

Community medicine
Week 6
MCH Lecture 3
Dr. Samar

Edited by: Alia Abbadi

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

الحمد لله رب العالمين والصلاة والسلام علي سيدنا محمد
الصادق الوعد الأمين ، اللهم أخرجنا من ظلمات الجهل
والوهم ، إلى نور المعرفة والعلم..

- **WHAT IS MATERNAL MORBIDITY??**

- Any departure, subjective or objective, from a state of physiological or psychological maternal well-being; during pregnancy, childbirth and the postpartum period up to 42 days of delivery, related to changes taking place in these periods.

The professor didn't talk about this slide and the following one

pregnancy complications

Problem	Symptoms
Anemia Hb.< 10	<ul style="list-style-type: none">■ Feel tired or weak■ Look pale■ Feel faint■ Shortness of breath
Gestational diabetes Too high blood sugar levels during pregnancy	<ul style="list-style-type: none">■ Usually, there are no symptoms. Sometimes, extreme thirst, hunger, or fatigue■ Screening test shows high blood sugar levels
High blood pressure (pregnancy related) High blood pressure that starts after 20 weeks of pregnancy and goes away after birth	<ul style="list-style-type: none">■ High blood pressure without other signs and symptoms of preeclampsia

Miscarriage

Pregnancy loss from natural causes before 20 weeks. As many as 20 percent of pregnancies end in miscarriage. Often, miscarriage occurs before a woman even knows she is pregnant

Signs of a miscarriage can include:

Vaginal spotting or bleeding*

Cramping or abdominal pain

Fluid or tissue passing from the vagina

*** Spotting early in pregnancy doesn't mean miscarriage is certain. Still, contact your doctor right away if you have any bleeding.**

Preeclampsia

A condition starting after 20 weeks of pregnancy that causes high blood pressure and problems with the kidneys and other organs. Also called toxemia.

High blood pressure

Swelling of hands and face

Too much protein in urine

Stomach pain

Blurred vision

Dizziness

Headaches

Preterm labour – Going into labour before 37 weeks of pregnancy

Increased vaginal discharge

Pelvic pressure and cramping

Back pain radiating to the abdomen

Contractions

- ***Most frequently reported maternal morbidities "from the most to the least common"** (taken from WHO's systematic review of maternal mortality and morbidity (2003) that covered all published and unpublished reports on maternal mortality and morbidities from 1997 to 2002)

Most frequently reported maternal morbidities "from the most to the least common" GLOBALLY —> mainly in the developing world

- 1. Hypertensive disorders
- 2. Stillbirth
- 3. Abortion
- 4. Hemorrhage
- 5. Preterm delivery
- 6. Anemia in pregnancy
- 7. Diabetes in pregnancy
- 8. Ectopic pregnancy
- 9. Perineal tears
- 10. Uterine rupture
- 11. Depression
- 12. Obstructed labour
- 13. Postpartum sepsis

2. Stillbirth: delivery of a baby who had died usually due to a problem in pregnancy/ maternal morbidity.

3. Abortion: in the first 28 weeks, most commonly in the first 12 weeks of pregnancy —> abortion causes hemorrhage

5. Preterm delivery: due to a problem in pregnancy/the mother

8. Ectopic pregnancy: is when a fertilized egg attaches somewhere else in the body other than the uterus. Almost all ectopic pregnancies occur in a fallopian tube. As the pregnancy grows, it can cause the tube to rupture which can cause major internal bleeding. This can be life-threatening & needs immediate surgery.

12. Obstructed labour, is when the baby does not exit the pelvis during childbirth due to being physically blocked e.g. due to small pelvis

13. postpartum sepsis: within the first 6 weeks of delivery due to infections.

HYPERTENSIVE DISORDERS OF PREGNANCY

In chronic hypertension, the woman suffers from hypertension before pregnancy or during the first 20 weeks of pregnancy. It usually gets during pregnancy.

- • (Essential hypertension) Chronic hypertension is defined as blood pressure exceeding 140/90 mm Hg before pregnancy or before 20 weeks' gestation. When hypertension first is identified during a woman's pregnancy and she is at less than 20 weeks' gestation, blood pressure elevations usually represent chronic hypertension.

Preeclampsia: pregnancy induced hypertension

- In contrast, new onset of elevated blood pressure readings **after 20 weeks'** gestation mandates the consideration and exclusion of preeclampsia. Preeclampsia occurs in approximately **5%** of all pregnancies, **10% of first pregnancies**, and **20-25%** of women with a history of chronic hypertension. Hypertensive disorders in pregnancy may cause maternal and fetal morbidity and remain a leading source of maternal morbidity.

Blood pressure usually goes back to normal after delivery

Preeclampsia symptoms:

Excessive increase in weight, proteinuria (proteins present in urine), hypertension & edema

- Although the exact path physiologic mechanism is not clearly understood, preeclampsia can be thought of as a disorder of endothelial function with vasospasm. (Fetal ischemia)
- Evidence also indicates that an altered maternal immune response to fetal/placental tissue may contribute to the development of preeclampsia.

Knowing risk factors is important to try to prevent during them starting from prenatal and antenatal care

RISK FACTORS

For all non-communicable diseases and whose physiological mechanisms are not known —> we study risk factors.

Preeclampsia is one of those.

- **Maternal risk factors:**
- First pregnancy Primigravida
- New partner/paternity
- Age younger than 18 years or older than 35 years
- History of preeclampsia
- Family history of preeclampsia in a first-degree relative
- Black race

If in 1st pregnancy, the woman suffered from preeclampsia —> higher probability of developing it again in the second pregnancy.

If not —> less probability

Medical risk factors:

- Chronic hypertension
 - Secondary causes of chronic hypertension such as hypercortisolism, hyperaldosteronism, pheochromocytoma, or renal artery stenosis
 - Preexisting diabetes (type 1 or type 2), especially with microvascular disease
 - Renal disease
 - Systemic lupus erythematosus SLE
 - Obesity - Women with preeclampsia usually gain more than 20 kg during pregnancy
- Early detection of preeclampsia is important
 - Prenatal care is important to check for risk factors

Anemia of pregnancy

- • Anaemia is defined during pregnancy as a haemoglobin (Hb) level below 11 Ogr/L (WHO, 1992). During pregnancy, the Hb level is lower than normal, and it varies according to gestational age. Most women with Hb levels below this limit have normal pregnancies. Using the above definition, 20 to 50% of women, and even more in some areas, are considered as anemic.

Anaemia

- Anaemia is very prevalent among women in developing countries, as a result of iron and/or folate deficiency and of malaria and other parasitic diseases. WHO estimated that around 60 percent of pregnant women in developing countries (other than China) had nutritional anemia despite efforts in iron supplementation, fortification and dietary modification?

- Anaemia contributes to maternal mortality by making women more susceptible to infection and less able to withstand infection or the effects of haemorrhage. Anaemia is known to give rise to considerable long term morbidity in women, and at extreme levels may be associated with low birth weight.

In the case of a mother with anaemia, hemorrhages would cause hypovolemic shock at earlier stages.

PATHOPHYSIOLOGIC CAUSES

Due to increase of plasma volume

- ~ HEMODILUTION: Anemia during pregnancy can be thought of as a physiologic process of hemodilution; i.e. this anemia is relative and is not associated with a total decrease in oxygen carrying capacity.
- ~ IRON DEFICIENCY is responsible for 95% of anemia of pregnancy.
- ~ FOLATE DEFICIENCY due to Increased turnover or requirements of folate can occur during pregnancy - because of the transfer of folate to the fetus- and during lactation; giving rise to Megaloblastic anemia.

RISK FACTORS

- Twin or multiple pregnancy
- Poor nutrition, especially multiple vitamin deficiencies Smoking, which reduces
- absorption of important nutrients Excess alcohol consumption, leading to poor
- nutrition Any disorder that reduces absorption of nutrients Use of anticonvulsant medications

EPIDEMIOLOGY

- **Region % of women Hb <11**
- World 51
- Developing 56
- Developed 18
- Africa 52
- Asia (except Japan ..) 60
- Latin America 39
- North America 17
- Europe 17

In Jordan 43% of pregnant women suffer from anemia in the 3rd trimester

Reproductive Tract Infections:

- Vulvovaginitis
- Endometritis (infection of the uterus)
- Pelvic Inflammatory disease (PID) an infection of the upper genital tract

Urinary Tract Infection :

- The short urethra & its intimate relationship with the vagina considerably increase the risk of a woman developing UTI.

- Symptoms are dysuria, frequency & urgency of micturition It has been estimated that about 20% of women may complain of an episode of dysuria each year.
- In over 80% of cases, E. coli is the infecting organism treatment is by antibiotics .

Gestational Diabetes

After 20 weeks of pregnancy
Checked by measuring sugar in urine

& blood sugar would be higher than 110mg/dL

- **Gestational diabetes is high blood sugar that develops during pregnancy and usually disappears after giving birth.** But she's more at risk of developing another type of diabetes later in her life

In gestational diabetes, the woman doesn't have diabetes before pregnancy

If she has diabetes before pregnancy—> gets worse when she gets pregnant

GDM

- It can occur at any stage of pregnancy, but is more common in the second half.
- It occurs if your body cannot produce enough insulin – a hormone that helps control blood sugar levels – to meet the extra needs in pregnancy.

GDM

- Gestational diabetes can cause problems to the mother as well as her baby during and after birth. But the risk of these problems happening can be reduced if it's detected and well managed.



PREVELANCE OF GDM

- The prevalence of GDM, as reported in different studies, varies between 1% and 14% in all pregnancies depending on the genetic characteristics and environment of the population under study, screening and diagnostic methods employed as well as on prevalence of type 2 diabetes mellitus

Diabetes rates (generally) are already high in Jordan

From google: (the professor asked us to find the percentage)

34% of Jordanians aged above 25 years live with diabetes

. Risk factors for gestational diabetes

- **Age greater than 25.** Women older than age 25 are more likely to develop gestational diabetes.
- **Family or personal history**
- **Excess weight.**
- **Nonwhite race.**

- Most women who have gestational diabetes deliver healthy babies. However, gestational diabetes that's not carefully managed can lead to uncontrolled blood sugar levels and cause problems for the mother and her baby, including an increased likelihood of needing a C-section to deliver :

Complications that may affect the baby

- **Excessive birth weight.** More than 4.5/5 kg
- **Early (preterm) birth and respiratory distress syndrome. .**
- **Low blood sugar (hypoglycemia).**
- **Type 2 diabetes later in life.**
- **Untreated** gestational diabetes can result in a baby's death either before or shortly after birth. Or retardation

Complications that may affect the mother

- induced labour or a caesarean section
- Polyhydramnios
- premature birth
- pre-eclampsia Pregnancy induced hypertension with proteinuria, obesity, edema
- Stillbirth
- type 2 diabetes

Sexually transmitted diseases:

These are diseases that are transmitted through sexual contact. Can cause pain, infertility & death if not treated .

- Each year, there are about 330 million new cases of STD & 1 million case of AIDS in the world .

Examples of STDs:

- 1) Gonorrhea
- 2) syphilis
- 3) chlamydia.
- 4) genital herpes
- 5) trichomonas vaginatis

Sexually Transmitted Infections (STIs) /JPFHS 2017

30%

- One-third of ever-married women and all men have heard of STIs other than HIV/AIDS. Among the ever-married men who have heard of STIs, 11% report having had an STI in the year before the survey. Men's self report of STIs is highest in Aqaba (24%) and Balqa (21%).

Causes of maternal morbidities in Jordan

- Urinary tract infections
- Vaginal infections
- Anemia
- Early bleeding
- Hypertension
- Gestational diabetes
- Pre-eclampsia
- Late bleeding
- Multiple pregnancy
- Kidney diseases
- Thyroid disorders
- Disseminated intravascular coagulopathy
- Heart Disease

Memorize first 5/6 causes. These are more important to know than the global list

the highlighted parts are the ones mentioned by the professor

Women's Nutritional Status

The 2017-18 JPFHS took weight and height measurements of ever-married women age 15-49.

About two-fifths (43%) of women are within the normal range for body mass index (BMI). Three percent of women are thin, while 54% are overweight or obese.

Overweight/obesity increases with age; 81% of women age 40-49 are overweight or obese compared with 26% of women 15-19. Women's nutritional status has remained stable since 2009.

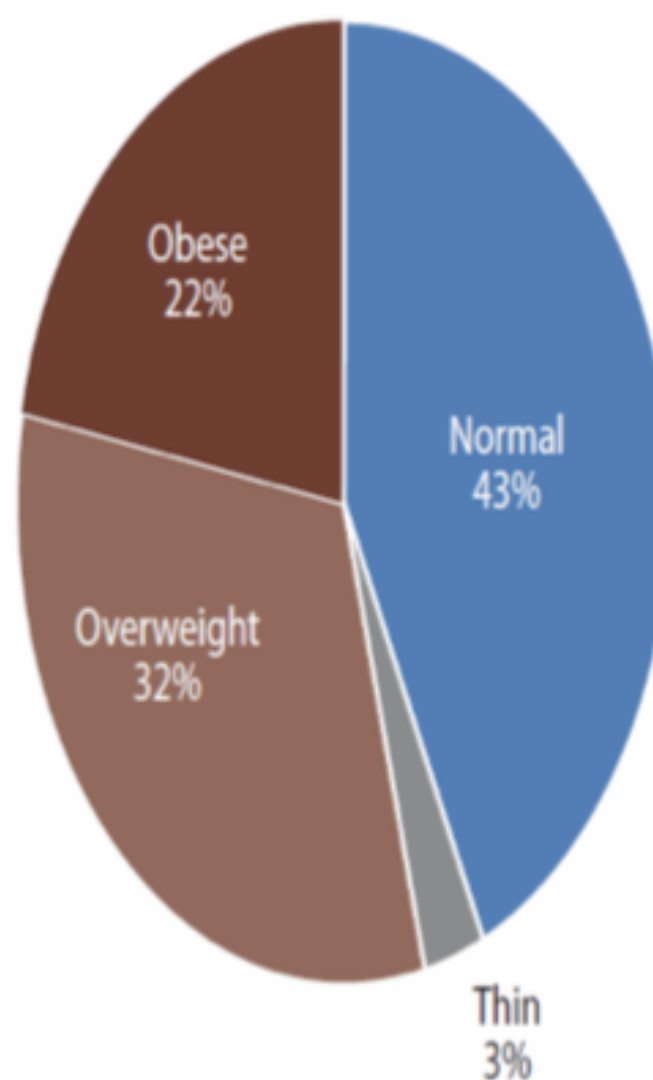
Anaemia

Anaemia is more common in women than in children – 43% of women age 15-49 are anaemic.

Anaemia is relatively high among women across all educational and wealth categories. Anaemia in women ranges from 35% in Madaba to 49% in Ma'an.

Women's Nutritional Status

Percent distribution of ever-married women age 15-49



Average in Jordan 43%

Iron Supplementation

Pregnant women should take iron tablets for at least 90 days during pregnancy to prevent anaemia and other complications. Half of women (49%) received the recommended 90 days of iron supplements; 22% received no iron supplements during their last pregnancy.

Iron supplements are given for 90 days (not in the beginning of pregnancy but in the middle period)