

2-6-2007

# Social Determinants of Health and Disease Working Together

Amresh Srivastava

University of Western Ontario, amresh.srivastava@sjhc.london.on.ca

Follow this and additional works at: <https://ir.lib.uwo.ca/psychiatrypres>

 Part of the [Psychiatry and Psychology Commons](#), and the [Public Health Commons](#)

---

## Citation of this paper:

Srivastava, Amresh, "Social Determinants of Health and Disease Working Together" (2007). *Psychiatry Presentations*. 17.  
<https://ir.lib.uwo.ca/psychiatrypres/17>

# Thank you for the opportunity

## Amresh Srivastava

MD,DPM,MRCPsych.

Assistant Professor, Western  
Physician, Early Psychosis Programme,  
Regional Mental Health Care.St.Thomas  
Associate Scientist, Lawson Research,  
London,On,Canada.

E.Mail: [dr.amresh@gmail.com](mailto:dr.amresh@gmail.com)



The research institute of London Health Sciences Centre  
and St. Joseph's Health Care London



# Social Determinants of Health and Disease

## working Together

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.



# Factors responsible for our health??

---

- State of health and social determinants
- Hard facts about social conditions affecting health
- the link between SD & Health
- Is there an evidence?
- Consequences?
- Health inequalities? And why
- What needs to be done?

- .. A state of physical, mental and social ,  
(spiritual) well - being, not merely absence of  
a disease.....

**Social determinants are responsible  
for Health inequalities**

**"society determines  
outcome of an illness"!**

## Good health involves

- **Reducing levels of educational failure,**
- **Reducing insecurity and unemployment and improving housing standards.**
- **Societies that enable all citizens to play a full and useful role in the social, economic and cultural life of their society will be healthier than those where people face insecurity, exclusion and deprivation.**

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

# Social Determinants

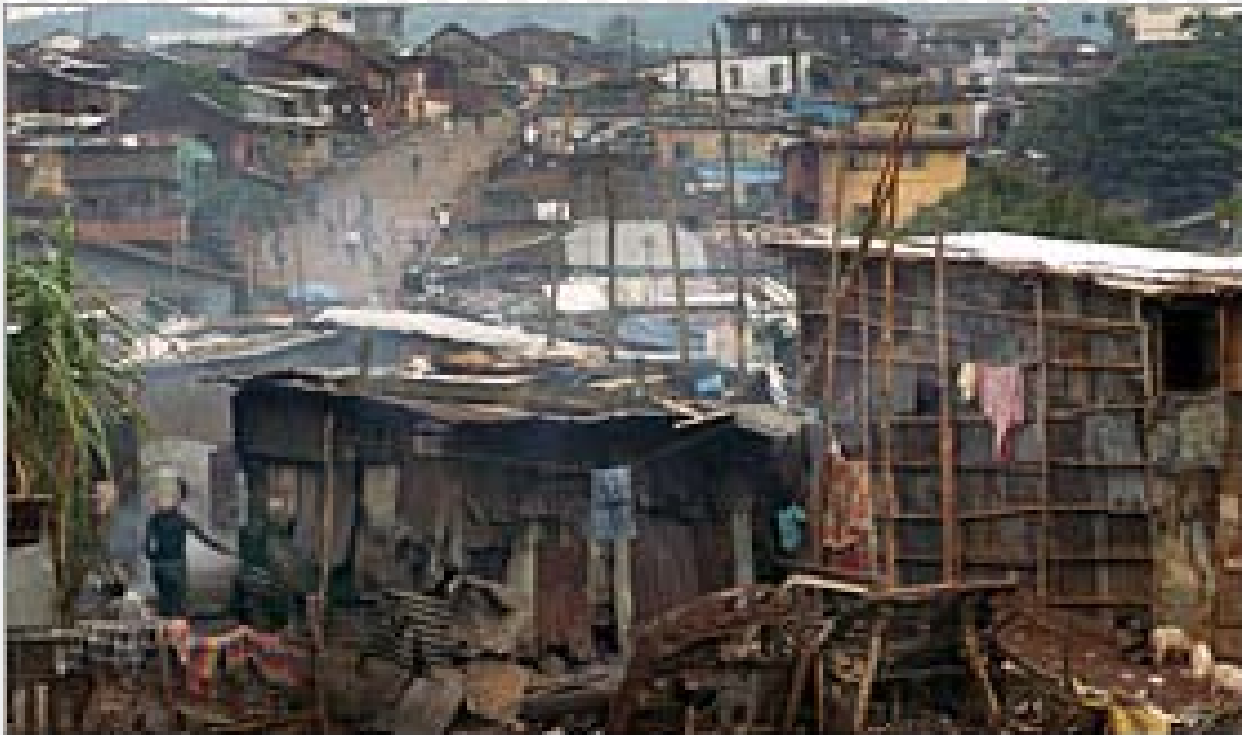
As cognitive , emotional, and sensory inputs programme brain's responses.

Insecure and poor stimulation can lead to  
reduce readiness for school,  
leading to low educational attainment ,  
problem behaviour ,  
risk of social marginalization

Poverty, social exclusion, poor housing and poor health systems are among the main

---

social  
causes of ill health.





Differences in the quality of life within and between countries affect how long people live.

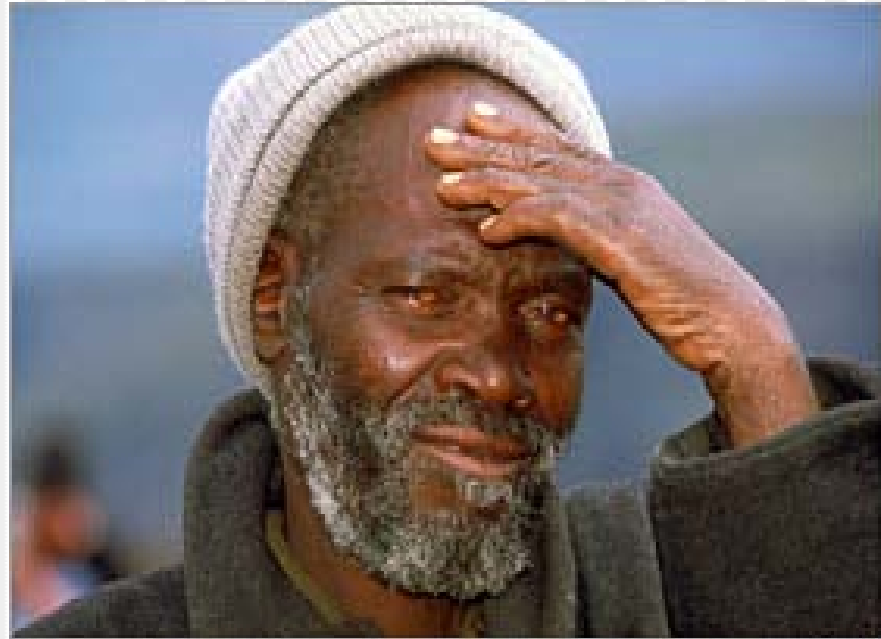
---

A child born in Japan has a chance of living 43 years longer than a child born in Sierra Leone.



## The probability of a man dying

between the ages of  
15 and 60 is  
8.2% in Sweden,  
48.5% in the  
Russian Federation,  
and  
84.5% in Lesotho.



In Australia, there is a 20-year gap in life expectancy

between Australian Aboriginal and Torres Strait Islander peoples, and the Australian average.



In 2002, nearly 11 million children died

before reaching their  
fifth birthday –  
98% of these deaths  
were in  
developing  
countries.



## Low- and middle-income countries

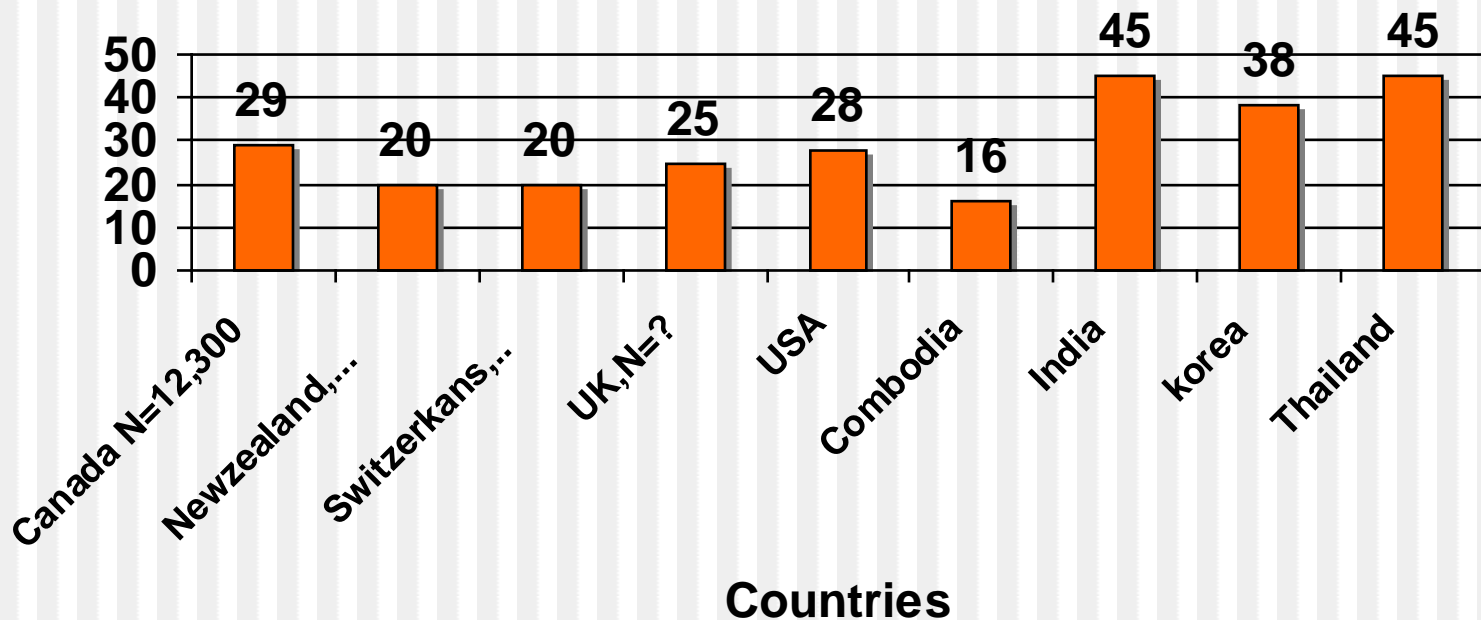
account for 85%  
of the world's road deaths.



# Violence & its Faces

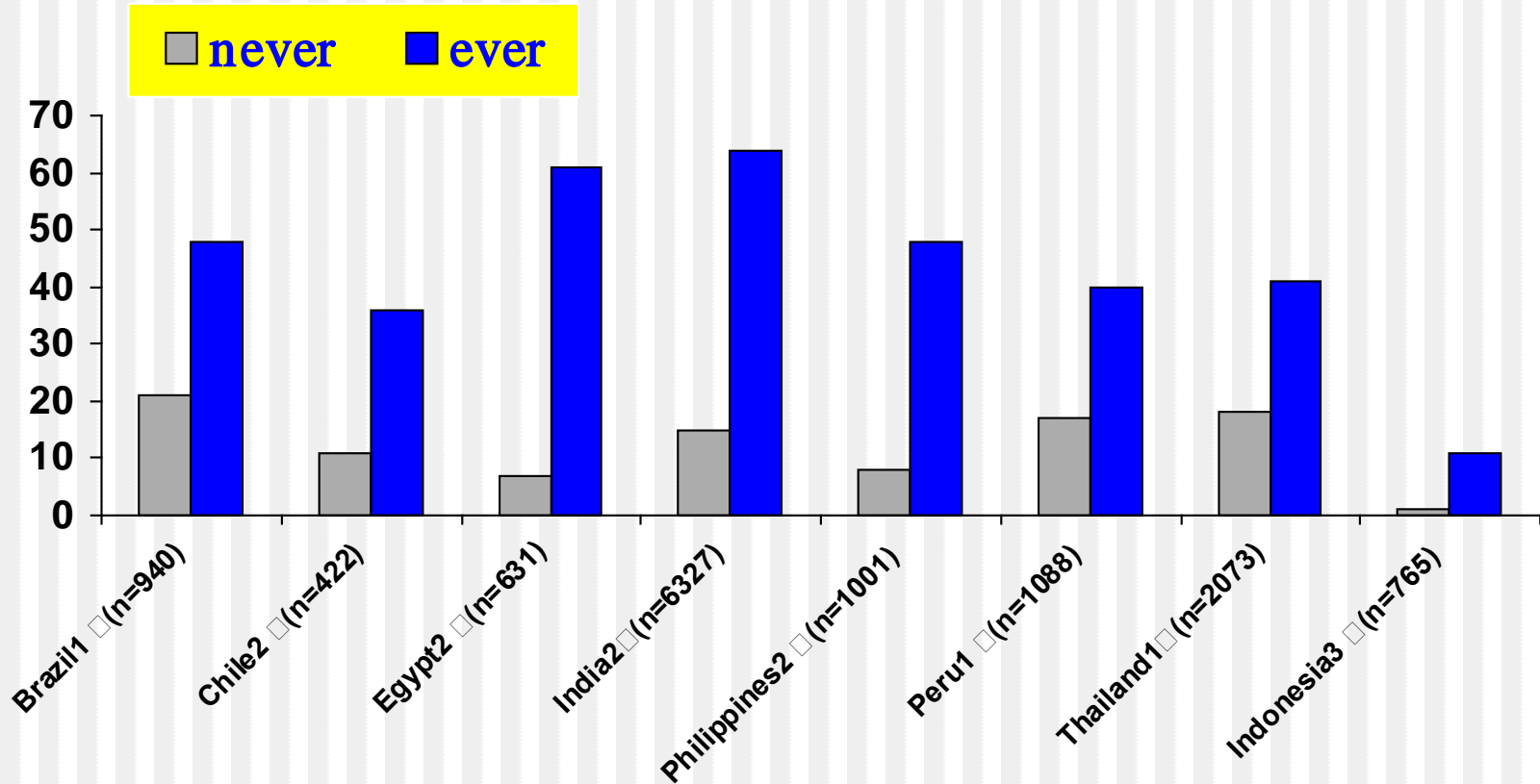
## violence against women

■ Violence against women, age 18-50, variable sample size, western world and Asia Pacific, WHO



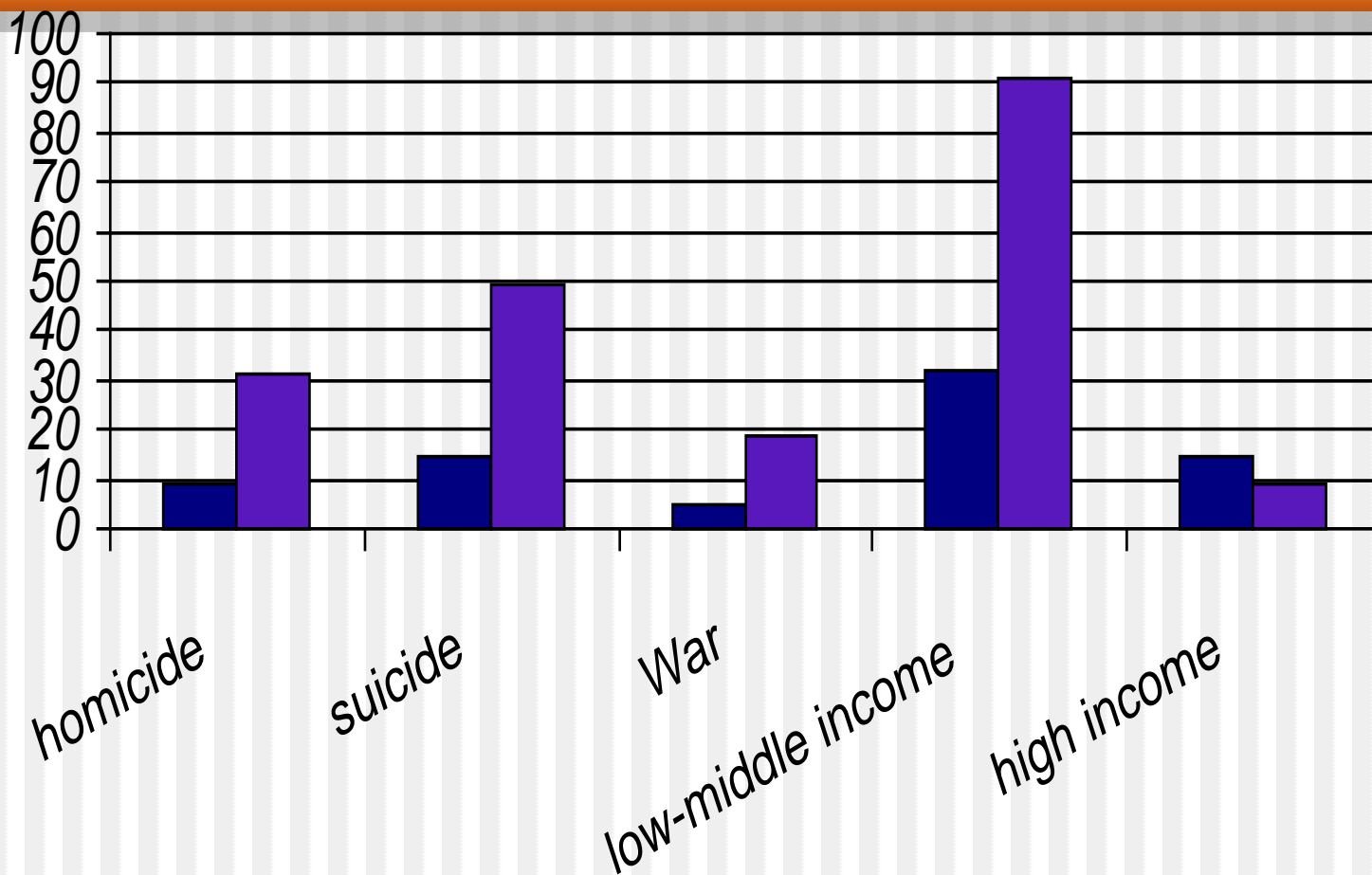
# Relationship between domestic violence and contemplation of suicide , WHR 2001

% of women who have ever thought of committing suicide (P<0.001)



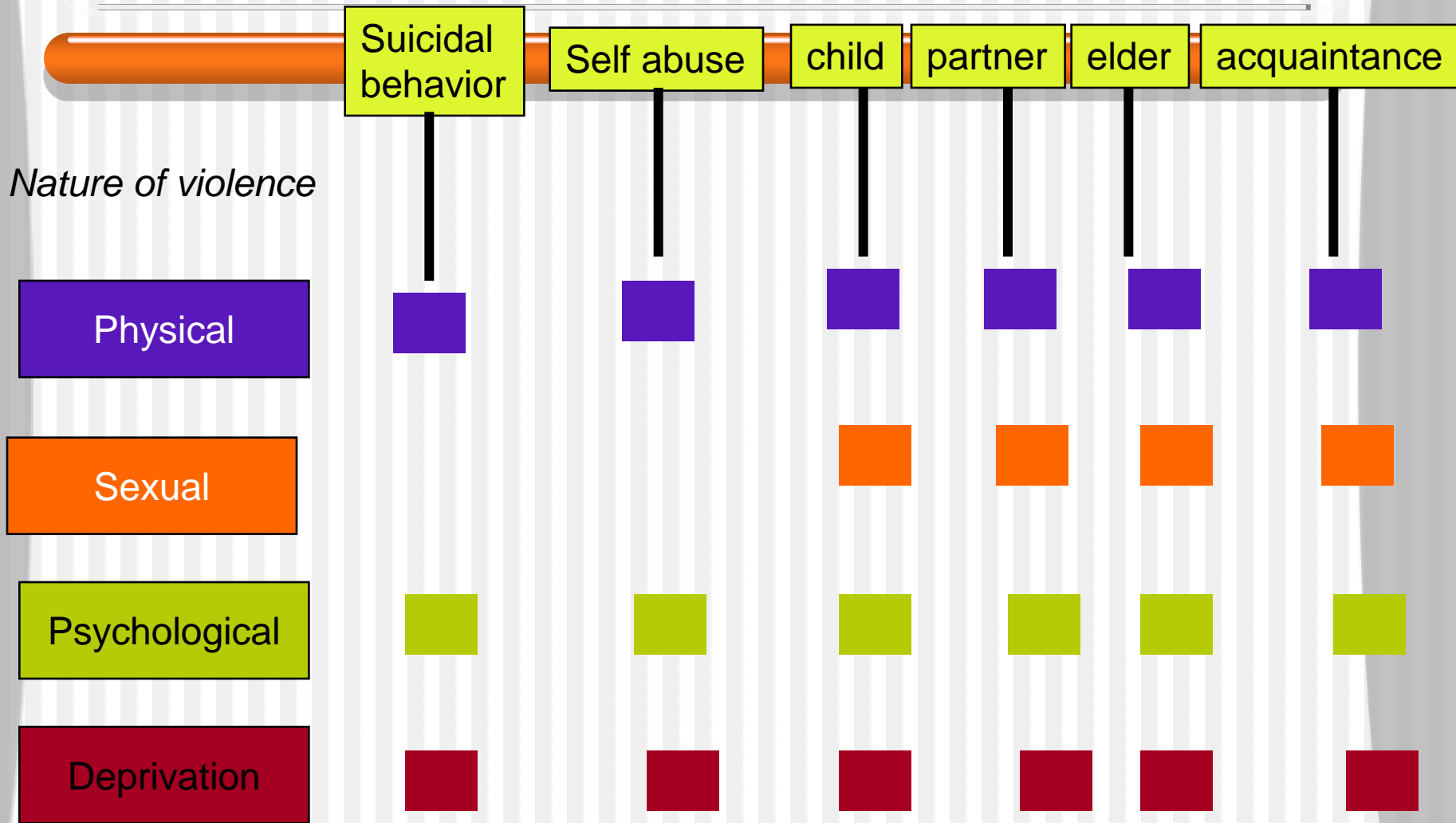
# Estimated Global Violence related Death, 2000

■ rate per 100K ■ prortion of total in %





- ❖ More than a million people lose their lives.
- ❖ Overall, violence is the leading cause of death in the years 15-44 years.



# ***Health Consequences***

## *Physical*

- ❖ Abdominal/thoracic injury
- ❖ Bruises
- ❖ Chronic pain syndrome
- ❖ Disability
- ❖ Fibromyalgia
- ❖ Fractures
- ❖ GI disorders
- ❖ IBS
- ❖ Lacerations and abrasions
- ❖ Ocular damage
- ❖ Reduced physical functioning

## *Sexual and reproductive*

- ❖ Gynaecological
- ❖ Infertility
- ❖ Pelvic inflammatory disease
- ❖ Pregnancy complications
- ❖ Sexual dysfunction
- ❖ STD, HIV/ AIDS
- ❖ Unsafe abortions
- ❖ Unwanted pregnancy

# ***Health consequences***

## *Psychological & Behavioral*

- ❖ Alcohol, drug abuse
- ❖ Depression and anxiety
- ❖ Eating and sleep disorder
- ❖ Feeling of shame and guilt
- ❖ Phobias and panic disorder
- ❖ Physical inactivity
- ❖ Poor self esteem
- ❖ PTSD
- ❖ Smoking
- ❖ Suicidal behavior
- ❖ Unsafe sexual behavior

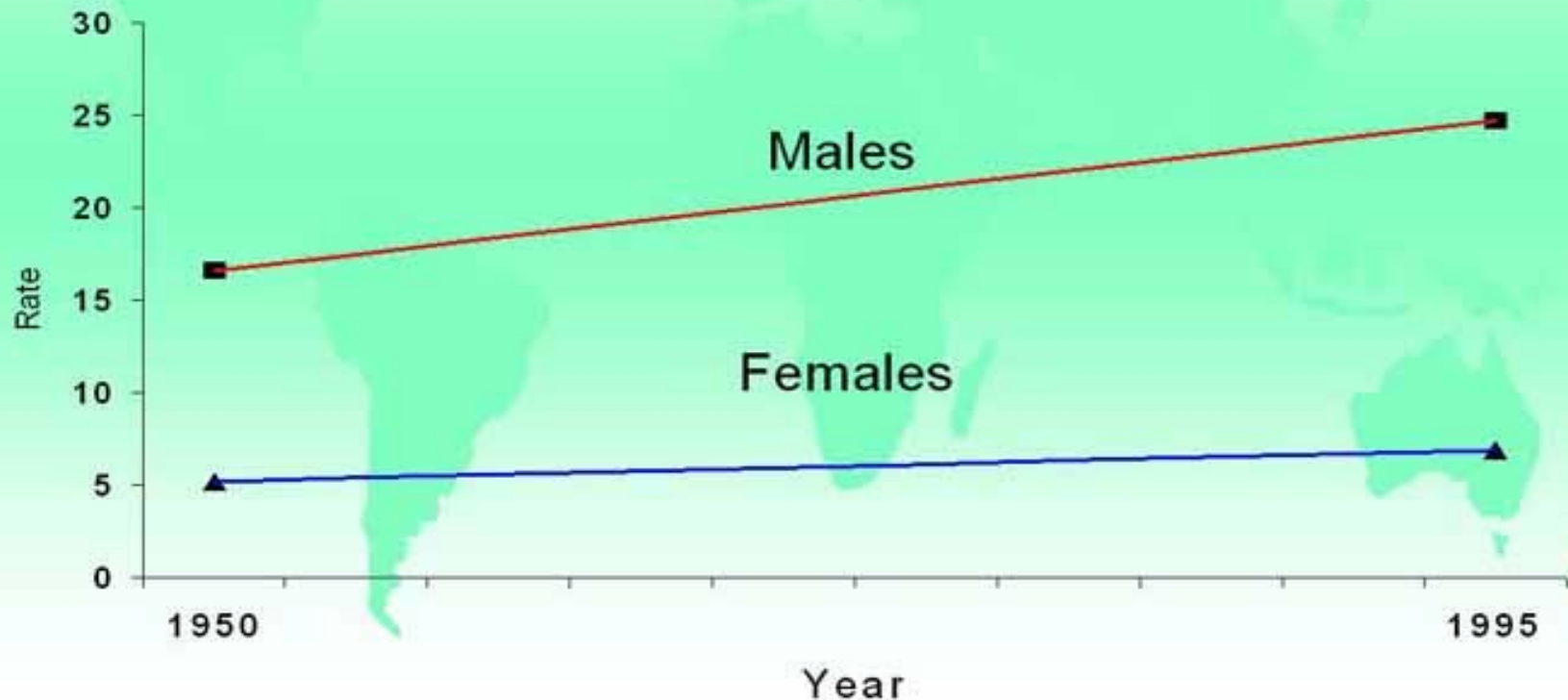
## *Fetal health consequences*

- ❖ AIDS-related mortality
- ❖ Maternal mortality
- ❖ Homicide
- ❖ Suicide

# Suicide

**One million people commit suicide every year**

Evolution 1950-1995 of global suicide rates (per 100.000).



**Figure 2.5 Suicide as a leading cause of death, selected countries of the European Region and China, 15–34-year-olds, 1998**

**European Region (selected countries)<sup>a</sup>**

Both sexes	Males	Females
1. Transport accidents	1. Transport accidents	1. All cancers
2. Suicide	2. Suicide	2. Transport accidents
3. All cancers	3. All cancers	3. Suicide

**China (selected areas)<sup>b</sup>**

Both sexes (rural and urban areas)	Males (rural areas)	Females (rural areas)
1. Suicide	1. Motor vehicle accidents	1. Suicide
2. Motor vehicle accidents	2. All cancers	2. All cancers
3. All cancers	3. Suicide	3. All cardiovascular diseases

Few governments have explicit policies

for tackling  
socially determined health inequalities.



# exact cause is not known

## Model of disease etiopathogenesis

- Fairly complex
- Some can be explained on Host-vector theory
- Cause - effect theory or causal relationship
- Many causes and similar effect [ depression]
- Same cause and multiple effects [ hyperlipidemia, nutritional deficiencies]
- Gene-environment theory

# Social determinants (SD)

- Even in the most affluent countries, less well off people, shorter life expectancies and more illnesses than the rich.
- Not only are these differences in health an important social injustice, they have also drawn :
- scientific attention to some of the most powerful determinants of health standards in modern societies.
- They have led in to understanding of the remarkable sensitivity of health to the social environment
- become known as the

6th Feb.2007

Amresh Srivastava,

**social determinants of health**





**Adverse  
life situation**

**Psychological  
stress**

**Health**

**Consequences**

**Violence**

**Suicide**

**Physical illness**

**Mental Illness**

# Estimated impact of determinants of health on health status Of population

---

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

# The Ten Factors - identified as SDH

- lifelong importance of health determinants in
- early childhood, and
- the effects of poverty,
- drugs,
- working conditions,
- unemployment,
- social support,
- good food and transport policy. influences affect physical health and longevity.

# Health policy ,1st SDH

## ***universal access to medical care***

- Health policy was once thought to be about little more than the provision and funding of medical care:
- the social determinants of health were discussed only among academics.
- This is now changing.
- While medical care can prolong survival and improve prognosis after some serious diseases,
- more important for the health of the population as a whole are the social and economic conditions that make people ill and in need of medical care in the first place.
- Nevertheless, universal access to medical care is clearly one of the social determinants of health.

# Why , there is 'nothing about genes' only ? In SDH discussion

- The new discoveries on the human genome are exciting in the promise they hold for advances in the understanding and treatment of specific diseases.
- But however important individual genetic susceptibilities to disease may be, the common causes of the ill health that affects populations are environmental:
- They come and go far more quickly than the slow pace of genetic change because they reflect the changes in the way we live.
- This is why life expectancy has improved so dramatically over recent generations;
- It is also why some European & Western countries have improved their health while others have not, and it is why health differences between different social groups have widened or narrowed as social and economic conditions have

# The Evidence for SDH

## Social determinants (SD)



Commission on  
Social Determinants of Health

Why don't people's illnesses without changing  
what many think look to the best place?

© 2007

- The data and evidence which relate to social determinants of health come from a variety of disciplinary backgrounds and methodological traditions.
- The evidence about the social determinants comprises a range of ways of knowing about the biological, psychological, social, economic and material worlds.
- The disciplinary differences arise because social history, economics, social policy, anthropology, politics, development studies, psychology, sociology, environmental science and epidemiology, as well as biology and medicine may all make contributions.
- However, each of these has its own disciplinary paradigms, arenas of debate, agreed canons, and particular epistemological positions.

# The evidence to substantiate contribution of SD ( WHO Commission on Social Determinants of Health (SDH)

---

- Comes from very large numbers of research reports – many thousands in all. {By Institute of Health research}
- Some of the studies have used prospective methods, sometimes following tens of thousands of people over decades – sometimes from birth.
- Others have used cross-sectional methods and have studied individual, area, national or international data.
- Difficulties that have sometimes arisen (perhaps despite follow-up studies) in determining causality have been overcome by using evidence from intervention studies, from so-called natural experiments, and occasionally from studies in primate species.

People's lifestyles and the conditions in which they live and work strongly influence their health.



QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.



# Social gradient

life expectancy is shorter and most diseases are more common further down the social ladder in each society

# Occupational class difference in life expectancy, England, 1997-1999

Professionals

Managerial-  
Technical

Skilled non-  
Manual

Skilled  
Manual

Partly skilled  
Manual

Unskilled  
manual

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Education and awareness is  
key to success

# Stress

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Lack of control over work and home  
can have powerful effects on health.

# Stress

# Stress

Stressful circumstances, making people feel worried, anxious, and unable to cope are damaging to health and may lead to premature death.

## What is known

1. Social and psychological circumstances can cause long-term stress, social isolation, and lack of control over work and home life have powerful effects on health.
2. Such psychosocial **risk accumulate** during life and increase the chances of poor mental health and premature death.

# Stress

3. Long periods of anxiety and insecurity and the lack of supportive friendship are damaging in whatever area of life they arise.
4. The lower people are in social hierarchy of industrialized countries ,  
the come common these problems are

# Why do these psychosocial factors affect physical health?

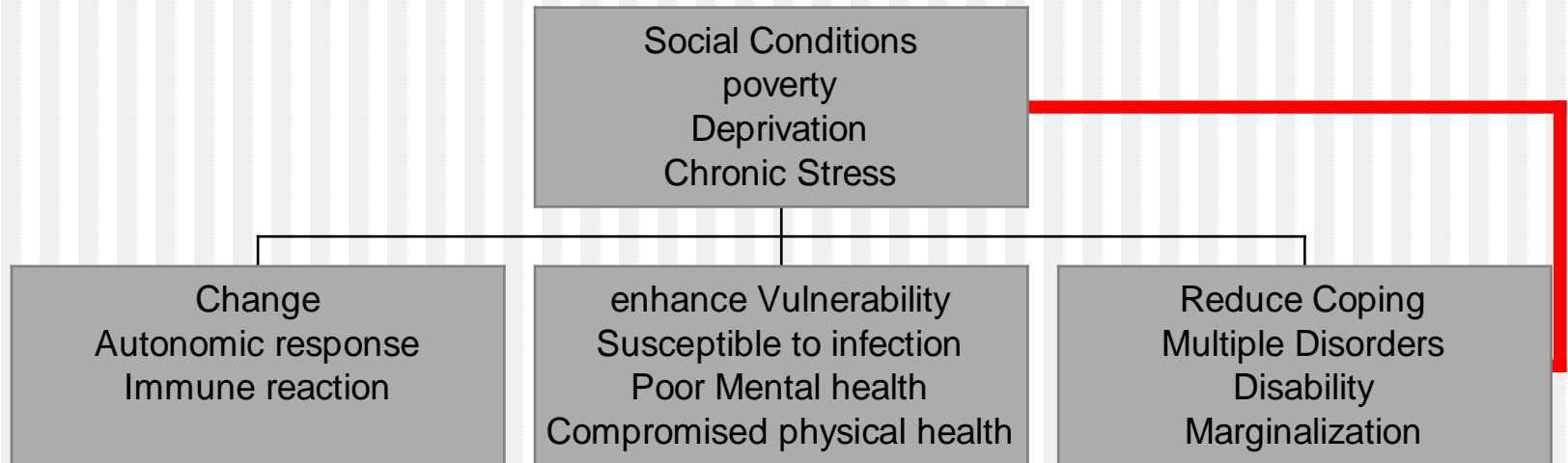
- In emergencies, our hormones and nervous system prepare us to deal with an immediate physical threat by triggering the fight or flight response: raising the heart rate, mobilizing stored energy, diverting blood to muscles and increasing alertness.

# Environment affects bodily function

---

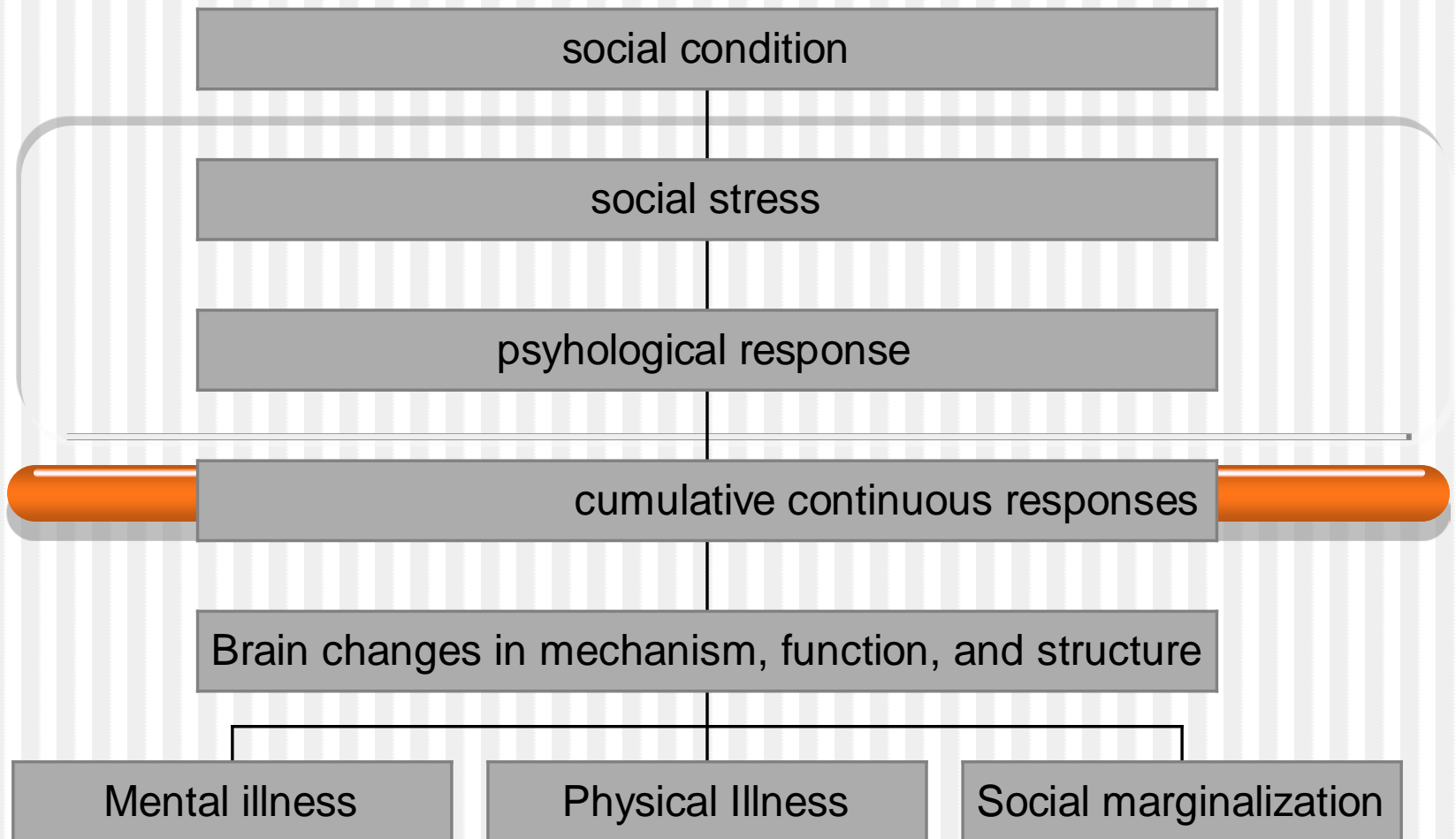
- Although the stresses of modern urban life rarely demand strenuous or even moderate physical activity, turning on the stress response diverts energy and resources away from many physiological processes important to long-term health maintenance.
- Both the cardiovascular and immune systems are affected. For brief periods, this does not matter; but if people feel tense too often or the tension goes on for too long, they become more vulnerable to a wide range of conditions including infections, diabetes, high blood pressure, heart attack, stroke, depression and aggression.

# The Process





# Social Conditioning



## Environmental Conditions determine Individual's Social adaptability

---

Genetic expressions are affected by biological Factors modulated by psychosocial factors, thus accounting For 'variability' in disorders of genetic origin across the world.

Epidemiological differences are possible to explain .  
Field of Cultural epidemiology and transcultural /  
Cross Cultural differences are therefore being studied  
e.g.

Drug metabolism, response and dosage,  
Differences in outcome of treatments

# Early years

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Important foundation of adult health are laid in early  
childhood

A good start in life means supporting mothers and young children: the health impact of early development and education lasts a lifetime.

---

- What is known
- Boundaries of adult health are laid in early childhood and before birth.
- Slow growth and poor emotional support is a life time risk of poor physical health, and reduce physical, cognitive and emotional functioning
- Poor early experience and slow growth become embedded in biology during process of development and form a basis for our biological and human capital

# Risk of diabetes in men aged 64 years

## By birth weight

Risk of diabetes with birth weight >3.4 Kg at 1

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Slow/retarded growth in infancy is associated with reduced cardiovascular, respiratory, pancreatic and kidney development, with increased risk of illness in adulthood.

Birth weight

# Social Exclusion

Life is short where its quality is poor.  
By causing hardship and resentment,  
poverty, social exclusion  
And discrimination costs lives.

Percentage %

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Proportion of  
children  
living in  
Poor  
household  
(below 50%  
of national  
Average  
income

# Social Exclusion

## *What is known*

- Social exclusion,
- Poverty,
- Relative deprivation
- Relative poverty
- Poor access to health and education
- At-risk pregnancy
- More the length of exclusion more Cardiac and
- Mental Health problem
- Results from
- Racism, discrimination,
- stigmatization
- Hostility
- Unemployment
- Risk for divorce

***People living on the streets suffer the Highest rates of premature death***

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Jobs with high demand  
and control carry special  
risk

Work

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

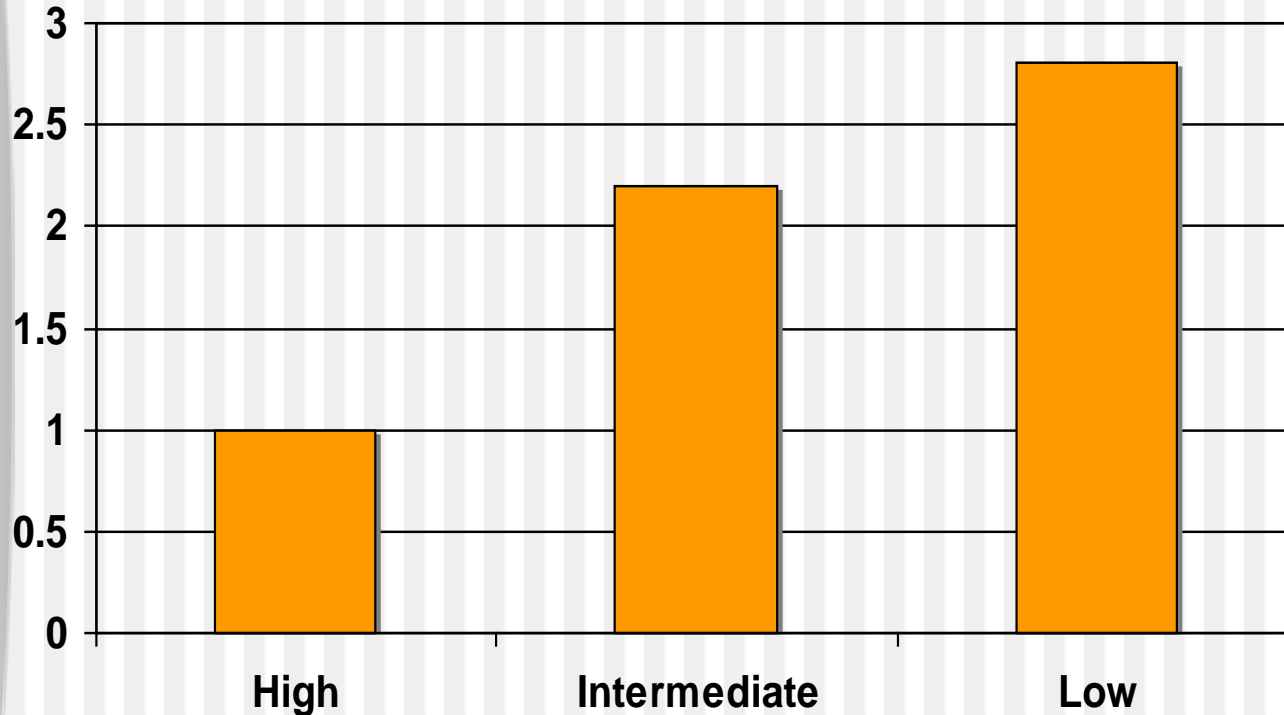
Stress in work  
place increases the  
risk of  
disease.  
People who  
have more  
control over  
the work have  
better health

Jobs with high demand and control carry special risk



# Self-reported level of Job control and Incidence of coronary heart disease in men and women

Risk of CHD with high job control at 1.0



Adjusted for age, sex, length of follow up, effort, reward, Employment Grade, coronary risk factors and negative psychological disposition

- social status
  - Sickness, absence ,
  - premature death
- Inability to use their skills
- Low decision - making authority

Health effects start when people feel threatened, even before they actually become unemployed,

---

Job security is known to have effects on mental health, self reported ill health, heart disease, and risk factors for CAD, Job quality is also important.

QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.

# Unemployment

# Effects of job insecurity and unemployment at health

Job security increases health, well-being and job satisfaction. Higher rates of unemployment are related to more illness and premature death

Risk of ill health with  
securely Employed  
set at 100

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Social support.

# Social Support

Belonging to a social network makes people  
Feel cared for  
Good social  
relations and  
Strong  
supportive  
networks  
improve  
health at  
home  
Work and in  
community.

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

# Support operates on the level of both, individual and society

---

- Social isolation and exclusion are associated with increased rates of premature death and poorer chances of survival after MI.
- Less social and emotional support support in linked with experience of low or less well-being, more depression, high level of disability from chronic diseases.
- Amount of social support varies by socio-economic class.
- Poverty can contribute to exclusion and isolation.

Social cohesion defined by quality of social relationship and the experience of trust, is a health protective factor  
breakdown of trust and relation is traumatic and leads to  
mental health issues

Age adjusted mortality rate

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

## Social integration

Level of social integration and mortality in five prospective studies, USA, Finland, Sweden

# Addiction and Drug Abuse

*Addiction:  
people  
turn to alcohol,  
drugs and tobacco  
and suffer but  
use is influenced  
by wider  
social settings*

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

# Drug use

is both

1. response to social break down
2. factor in worsening inequalities in health

- Associated with markers of social disadvantage
- In some countries ( Central and eastern Europe , grate social upheaval has been found related to sharp rise in death linked to alcohol, accidents, poisoning, injury and suicide.



# Socioeconomic deprivation and risk of dependence on alcohol, nicotine and, drugs in Great Britain , 1993

Risk of dependence with most affluent at 1

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Most  
affluent

Deprivation score

Most  
deprived

# Food and healthy food

Because global market controls food supply healthy food is a political issue

QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.

- Socioeconomic conditions is a social gradient in diet quality.
- Main dietary difference in social class is source of nutrient.
- The poor tend to substitute processed food.
- People on low income in all social groups such as young families, elderly and unemployed are least able to eat well

# Mortality fro coronary HD in relation to fruit and vegetable supply in selected European countries

Age standardized Death rates per  
100K for men aged 35-74

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

Supply of fruits and vegetable/person/year

# Transport

Healthy transport means less driving and more walking and cycling, backed up by better public transport

QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.

distance

Distance traveled per person by mode of transport, Great Britain, 1985, 200

QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.

Mode of transport

# Health Inequalities

- There is a lack of systematic studies of the effects of policy on inequity.
- The contours of inequality and social difference and disadvantage are not well described.
- The degree to which changes in inequalities can be measured is ill defined (Kilogram & Kelly, 2004).
- The difference between the determinants of health and the determinants of inequalities in health is often confused (Graham & Kelly, 2004; Graham, 2004a; 2004b; 2004c)
- The health of populations and the health of individuals is frequently elided (Heller, 2005).

# Health Inequalities

➤ Take an evidence based approach which offers the best hope of tackling the inequities that arise as a consequence of the operation of the social determinants.

evidence will provide the basis for understanding and the basis for action

There is a very rich literature describing health inequalities and the social determinants of health, especially in developed countries

But ,good scientific studies explaining what can be done to reduce health inequalities are lacking

# Health Inequalities

- finally, the links between the proximal, intermediate and distal determinants of health are poorly conceptualized and integrated into research (WHO, 2004).
- In the face of these difficulties an evidence based approach means finding the best possible evidence about the social determinants (NHMRC, 1999).
- The definition of best evidence should be made on the basis of its fitness for purpose and on the basis of its connectedness to research questions (Glasziou et al., 2004).
- Those research questions are the ones which deal with the effectiveness of interventions to change the social determinants.

# Response to SDH

- Decreasing social stratification itself, by reducing "inequalities in power, prestige, income and wealth linked to different socioeconomic positions";
- Decreasing the specific exposure to health-damaging factors suffered by people in disadvantaged positions;
- Lessening the vulnerability of disadvantaged people to the health-damaging conditions they face;
- Intervening through healthcare to reduce the unequal consequences of ill-health and
- prevent further socioeconomic degradation among disadvantaged people who become ill.

**working together**



Over last 50 years urban  
population has  
Grown dramatically.

---

in 1950 --29% were  
in urban areas,  
by 1975- 37.3% .  
In 2006/7 it is expected  
to be 50%  
and 60% by 2030

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

working together

# working together

New urban setting and Rapid urbanization

QuickTime™ and a  
IFF (LZW) decompressor  
needed to see this picture.

QuickTime™ and a  
TIFF (LZW) decompressor  
are needed to see this picture.

# What is there for scientists in SDH?

- An obligation for search of truth
- Several research questions are challenging you.
- Why are there differences in similarities
- Why do the diseases show atypical presentation?
- How exactly does the environment, society, individual and biological substrate interact?
- In constantly changing social scenario , can a prediction be made and prevention be planned?
- Are Biological changes , socially mediated; if No why then the rates of infertility so variable.

# Research SDH

- The scientist of today is faced with much more , complex and difficult questions, than ever before.
- Continuous changes, constants amongst variables, geo-political-social changes;are challenging the scientific communities.

# Thanks for your Time

I wish to prey for a bright future for those striving for science to make this world a better place to live.