

# Vulnerability in the South African context

Presented at

CSIR Innovation Conference

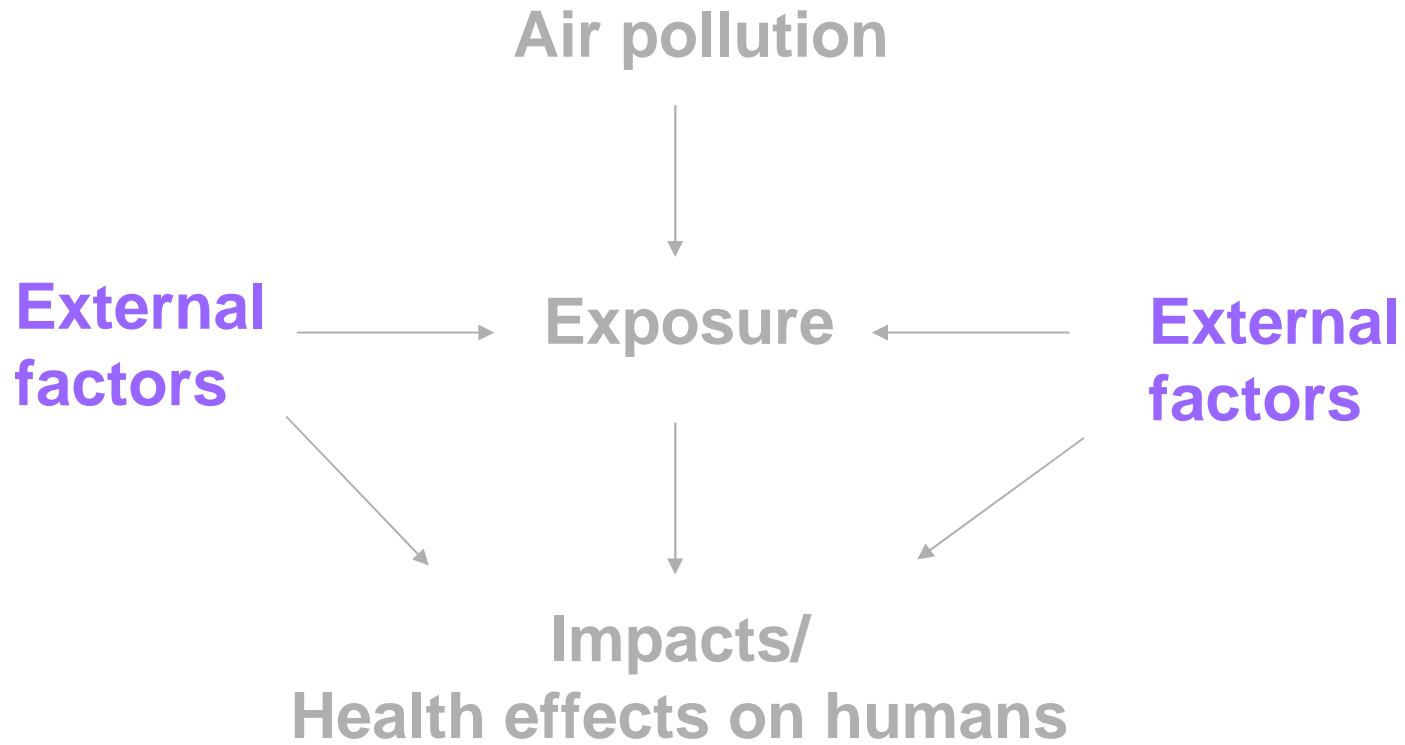
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28 February 2006



# Our focus



# Vulnerability: an introduction

- What is vulnerability?  
*'characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of natural or man made hazards'*
- The important question: Vulnerable to what?
- Why is vulnerability significant in the air pollution context?

# What is the focus of the presentation?

- Risk vs vulnerability
- Categories of vulnerability
- Some Vulnerability factors affecting SA communities in relation to air pollution.
- A conceptual framework for integrating health risk assessment and vulnerability
- Challenges associated with integrating these concepts

# Risk vs vulnerability

- Risk: likelihood of an event following exposure
- Determination of health impacts of air pollution through
  - Epidemiology and toxicological studies
  - Health risk assessments
  - Environmental health impacts studies
- Data on risk factors lacking ↔ risk management
- Realisation that risks cannot be considered within the boundaries of traditional risk assessment framework
- Risk = f{Hazard, Vulnerability}

# Categories associated with vulnerability

- Susceptibility/sensitivity
- Differential exposure
- Differential preparedness
- Differential ability to recover

# Categories and factors associated with vulnerability

Susceptibility		Differential exposure	Differential ability to recover/cope
Intrinsic	Acquired		
Life/developmental stage	Nutrition	Occupation	Access to health care Immunisation
Genetics	Drug/alcohol use	Cultural/behavioural practices	Education
Race	Fitness	Background exposure	Socio-economic status
Gender	Obesity	Body burden	Cultural practices
Disease state	Disease	Fuel use	Employment

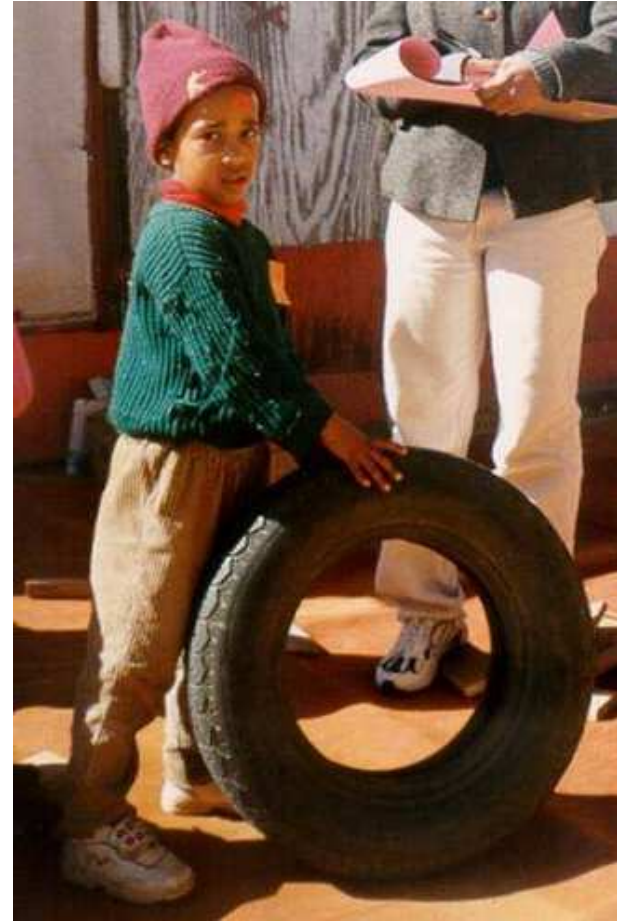
# Vulnerability: The South African context



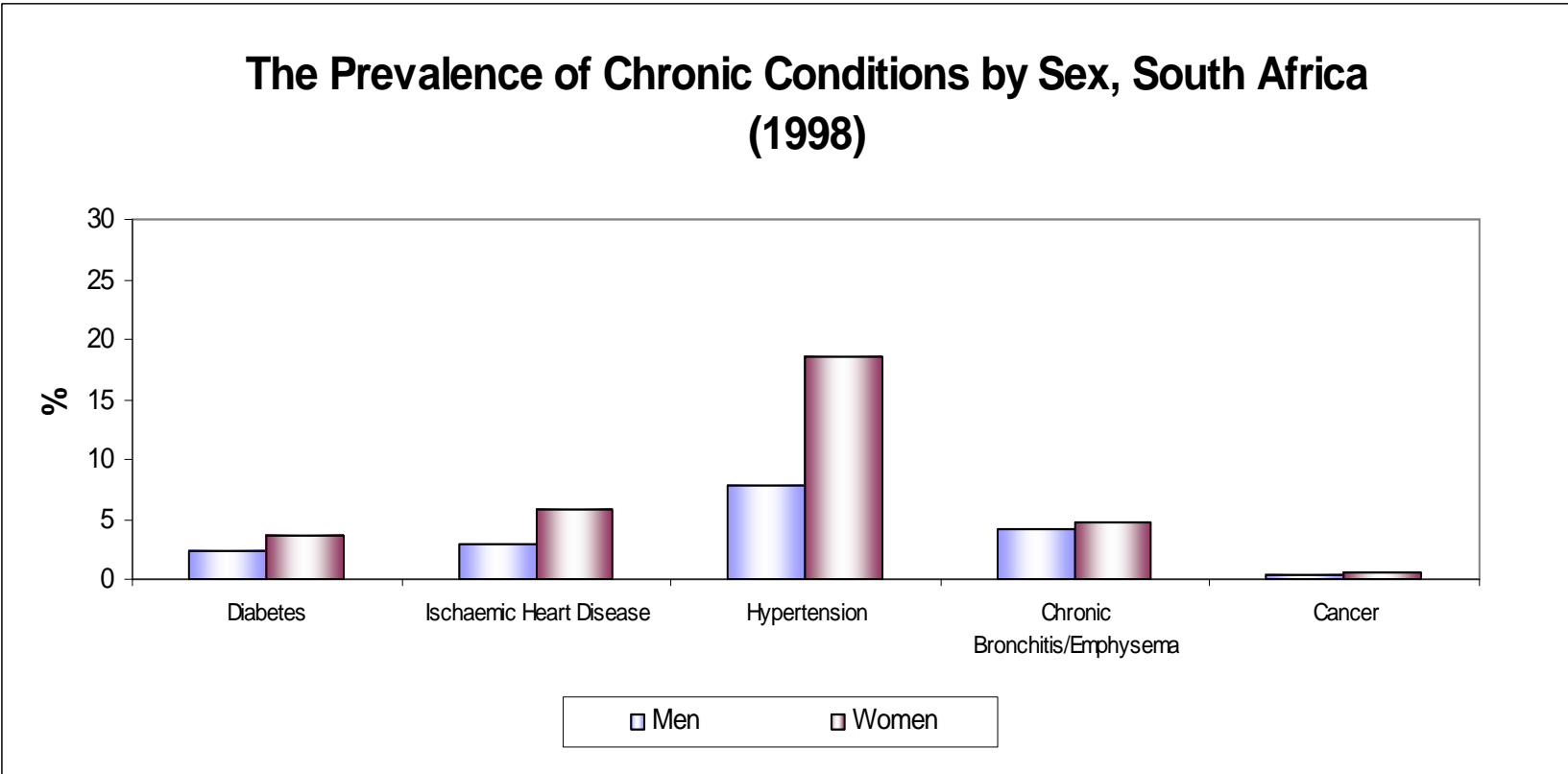


# Susceptibility factors

- Life/developmental stage (age)
- Genetics
- Race
- Gender
- Disease state
  - Respiratory diseases
  - HIV/AIDS and opportunistic infections
  - Nutritional status



# Gender



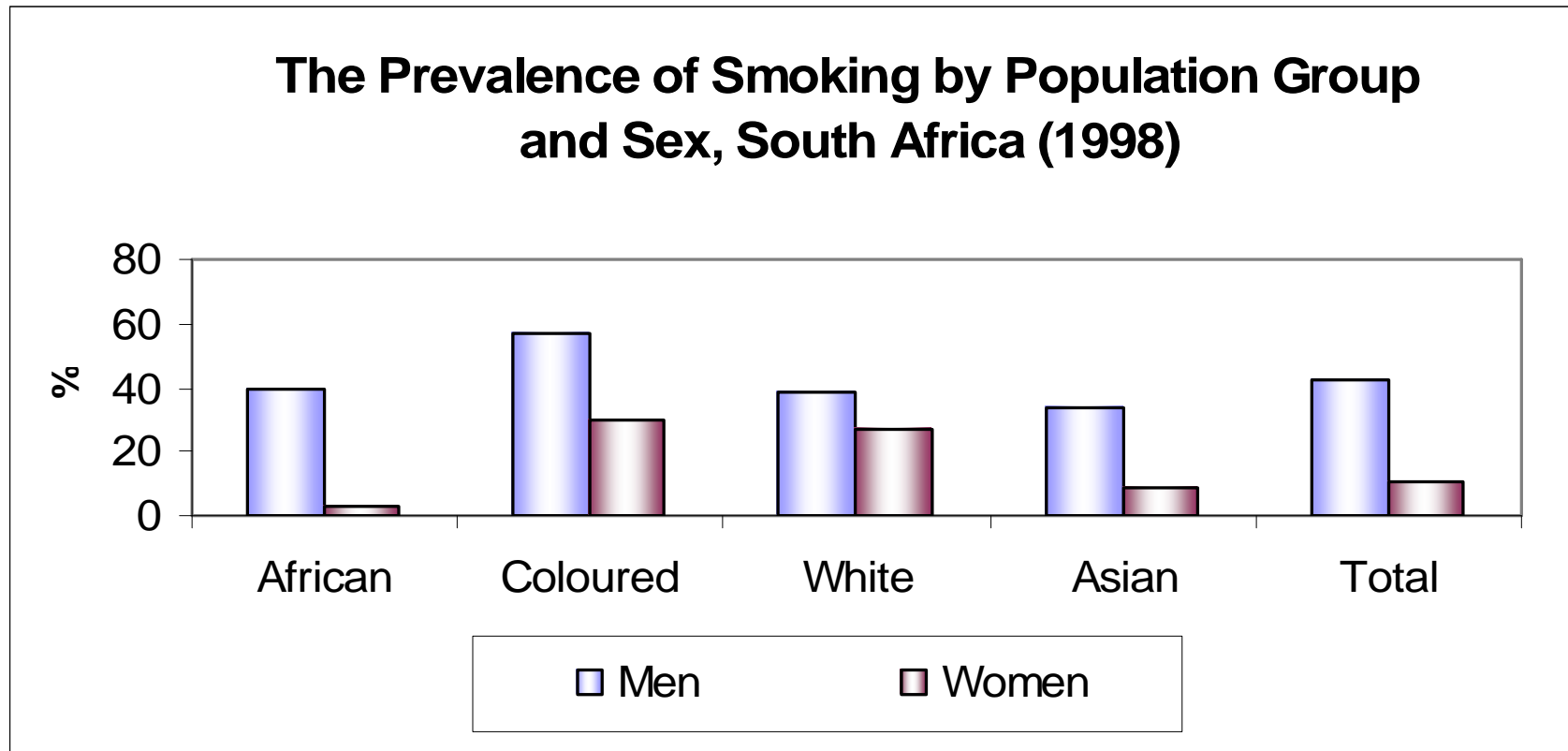
Source: DoH, MRC & MacroInt, 2001

# Differential exposure factors

- Fuel use
- Occupation
- Cultural and behavioural practices
- Background exposure
- Body burden



## Behavioural practices



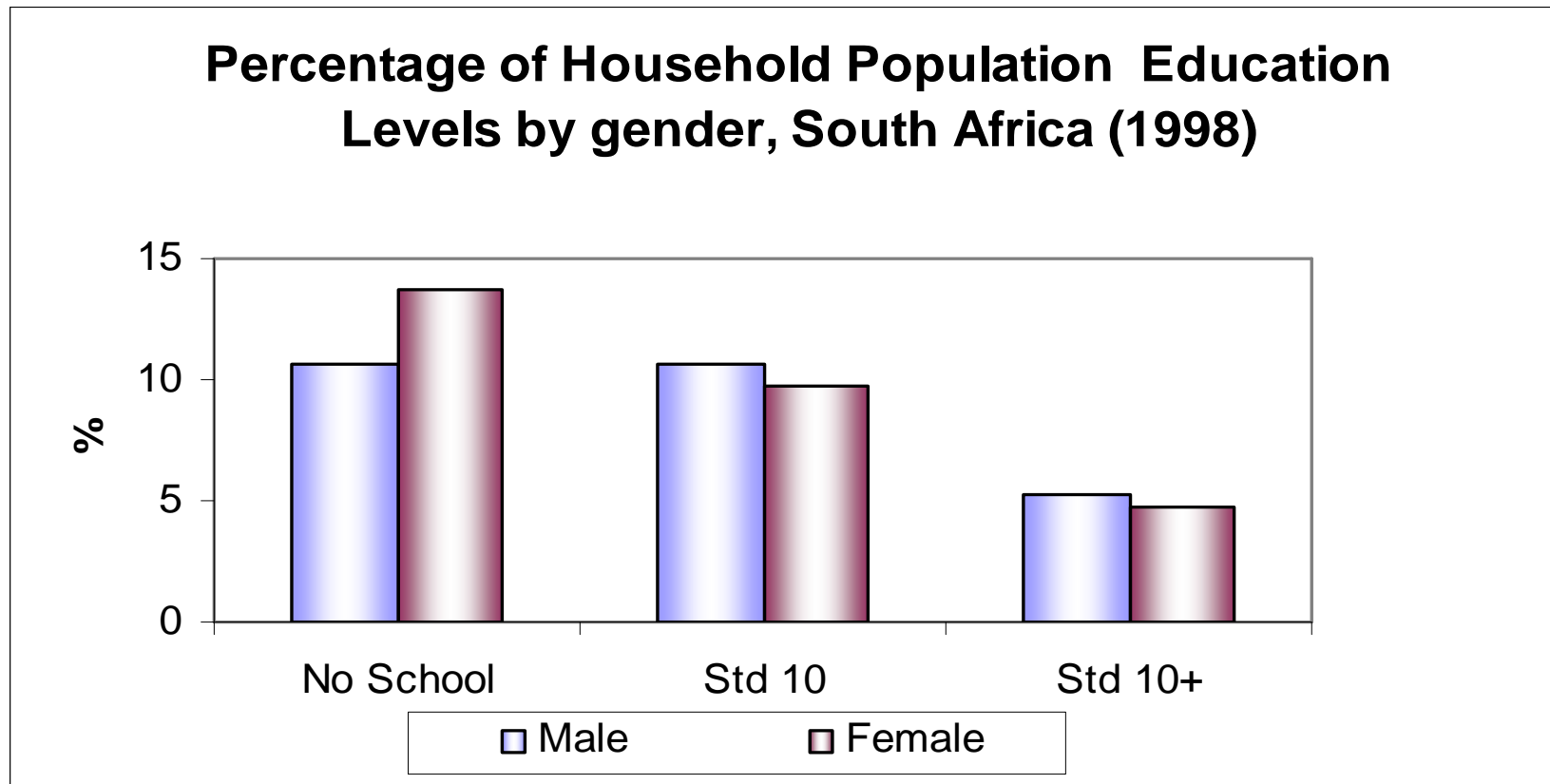
Source: DoH, MRC & MacroInt, 2001

# Differential ability to recover/cope

- Education
- Access to health care
- Socio-economic status
- Cultural practices
- Employment

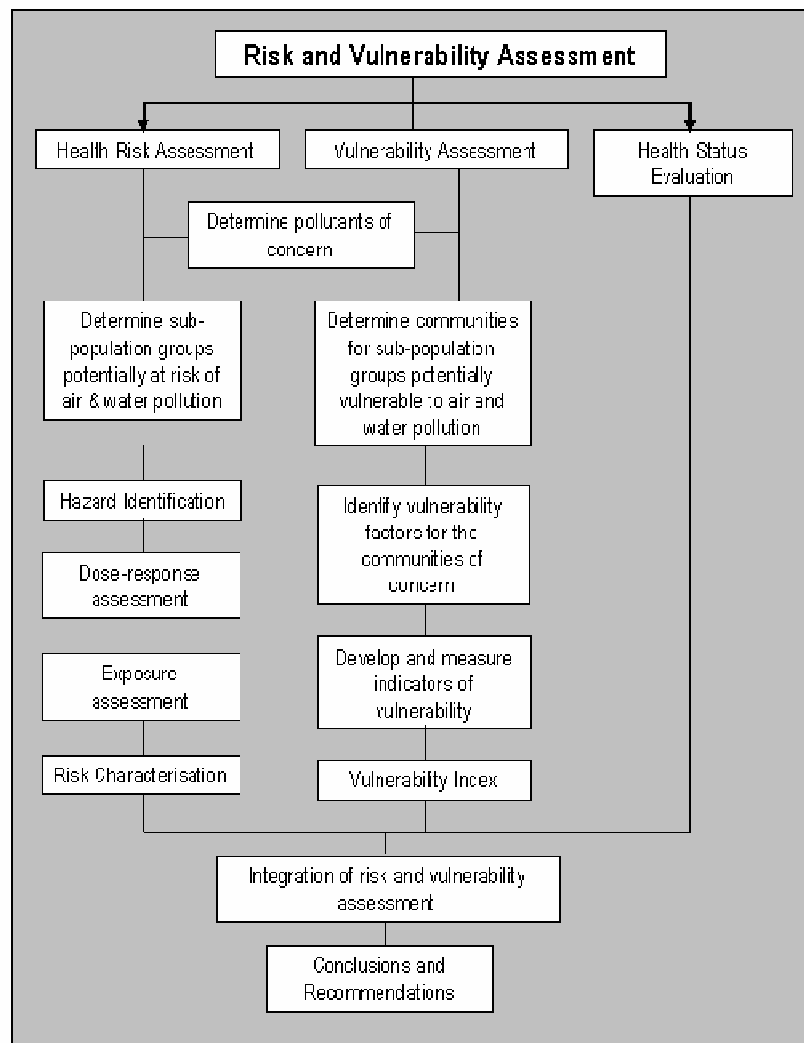


# Education



Source: DoH, MRC & MacroInt, 2001

# Integration of vulnerability and risk: a methodological framework



# Challenges

- Aim: to provide a true reflection of the health risks of community to environmental stressors
- Methodological challenges
- Pilot test challenges
- Standardisation challenges