nurse practitioners, six MAs, and four WHEs. The nurse practitioners were given 20 pre and posttests, along with the preeclampsia pamphlets. Data collection was completed on March 22, 2019.

Phase 3- Analyze data. The data collection was interpreted and analyzed March 22, 2019. The project manager and statistician were the participants of this phase. The project manager collected and organized the data into Word Excel spreadsheets to collaborate with the statistician to utilize statistical methods to analyze the outcome of the data.

Phase 4- DNP scholarly defense. The author's defense for the DNP scholarly project to the scholarly project committee was on April 8, 2019. Changes to this QI initiative project were determined.

Phase 5- Plan for dissemination. On April 10, 2019, plans for dissemination of this QI project were presented by the author to the TWU Graduate Student Research Symposium. The author was the only participant included. This project was also presented at a nurse practitioner's quarterly meeting on May 2, 2019. Changes to this intervention will be determined.

Measurement for Each Objective

There were two measurements for each objective, which were listed as follows:

1. To encourage preeclampsia pamphlet and information by sampling a minimum of 80 pregnant women in their second and third trimester and their support person.
2. To determine if the preeclampsia pamphlet provided awareness and education to pregnant women in the second and third trimester along with their support person.

Descriptive Statistics

The project demographic data collected included language, trimester of pregnancy, relationship to patient, age group, race/ethnicity, and level of education. The QI was conducted over 1 week with a total of 100 participants from an urban clinic in a large metropolitan area of a southwestern state in the U.S. The data dictionary with the variables is included (see Appendix E).

Of the 100 participants, 52% were English speaking and 48% were Spanish speaking (see Table 1). There were 89% of female participants and 11% of male participants (see Table 2).

Table 1. Language

Language			
		Frequency	Percent
	English	52	52.0
	Spanish	48	48.0
	Total	100	100.0

Table 2. Sex

Sex			
		Frequency	Percent
	Male	11	11.0
	Female	89	89.0
	Total	100	100.0

Table 3. Relationship

Relationship			
		Frequency	Percent
	Patient	84	84.0
	Husband/Significant other	11	11.0
	Mother	5	5.0
	Total	100	100.0

Of the participants, 84% were the female patients, 11% were the patients' husband/significant other, and 5% were the mother of the patient (see Table 3). The participants

ages ranged from 18 through 41 plus with ages 18-25 range at 46% (see Table 4). Of the age group 41+ range, there were only 3 participants.

Table 4. Age Group

Age group			
		Frequency	Percent
	18-25	46	46.0
	26-30	25	25.0
	31-40	26	26.0
	41+	3	3.0
	Total	100	100.0

Race/Ethnicity was divided into six categories which included White/Caucasian, Black/African American, Hispanic/Latino, Asian/ Pacific Islander, Native American/American Indian, or other (see Table 5). Eighty-two percent of the participants were of Hispanic/Latino origin, followed by African American/black at 13%. Caucasian/white had the least participants at 5%.

Table 5. Race/ethnicity

Race/Ethnicity			
		Frequency	Percent
	White/Caucasian	5	5.0
	Black/African American	13	13.0
	Hispanic/Latino	82	82.0
	Total	100	100.0

Table 6. Level of Education

Level of Education			
		Frequency	Percent
	None	1	1.0
	Middle School	24	24.0
	Some High School	21	21.0
	High School/GED	38	38.0
	Some College	15	15.0
	College Graduate	1	1.0
	Total	100	100.0

Levels of education were divided into six categories (see Table 6). The majority of the participants completed high school or had a GED (38%) followed by 24% with middle school education and 21% with some high school education. One percent of the population had non education and one percent of the population was a college graduate.

During this QI initiative, 46% of the participants were in their second trimester where as 54% were in the third trimester of pregnancy (see Table 7).

Table 7. Trimester of Pregnancy

Trimester of Pregnancy			
		Frequency	Percent
	Second trimester	46	46.0
	Third trimester	54	54.0
	Total	100	100.0

Statistical Method and Analysis

Ethical implications. The QI initiative was presented to the IRB within the hospital system and identified as a QI project, which was exempt from the institution's formal IRBs process. The initiative was also presented to a Southern University QI Panel and was exempt from IRB review. The demographics of the data collection did not have any identifiable information placed.

Methods of evaluation. The method of evaluation was intended to compare the baseline knowledge of signs and symptoms of preeclampsia and knowledge after being educated by the nurse practitioners or women's health educators. A priori power analysis was completed to determine a minimal sample size, which was 80. A sample size of 80 achieves 80% power to detect a mean of paired differences of 0.2 (pre: 0.20 post: 0.40) with an estimated standard deviation of differences of 0.6 and with a significance level (alpha) of 0.05 using a two-sided paired t-test. A descriptive analysis used percentages and means with standard deviations to describe demographic data, such as patient, age, sex, educational status, trimester, language, race, and relationship to patient. Categorical variables were assessed using Chi-square test between the pre and post exams. Continuous variables were calculated using paired t-test between the pre and post proportion of responses correct.

Instruments issued to assess effectiveness. The instruments that were used for the pre and posttest were created to assess the effectiveness of the preeclampsia pamphlet. The pre and posttest consisted of five test questions that were rearranged (see Appendix C).

Validity and reliability of the instruments. The validity and reliability of the pre and posttest was examined by 6 expert nurse practitioners using the Content Validity Testing (CVI). CVI is one of the most valuable and difficult measures of validity (Bolarinwa, 2015). CVI was

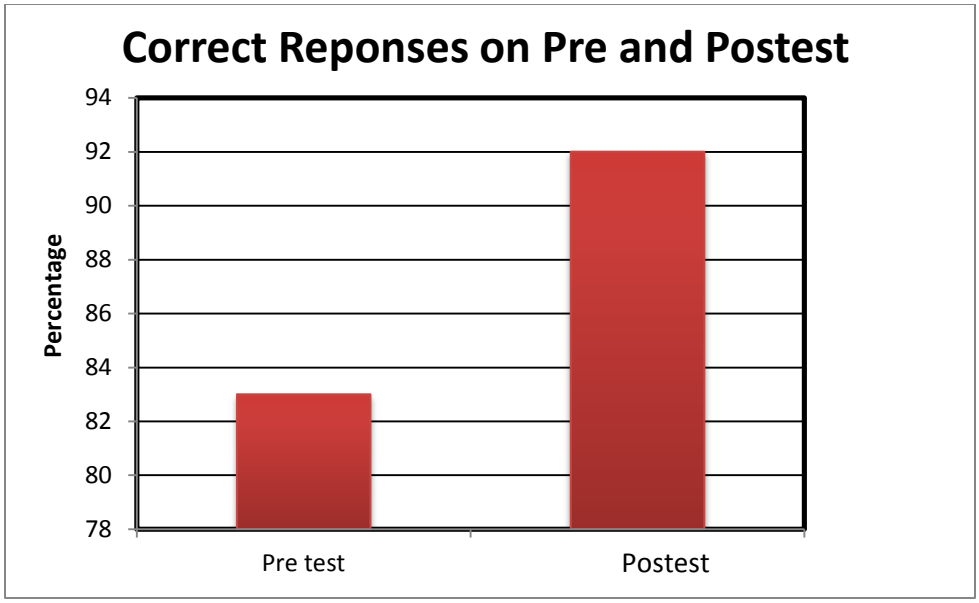
initially 85%. The final CVI was 100% after removal of the three problematic items that were identified by the subject matter experts. (Refer to Appendix I).

Methods used to ensure quality. The project analysis data collections process was collected from nurse practitioners at the end of each business day and entered into Microsoft Excel to ensure the quality of this QI initiative. The data was rechecked three times on two different days before transferring the information into the Statistical Package for Social Sciences (SPSS). The information was also reviewed by the statistician to verify the statistical analysis and results.

Data analysis and statistical methods for analyzing the data. The data was analyzed by Cross tabulation to analyze the multiple variables if the pre and posttest along with the Chi-squared test for the categorical variables. The Cross tabulation method provided a method to levels which knowledge increased of preeclampsia after the posttest was administered.

Expected vs actual outcomes. The expected outcome of this QI initiative project was to increase the knowledge of early signs and symptoms of preeclampsia by 20%. Unfortunately, after the QI initiative was implemented, the goal was not met. There was a 9.2% increase of knowledge of early signs and symptoms of preeclampsia (See Figure 1). Although the goal was not met, this project was a success because there was an increase of knowledge.

Figure 1. Comparison of Correct Pre and Posttest



Quality Indicators and Resources

The quality resource for this QI initiative was the statistician from the urban hospital clinic located in a large metropolitan area of a southern state. The statistician played a major part in the statistical analysis and confirmation of accuracy to validify the results.

Barriers

Barriers which affected the success of the project were the willingness of staff to participate at the facility. The increased time utilized to educate and read the pamphlets to the individual that were willing to participant in this QI initiative was a barrier. The time slightly affected the dwell time of the other patients being seen. Another barrier was the literacy level of the patient or support person who agreed to participate in this QI initiative. The preeclampsia pamphlet was read to the patient and or support person, but the patient or support person had to be able to read the pre and posttest.

Summary

In this chapter, the author presented analysis of the statistical methods to answer the research question presented. The QI initiative project was exempt from the IRB process. The outcomes of the QI initiative, quality indicators and barriers were also discussed in this chapter.

Chapter 5. Discussion

Interpretation of Findings

The paired sample t-test statistics were used to determine the mean difference between the pre and posttest of the QI initiative (Pallant, 2016). The mean of the pretest correct responses was 0.8280 with a 0.16822 standard deviation. On the posttest, the mean of the correct responses was 0.9200 with a standard deviation of 0.17056 (See Table 8). This test shows that there was a 9% increase of knowledge of the early signs and symptoms of preeclampsia.

Cross tabulation tables were used to examine the comparison between the pre and posttest responses. Each question on the pre and posttest have their own individual cross tabulation score (Refer to Appendix J). All cross tabulations for the five questions, show an increase in the correct responses.

Table 8. Paired Sample T-test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre correct percentage	.8280	100	.16822	.01682
	Post correct percentage	.9200	100	.17056	.01706

Paired Samples Test

	Paired Differences				t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference			

				Mean	Lower	Upper			
Pair 1	Pre correct percentage- Post correct percentage	-.09200	.19781	.01978	-.13125	-.05275	-4.651	99	.000

Limitations/Recommendations

Limitations of the project were English and Spanish speaking patients only, patients seeking medical attention in an underserved population, and the inability to make sure all the staff at the facility were consistent when implementing this intervention.

Recommendations to this project are to continue to educate patients on early signs and symptoms of preeclampsia and to keep track on which individuals were actually admitted with is diagnosis of preeclampsia. With this information, in the near future, there may be an opportunity to use medication management, such as aspirin, in treating this diagnosis to prevent maternal and infant mortality.

DNP Role Considerations and Implications

DNP essentials I, II, III, VI, VII, and VIII were addressed in this study (Zaccagnini & White, 2017) (See Figure 2). DNP Essential I was developed on the nursing practice theory HBM and PSDA model. Essential II involves the development of this QI initiative project by assessing the needs of the patients based on scientific findings of the knowledge of preeclampsia. Scholarship and research are the focus of Essential III. Essential VI was used several times by collaborating with the staff at the facility and the statistician for data analysis review. DNP

Essential VII and Essential VIII shows how this project was carried out by designing, delivering, and evaluating utilizing evidence-based practice with this QI initiative project.

Figure 2. DNP Essentials

Essential I	**Scientific Underpinnings for Practice**
Essential II	Systems Thinking, Healthcare Organizations, Global Health, and the Advanced Practice Nurse Leaders
Essential III	Clinical Scholarship and Evidence-Based Practice
Essential VI	Interprofessional Collaboration for Improving Patient and Population Health
Essential VII	Clinical Prevention and Population Health for Improving the Nation's Health
Essential VIII	Advanced Nursing Practice for Specialty Roles

Dissemination

On April 8 2019, this QI project was presented to the TWU Graduate Student Research Symposium. This study was also presented at a large southwestern hospital nurse practitioner's quarterly meeting May 2, 2019.

Summary

In this chapter, the interpretations of the statistical findings are addressed, limitations of the study, recommendations for the study, implications for DNP role, and plans for dissemination.

Conclusion

Although this QI initiative did not meet a 20% increase of knowledge of signs and symptoms of preeclampsia, there was a small percent (9.2%) of increased knowledge of signs and symptoms of preeclampsia among the patients. This project also showed that several of the participants knew a little information about preeclampsia. Educating individuals and family members about preeclampsia will lead to early recognition of signs and symptoms so that appropriate care can start right away to reduce some of the consequences, like seizures, strokes, heart attacks, kidney failure, and/or death. Educating providers, patients, and family members is very beneficial. With everyone involved, being knowledgeable about preeclampsia should eventually have a decrease in maternal and fetal death in the near future.

References

Abalos, E., Cuesta, C., Grosso, A. L., Chou, D., & Say, L. (2013). Global and regional estimates of preeclampsia and eclampsia: A systematic review. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 170(1), 1-7. doi: 10.1016/j.ejogrb.2013.05.005

Álvarez-Cabrera, M. C., Barrientos-Galeana, E., Barrera-García, A., Osorio-Caballero, M., Acevedo, J. F., Flores-Herrera, O., … Flores-Herrera, H. (2018). Secretion of heat shock -60, -70 kD protein, IL-1β and TNFα levels in serum of a term normal pregnancy and patients with pre-eclampsia development. *Journal of Cellular and Molecular Medicine, 22(11*), 5748–5752. https://doi.org/10.1111/jcmm.13824

American College of Cardiology. (2017). New ACC/AHA high blood pressure guidelines lower definition of hypertension. Retrieved from https://www.acc.org/latest-in-cardiology/articles/2017/11/08/11/47/mon-5pm-bp-guideline-aha-2017

American College of Obstetricians and Gynecologists. (2013). Hypertension in pregnancy. Report of the American College of Obstetricians and Gynecologists' Task Force on hypertension in pregnancy. Obstetrics and gynecology, 122(5), 1122. doi: 10.1097/01.AOG.0000437382.03963.88

Avci, D., Karagoz, H., Ozer, O., Esmeray, K., Bulut, K., Aykas, F., & ... Erden, A. (2016). Are the blood groups of women with preeclampsia a risk factor for the development of hypertension postpartum? *Therapeutics & Clinical Risk Management, 12*617-622. doi:10.2147/TCRM.S100557

Bell, M. J. (2010). A Historical Overview of Preeclampsia-Eclampsia. *Journal of Obstetric, Gynecologic, and Neonatal Nursing : JOGNN / NAACOG*, *39*(5), 510–518. http://doi.org/10.1111/j.1552-6909.2010.01172.x

Bolarinwa, O.A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal, 22 (4)*, 195-201. doi: 10.4103/1117-1936.173959

Breathett, K., Muhlestein, D., Foraker, R., & Gulati, M. (2014). Differences in preeclampsia rates between African American and Caucasian women: Trends from the national hospital discharge survey. *Journal of Women's Health*, 23(11), 886-893. doi: 10.1089/jwh.2014.4749.

Crombag, N. M. T. H., Lamain-de Ruiter, M., Kwee, A., Schielen, P. C. J. I., Bensing, J. M., Visser, G. H. A., … Koster, M. P. H. (2017). Perspectives, preferences and needs regarding early prediction of preeclampsia in Dutch pregnant women: A qualitative study. *BMC Pregnancy & Childbirth*, *17*, 1–9. https://doi.org/10.1186/s12884-016-1195-2

Crotegut, C. A. (2016). Prevention of preeclampsia. *Journal of Clinical Investigation*, *126*(12), 4396-4398. doi:10.1172/JCl91300

Cursino, T., Katz, L., Coutinho, I., & Amorim, M. (2015). Diuretics vs. placebo for postpartum blood pressure control in preeclampsia (DIUPRE): A randomized clinical trial. *Reproductive Health*, *12*(1), 1-7. doi:10.1186/s12978-015-0057-0

de França Nóbrega, M., Botti Rodrigues Santos, M. T., Barbosa Davim, R. M., Ferreira Monteiro e Oliveira, L., Surama Ribeiro César Alves, É., & Ribeiro César Rodrigues, E. S. (2016). Profile of pregnant women with hypertensive syndrome in a public maternity. *Journal Of Nursing UFPE / Revista De Enfermagem UFPE*, *10*(5), 1805-1811. doi:10.5205/reuol.9003-78704-1-SM.1005201629

Diehl, C., Brost, B., Hogan, M., Elesber, A., Offord, K., Turner, S., & Garovic, V. (2008). Preeclampsia as a risk factor for cardiovascular disease later in life: Validation of a

preeclampsia questionnaire. *American Journal Of Obstetrics And Gynecology*, *198*(5), e11-e13. doi: 10.1016/j.ajog.2007.09.038.

Does obesity = worse outcome for women with severe preeclampsia? (2017). *Contemporary OB/GYN*, *62*(6), 52-53. Retrieved from https://www.contemporaryobgyn.net/

D'Souza, R., & Kingdom, J. (2016). Preeclampsia. *CMAJ: Canadian Medical Association Journal*, *188*(16), 1178. doi:10.1503/cmaj.151551

English, F. A., Kenny, L. C., & McCarthy, F. P. (2015). Risk factors and effective management of preeclampsia. *Integrated Blood Pressure Control*, *8*, 7–12. http://doi.org/10.2147/IBPC.S50641

Ghulmiyyah, L. & Sibai, B. (2012). Maternal mortality from preeclampsia/eclampsia. *Seminars in Perinatology*, 36(1), 56-59. https://doi.org/10.1053/j.semperi.2011.09.011

Gupte, S., & Wagh, G. (2014). Preeclampsia–Eclampsia. *Journal of Obstetrics and Gynaecology of India*, *64*(1), 4–13. http://doi.org/10.1007/s13224-014-0502-y

Heshmati, A., Mishra, G., & Koupil, I. (2013). Childhood and adulthood socio-economic position and hypertensive disorders in pregnancy: The Uppsala Birth Cohort Multigenerational Study. *Journal of Epidemiology and Community Health (1979-), 67*(11), 939-946. Retrieved from https://jech.bmj.com/

Janani, F., & Changaee, F. (2017). Seasonal variation in the prevalence of preeclampsia. *Journal of Family Medicine and Primary Care*, *6*(4), 766–769. http://doi.org/10.4103/jfmpc.jfmpc_132_17

Koual, M., Abbou, H., Carbonnel, M., Picone, O., & Ayoubi, J.M. (2013). Short-term outcome of patients with preeclampsia. *Vascular Health And Risk Management, 9*, 143–148. https://doi.org/10.2147/VHRM.S38970

Kumagai, A., Itakura, A., Koya, D., & Kanasaki, K. (2018). AMP-activated protein (AMPK) in pathophysiology of pregnancy complications. *International Journal Of Molecular Sciences*, *19*(10). https://doi.org/10.3390/ijms19103076

Lai, C., Coulter, S. A., & Woodruff, A. (2017). Hypertension and pregnancy. *Texas Heart Institute Journal*, 44(5), 350-351. doi: 10.14503/THIJ-17-6359

LeFevre, M. L. (2014). Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force recommendation statement. *Annals of Internal Medicine*, *161*(11), 819–826. https://doi.org/10.7326/M14-1884

Lotufo, F. A., Parpinelli, M. A., Osis, M. J., Surita, F. G., Costa, M. L., & Cecatti, J. G. (2017). Obstetrician's risk perception on the prescription of magnesium sulfate in severe preeclampsia and eclampsia: A qualitative study in Brazil. *Plos One*, *12*(3), e0172602. https://doi.org/10.1371/journal.pone.0172602

Luchian, B., Neagu, M., Luchian, L., & Vladareanu, R. (2016). Preeclampsia screening from the patient's perspective. *Journal Of Medicine And Life*, *9*(3), 321-323. http://dx.doi.org/10.1016/j.midw.2014.04.006

McEwen, M., & Willis, E. M. (2011). *Theoretical basis for nursing (3rd ed.)* Philadelphia, PA: Lippincott, Williams, & Wilkins.

National Heart, Lung, and Blood Institute. (2015). High blood pressure. Retrieved from https://www.nhlbi.nih.gov/health-topics/high-blood-pressure

Nicolás, C., Benítez, P. R., Riaño, M. O. A., Canencia, L. M., Mercurio, C., Fernández, M. S., … Jorge, A. T. (2016). Preeclampsia: Long-term effects on pediatric disability. *Journal Of Neonatal-Perinatal Medicine, 9(1)*, 41–48. https://doi.org/10.3233/NPM-16915065

Nordqvist, C. (2017, March 30). Preeclampsia: Causes, symptoms, and treatments. *Medical*

News Today. Retrieved from http://www.medicalnewstoday.com/articles/252025.php.

O'Gorman, N., Wright, D., Syngelaki, A., Akolekar, R., Wright, A., Poon, L. C., & Nicolaides, K. H. (2016). Competing risks model in screening for preeclampsia by maternal factors and biomarkers at 11-13 weeks gestation. *American Journal of Obstetrics and Gynecology*, 214(1), 103-e1. doi: 10.1016/j.ajog.2015.08.034

Pallant, J. (2016). *SPSS Survival Manual A Step by Step Guide to Data Analysis Using IBM SPSS (6th ed.).* New York, NY: McGraw-Hill Education.

Parkland, (2015). Strategic Plan 2020. Retrieved from https://www.parklandhospital.com/strategic-plan-2020

Pennington, K. A., Schlitt, J. M., Jackson, D. L., Schulz, L. C., & Schust, D. J. (2012). Preeclampsia: Multiple approaches for a multifactorial disease. *Disease Models & Mechanisms*, 5(1), 9–18. http://doi.org/10.1242/dmm.008516

Perera, N., & Abeysena, C. (2011). Psychosocial stress, standing time and overweight are risk factors for pregnancy induced hypertension: A case control study. *Journal Of The College Of Community Physicians Of Sri Lanka*, *16*(1), 35. doi: 10.4038/jccpsl.v16i1.3870

Prathima, P. (2014). Compare knowledge on self care management of pregnancy induced hypertension between primigravida and multigravida. *Nitte University Journal Of Health Science*, *4*(3), 61-65. doi:10.1136/bmj.b2255

Rahmati, R., Dehnavi, Z. M., Kamali, Z., & Dehnavi, A. M. (2018). The effect of mobile-based and lecture-based training methods on midwives' knowledge regarding management of pre-eclampsia/eclampsia. *Journal of Midwifery & Reproductive Health*, *6*(4), 1430–1436. https://doi.org/10.22038/jmrh.2018.30107.1326

Rich-Edwards, J. W., Ness, R. B., & Roberts, J. M. (2015). Epidemiology of pregnancy-related hypertension. *Chesley's Hypertensive Disorders in Pregnancy*, 4th ed, 37-55.

Scoville, R., & Little, K. (2014). *Comparing lean and quality improvement*. Institute for Healthcare Improvement White Paper. Retrieved from http://www.ihi.org/resources/Pages/IHIWhitePapers/ComparingLeanandQualityImprovement.aspx

Screening for preeclampsia in pregnancy. (2017). *Clinical Advisor*, *20*(6), 11. Retrieved from https://www.clinicaladvisor.com/

Shukla, D. (2016). A study to assess the effectiveness of self instructional module on knowledge regarding the selected care of pre-eclampsia patient among nurses in selected hospitals of Vidarbha region. *IOSR Journal Of Nursing And Health Science*, *05*(05), 01-05. doi: 10.9790/1959-0505040105

Sibai, B. M. (2016). Preeclampsia. *Contemporary OB/GYN*, *61*(5), 25. Retrieved from https://www.contemporaryobgyn.net/

Thomopoulos, C., Salamalekis, G., Kintis, K., Andrianopoulou, I., Michalopoulou, H., Skalis, G., & ... Salamalekis, E. (2017). Risk of hypertensive disorders in pregnancy following assisted reproductive technology: overview and meta-analysis. *Journal of Clinical Hypertension*, *19*(2), 173-183. doi:10.1111/jch.12945

Townsend, R., O'Brien, P., & Khalil, A. (2015). Diagnosis and management of preeclampsia: A clinical perspective on recent advances in the field. *British Journal Of Midwifery*, *23*(4), 252-258. doi: 10.12968/bjom.2015.23.4.252

Udenze, I., Amadi, C., Awolola, N., & Makwe, C. C. (2015). The role of cytokines as inflammatory mediators in preeclampsia. *The Pan African Medical Journal, 20,* 219. https://doi.org/10.11604/pamj.2015.20.219.5317

Williams, D., & Craft, N. (2012). EASILY MISSED? Pre-eclampsia. *BMJ: British Medical Journal, 345*(7871), 45-47. Retrieved from https://www.bmj.com/

White, K. M., Dudley-Brown, S., & Terhaar, M. F. (2016). *Translation of evidence into nursing and health care practice*. New York: Springer Publishing Company.

Yang, J., Wang, Y., Wang, X., Zhao, Y., Wang, J., & Zhao, Y. (2017). Adverse Pregnancy Outcomes of Patients with History of First-Trimester Recurrent Spontaneous Abortion. *Biomed Research International*, 1-7. doi:10.1155/2017/4359424

Zaccagnini, M., & White, K.W. (2017). *The doctor of nursing practice essentials: a new model for advanced practice nursing* (2nd. ed). Burlington, MA: Jones & Bartlett Learning.

Appendix A

Synthesis Section	**Specific Themes**	**Variations: Concepts**	**Variations: Methods and Design**	**Citations: Author and Year**	**Level of Evidence**
1	Medical treatment of preeclampsia	Assesses the effect on magnesium sulfate and magnesium sulfate toxicity when treating preeclampsia.	Qualitative study	Lotufo, F. A., Parpinelli, M. A., Osis, M. J., Surita, F. G., Costa, M. L., & Cecatti, J. G. (2017). Obstetrician's risk perception on the prescription of magnesium sulfate in severe preeclampsia and eclampsia: A qualitative study in Brazil. *Plos One, 12(3)*, e0172602. https://doi.org/10.1371/journal.pone.0172602	VI
	Medical treatment of preeclampsia	Prevention of preeclampsia by using vitamin D.	Randomized Controlled study	Crotegut, C. A. (2016). Prevention of preeclampsia. *Journal of Clinical Investigation, 126(12)*, 4396-4398. doi:10.1172/JCl91300	II
	Medical treatment of preeclampsia	Update d reviewed of the U.S. Preventive Services Task Force (USPSTF)	Systematic review	LeFevre, M. L. (2014). Low-dose aspirin use for the prevention of morbidity and mortality from preeclampsia: U.S. Preventive Services Task Force recommendation statement. *Annals of Internal Medicine, 161(11)*, 819–826.	V

		endorsement on aspirin prophylaxis in preeclampsia patients.		https://doi.org/10.7326/M14-1884	
2	Education and preeclampsia	To determine if mobile-based training or lecture based training is effective when education on awareness to prevent preeclampsia.	Experimental study	Rahmati, R., Dehnavi, Z. M., Kamali, Z., & Dehnavi, A. M. (2018). The effect of mobile-based and lecture-based training methods on midwives' knowledge regarding management of pre-eclampsia/eclampsia. *Journal of Midwifery & Reproductive Health, 6(4),* 1430–1436. https://doi.org/10.22038/jmrh.2018.30107.1326	IV
	Education and preeclampsia	To increase awareness of early risk-identification during pregnancy and to aim the study to explore a women's need, perception and	Qualitative study	Crombag, N. M. T. H., Lamain-de Ruiter, M., Kwee, A., Schielen, P. C. J. I., Bensing, J. M., Visser, G. H. A., … Koster, M. P. H. (2017). Perspectives, preferences and needs regarding early prediction of preeclampsia in Dutch pregnant women: a qualitative study. *BMC Pregnancy & Childbirth*, *17*, 1–9.	VI

		preference regarding prediction model in the first trimester screening for pregnant complications.		https://doi.org/10.1186/s12884-016-1195-2	
3	Cytokines and preeclampsia	To investigate concentrations of C reactive protein (CRP), IL-6 and TNF in women with preeclampsia and associate that with matched gestational aged normotensive pregnant women.	Case Controlled study	Udenze, I., Amadi, C., Awolola, N., & Makwe, C. C. (2015). The role of cytokines as inflammatory mediators in preeclampsia. *The Pan African Medical Journal, 20,* 219. https://doi.org/10.11604/pamj.2015.20.219.5317	IV

4	Preexisting conditions leading to preeclampsia	To identify new predisposing factors and evaluate short term outcomes in patients with preeclampsia.	Prospective cohort study	Koual, M., Abbou, H., Carbonnel, M., Picone, O., & Ayoubi, J.-M. (2013). Short-term outcome of patients with preeclampsia. *Vascular Health And Risk Management, 9*, 143–148. https://doi.org/10.2147/VHRM.S38970	IV
	Preexisting conditions leading to preeclampsia	To educate individuals on the five most important things to know about preeclampsia, including preexisting conditions.	Cohort study	D'Souza, R., & Kingdom, J. (2016). Preeclampsia. *CMAJ: Canadian Medical Association Journal*, *188*(16), 1178. doi:10.1503/cmaj.151551	IV
5	Effects of preeclampsia to unborn babies	To determine if obstetric management and preeclampsia severity correlate to disability in infants.	Observational/Descriptive study	Nicolás, C., Benítez, P. R., Riaño, M. O. A., Canencia, L. M., Mercurio, C., Fernández, M. S., … Jorge, A. T. (2016). Preeclampsia: long-term effects on pediatric disability. *Journal Of Neonatal-Perinatal Medicine*, *9(1)*, 41–48. https://doi.org/10.3233/NPM-16915065	VI

	Effects to preeclampsia to unborn babies	Examines the effects of AMP-Activated Protein (AMPK) with pregnancy complications.	Systemic review	Kumagai, A., Itakura, A., Koya, D., & Kanasaki, K. (2018). AMP-activated protein (AMPK) in pathophysiology of pregnancy complications. *International Journal Of Molecular Sciences*, *19*(10). https://doi.org/10.3390/ijms19103076	V

Appendix B

Preeclampsia Verbal Consent

We are starting a quality improvement initiative learning about early signs and symptoms of preeclampsia. It will consist of a pretest, posttest and an educational pamphlet that will be read to you. No demographic information will be kept and each completed pretest and posttest will receive a number. If you decide not to participate in this quality improvement initiative, your care will not be affected, and we will still educate you on early signs of preeclampsia so you could seek medical attention earlier if needed. Would you like to participate in our new quality improvement initiative project learning about early signs and symptoms of preeclampsia?

Consentimiento Verbal de la Preeclampsia

Estamos empezando una iniciativa de mejora de calidad de aprendizaje sobre primeros signos y síntomas de preeclampsia. Constará de un pretest, postest y un folleto educativo que le lea a usted. No se mantendrá información demográfica y cada terminado pretest y postest recibirá un número. Si decide no participar en esta iniciativa de mejora de la calidad, su atención no se verá afectado y todavía se educarán sobre indicios de preeclampsia así que usted podría buscar atención médica antes si es necesario. ¿Quieres participar en nuestro nuevo calidad mejora iniciativa proyecto de aprendizaje sobre primeros signos y síntomas de preeclampsia?

Appendix C

Preeclampsia Pretest

By completing this form, you are consenting to participate in this quality improvement initiative.
Trimester of pregnancy (circle one): 2nd 3rd

Relationship to patient:_____ **Sex** (circle one): Male Female

Age group (circle one): 18-25 26-30 31-40 41+

Race/Ethnicity (circle one): White/Caucasian Black/African American Hispanic/Latino

Asian/ Pacific Islander Native American/American Indian Other

Level of Education (circle one): None Middle School Some High School

School diploma/GED Some College College Degree Masters/Doctorate degree

Circle "T" for true of "F" for false.

T/F 1. You or your baby can die from preeclampsia.

T/F 2. Preeclampsia is a medical emergency.

T/F 3. You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia.

Circle the correct response.

4. Listed below are all symptoms of preeclampsia except

A. Gaining more than 5pounds in 1 week

B. Headaches

C. Seeing spots

D. Knee pain

5. Which statement is true about preeclampsia?

A. Finding preeclampsia early is important for both mom and baby.

B. Preeclampsia is safe during pregnancy.

C. Preeclampsia can be treated and cured in one day.

D. Preeclampsia will not harm your baby.

Preeclampsia Posttest

Circle the correct response.

1. Which statement is true about preeclampsia?

A. Finding preeclampsia early is important for both mom and baby.

B. Preeclampsia is safe during pregnancy.

C. Preeclampsia can be treated and cured in one day.

D. Preeclampsia will not harm your baby.

2. Listed below are all symptoms of preeclampsia except

A. Gaining more than 5pounds in 1 week

B. Headaches

C. Seeing spots

D. Knee pain

Circle "T" for true of "F" for false.

T/F 3. Preeclampsia is a medical emergency.

T/F 4. You or your baby can die from preeclampsia.

T/F 5. You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia.

Preeclampsia antes de la prueba

Completando este formulario, usted consiente en participar en esta iniciativa de mejora de la calidad.
Trimestre del embarazo (circule uno): 2 º 3º

Relación con el paciente:_____ **Sexo** (círculo uno): hombres mujeres

Grupo de edad (circule uno): 18-25 26-30 31-40 41 +

Raza/origen étnico (circule uno): Blanco/caucásico Negro/africano americano

Hispana/Latino asiático/isleño del Pacífico nativo americano/American Indian otros

Nivel de educación (circule uno): Ninguno Algunos Alta escuela

GED/diploma de la escuela algunos maestros de grado de Universidad Colegio/doctorado

Círcule "V" de verdad "F" para falso.

V/F 1. Usted o su bebé puede morir de preeclampsia.

V/F 2. La preeclampsia es una emergencia médica.

V/F 3. Usted debe decirle a sus proveedores de atención médica si se presentan signos y síntomas de preeclampsia.

Círcule la respuesta correcta.

4. A continuación son todos los síntomas de preeclampsia excepto

A. subir más de 5pounds en 1 semana

B. dolor de cabeza

C. ver puntos

D. dolor de rodilla

5. ¿Qué afirmación es verdadera acerca de la preeclampsia?

A. encontrar la preeclampsia temprana es importante para mamá y bebé.

B. preeclampsia es segura durante el embarazo.

C. preeclampsia puede ser tratada y curada en un día.

D. preeclampsia no dañará a su bebé.

Preeclampsia Posttest

Círcule la respuesta correcta.

1. ¿Qué afirmación es verdadera acerca de la preeclampsia?

A. encontrar la preeclampsia temprana es importante para mamá y bebé.

B. preeclampsia es segura durante el embarazo.

C. preeclampsia puede ser tratada y curada en un día.

D. preeclampsia no dañará a su bebé.

2. A continuación son todos los síntomas de preeclampsia excepto

A. subir más de 5pounds en 1 semana

B. dolor de cabeza

C. ver puntos

D. dolor de rodilla

Círcule "V" de verdad "F" para falso.

V/F 3. La preeclampsia es una emergencia médica.

V/F 4. Usted o su bebé puede morir de preeclampsia.

V/F 5. Usted debe decirle a sus proveedores de atención médica si se presentan signos y síntomas de preeclampsia.

Appendix D


Ask Your Doctor or Midwife
Preeclampsia
What Is It?
Preeclampsia is a serious disease related to high blood pressure. It can happen to any pregnant woman during the second half of her pregnancy, or up to 6 weeks after delivery.
Risks to You
Seizures
Stroke
Organ damage
Death
Risks to Your Baby
Premature birth
Death
Signs of Preeclampsia
Stomach pain
Headaches
Feeling nauseous; throwing up
Seeing spots
Swelling in your hands and face
Gaining more than 5 pounds (2,3 kg) in a week
What Should You Do?
Call your doctor or midwife right away. Finding preeclampsia early is important for you and your baby.
For more information go to www.preeclampsia.org
Copyright © 2010, 2014 Preeclampsia Foundation. All Rights Reserved.


Pregúntele a su doctor o a la partera
Preeclampsia
¿Qué es?
La preeclampsia es una enfermedad grave que está relacionada con la presión alta. Es algo que puede pasarle a cualquier mujer embarazada durante la segunda mitad de su embarazo o hasta 6 semanas después de su parto.
Riesgos para usted
• Convulsiones
• Derrame o ataque cerebral
• Daño a algún órgano
• Muerte
Riesgos para su bebé
• Nacimiento prematuro
• Muerte
Sintomas de la preeclampsia
Dolor de estómago
Dolores de cabeza
Náuseas, vómitos
Ver manchas
Hinchazón en las manos y en la cara
Subir más de 5 libras (2,3 kg) de peso en una semana
¿Qué se debe hacer?
Llame de inmediato a su doctor o partera. Detectar a tiempo la preeclampsia es importante para usted y para su bebé.
Para más información, vaya a www.preeclampsia.org
Copyright © 2010, 2014 Preeclampsia Foundation. All Rights Reserved.

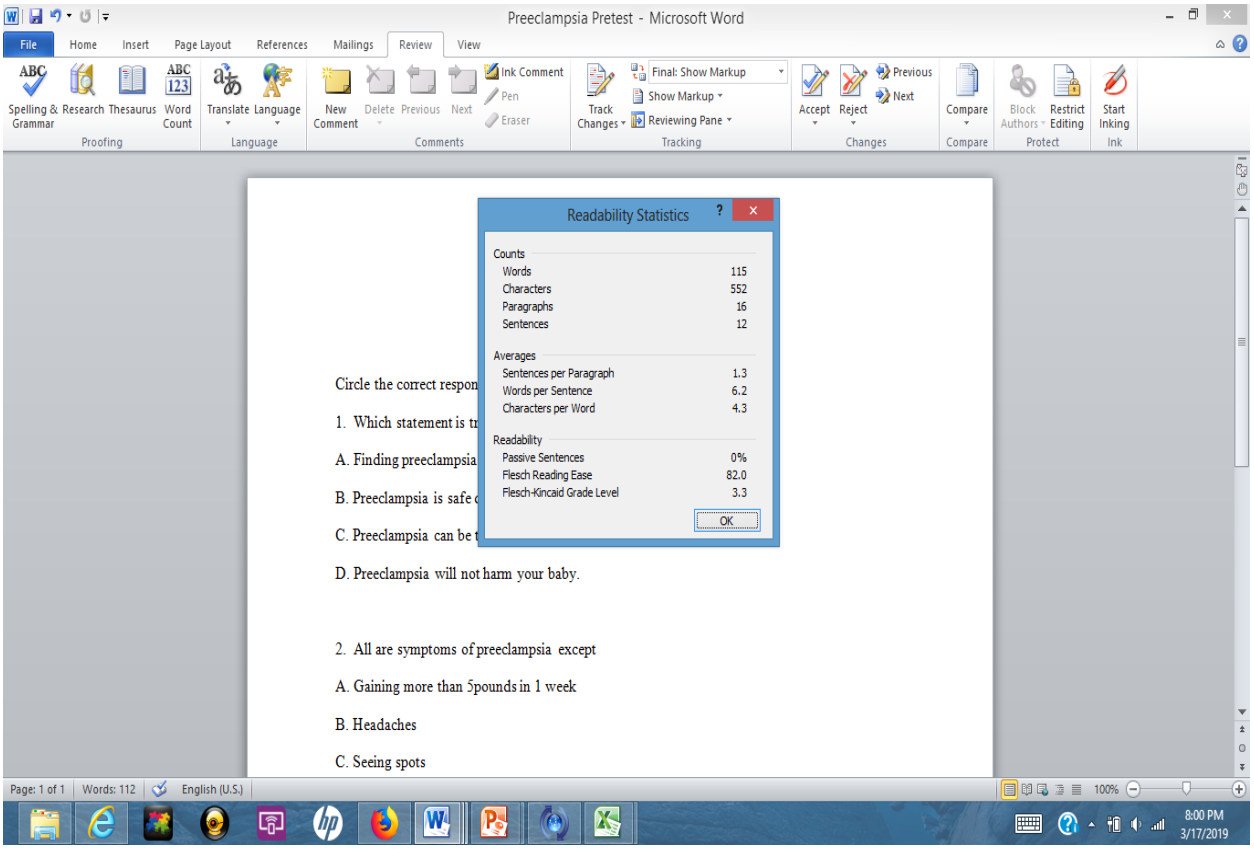
Appendix E
Data Dictionary

Language		1=English 2=Spanish		
PID=Patient identification				
Relationship		1=Patient 2=Husband/Significant Other 3=Mother 4=Mother in law 5=Sister 6=Child 7=Friend 8=Father 9=Sister in law 10=Aunt 11=Other		
Sex		1=Male 2=Female		
TRI=Trimester of pregnancy		1=Second trimester 2=Third trimester		
PreQ1	You or your baby can die from preeclampsia.	1=True 2=False		Answer: True
PreQ2	Preeclampsia is a medical emergency.	1=True 2=False		Answer: True
PreQ3	You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia.	1=True 2=False		Answer: True
PreQ4	All are symptoms of preeclampsia except	1=Gaining more than 5 pounds in 1 week 2=Headaches 3=Seeing spots 4=Knee pain		Answer: Knee pain
PreQ5	Which statement is true about preeclampsia?	1=Finding preeclampsia early is important for both mom and baby. 2=Preeclamspia is safe during pregnancy. 3=Preeclampsia can be treated and cured in one day. 4=Preeclampsia		Answer: Finding preeclampsia early is important for

		will not harm your baby.		both mom and baby.
PostQ1	Which statement is true about preeclampsia?	1=Finding preeclampsia early is important for both mom and baby. 2=Preeclamspia is safe during pregnancy. 3=Preeclampsia can be treated and cured in one day. 4=Preeclampsia will not harm your baby.		Answer: Finding preeclampsia early is important for both mom and baby.
PostQ2	All are symptoms of preeclampsia except	1=Gaining more than 5 pounds in 1 week 2=Headaches 3=Seeing spots 4=Knee pain		Answer: Knee pain
PostQ3	Preeclampsia is a medical emergency.	1=True 2=False		Answer: True
PostQ4	You or your baby can die from preeclampsia.	1=True 2=False		Answer: True
PostQ5	You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia.	1=True 2=False		Answer: True
Age Group		1=(18-25) 2=(26-30) 3=(31-40) 4=(41+)		
0=No response				

Race/Ethnicity	1=White/Caucasian 2=Black/African American 3=Hispanic/Latino 4=Native American/American Indian 5=Asian/Pacific Islander 6=Other		
Education	1=None 2= Middle School 3=Some High School 4=High School/GED 5=Some College 6=College Graduate 7=Masters/Doctorates		

Appendix F


Preeclampsia Pretest - Microsoft Word
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Paragraphs 16
Sentences 12
Averages
Sentences per Paragraph 1.3
Words per Sentence 6.2
Characters per Word 4.3
Readability
Passive Sentences 0%
Flesch Reading Ease 82.0
Flesch-Kincaid Grade Level 3.3
OK
Circle the correct respon
1. Which statement is tr
A. Finding preeclampsia
B. Preeclampsia is safe
C. Preeclampsia can be t
D. Preeclampsia will not harm your baby.
2. All are symptoms of preeclampsia except
A. Gaining more than 5pounds in 1 week
B. Headaches
C. Seeing spots
Page: 1 of 1
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English (U.S.)
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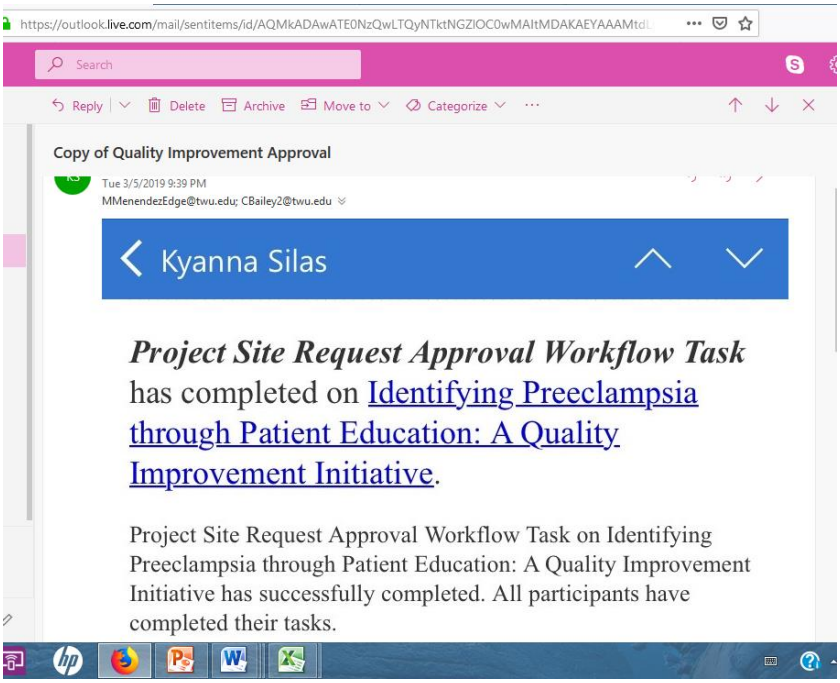
3/17/2019

Appendix G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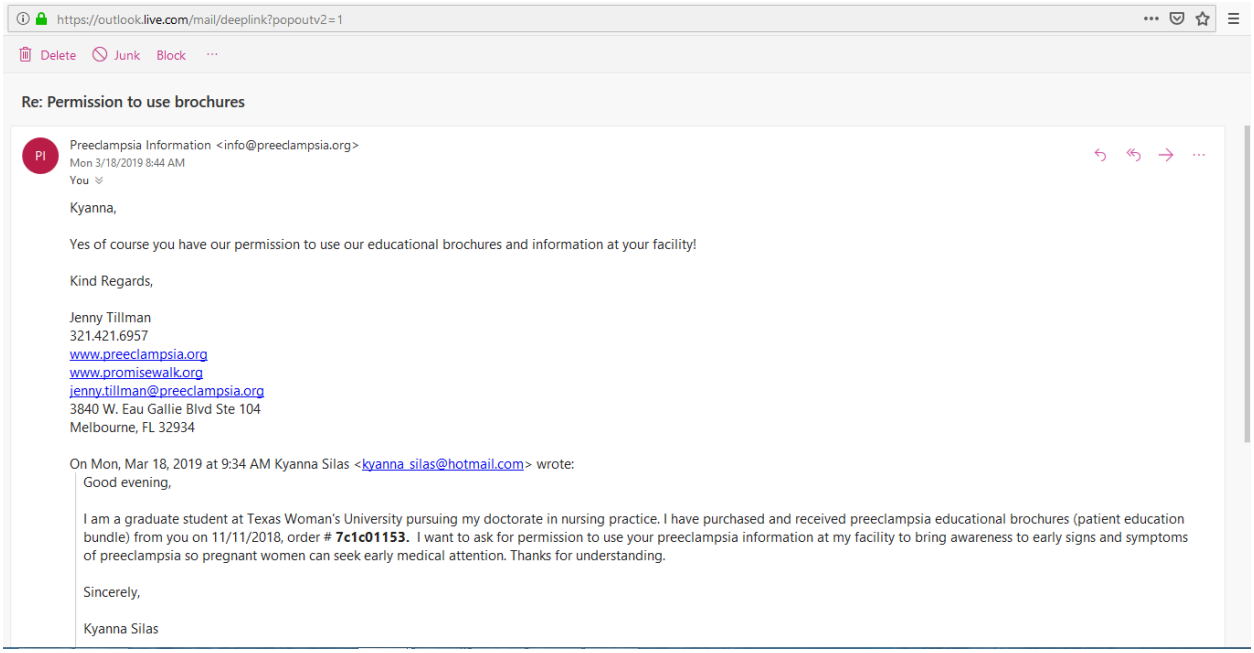
Search
Reply
Delete
Archive
Move to
Categorize
Copy of Quality Improvement Approval
Tue 3/5/2019 9:39 PM
MMenendezEdge@twu.edu; CBailey2@twu.edu
Kyanna Silas
Project Site Request Approval Workflow Task has completed on Identifying Preeclampsia through Patient Education: A Quality Improvement Initiative.
Project Site Request Approval Workflow Task on Identifying Preeclampsia through Patient Education: A Quality Improvement Initiative has successfully completed. All participants have completed their tasks.

Appendix H



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Delete Junk Block ···

Re: Permission to use brochures

PI

Preeclampsia Information <info@preeclampsia.org>
Mon 3/18/2019 8:44 AM
You

Kyanna,

Yes of course you have our permission to use our educational brochures and information at your facility!

Kind Regards,

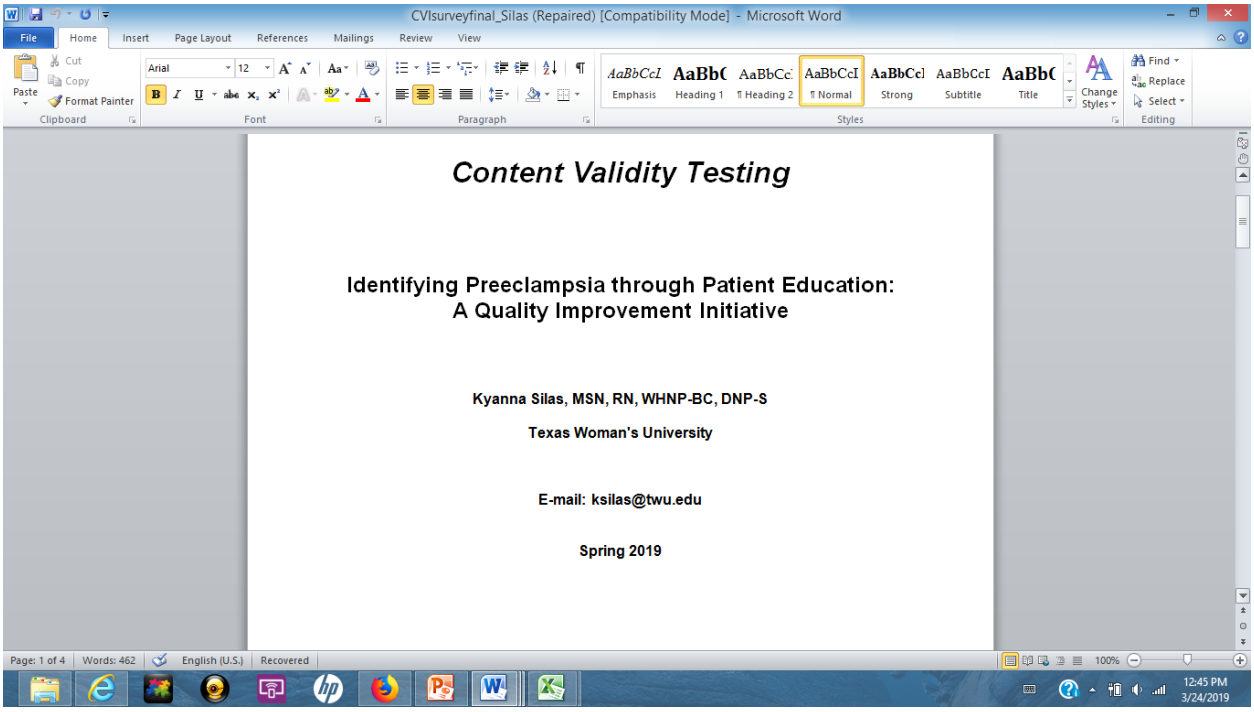
Jenny Tillman
321.421.6957
www.preeclampsia.org
www.promisewalk.org
jenny.tillman@preeclampsia.org
3840 W. Eau Gallie Blvd Ste 104
Melbourne, FL 32934

On Mon, Mar 18, 2019 at 9:34 AM Kyanna Silas <kyanna_silas@hotmail.com> wrote:

> Good evening,
>
> I am a graduate student at Texas Woman's University pursuing my doctorate in nursing practice. I have purchased and received preeclampsia educational brochures (patient education bundle) from you on 11/11/2018, order # **7c1c01153.** I want to ask for permission to use your preeclampsia information at my facility to bring awareness to early signs and symptoms of preeclampsia so pregnant women can seek early medical attention. Thanks for understanding.
>
> Sincerely,
>
> Kyanna Silas

Appendix I

CVI



CVIsurveyfinal_Silas (Repaired) [Compatibility Mode] - Microsoft Word

Content Validity Testing

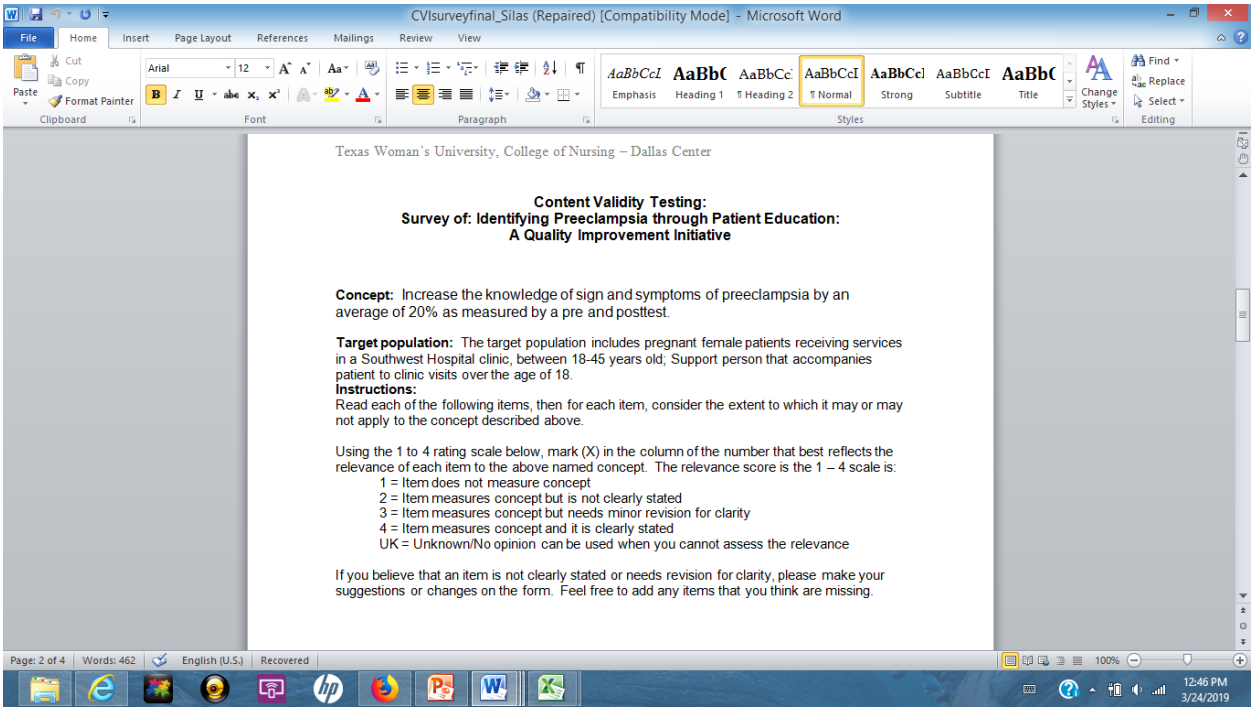
Identifying Preeclampsia through Patient Education:
A Quality Improvement Initiative

Kyanna Silas, MSN, RN, WHNP-BC, DNP-S

Texas Woman's University

E-mail: ksilas@twu.edu

Spring 2019



CVIsurveyfinal_Silas (Repaired) [Compatibility Mode] - Microsoft Word

Texas Woman's University, College of Nursing – Dallas Center

Content Validity Testing:
Survey of: Identifying Preeclampsia through Patient Education:
A Quality Improvement Initiative

Concept: Increase the knowledge of sign and symptoms of preeclampsia by an average of 20% as measured by a pre and posttest.

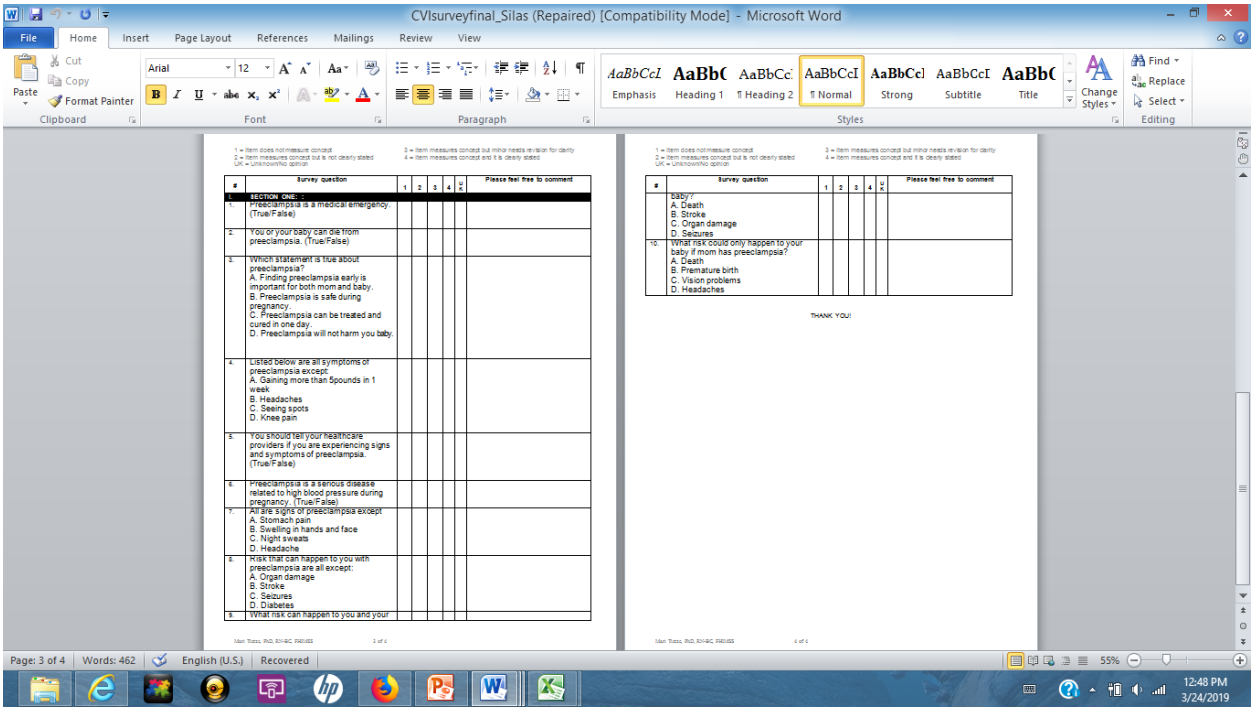
Target population: The target population includes pregnant female patients receiving services in a Southwest Hospital clinic, between 18-45 years old; Support person that accompanies patient to clinic visits over the age of 18.

Instructions:
Read each of the following items, then for each item, consider the extent to which it may or may not apply to the concept described above.

Using the 1 to 4 rating scale below, mark (X) in the column of the number that best reflects the relevance of each item to the above named concept. The relevance score is the 1 – 4 scale is:

1 = Item does not measure concept
2 = Item measures concept but is not clearly stated
3 = Item measures concept but needs minor revision for clarity
4 = Item measures concept and it is clearly stated
UK = Unknown/No opinion can be used when you cannot assess the relevance

If you believe that an item is not clearly stated or needs revision for clarity, please make your suggestions or changes on the form. Feel free to add any items that you think are missing.


CVIsurveyfinal_Silas (Repaired) [Compatibility Mode] - Microsoft Word
1 = Item does not measure concept
2 = Item measures concept but is not clearly stated
UK = Unknown/No opinion
3 = Item measures concept but minor needs revision for clarity
4 = Item measures concept and it is clearly stated
# | Survey question | 1 | 2 | 3 | 4 | N/C | Please feel free to comment
1. SECTION ONE: :
1. Preeclampsia is a medical emergency. (True/False)
2. You or your baby can die from preeclampsia. (True/False)
3. Which statement is true about preeclampsia?
A. Finding preeclampsia early is important for both mom and baby.
B. Preeclampsia is safe during pregnancy.
C. Preeclampsia can be treated and cured in one day.
D. Preeclampsia will not harm you baby.
4. Listed below are all symptoms of preeclampsia except:
A. Gaining more than 5pounds in 1 week
B. Headaches
C. Seeing spots
D. Knee pain
5. You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia. (True/False)
6. Preeclampsia is a serious disease related to high blood pressure during pregnancy. (True/False)
7. All are signs or preeclampsia except
A. Stomach pain
B. Swelling in hands and face
C. Night sweats
D. Headache
8. Risk that can happen to you with preeclampsia are all except:
A. Organ damage
B. Stroke
C. Seizures
D. Diabetes
9. What risk can happen to you and your baby?
A. Death
B. Stroke
C. Organ damage
D. Seizures
10. What risk could only happen to your baby if mom has preeclampsia?
A. Death
B. Premature birth
C. Vision problems
D. Headaches
THANK YOU!
Page: 3 of 4
Words: 462
English (U.S.)
Recovered
55%
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3/24/2019

Appendix J

Compare each question by pre and posttest

You or your baby can die from preeclampsia (PRE). * You or your baby can die from preeclampsia (POST). Cross tabulation						
			You or your baby can die from preeclampsia (POST).			Total
			no response	True (correct)	False	
You or your baby can die from preeclampsia (PRE).	no response	Count	0	3	1	4
		% of Total	0.0%	3.0%	1.0%	4.0%
	True (correct)	Count	6	74	1	81
		% of Total	6.0%	74.0%	1.0%	81.0%
	False	Count	0	14	1	15
		% of Total	0.0%	14.0%	1.0%	15.0%
Total		Count	6	91	3	100
		% of Total	6.0%	91.0%	3.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	9.497[a]	4	.050
Likelihood Ratio	6.720	4	.151
Linear-by-Linear Association	.068	1	.794
N of Valid Cases	100		

a. 7 cells (77.8%) have expected count less than 5. The minimum expected count is .12.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.308	.050
	Cramer's V	.218	.050
	Contingency Coefficient	.295	.050
N of Valid Cases		100	

Preeclampsia is a medical emergency (PRE). * Preeclampsia is a medical emergency (POST). Cross tabulation

			Preeclampsia is a medical emergency (POST).			Total
			no response	True (correct)	False	
Preeclampsia is a medical emergency (PRE).	no response	Count	2	0	0	2
		% of Total	2.0%	0.0%	0.0%	2.0%
	True (correct)	Count	1	93	2	96
		% of Total	1.0%	93.0%	2.0%	96.0%
	False	Count	1	0	1	2
		% of Total	1.0%	0.0%	1.0%	2.0%
Total		Count	4	93	3	100
		% of Total	4.0%	93.0%	3.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	77.691[a]	4	.000
Likelihood Ratio	26.997	4	.000
Linear-by-Linear Association	14.163	1	.000
N of Valid Cases	100		

a. 8 cells (88.9%) have expected count less than 5. The minimum expected count is .06.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.881	.000
	Cramer's V	.623	.000
	Contingency Coefficient	.661	.000
N of Valid Cases		100	

You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia (PRE). * You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia (POST). Cross tabulation

			You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia (POST).		Total
			no response	True (correct)	
You should tell your healthcare providers if you are experiencing signs and symptoms of preeclampsia (PRE).	no response	Count	1	3	4
		% of Total	1.0%	3.0%	4.0%
	True (correct)	Count	3	92	95
		% of Total	3.0%	92.0%	95.0%
	False	Count	0	1	1
		% of Total	0.0%	1.0%	1.0%
Total		Count	4	96	100
		% of Total	4.0%	96.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.811[a]	2	.090
Likelihood Ratio	2.454	2	.293
Linear-by-Linear Association	4.066	1	.044
N of Valid Cases	100		

a. 5 cells (83.3%) have expected count less than 5. The minimum expected count is .04.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.219	.090
	Cramer's V	.219	.090
	Contingency Coefficient	.214	.090
N of Valid Cases		100	

All are symptoms of preeclampsia except (PRE) * All are symptoms of preeclampsia except (POST) Cross tabulation

			All are symptoms of preeclampsia except (POST)				Total
			Gaining more than 5 pounds in 1 week	Headaches	Seeing spots	Knee pain (correct)	
All are symptoms of preeclampsia except (PRE)	no response	Count	1	0	0	1	2
		% of Total	1.0%	0.0%	0.0%	1.0%	2.0%
	Gaining more than 5 pounds in 1 week	Count	4	1	1	18	24
		% of Total	4.0%	1.0%	1.0%	18.0%	24.0%
	Headaches	Count	1	4	1	9	15
		% of Total	1.0%	4.0%	1.0%	9.0%	15.0%
	Seeing spots	Count	1	1	1	8	11
		% of Total	1.0%	1.0%	1.0%	8.0%	11.0%
	Knee pain (correct)	Count	1	1	0	46	48
		% of Total	1.0%	1.0%	0.0%	46.0%	48.0%
Total		Count	8	7	3	82	100
		% of Total	8.0%	7.0%	3.0%	82.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	25.399[a]	12	.013
Likelihood Ratio	21.567	12	.043
Linear-by-Linear Association	9.304	1	.002
N of Valid Cases	100		

a. 16 cells (80.0%) have expected count less than 5. The minimum expected count is .06.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.504	.013
	Cramer's V	.291	.013
	Contingency Coefficient	.450	.013
N of Valid Cases		100	

Which statement is true about preeclampsia (PRE)? * Which statement is true about preeclampsia (POST)? Cross tabulation

			Which statement is true about preeclampsia (POST)?			Total
			no response	Finding preeclampsia early is important for both mom and baby (correct)	Preeclampsia will not harm your baby	
Which statement is true about preeclampsia (PRE)?	Finding preeclampsia early is important for both mom and baby (correct)	Count	1	93	0	94
		% of Total	1.0%	93.0%	0.0%	94.0%
	Preeclampsia is safe during pregnancy	Count	0	2	0	2
		% of Total	0.0%	2.0%	0.0%	2.0%
	Preeclampsia will not harm your baby	Count	0	3	1	4
		% of Total	0.0%	3.0%	1.0%	4.0%
Total		Count	1	98	1	100
		% of Total	1.0%	98.0%	1.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	24.289[a]	4	.000
Likelihood Ratio	6.806	4	.147
Linear-by-Linear Association	20.971	1	.000
N of Valid Cases	100		

a. 8 cells (88.9%) have expected count less than 5. The minimum expected count is .02.

Symmetric Measures

		Value	Approximate Significance
Nominal by Nominal	Phi	.493	.000
	Cramer's V	.348	.000
	Contingency Coefficient	.442	.000
N of Valid Cases		100	