بسم الله الرحمن الرحيم

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Epidemiology of Chronic diseases

Non communicable diseases

Chronic diseases have been defined as :

Chronic illnesses.

- Non-Communicable.

- Degenerative.

Characteristics:

- Uncertain etiology.
- multiple risk factors.
- long latency period .
- Prolonged course of illness.
- non- contagious origin.
- functional disability and sometimes incurability .

- **<u>Latency period</u>** is the period between contact of the causative agent with susceptible host to the onset of first sign a symptoms.
- The cause of many chronic diseases remains obscure, but risk factors identified for some of the leading chronic diseases. The most important among these risk factor is Tobacco use especially in COPD .

Strategies for the prevention

- Approach to prevention of chronic diseases can be considered under three headings :

- 1-Primordial prevention: prevention or avoiding the development of risk factors in the community to prevent the disease in the population and as such protects the individuals. This involves the avoidance of risk behaviors.

- prevention of disease occurrence by altering susceptibility of the host or reducing exposure of susceptible persons to the risk factors
- Examples : immunization , good nutrition , health education ,
- counseling, environmental sanitation, purification of water , protection against accidents at work place and seat belts.

- Requires : accurate knowledge of causative agent and process of disease.

- 2-Primary prevention : Modifying or reducing the risk factors associated with the development of a disease in individuals with or without the use of interventions, It involves modification of established risk behavior and risk factors with specific interventions to prevent clinically manifest disease

- That is by early detection , screening by examinations altering the course of disease
- Examples : high blood pressure , T.B. Diabetes , Cancer of the breast , Cancer of the cervix colo-rectal cancers, lung cancer etc.

- 3- Secondary prevention : Modifying the risk factors in the presence of the manifested disease by changes in lifestyle and/or use of drugs.

- 4- Tertiary Prevention : alleviation and limitation of disability improvement of quality of life , Rehabilitation and follow up.

- Noncommunicable diseases (NCDs) are a global challenge. During the next several decades, NCDs will govern the health care needs of populations in most low- and middle-income countries because of declines in communicable diseases, conditions related to childbirth and nutrition, changes in lifestyle factors (eg, smoking), and population aging (1).

- We examined the burden of NCDs in the Hashemite Kingdom of Jordan. We computed the projected prevalence of diabetes, hypertension, and high blood cholesterol. All of these risk factors are associated with an increased risk of cardiovascular disease (CVD) — the leading cause of death in Jordan — and increased health care use.

- In 2005, Jordan's population was approximately 5.5 million. By 2050, the population is expected to increase to between 8.5 and 14.8 million people. (2) The proportion of older people (aged 60 years or older) is expected to be 15.6% (or approximately 1.8 million people) in 2050, more than 5 times that in 2000 (2).

- During 2005, NCDs accounted for more than 50% of all deaths in Jordan. Heart disease and stroke (International Statistical Classification of Diseases, 10th Revision, codes I00-I99) accounted for 35% of all deaths; malignant neoplasms (C00-C97) were responsible for 13% of deaths (3).

- Nearly 60% of deaths from malignant neoplasms occurred among people younger than 65 years, and approximately one-third of those who died from CVD were aged 65 or younger

- During 2004, approximately 400,000 (15%) Jordanian adults had diabetes (an increase from 7% in 1996), and an estimated 350,000 (12%) had impaired fasting glucose (4,5). Approximately 15% of adults reported hypertension, and roughly 23% had high blood cholesterol — an increase from 9% in 1996 (4,5).

- The proportion of all deaths attributable to NCDs in the World Health Organization's Eastern Mediterranean Region is projected to increase from 51% during 2005 to 66% by 2030 (6).

- Programs to monitor and control risk factors, clinical services, and a robust health care system will be important to successfully improve NCD outcomes and reduce the burden of disease.

The major non communicable diseases are : NCD/1

- Cardiovascular Diseases.
- Chronic Obstructive Pulmonary Disease
- Diabetes
- Hypertension
- Cancers
- Accidents in its different types

Chronic Diseases 2
Morbidities and Disabilities

- Disability or chronicity may be the outcome of many of these chronic diseases and they will not be accounted for by using the mortality indicators as the only indicators for these chronic and degenerative diseases is the resulting disabilities rates

Examples :

- **1- Musculo-sketelal problems**
- Osteoporosis
- Artihritis and osteoarthritis which may reach in old age a prevalence of 600/1000 persons, and over 300/1000 persons in males.
- Rheumatoid arthritis
- Low back pain
- Foot problems in old age
- Scoliosis in children
- Congenital hip dislocation

2- Neurological disorders

- Cerebral palsy
- Mental retardation
- Epilepsy and other seizure disorders
- Headache and migraine
- Multiple sclerosis
- Alzheimer and dementia
- Parkinson disease.

Psychiatric Disorders

- **<u>Psychosis</u>**
- Schizophrenia
- 6--Affective psychosis
- 4--Unspecified psychosis
- 3--Senile & pre-senile dementia
- 3--Psychosis associated with other cerebral conditions

Neuroses.

- **Phobias**
- **Anxiety**
- **Depression**
- **Obsessive Compulsive Neuroses.**
- **Personality disorders & other non-psychotic mental disorders**

6- Genetic disorders

- – Down's syndrome
- Autosomal recessive defect chromosome 7 mutations are thought to be responsible for that disease .
- Cystic fibrosis : is the most lethal in Northern European descent (1/3500 births) in USA(1/14,000 births in Blocks) in Asian Americans 1/25,500 births , Median survival age for C.F. improved between 1938 and 1998 from 5 y to almost 30 y .

Mental Diseases

- **The Global Burden of Disease (GBD) study published in 1996 showed that <u>neuro-psychiatric disorders</u> account for more than a quarter of all health loss due to <u>disability</u>, more than eight times greater than that attributed to coronary heart disease and 20-fold greater than cancer .**

- **These findings highlighted for the first time the central place of mental disorders in population health as well as a need for a response from health service systems. Sound epidemiological information around mental disorders is an essential starting point for that policy response.**

Mental health as part of primary :health care

- Mental health care is a basic and essential building block for ensuring life-long good health. Multipurpose health workers, family doctors and general practitioners need to become increasingly better able to recognize any potential mental impairment or brain disorder in order to provide quality care .

- **Up to 40% of individuals visiting their family physician have a mental health problem**

- **Edmonton Study (Bland et al 1997)**
- Only **28.1%** of individuals with a mental disorder received help in a year.
- Of these:
- 78% saw a physician (usually family physician)
- 29% saw a psychiatrist
- 18% saw a psychologist
- 10% saw a social worker
- 18% saw a psychologist
- 10% saw a social worker

- To ensure that basic mental health services are available to all people, even the most vulnerable and deprived groups, in the past two decades the WHO Regional Office for the Eastern Mediterranean collaborated with almost all countries of the Region to prepare national mental health programs .

- The implementation of these programs have been carried out in different degrees in the countries of the Region .

- **Untreated Psychiatric Disorders**
- **72% of individuals with a psychiatric disorder receive no treatment over the course of a year. 81% of these individuals will visit their family physician.**
- **Lesage Ontario Mental Health Supplement 1997**

- **Despite high prevalence rates**
- Detection rates are low•
- Treatment rates are low•
- Referral rates are low

Depression

What is depression?

- Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities.

In contrast to normal sadness, severe depression, also called major depression, can dramatically impair a person's ability to function in social situations and at work. People with major depression often have feelings of despair, hopelessness, and worthlessness, as well as thoughts of committing suicide

- Surveys indicate that people commonly view depression as a sign of personal weakness, but psychiatrists and psychologists view it as a real illness. In the United States, the National Institute of Mental Health has estimated that depression costs society many billions of dollars each year, mostly in lost work time.

A Global Public Health Concern

Depression is a significant contributor to the global burden of disease and affects people in all communities across the world. Today, depression is estimated to affect 350 million people. The World Mental Health Survey conducted in 17 countries found that on average about 1 in 20 people reported having an episode of depression in the previous year.

Depressive disorders often start at a young age; they reduce people's functioning and often are recurring. For these reasons, depression is the leading cause of disability worldwide in terms of total years lost due to disability.

At its worst, depression can lead to suicide. Almost 1 million lives are lost yearly due to suicide, which translates to 3000 suicide deaths every day. For every person who completes a suicide, 20 or more may attempt to end his or her life (WHO, 2012).

Risk Factors

- Age : Depression is usually the disease of youth (20-40years).

- Women experience depression about twice as often as men

  History of anxiety disorder, borderline personality disorder or post-traumatic stress disorder

- Abuse of alcohol or illegal drugs

- Certain personality traits, such as having low self-esteem and being overly dependent, self-critical or pessimistic

- Serious or chronic illness, such as cancer, diabetes or heart disease

- Certain medications, such as some high blood pressure medications or sleeping pills (talk to your doctor before stopping any medication)

- Traumatic or stressful events, such as physical or sexual abuse, the loss of a loved one, a difficult relationship or financial problems
- Blood relatives with a history of depression, bipolar disorder, alcoholism or suicide

Why is depression important?

Projections are that by 2020, depression will be second only to heart disease in its contribution to the global burden of disease as measured disability-adjusted life years

Prevalence

- Depression continues to be one of the important chronic medical conditions worldwide. In an analysis of data from 14 different countries, the overall prevalence of depression in the developed world was 17.9%, which compared unfavorably with the rate of depression in the developing world (9.4%).[2] The lifetime prevalence of mood disorders in the United States specifically is approximately 20%.[3]

- And these are not just cases of "the blues." Over one half of cases of depression in the United States are rated as severe or very severe.[4] Three quarters of adults with depression have other comorbid mental health diagnoses, and 40% of persons with a substance use disorder have a concomitant mood disorder.

- Also, depression is associated with worse control of chronic medical conditions, such as diabetes.[5,6] Finally, a study of survey data from 183,100 participants in the National Survey on Drug Use and Health found that the prevalence of suicidal ideation among adults with depression was 26.3%.[7]

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Epidemiology of Depression Among Women

- In U.S. twice as many women (12.3%) as men (6.7%) are affected each year
  - 12.4M women and 6.4M men

- For low-income women, the estimated prevalence doubles to 25%

- Most prevalent among women of child-bearing and child-rearing age (16 to 53)

Epidemiology of Depression Among Mothers

Estimated rates of depression among pregnant and postpartum women range from 8 to 20%.

For low-income women with young children, prevalence rates are commonly estimated at approximately 40%.

- Primary Health Care Physicians are the diagnosticians at the front line of the health services, and untreated depression has come to be viewed as a major public health problem.

- Despite the high prevalence and severe consequences of depression, it remains underrecognized and undertreated. In a study of over 1600 patients with depression in The Netherlands, the rate of undertreatment of moderate or severe major depressive disorder was 43%.[8] Among patients seen only in primary care practices, this rate was 73%.

In Arab world

Communities in Arab world show depression ranging from 13% to 37%.

One of the high rates 32% was recorded in Lebanese women after the civil war.

Urban population in Dubai and Cairo showed lower rates 12% and 16% respectively.

In Jordan

- *The highest was recorded in Jordan*

  - *A study published 2004, done on Jordanian women reviewing PHC centers for different reasons showed a rate of 37% scored positively.*

- The illness affects all people, regardless of sex, race, ethnicity, or socioeconomic standing. However, women are two to three times more likely than men to suffer from depression. Experts disagree on the reason for this difference. Some cite differences in hormones, and others point to the stress caused by society's expectations of women.

Prevalence

- Depression occurs in all parts of the world, although the pattern of symptoms can vary. The prevalence of depression in other countries varies widely, from **1.5 percent of people in Taiwan to 19 percent of people in Lebanon**. Some researchers believe methods of gathering data on depression account for different rates.

- Social scientists have proposed many explanations, including changes in family structure, urbanization, and reduced cultural and **religious influences**

Conclusion

- Of the estimated 17.5 million Americans who are affected by some form of depression, 9.2 million have major or clinical depression

- Two thirds of people suffering from depression do not seek necessary treatment.

- 80% Of all people with clinical depression who have received treatment significantly improve their lives.
- The economic cost of depression is estimated at $30.4 billion a year but the cost in human suffering cannot be estimated

- Women experience depression about twice as often as men

- By the year 2020, the World Health Organization (WHO) estimates that depression will be the number two cause after CVD of "lost years of healthy life" worldwide

- According to the U.S. Centers for Disease Control and Prevention (CDC) suicide was the ninth leading cause of death in the United States in 1996

- **"A SOLUTION FOR DEPRESSION IS AT HAND...EFFICACIOUS AND COST EFFECTIVE TREATMENTS ARE AVAILABLE TO IMPROVE THE HEALTH AND THE LIVES OF MILLIONS OF PEOPLE AROUND THE WORLD..."**

Recommendations

- Public education.

- Provision of relevant posters and leaflets in waiting rooms at PHC centers helps in destigmatization of the disease.

- Improvements in depression screening have paralleled improvements in depression treatment and reduced stigma

- Encourage patients to talk about their symptoms with their Family doctors.

- Recognition of depression by the patient and his or her family.

- Primary Care Physicians have embraced responsibility for screening ,recognition, and treating depression
- For additional efficiencies, we will need advances in technology (e.g, computerized screening and scoring) improved treatment outcomes.

Training courses for Primary Health physicians to improve their diagnostic skills in depression to improve the recognition rate of depression in Primary Health Care Settings in Jordan is also recommended

Dementia

Hulton-Deutsch Collection

- Dementia is defined as global impairment of cognitive function which interferes with normal activities.

- Impaired short and long-term memory and other cognitive functions (abstract thinking, judgment, speech, coordination, planning or organization

- Alzheimer's accounts for most cases of dementia more than 50%.

- 10-20% cases are attributed to vascular (multi-infarct) dementia

- Other causes-alcoholism, Parkinson, vit B12 deficiency, hypothyroidism, CNS infections, intracranial lesions

Health Burden of Dementia

- disease progresses over a period of 2-20 years, causing increasing functional impairment and disability

- Care of the demented patient imposes an enormous psychosocial and economical factors.

- Alzheimer's burden on the family

Risk Factors of Dementia

- Increases steadily with age, roughly doubling every 5 years
- Common among institutionalized elderly
- Present in ½ to 2/3 of nursing home residents
- Family history associated with an increased risk of Alzheimer

Risk factors

- Age: Strongest risk factor particularly for ALZ d
- annual incidence 0.6% for age 65-69
- 1% for age 70-74
- 2% for age 75-79
- 3.3 % for age 80-84 and 8.4% for above 85
- 1/2-2/3 of nursing home residents

Risk factors

- Family history : Especially in relation to ALZ D

- First degree relatives have 10-30% increased risk for the disease

- Apolipoprotein E epsilon 4 genotype predisposes to development of ALZD

Risk factors

- History of head trauma .
- History of low educational achievement
- Organic solvent exposure
- Female gender 16%/6%
- Relationship to blood pressure : a U shape association
- Hypercholesterolemia /role of statins
  - Diabetes

Screening Tests

- Dementia is easily recognized in advanced stages, often overlooked in early stage
- Clinicians fail to detect 21-72% of patients with dementia esp. in early stages

- Undiagnosed AD patients often face avoidable social, financial, and medical problems
- Early diagnosis and appropriate intervention may lessen disease burden
  - Early treatment may improve overall course substantially
- No definitive laboratory test for diagnosing AD exists
  - Efforts to develop biomarkers, early recognition by brain scan

Prevalence of Alzheimer

- Alzheimer's disease (AD) is the most common form of dementia. It represents a worldwide medical challenge affecting more than 18 million people; estimated to reach 34 million by the year 2025 .

- With over 1.5 million cases in the Arab world. Alzheimer's disease is a devastating illness which can affect all members of society

Mortality

- ALZHEIMER'S DISEASE LIKELY PLAYS A MUCH LARGER ROLE IN THE DEATHS OF OLDER AMERICANS THAN IS REPORTED, ACCORDING TO A NEW STUDY THAT SAYS THE DISEASE MAY BE THE THIRD-LEADING CAUSE OF DEATH IN THE UNITED STATES.

- THE **CENTERS FOR DISEASE CONTROL** AND PREVENTION LISTS ALZHEIMER'S AS THE SIXTH-LEADING CAUSE OF DEATH, FAR BELOW HEART DISEASE AND CANCER. BUT THE [NEW REPORT](), PUBLISHED WEDNESDAY IN THE MEDICAL JOURNAL OF THE AMERICAN ACADEMY OF NEUROLOGY, SUGGESTS THAT THE CURRENT SYSTEM OF RELYING ON DEATH CERTIFICATES FOR CAUSES MISSES THE COMPLEXITY OF DYING FOR MANY OLDER PEOPLE AND UNDERESTIMATES THE IMPACT OF ALZHEIMER'S.

- WHILE THE CDC (center for disease and control) ATTRIBUTED ABOUT 84,000 DEATHS IN 2010 TO ALZHEIMER'S, THE REPORT ESTIMATED THAT NUMBER TO BE 503,400 AMONG PEOPLE 75 AND OLDER. THAT PUTS IT IN A CLOSE THIRD PLACE, BEHIND HEART DISEASE AND CANCER, AND WELL ABOVE CHRONIC LUNG DISEASE, STROKE AND ACCIDENTS, WHICH RANK THIRD, FOURTH AND FIFTH.

- Alzheimer's is officially the 6th leading cause of death in the United States and the 5th leading cause of death for those aged 65 and older. However, it may cause even more deaths than official sources recognize. It kills more than prostate cancer and breast cancer combined.

- Deaths from Alzheimer's increased 68 percent between 2000 and 2010, while deaths from other major diseases decreased. Alzheimer's disease is the only cause of death among the top 10 in America that cannot be prevented, cured or even slowed.

Conclusions and Recommendations

- Next to Cancer and AIDS, the highest medical budgets are allocated to Alzheimer's research. The Arab Conference on AD 2005 seeks to develop a regional and national plan to raise the level of awareness on AD and reach patients, caregivers, specialists, doctors, nurses, specialized international agencies and governmental and non-governmental organizations

References

- 1-Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. PLoS Med 2005;3(11):e442.
- 2-Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. World population prospects: The 2006 revision. New York (NY): United Nations; 2007.
- 3-Directorate of Information Studies and Research, Ministry of Health, The Hashemite Kingdom of Jordan. Mortality in Jordan 2005. Amman (JO): Ministry of Health, The Hashemite Kingdom of Jordan; 2008.
- 4-Mokdad AH. Health issues in the Arab American community. Chronic diseases and the potential for prevention in the Arab world: the Jordanian experience. Ethn Dis 2007;17(2 Suppl 3):S3-55-56.
- 5-Zindah M, Belbeisi A, Walke H, Mokdad AH. Obesity and diabetes in Jordan: findings from the Behavioral Risk Factor Surveillance System, 2004. Prev Chronic Dis 2008;5(1). http://www.cdc.gov/pcd/issues/2008/jan/06_0172.htm.
- 6-Projections of mortality and burden of disease to 2030. Geneva (CH): http://www.who.int/healthinfo/statistics/bodprojections2030/ en/index.html. Accessed July 16, 2008.

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