The Gap Between Evidence and Practice In NCDs

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Outline

- Learning Objectives
- Burden of death and disease due to NCDs
- The gap between evidence and practice
- The Case of CVDs
- Research questions and themes
- Conclusions
Learning Objectives

• To review the magnitude of death, disability and death caused by NCDs and injuries
• To identify the size and nature of the gap between what we know and what we do
• To consider possible ways of reducing the gap between the evidence and the practice
• To identify possible research questions and themes
Terminology

- Noncommunicable diseases includes CVD, cancers, respiratory conditions and musculoskeletal disorders
- Chronic diseases includes many Noncommunicable diseases e.g HIV/AIDs
- WHO NMH Cluster includes Violence and Injury, Mental Health and Substance Abuse/Dependence
Global Burden of Disease and Death due to NCDs

- In 2002, NCDs the leading cause of death in all WHO regions (except Africa)
- 2001 - 60% deaths and 47% disease burden
- 2002 - 32/45 million deaths due NCDs and another 4.5 million due to injuries
- BOD expected to rise to 73% of all deaths and 60% of global disease burden by 2020
Death and Disease Burden

- 79% of all NCD deaths occur in developing countries
- Double burden of disease
- Twice as many CVD deaths in developing countries as in developed countries
- Early age of CVD deaths in developing countries: 1/2 CVD deaths in India occur below 70 years compared to 1/5 in developed nations
Deaths, by broad cause group estimates for 2002

Total deaths: 57,027,000

- Noncommunicable conditions (58.6%) of which 50% are due to CVD
- Communicable diseases, maternal and perinatal conditions and nutritional deficiencies (32.3%)
- Injuries (9.1%)

Source: WHO, WHR, 2003
Deaths, by broad cause group and WHO Region, 2001

Communicable diseases, maternal and perinatal conditions and nutritional deficiencies

Noncommunicable conditions

Injuries

Source: WHR 2002
Deaths due to CVD by WHO Region, 2000

The prevalence of diabetes in adults (millions of people).

World Health Report, 1997
Deaths attributable to 16 leading risk factors: all countries, 2001

Blood pressure
Tobacco Use
Cholesterol
Underweight
Unsafe sex
Fruit & vegetable intake
High Body Mass Index
Physical inactivity
Alcohol
Unsafe water, hygiene
Indoor smoke from fuels
Iron deficiency
Urban air pollution
Zinc deficiency
Vitamin A deficiency
Unsafe health care injections

Source: WHO, WHR, 2003
World
Deaths in 2000 attributable to selected leading risk factors

Number of deaths (000s)

- Blood pressure: 7000
- Tobacco: 5000
- Cholesterol: 4000
- Underweight: 3000
- Unsafe sex: 2000
- Fruit and vegetable intake: 1500
- High Body Mass Index: 1200
- Physical inactivity: 1000
- Alcohol: 900
- Unsafe water, sanitation, and hygiene: 800
- Indoor smoke from solid fuels: 600
- Iron deficiency: 500
- Urban air pollution: 400
- Zinc deficiency: 300
- Vitamin A deficiency: 200
- Unsafe health care injections: 100
- Occupational risk factors for injury: 0

Source: WHR 2002
High Mortality Developing Countries
Deaths in 2000 attributable to selected leading risk factors

- Underweight
- Unsafe sex
- Blood pressure
- Unsafe water, sanitation, and hygiene
- Cholesterol
- Tobacco
- Indoor smoke from solid fuels
- Low fruit and vegetable intake
- Zinc deficiency
- Vitamin A deficiency
- Iron deficiency
- Physical inactivity
- Alcohol
- High Body Mass Index
- Unsafe health care injections
- Urban air pollution

Number of deaths (000s)
Low Mortality Developing Countries
Deaths in 2000 attributable to selected leading risk factors

- Blood pressure
- Tobacco
- Cholesterol
- Alcohol
- Low fruit and vegetable intake
- High Body Mass Index
- Indoor smoke from solid fuels
- Physical inactivity
- Urban air pollution
- Underweight
- Unsafe health care injections
- Unsafe water, sanitation, and hygiene
- Unsafe sex
- Occupational particulates
- Iron deficiency
- Occupational risk factors for injury
- Lead exposure
- Illicit drugs

Number of deaths (000s)
Developed Countries
Deaths in 2000 attributable to selected leading risk factors

- Blood pressure
- Tobacco
- Cholesterol
- High Body Mass Index
- Low fruit and vegetable intake
- Physical inactivity
- Alcohol
- Urban air pollution
- Lead exposure
- Occupational carcinogens
- Illicit drugs
- Unsafe sex
- Occupational particulates
- Occupational risk factors for injury

Number of deaths (000s)
Global prevalence of underweight and obesity in adults for year 2000 by level of development

Prevalence (%)

- BMI < 17.00
- BMI > 30.00

BMI = Body Mass Index

Source: WHO, NMH/NHD 2000
Trends of overweight in children

Other NCDs, Injuries & Mental Health

- 7.1 million cancer deaths in 2002; 17% from lung cancer alone
- 19% of adult disease burden due to neuropsychiatric disorders
- Injuries contributed 14% of adult disease burden in 2002 (>30% in males 15-44 years in many WHO regions)
- 20 million road deaths per year globally
Road Traffic Injuries

• Hidden epidemic - injuries, air pollution deaths, physical inactivity etc

• Road traffic injuries increasing exponentially especially in SEA and sub-Saharan Africa - 80% average increase in all low/middle-income countries

• Road traffic injuries are preventable - fatality rates declining in high-income countries
The Case of Cardiovascular Diseases

• CVDs most important single cause of NCD: 29% of all deaths and 10% global Burden of Disease in 2001

• Myths and Misconceptions distracts from actions needed:
  - disease of the wealthy, natural ageing and degenerative processes
  - “lifestyle diseases” therefore individual choice and responsibility
Cardiovascular Diseases

- CVDs declining in developed nations due largely to success of primary prevention (and to a lesser extent, treatment) but increasing
- Enough evidence to show if we apply existing knowledge, we can make major rapid, cost-effective contribution to prevention and control of NCDs
CVD causes are known

• 3 risk factors account for 75-85% of new cases of CVD
  – Tobacco use
  – Reduced levels of physical activity
  – Nutrition transition - increase fat, salt and sugar and depleted fruit and vegetables
Evidence IS Available for Action

• 1/2 Tobacco users will die from tobacco-related cause
• Convincing evidence of adverse effects of second-hand smoking & on foetal development
• Tobacco causes 8.8% global deaths (5 million)
• Attributable burden increasing in developing countries (at least 1 more million deaths due to tobacco between 1990 & 2000)
Evidence IS Available for Action

• No standardised methodology for measuring PA - leisure time, work, transport, domestic duties
• Globally, 1/5 adults 15 years+ are inactive and another 41% insufficiently active
• Physical activity reduces risk of CVD, some cancers and Type II diabetes
• Globally, inactivity causes 2 million deaths
Policies are available

• Integrated management of CDs and NCDs through primary care - prevention, treatment and long-term management

• Local, regional and international evidence-based interventions available but not universally implemented e.g FCTC and Global Strategy on Diet, PA and Health

• Few countries have implemented comprehensive prevention and control policies (WHO 2001)
Secondary Prevention of CVDs

- Lifestyle modification works
- Strong evidence that stopping smoking after MI reduces mortality by about 1/2
- Dietary modification results vary for saturated fat intake but fish oils show consistent reduction in CVD and total mortality (DART trial)
- Observational studies show high salt intake increases CVD risk; no RCTs for reduced salt intake lowers risk for CVD
Secondary Prevention of CVDs

• Trials of high fibre show no evidence of benefit
• Increase in folate and B-vitamins trials underway
• Vitamin E supplements no benefit
• Benefits of Physical Activity ongoing debate but 20-25% reduction in cardiac and all-cause mortality
• Overweight (BMIs 25-29.9) and obese (BMIs > 30) people have increased risk of CVD but no RCT evidence of benefits of weight loss
Not enough is being done

• CVD patients in DEVELOPED countries
  - 2/3 do not get statins;
  - 1/2 did not get beta blockers;
  - 1/4 did not get aspirin

• CABG and PTCA under-utilised in women, ethnic minorities and low SES groups

• data not readily available for developing countries - WHO PREMISE study
Patient Awareness and Practice

• Generally, in developing countries, high level awareness of better diet, higher levels of PA and cessation of tobacco use among patients BUT
  – 1/3 have difficulty with diet,
  – 1/2 do not get enough PA and
  – 1/10 continue to smoke

• Considerable missed opportunities for prevention exist
Mental Health

- 40% of countries lack mental health policy
- 25% with a policy assign no budget
- 36% devote < 1% of total health resources
- 65% psychiatric beds in mental hospitals despite evidence that community-based services most effective
- depression, schizophrenia, epilepsy and alcohol problems readily managed by PHC
What Constrains Progress?

• NCDs ‘crowded out’ by CDs
• Policy-makers unaware of NCD magnitude & trends
• NCDs expensive to treat and unable to prevent
• NCD prevention slow to show impact
• Strong commercial interests hamper introduction of effective control measures
• Research and Policy Gap

WHO NCD Research Partners Meeting 2001
Research Priorities

- Standardised data on risk factor prevalence
- Research and evaluation of outcomes
- Effectiveness of preventive interventions
- Impact of global marketing and pricing policies on diet and nutrition, especially for young people
- Dynamics & means of improving intersectoral action
- Impact of globalisation and trade on diet and nutrition patterns
- Cost effectiveness of health promotion and preventive interventions
Research Questions

• Effectiveness of drug treatment combinations
• Cost, availability and affordability of secondary prevention
• Estimates of the prevalence of established CVD in different age-sex groups
Research Questions

• Consider Research Question relevant to your country for your Assignment
Conclusions

• NCDs a major and increasing public health challenge globally, especially for developing countries
• Considerable gap exists in what we know and what we do
• Much we do not know about NCDs
• Research capacity and funding is limited
Conclusions

• Considerable gap between knowledge and action in primary and secondary prevention at:
  – population level (policies, programmes, services)
  – individual level (individual knowledge, quality of care provided)