Community-based Intervention for Prevention and Control of CVD

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Outline

Introduction
Objectives
Methods
Findings
Conclusions & Recommendations
Introduction

• CVD is the leading cause of death worldwide

• Of the estimated 16.6 million deaths attributed to CVD worldwide, 80% is in developing countries

• Developing countries need to define and implement preventive interventions for CVD
Objectives

• to identify evidence-based, cost-effective community-based interventions for prevention and control of CVD;
• to form recommendations for their appropriate use in the developing countries.
Methods

• literature review

MEDLINE 1966 to March 2003
searches of reference list of papers
hand searching
Findings

1. Community-based interventions for primary prevention of CVD

2. Community-based Interventions for secondary prevention of CVD
Findings

1. primary prevention
   • High-Risk versus Population Approach
   • Single Cardiovascular Risk-Management versus Comprehensive Cardiovascular Risk-Management
   • Individual behavior Change versus Policy and Environmental changes
North Karelia Project (Finland)
Stanford Three-Community Study (USA)
Stanford Five-City Project (USA)
Minnesota Heart Health Program (USA)
Swiss National Research Programme
German Cardiovascular Prevention Study
Kilkenny Health Project (Ireland)
Comprehensive Cardiovascular Community Control Program (CCCP) (WHO/ EURO)
CINDI (EURO), CARMEN (AMRO)
Interhealth (WHO headquarter)
## Risk factor changes in North Karelia 1972-1997

(30-59 Years)

<table>
<thead>
<tr>
<th>Year</th>
<th>Men</th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Smoking %</td>
<td>S-Cholesterol mmol/l</td>
<td>Blood Pressure mmHg</td>
<td>Smoking %</td>
<td>S-Cholesterol mmol/l</td>
<td>Blood Pressure mmHg</td>
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<tr>
<td>1972</td>
<td>52</td>
<td>6.9</td>
<td>149/92</td>
<td>10</td>
<td>6.8</td>
<td>153/92</td>
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<tr>
<td>1977</td>
<td>44</td>
<td>6.5</td>
<td>143/89</td>
<td>10</td>
<td>6.4</td>
<td>141/86</td>
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<td>1982</td>
<td>36</td>
<td>6.3</td>
<td>145/87</td>
<td>15</td>
<td>6.1</td>
<td>141/85</td>
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<tr>
<td>1987</td>
<td>36</td>
<td>6.3</td>
<td>144/88</td>
<td>16</td>
<td>6.0</td>
<td>139/83</td>
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<tr>
<td>1992</td>
<td>32</td>
<td>5.9</td>
<td>142/85</td>
<td>17</td>
<td>5.6</td>
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<tr>
<td>1997</td>
<td>31</td>
<td>5.7</td>
<td>140/88</td>
<td>16</td>
<td>5.6</td>
<td>133/80</td>
</tr>
</tbody>
</table>

Puska Public health Medicine 2002
Age-adjusted mortality rates of coronary heart disease in North Karelia and the whole of Finland among males aged 35-64 years from 1969 to 1995.
Findings

2. secondary prevention

• Evidence
  – lifestyle changes such as smoking cessation, can significantly contribute to reduction in CVD mortality in people with established CVD and their recurrence.

• Indicators of quality of life for CVD patients
commonly used indicators for assessment of QOL in patients with CVD

Psychological
Social interactions
Symptom relief
Functional capacity and role activities
Economic
Life satisfaction
Perceptions of general health status or well-being
Sleep disturbance
Side effects
Conclusions & Recommendations

1. Both primary and secondary prevention are needed
2. Community-based primary prevention should
   -- target common lifestyle risk factors
   using comprehensive risk-management strategies
World

Deaths in 2000 attributable to selected leading risk factors

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

Number of deaths (000s)
Conclusions & Recommendations

--combination of population approach and high-risk approach
Strategies aimed at diet and physical activity of the population shift the blood pressure distribution of the whole population to the left.

High-risk strategy focuses on about 25% of the population.

Source: Integrated management of cardiovascular risk, WHO
Conclusions & Recommendations

--combination with population approach and high-risk approach

--emphasize policy and environmental change, community organization

--life course perspectives
Scope for NCD Prevention
a Life Course Approach

- Fetal Life
- Infancy and Childhood
- Adolescence
- Adult Life
  - established adult risk factors
    - behavioral/biological

Development of NCD

- SES maternal nutritional status & obesity, fetal growth
- SES nutrition diseases linear growth obesity
- obesity lack of PA, diet, alcohol, smoking SE potential

Accumulated Risk

Range of Individual Risk

Source: WHO, Ageing and Life Course, NMH/NPH
Thank you