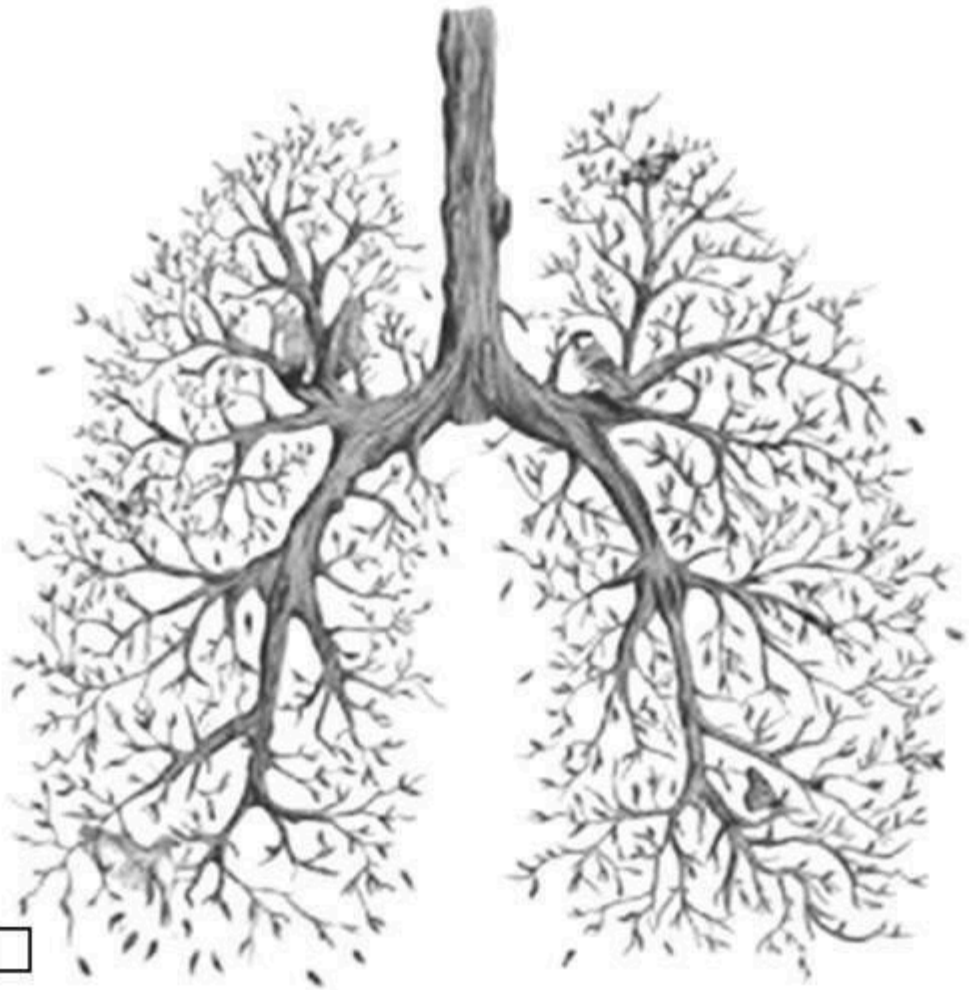


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Medical Committee
The University of Jordan

Community Medicine



Slides

Sheet

Lecture # 14

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Done By: **Areej jaber**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Child mortality

When we are talking about **mortality**, we are reflecting the **developing world**.

In **Jordan**, you will notice that child mortality causes is very similar to the developed world. why?! Because there is no infectious diseases as the case in the developing world as a main cause of death of children under 5 years old.

Worldwide about 14 million children under the age of 5 will die each year and Majority of these deaths occurs in developing countries.

In developed countries, deaths under the age of five constitute only a very small proportion of all deaths while in many developing countries deaths of young children constitute a large share of total deaths.

*** What is the most important cause of morbidity and mortality in children? ...

THE INFECTIOUS DISEASES

NOW, Infectious diseases are controlled BY VACCINATIONS. AND because of the 100% coverage of vaccinations, infectious diseases "if there are any " will be considered as subclinical state.

So cases "of infectious diseases" will not reach the severity of death: as diarrhea, upper respiratory tract infection, respiratory tract infection,.. Etc... All are *under control* NOW.

Diseases with severe complications usually they work on how to find a vaccine for it, especially in children as their immunity still developing.

The doctor repeated again: In developed countries, deaths under the age of five constitute only a very small proportion of all deaths while in many developing countries deaths of young children constitute a large share of total deaths.

About 40% of all deaths in developing countries are deaths of children under age of 5 and nearly 30% of all deaths in the world are deaths of young children in developing countries.

*****Why the child mortality is different with developing and developed world?**

Answer: BESIDE the * coverage of **vaccination** for diseases “which is higher in the developed”, this difference is mainly Due to * **Nutrition** “which is very important in relation to immunity and infectious diseases”

In Most of the Developed World nutrition is BASIC, there is NO such things as MALNUTRITION in country like; Sweden, UK or USA, WHY?! ... Because these are covered by governmental services 😊

But still in Developing world, we are seeing a lot of malnutrition like in Africa there is kwashiorkor, Marasmus or any other types of malnutrition in developing world.

((We will take these types later in NUTRITION))

That's what make their immune system is poor and more prone not only to have **infections** but also to the **complications of infections** ((For example ; NOT only to measles but also encephalitis of measles , pneumonia .. etc.))

These diseases are easily preventable in the developed world through immunization. Research in many countries has consistently indicated a strong **inverse** relationship between **female education** and **child mortality**.

Mothers in developed world are more educated than in the developing world. THAT is not because of money but also early age of marriage "in some of the developing world" will prevent her from being educated. That will increase the risk on pregnancy, baby

and on education {because she will marry at the age of 13 or 14, so what education she will finish after marriage ??! }

The five measurements of infant and child mortality

Neonatal mortality, the probability of dying in the first month of life.

Post neonatal mortality, the probability of dying after the first month of life but before the first birthday. From one month to one year.

Infant mortality, the probability of dying in the first year. (Neonatal + post neonatal)

Child mortality, the probability of dying between the first and fifth birthday

Under-five mortality, the probability of dying before the fifth birthday.

☺ In Jordan, here we are dealing with **infant mortality** ☺

In Developed world, where the infant mortality is very low (equal to ZERO), they go for neonatal mortality or postnatal.

Keep in your mind: NEONATAL MORTALITY is the most important.

Child mortality, which is from 1 to 5 years, is usually much less than **infant mortality**, {child mortality is one fourth or one fifth the infant mortality}

Under –five mortality: is the sum of infant mortality and child mortality.

(Under-five mortality = infant (0 to 1 year) + child (1 to 5 years))

ALL These mortalities are calculated per 1000 live Births

1-Perinatal period: you will notice that 20% of mortalities occur during this period. (* remember: **perinatal** means “week before – and week after – delivery”)

It is very serious complication of pregnancy or at delivery "first day of labor"

2-early neonatal: first week

3_late neonatal: first week to first month

4_neonatal: first month

5_postneonatal: first month to first year

6-infant: during the first year

*** The less is the period "from the above", the more the sensitive the baby. So **the most sensitive period is: the perinatal one**

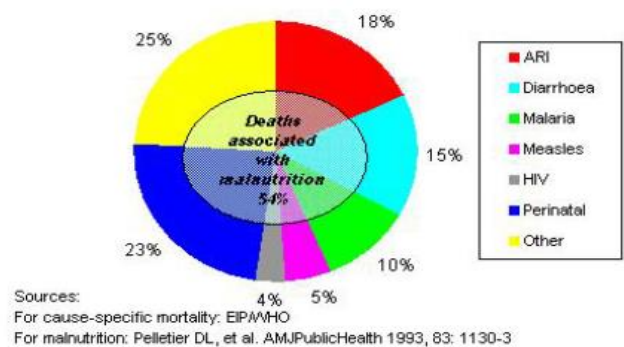
{From the most to the least sensitive: perinatal > early natal > late natal > neonatal > postnatal > infant}

IN JORDAN, we still stick to **infant mortality** "the death during the first year per 1000 live births"

IN Slide # 22: this is reflecting the world WHO report for worldwide mortality rates "this is MAINLY reflecting the developing world more than the developed one"

-usually 90% of deaths occur in developing world.

Proportional Mortality Among Under Fives, Yr 2002, World



-From the graph we can see that: More than 50 % of deaths are due to INFECTIOUS DISEASES {acute respiratory infection 18 %, 15% for diarrhea, 10% for malaria, 5% for measles and for HIV is 4%}

- 23 % due to perinatal causes "we will talk about them later " , **perinatal** **DEPENDS** not only **on delivery** but also on **pregnancy** ; because the last week of pregnancy is

reflecting what was happened during pregnancy , whether there is complications or retardation of growth of embryo .

-25% for other causes LIKE: congenital abnormalities, accidents, hemorrhage, etc. . . .

THOSE "other causes" are more common in developed countries; because they are considered AS non-Infectious ones.

Causes of Perinatal mortality

Include:

-Low birth weight

****What is the difference between (premature – and low birth weight –) baby?!**

Answer:

Premature: before 36 weeks.

Low birth weight: the baby is mature but there is retardation, so comes with low weight
"less than 2.5 KG"

-Cord prolapse –Asphyxia **THOSE happen during labor or immediately before labor.**

-Birth injury –Congenital anomalies –Sepsis

-Neonatal tetanus – Complicated labors (prolonged, obstructed, breech, transverse)

- Mismanagement of labor

- Anoxia due to problems such as: Anti-partum hemorrhage: bleeding during the last trimester, before labor or after 20 weeks

-maternal age: Very Important; if she is very young, she is at high risk to deliver premature and small-for-date babies, **ESPECIALLY** if she is less than 20 years old !!
{You will notice "in the study in Jordan" that maternal age is one of the important variables}

-**Maternal anemia** - **Maternal health problems** - **Maternal infections**

-**Parity**: also affect the pregnancy, usually **prime** "pregnant for the first time" or **multi-parity** "has more than 5 or 6 babies"

-**Mother's utilization of health services**:" the more she utilize, the less she risk to die".

-**Ruptured uterus**

- **Maternal Education**: very important. In order to reach the services, she needs to be educated before she gets into trouble. She should have come **for preventive** and health promotion services.

In Jordan: The **infant mortality rate** also declined from **82** per thousand in 1976 to **22** in 2002, and reached **19** per thousand in 2007. In 2012, **16** or **17**.

By **dropping the infant mortality rate**, on the other side, we have **longer life span** (The more the developing in health services, the less the infant mortality rate, the more the life span).

In Jordan, in 2007, the life expectancy for males: **72** and for females: **74**; while recently in **2012**, the life expectancy for males: **74** and for females: **76**.

The main causes for infant mortality in JORDAN

•• AS you can see the main causes **are not infectious** ones as in the developed world, **NOT** as developing world ...

1- **Conditions originating in the perinatal period** (as pregnancy trouble and first week of labor) are number one cause of infant mortality causes

2- **Congenital malformations**

3- **Diseases of the respiratory tract**

•• The leading cause of death in the **neonatal period** (first week) was conditions originating in the perinatal period (as Asphyxia, maternal diseases like preeclampsia... etc.), while in the **post-neonatal period**, it was congenital malformations.

•• **Prematurity** is very important, it is *the most contributory factor in all mortalities* (SO we can say: If we can prevent prematurity, we can save a lot of children); because Prematurity was the leading contributory cause of infant death in Jordan

In conclusion.

This study showed that causes of infant mortality in Jordan tend to be similar to those prevailing in developed countries; Done by: **Khoury SA** and **Mas'ad DF** (from the Department of Family and Community Medicine)

THIS was a **good study**, because infant mortality study is **very difficult** and needs **a lot of funds**.

Why premature and small-for-date babies at higher risk to die ?!***

This is due to many reasons; they are at higher risk to:

- Respiratory distress syndrome
- Birth Trauma
- Hemorrhages
- Feeding problems
- Infections
- Failure to thrive (failure to reach up with their **(15:16)** within the first five years) ,, those babies " premature and small-for-date babies " need longer time to catch with their term babies So (Failure to thrive) is **delaying in growth within the first 5 years...**

Figure 8.1 Trends in Infant and Child Mortality by Five-year Periods

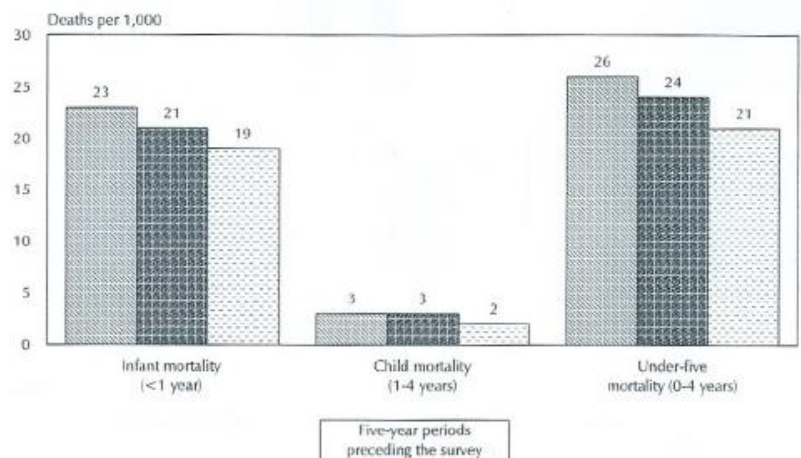


Figure 8.1,,, slide #31 ..

Showing infant and child mortality by five years periods (2007, 2002, 1997)

•• You don't have to memorize these numbers, **JUST notice** how it is dropping

{Remember: under-five years means the sum of infant and child mortalities}

From the graph notice that **child mortality** (3 from the graph) is about **one sixth** the **infant mortality** (23 from the graph).

Or child mortality (2 from the graph) in relation to infant mortality (19 from the graph)

What are the variables affecting the infant mortality?

In slide #32, figure #8.3

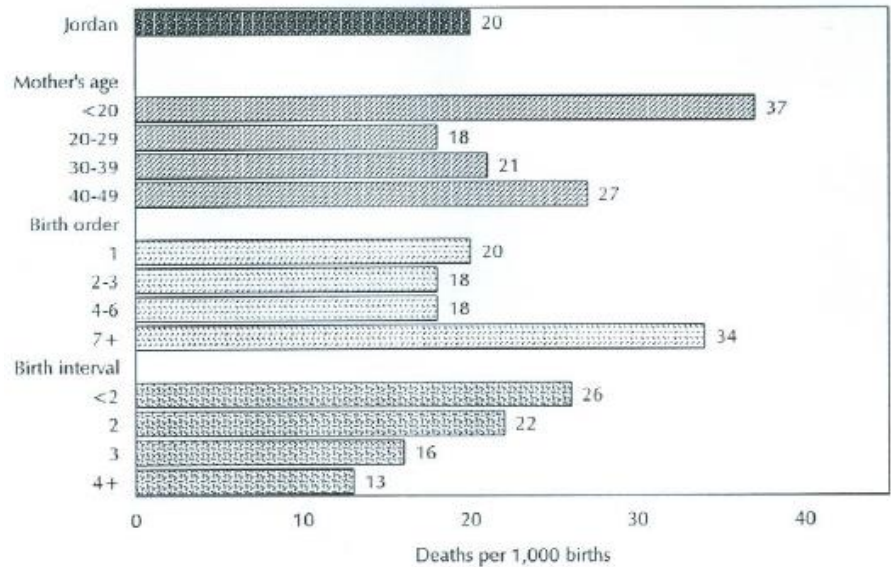
Figure 8.3 Infant Mortality by Selected Demographic Characteristics

In Jordan, total characters were 20.

-**mother's age** (the younger than 20 or the older than 35, the infant mortality increases)

-**birth order** (the first baby or the baby after the sixth or the seventh)

-**birth interval** (less than 2 years interval has the highest risk; the more the interval between the baby and the next, the less the infant mortality)

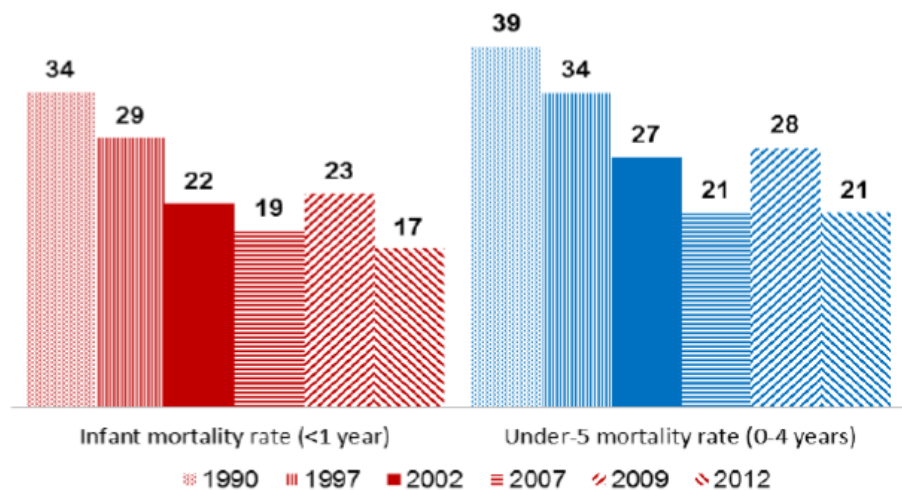


In slide #33... It is important to *go deep* for it!

In JORDAN

In 1990, the infant mortality was 34 per 1000 live births BUT in 2012, it drops to the half "17 per 1000 live births.

ALSO, for Under-five mortality rate it drops to the half from 1990 (it was 39) to 2012 (it was 21).



SO here is a 50% drop from 1990 to 2012, for BOTH infant and child mortality.

~ Indicators to describe a child's well-being:

To reflect how good the health services are applied for infants and children is, there are certain indicators:

The most important indicator is the infant mortality rate **

Causes that reflect the baby health are:

Nutritional, Environmental and Socio-Economical "POVERTY is a risk factor for all , but specially here for infants and pregnant women because they are so sensitive and have special needs "

The Socio-Economical makes the developing world with high mortality and morbidity rate, because these countries can't afford a good quality of services.

1 Number of low birth weight babies** (if we take a comparison between the number of births and number of low birth or premature babies: the more the number of low birth or premature, the high the mortality rate

2 **Infant mortality rate (very important, the number of deaths less than one year of age per 1000 live births)

3 ** Children's death rate: (1-14 years) calculated per 100,000 children

NOTE: if we CALCULATE the children deaths rate **PER 1000** ... THE AGE will be from (1 to 5 years)

{*Remember we calculate **maternal mortality PER 100,000** }

4 **Rate of teen death (between 15-19 years) as a result of accidents (most important: car traffic) and Suicide (In Jordan suicide is very little)

5 **Teen birth rate: it is very important in case of those who have their first baby at the age between (15-17), because it is directly related to infant and neonatal mortality

These cases can be found in the developed (getting pregnant before marriage) & developing countries (Due to early marriage)

In Jordan , there is no early age of marriage ... The Average age for marriage ,here in Jordan, is around 22.2 and for getting first baby is 24 , which is very good >> 😊 **THE BEST**

At same time there is no pregnancy without marriage or at least it is very limited... SO in this case Jordan is **neither** as developing **nor** as developed countries.

Therefore; their pregnancy is at a high risk of obstructed Labor, maternal death, low birth weight baby, and long term disabilities affecting the baby.

6 •• Dropping of schools... the teenagers, especially in developing world, when she becomes 12 or 13 years old, she will leave the school and get married

IN Jordan, this case is very limited ,, very minimum who leave the school before al-tawjehe 😊

7 •• Percent of teens not attending school nor working, it is very important in some countries →they end up with very risk pregnancy.

8 ••Percentage of children whose parents don't have a full year employment (as in poverty), unemployment will badly affect the baby health

9 ••Percentage of children in poverty.

10 ••Number of families with children headed by a single parent, for any reason like divorce or death (in Jordan) , or like single parent in developed countries (because of pregnancy before marriage).

11 ••Number of children with health insurance like vaccination , nutritional counseling , all other services that given in a well-baby clinic(it should be for free ,

covered by government).... In other places they don't have the health insurance and so can't cover the basic health monitoring DUE TO POVERTY.

**Children in poor families LACK medical insurance as well as good Nutrition → We get a double negative impact.

NOW, we will come to age between **6-18 years** ... those are divided to two groups (Both are very important):

From **6-10** >> early child and From **10-19** >> adolescence

** Adolescence has its own troubles; IN DEVELOPED: they have their own clinics "called the **youth clinic**" >> Go for counseling, nutritional, family planning services, psychological, social problems (In This age there are a lot of problems)

** IN Jordan, we have such problems (like psycho-social ones, have any learning problems, performance, speech, etc...), but we **don't have such a service for it** "Because we don't give it the priority "... We **can't afford** to have such services

→ In our schools, we have more than 20-30% of our children have a poor performance where we have to find the causes which could be psychological, social or physical (however physical is less than others).

* During the school age , there is a performance which becomes at a low level due to attention deficient (they can't pay attention for more than 5-10 minutes) ... also they are hyperactive ..

In USA, there is around 20% of schools' students have **the attention deficiency hyperactive syndrome**.

NOT all hyperactive cases need a treatment, AND that doesn't mean to IGNORE all cases

Those cases are diagnosed by parents, teachers, and counselors and finally by a physician ... HERE IN JORDAN, there are no such diagnoses.

There is something called **Global School –base Student Health Survey** which is done world-wide in all countries especially in developed world, in Jordan it has been done starting from mid ninetenths for each 5 years, studies the most important behavioral problems more than physical in children between 15–17 years old in where they have behavioral problems which may cause many health problems,

Some of these behavioral problems are:

•• **Personality** which is built up during the age (11–19), it affects the person's behavior a lot, especially if he feels insecure, depressed, border-line personality disorder, those have a personality defect,

•• **Smoking** is one of the behavioral that affect the health in the adolescence,, in a study done in Jordan (in 5 private schools).. They found 35% of schools' STUDENTS who admit are smokers!!

•• **Over-eating** of junk food, in where obesity is becoming more and more by years ...ALSO they found that 30% of students have a body mass index ABOVE 27!!!

✓ Physical problems we might face at this age: acne

* School health index are done online by each individual from (11–19) years old ...

* Physical activities are very important such like exercises, it is a part of life style and children should be encouraged to it from the childhood.

* ALL adolescence like junk food more than homemade one Like: mlo5eyeh :P ,, we must avoid junk food because it is a big problem can lead to obesity, and also lead to attention deficiency

From slide # 45

This survey measures behaviors and protective factors related to the leading causes of mortality and morbidity among youth and adults in Jordan.

1. Alcohol and other drug use (in USA they are very honest)
2. Dietary behaviors (ask how frequent you eat junk food, how many times you drink milk for example)
3. General Hygiene
4. Mental health (if have any retarded child or psychotic problem)
5. Physical activity
6. Protective factors (like seatbelts which protect you in accidents)
7. Sexual behaviors that Contribute to HIV infection (it is limited in Jordan)
8. Tobacco use
9. Violence and unintentional injury

What should school health services cover?

In school (from 6-18) >> from 15-17 it is a very serious period... it should cover:

- **Health physicals** (routine physical examination. Some students have chronic diseases like asthma, diabetes, epilepsy, mental retardation “special needs” (whether vision, hearing, speech...), etc. >> all these diseases must be followed up and treated as early as possible)
- **Immunizations**
- **Administration of prescriptions for routine medications**
- **Health education** (for the parents and children)
- **Care for acute illness and injury** (counseling, which isn't found in our schools, is more important than acute services)

- Care for common adolescent physical problems
- Follow-up as requested by physician
- Nutrition counseling

Social, emotional, and mental health counseling

- Family counseling
- Drug and alcohol counseling
- Social service assistance
- Pregnancy check-ups
- Abstinence counseling and family planning
- Referral services

FROM SLIDE #49 NOTES

Chronic and Disabling Conditions:

- * **Physical handicaps** (such as: Dwarfism, Cerebral palsy, [Visual, hearing, or speech] defects, Spine bifida, Facial deformity, obesity, Intellectual Handicaps, Learning disorders, Mental retardation) **must be detected through schools**
- * The most important learning disorder is: **attention deficiency hyperactive syndrome.**
- * Chronic disease (Epilepsy, Asthma cystic fibrosis, Malignancy, Neurological infection)

What is the recommendation for adolescence to improve their health?

RECOMMENDATION ARE FOR SELF-READING ☺

THE MID-EXAM IS ON THURSDAY, 6th OF NOVEMBER...

Sorry for any mistake...

☺ GOOD LUCK ☺