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\begin{aligned}
& \text { الكلية : كلية طب العام } \\
& \text { الفرع : طب الاسرة والمجتمع } \\
& \text { المرحلة : الرابعة } \\
& \text { أستاذ المادة : د بديعه ثامر يحيى } \\
& \text { اسم المادة باللغة العربية: وبائيات }
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Epidemiology: اسم المادة باللغة الانكليزيه
اسم المحاضره الأولى باللغة العربيه : الخصـائص السكانية والصحية
Population and health characteristics: اسم المحاضره الاولى باللغة الانطليزية

## 1- Population and health characteristics:

Q1- The age and sex distribution of a certain population is given in the following Table:

| Age in years | Male | Female | Total |
| :---: | :---: | :---: | :---: |
| $0<1$ | 96 | 86 | 182 |
| $1-4$ | 358 | 355 | 713 |
| $5-14$ | 993 | 1057 | 2050 |
| $15-44$ | 1530 | 1562 | 3092 |
| $45-64$ | 301 | 312 | 613 |
| 65 and above | 98 | 119 | 217 |
| Total | 3376 | 3491 | 6867 |

1. Describe the Table above and try to compare the relative composition with respect to age and sex. Comment on your findings.
2. Draw a population pyramid for this population.
3. What type of countries does this population belong to?
4. What health problems are expected to be prevailing in such a population?
5. What will happen to this distribution if:

- Fertility declined
- Mortality declined.:

Sol:

| Age in years | Male | Rf $\%$ | Female | RF\% | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $0<1$ | 96 | 2.8 | 86 | 2.5 | 182 |
| $1-4$ | 358 | 10.6 | 355 | 10.2 | 713 |
| $5-14$ | 993 | 29.4 | 1057 | 30.3 | 2050 |
| $15-44$ | 1530 | 45.3 | 1562 | 44.7 | 3092 |
| $45-64$ | 301 | 8.9 | 312 | 8.9 | 613 |
| 65 and above | 98 | 2.9 | 119 | 3.4 | 217 |
| Total | 3376 | 99.9 | 3491 | 100 | 6867 |

1. 

- The age distribution have six groups from $0<1$ to $65+$ according to sex.
- Unequal class interval : $0<1=$ less than one year

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1-4=\text { pre }- \text { school age }=\text { less than } 5
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5-14 = school age
$15-44=$ young age
$45-64=$ middle age 65+ = elderly

- The highest RF\% of male is $45.3 \%$ at age group (15-44)which near the highest RF \% of female at the same age group $44.7 \%$ at the same age group .
- The lowest RF\% of males is $2.8 \%$ at the age group $(0<1)$ which also near the lowest RF\% of females .


2. Developed countries : education and health care to large portion of population


Population Pyramid for a Developed country


4- Health problem
Health problems in developed countries include chronic disease

Health problems in developing countries include related to infant and mother
5- Decline fertility and decline mortality: reduction in fertility is usually associated with a reduction in mortality

Low fertility $\rightarrow$ less people $\rightarrow$ better health $\rightarrow$ less death

Q2- A community has the following data for the year 2012:

| Total population | 50000 |
| :--- | :---: |
| Number of total births (LB+SB) | 2200 |
| Number of live births | 2000 |
| Number of total deaths | 400 |
| Number of deaths during first year of life | 120 |
| Number of deaths during first week of life | 18 |
| Number of persons who developed disease(x) | 100 |
| Number of persons who died from disease(x) | 4 |

Calculate for this population epidemiological parameters related to fertility, morbidity and mortality in the year 2012.

Measurement of fertility : القانون الثاني والثالث لايطبق في هذا السؤال
No. of live births in 2012
Crude birth rate $=--------------------------------------------\quad$ X K
Total population in the same year
$=40 \backslash 1000$
No. of live births
General fertility rate = ----------------------------------------- X K
Total no. of women ( $15-49$ )years at child bearing age
no. of live birth in a specific place

Marital specific fertility rate $=$ X K

No. of married women age
( 15 - 49) years in the same place and time

Measurement of morbidity: لاينطبق القانون الاول
no. of new cases of a disease in a year in
a given population

total population at risk in the same year

# NO. OF EXIST CASES (OLD + NEW) OF <br> A DISEASE IN A YEAR IN A GIVEN POPULATION <br> Prevalence rate = ------------------------------------------------x k <br> TOTAL POPULATION AT RISK <br> $=2 \backslash 1000$ 

Measurements of mortality:
TOTAL NO. OF DEATH
1- Crude death rate $=\underset{\text { TOTAL POPULATION }}{ }$
$8 \backslash 1000$

2- AGE -SPECIFIC DEATH RATE لاينطبق القانون
No. of death of an infant at age less than one year
3- Infant mortality rate = ------------------------------------------X k
No. of live births in the same year
$=60 \backslash 1000$
No. of death of under 28 days of age in a year

Total no. of live birth in the same year
لا يطبق هذا القانون على السؤال

1. Early neonatal mortality $=$-----------------------------------x $k$ no. of live births in the same year $=9 \backslash 1000$


No . of deaths among infants aged between 28 days and 1 year Post-neonatal mortality rate=----------------------------- X K

Total no. of live births in the same year

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لاينطبق القانون على السؤ ال
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No. of fetal death after 24 weeks of
gestation occurring in a year


Total births in the same year

No. of stillbirths + no. of infant deaths in the first week after birth in a year

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& \text { Perinatal mortality rate }=
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> Total births in the same year $=99.1 \backslash 1000$

No. of deaths of pregnant mother from causes related to pregnancy, delivery and puerperium which occurred among the female population in a given year 10 - maternal mortality rate $=$ -X 100000
number of total births
(live births + stillbirth) which occurred among the population of the given geographic area during the same year

لا ينطبق السؤال على القانون
No. of deaths due to specific cause
11-proportional mortality rate $=$
Total no. of deaths
$=1 \backslash 1000$

No. of deaths due to particular disease

Total no. cases diagnosed with the same disease
$=4 \%$

