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Unit 4: Fetal and Maternal Development

Required Question: The surprising effects of pregnancy.

There are so many changes during pregnancy. The mother's body is learning to adapt to this new developing system. Especially during a first pregnancy, the expectant mother's body learns to function not only for her but also for the growing fetus. The video starts off with a concept I never really thought of before: how come the immune system does not attack the embryo? It is a new and foreign DNA that is implanted into the mother's uterus, it should attack it as a disease. It is incredible how the body learns to adapt accordingly.

As the baby grows in the uterus, it affects the rest of the organs. For example, the diaphragm now had pressure from the large space the fetus is taking up, needing the mother to breathe. She also needs oxygen for her and the baby, often leaving her short of breath. The mother's body also needs nutrients from not only herself but the developing fetus as well. This means the heart and other organs work extra hard.

There are also differences in brain activity. The mother tends to be more aware of the facial cues of the baby so she can tend to its needs. The mother and the developing fetus are both changing and adapting. For a long time, research had been focused on the growing baby. As it is important to focus on the first developing stages of the human, it is just as important to take a look at the body it is growing in. The mother is like a harbor for the baby and it is fully dependent on her.

Chapter 7 Maret

4. What is lanugo? vernix? meconium? What functions do they perform?

Lanugo - a fine, soft, hair that grows around the body of a developing fetus in the womb. It is the first type of hair to grow on a developing fetus. This is usually shed before birth but also can be present at birth and then shed soon in the first few weeks of life. The function of lanugo is believed to play a role in regulating the temperature of the developing fetus in the womb. It can help to protect the skin and provide a cushioning effect against the amniotic fluid.

Vernix - a white substance that covers the skin of a developing fetus in the womb. It is mainly composed of sebum and dead skin cells. Vernix begins to develop around the 20th week of pregnancy. The function of vernix is to help protect the skin of the developing fetus from the harsh environment of the amniotic fluid. The vernix also has antimicrobial properties, which help to protect the fetus from infection. In addition, vernix plays a role in aiding the transition from life in the womb to life outside of the womb. When a baby is born, the vernix helps to protect the baby's delicate skin from the outside world.

Meconium - is the first stool passed by a newborn baby. It is usually a thick, black, or green substance that is composed of waste products that have accumulated in the baby's intestines during the time in the womb. Meconium contains substances that have antimicrobial properties, which help to protect the baby from infection. In addition, meconium can provide important information about the baby's health. Observations of changes in the color, consistency, or timing of meconium passage can notify the doctor of any health abnormalities.

5. Discuss sleep prior to birth.

Getting enough quality sleep is important during pregnancy, it can affect the mother and the developing fetus. In the first trimester of pregnancy, many women experience fatigue and may need to nap during the day to compensate for this. Hormonal changes lead to increased nighttime urination which disrupts the mother's sleep, as well as nausea, vomiting, and heartburn. As the pregnancy progresses, physical discomfort and changes in the body can make it more difficult to get comfortable at night such as back pain, hip pain, and difficulty finding a comfortable sleeping position. In the third trimester of pregnancy, many women experience more frequent and intense Braxton Hicks contractions. Anxiety and worries about the upcoming birth and parenting also affect sleep quality. It's important for pregnant women to prioritize sleep. This may include creating a relaxing bedtime routine, avoiding caffeine, staying hydrated throughout the day, or using pillows to find a comfortable sleeping position.

Chapter 8 Maret

8. Discuss the various factors affecting “morning sickness”.

Morning sickness, also known as nausea, is a common symptom during the first trimester of pregnancy. Several factors are believed to contribute to its onset and severity, including hormonal changes, stress, blood sugar levels, digestive issues, food sensitivities, or genetics. During pregnancy, the body experiences a surge in hormones, including estrogen. These hormonal changes can trigger nausea and vomiting. Stress can have a negative impact on anyone. For some pregnant women, stress triggers this nausea. Low blood sugar levels also contribute to feelings of nausea. Additionally, the digestive system changes during pregnancy, and it slows down leading to constipation and bloating. During pregnancy, the woman some women develop food sensitivities which are followed by vomiting when they eat certain types of food. Genetics: Some studies also suggest that morning sickness can be genetic. Many women who have a family history are more likely to experience it themselves. Morning sickness is uncomfortable for the expecting mother, but it is usually not harmful to the developing fetus. In severe cases, it can lead to dehydration and weight loss.

10. How is a due date identified? How accurate are due dates?

A due date is identified based on the estimated date of conception. Conception is calculated by using the date of the woman's last menstrual period and the average length of her menstrual cycle. This assumes that ovulation occurred approximately 14 days after the start of

the last menstrual period. And that conception occurred shortly thereafter. Ultrasound measurements can also determine the due date. These are taken in the first trimester and can also estimate the gestational age of the fetus, therefore providing a more accurate due date. Unfortunately, due dates are not always accurate. Many factors can influence the actual delivery of the baby such as variations in the length of menstrual cycles, irregular ovulation, and differences in fetal development rates. It is very common that women go into labor naturally before or after their due date, not on the specific estimated date. Due dates are more of a formality or an estimation to prepare for the birth. It is useful to estimate the monitoring of the pregnancy and the planning of the delivery.

11. Select and discuss either of the following: pregnancy and sex OR pregnancy and exercise.

Pregnancy and Sex: The correlation between sexual intercourse and pregnancy is not necessarily an extreme issue. There have been many misconceptions such as miscarriages. It really depends on when sexual intercourse takes place during the pregnancy. The warnings are more of a precaution. Sex in the first and second trimesters is without risk as the fetus is protected from potential harm in the amniotic sac. Some studies have proven that sex in the third trimester has even lowered the chances of premature births. Additionally, women experience changes in their sex drive and sexual preferences during pregnancy. Many women may experience a decrease in sexual desire as they are experiencing fatigue, nausea, and self-consciousness as their bodies are changing. Regarding safety, sex during pregnancy is generally considered safe for most women. There is also importance with the positions during sexual intercourse that can be more desirable for the woman due to the pregnancy.

12. Select and discuss either of the following: preeclampsia OR premature rupture of membranes.

Preeclampsia is a pregnancy complication that affects approximately 5-8% of all pregnancies. It typically will develop after the 20th week of pregnancy. It is characterized by high blood pressure and damage to organs, particularly the liver and kidneys. The exact cause of preeclampsia is not fully known. Symptoms of preeclampsia can include high blood pressure, swelling of the hands, feet, and face, headaches, vision changes, and nausea. In more severe cases, it can cause seizures, strokes, kidney failure or fetal growth restriction. There is no cure for preeclampsia; the only way to effectively treat it is to deliver the baby. Delivery can be difficult as the baby might not be full term and not completely developed yet. The use of medication happens in some cases and the mother and fetus are very closely monitored for changes. Some ways women can prevent preeclampsia include maintaining a healthy weight, avoiding substance use, and following a healthy diet.