

# Stunting, Women's Nutrition and South Asia

**Dr. Sheila C Vir**  
Director and Senior Nutrition Specialist,  
Public Health Nutrition and Development  
Centre, New Delhi





## Women's Nutrition

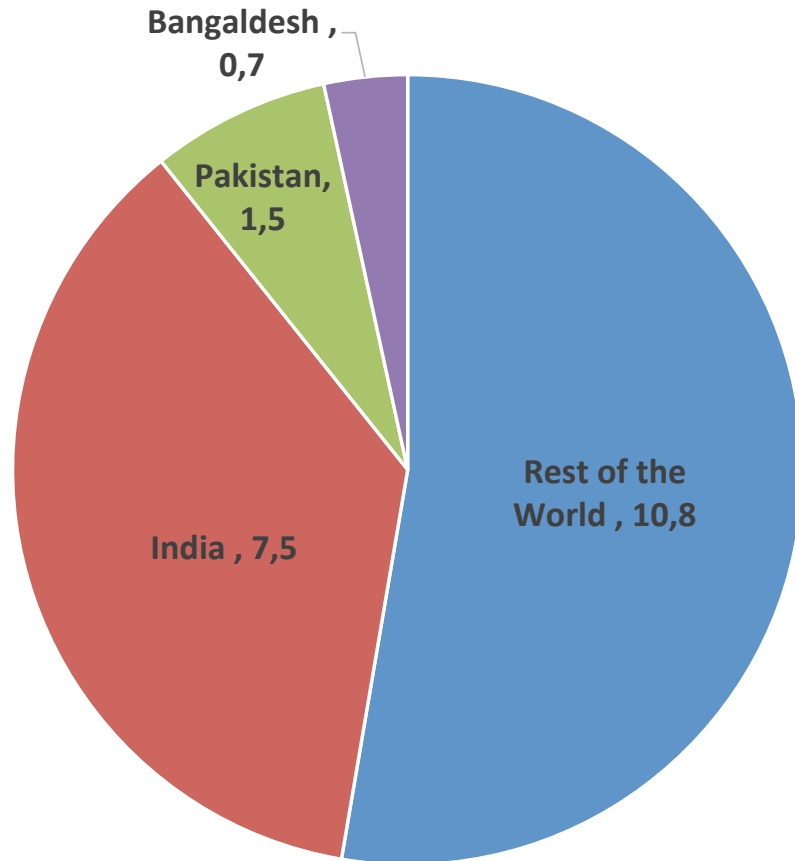
**Major Contributor to Stunting  
in South Asia**

# Women's Nutrition and Stunting

## Some Evidence Based Facts

- Poor Women Nutrition (poor height, thinness, BMI, anaemia) impacts not only maternal mortality but childhood stunting
- Both direct nutritional and non-nutritional factors influence women's nutrition
- Poor women nutrition adversely impacts early child care: Contributes to stunting
- Poor women nutrition impairs foetal development - contributes to LBW and increases the risk of stunting (2.1 to 4.3 times)

# Low Birth Weight in South Asia

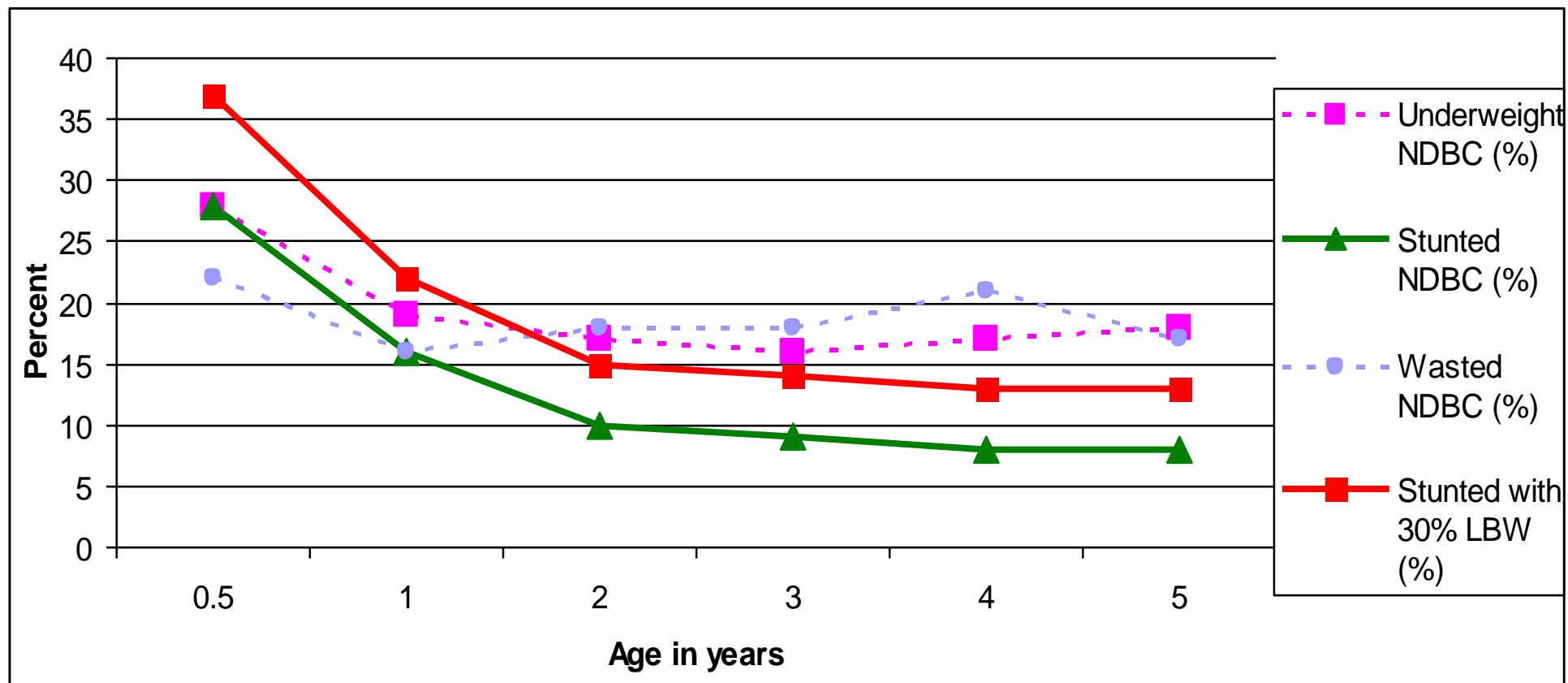


Low birth weight in millions

- 52% of global burden
- One in four children born are with LBW
- Burden is high in India, Pakistan and Bangladesh
- IUGR is the main contributor of LBW in countries with LBW >10 percent

# LBW, child stunting and women stature

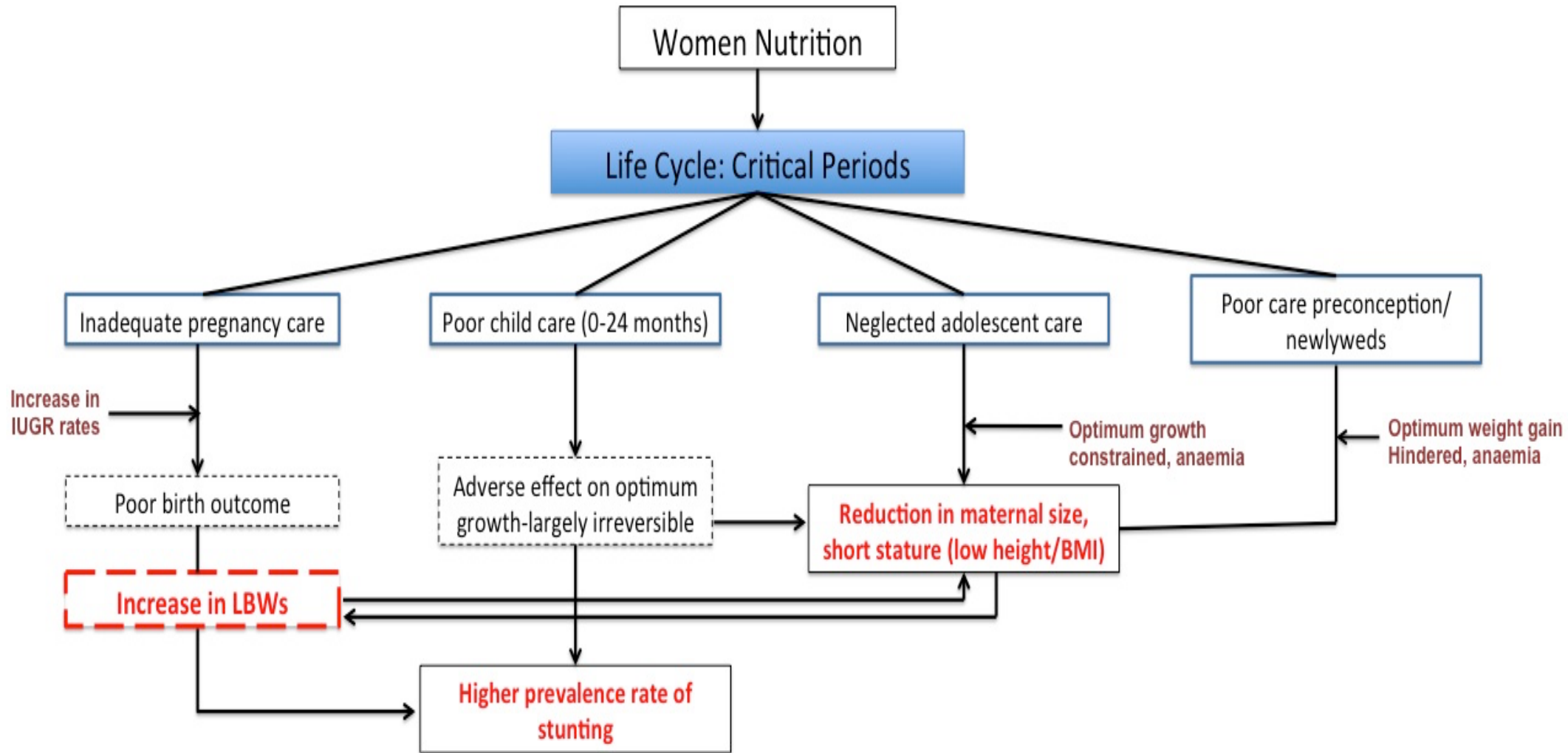
Highest proportion of linear growth failure <12 months attributed to LBWs



# Stunting: Women's nutrition through life cycle plays a critical role



# Major pathways for women's nutrition and stunting





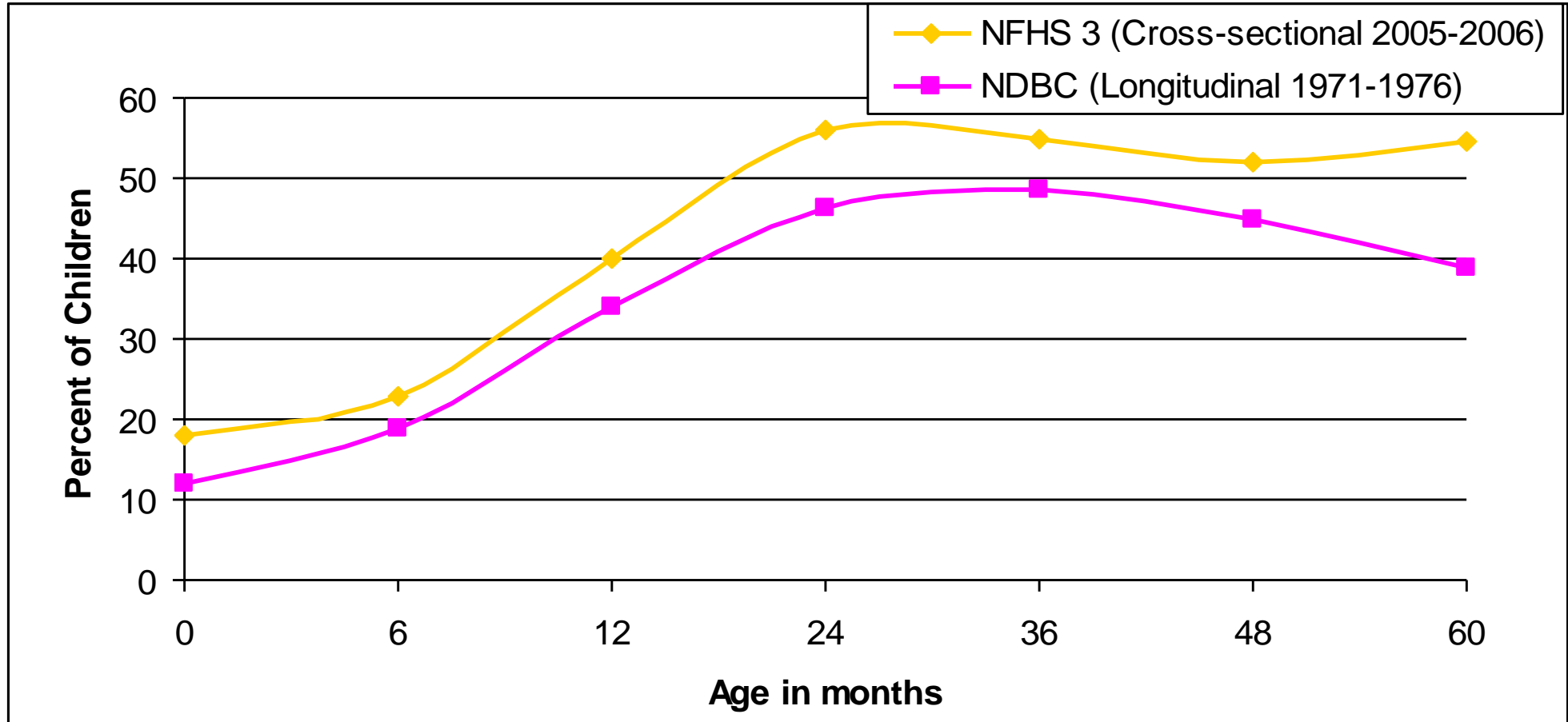
## **Stunting and Poor Child Care: 0-24 months**

**Largely irreversible  
stunting by 24 months:  
Poor start to adult  
maternal stature**



# Early childhood stunting 0-24 months

Predicts poor adult women stature



New Delhi Birth Cohort. Sachdev 2011)

# Neglected adolescent and pre-conception care: (poor maternal stature and anaemia): Child Stunting



# Maternal Height

## Association with Stunting Prevalence Rate

Maternal Height (cm)	Relative Risk of Stunting (95% Confidence interval)	P value
Maternal height per cm increase	0.971 (0.968—0.973)	<.001
Maternal height (cm) ≥ 160	1*(reference)	
155 -159.9	1.252 (1.152-1.359)	<.001
150 - 154.9	1.506 (1.390-1.632)	<.001
145 - 149.9	1.713 (1.580-1.857)	<.001
<145	1.947(1.792-2.116)	<.001

**1 cm increase in maternal height was associated with a significant decreased risk of child mortality, underweight, stunting, wasting and anemia.**

# Low Maternal Height – a risk factor for stunting in children

## Maternal Stature Study - 54 Countries (LIC/MIC)\*\*:

- Shorter maternal stature → risk factor → mortality, underweight and stunting in infancy and childhood

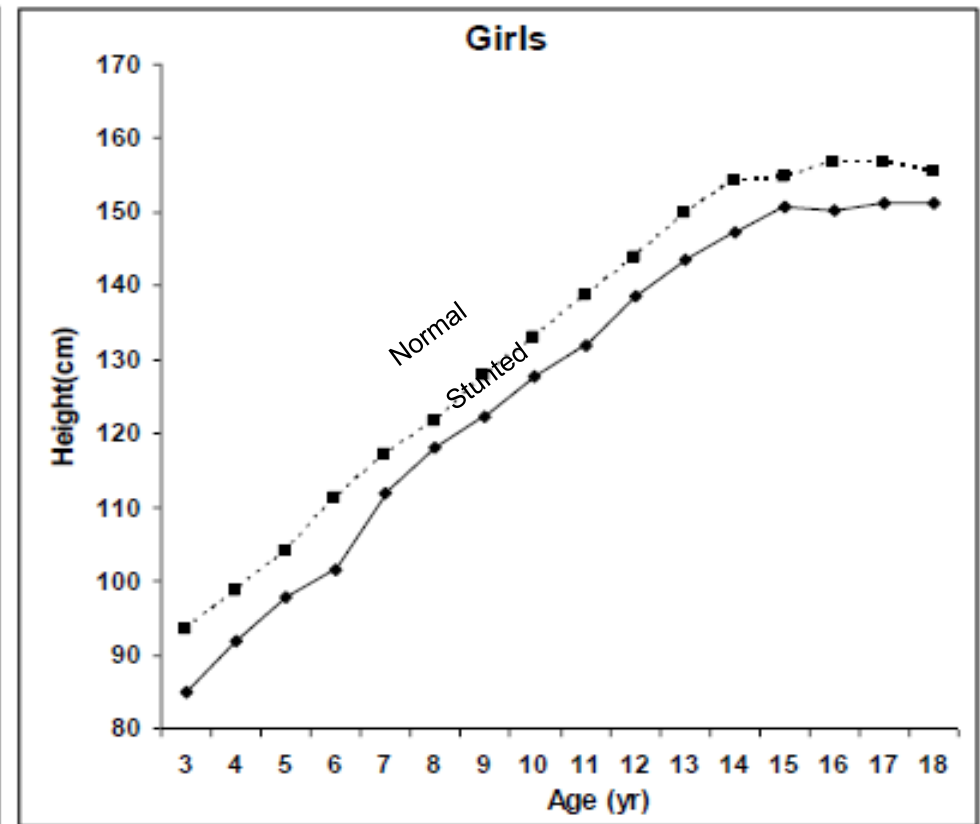
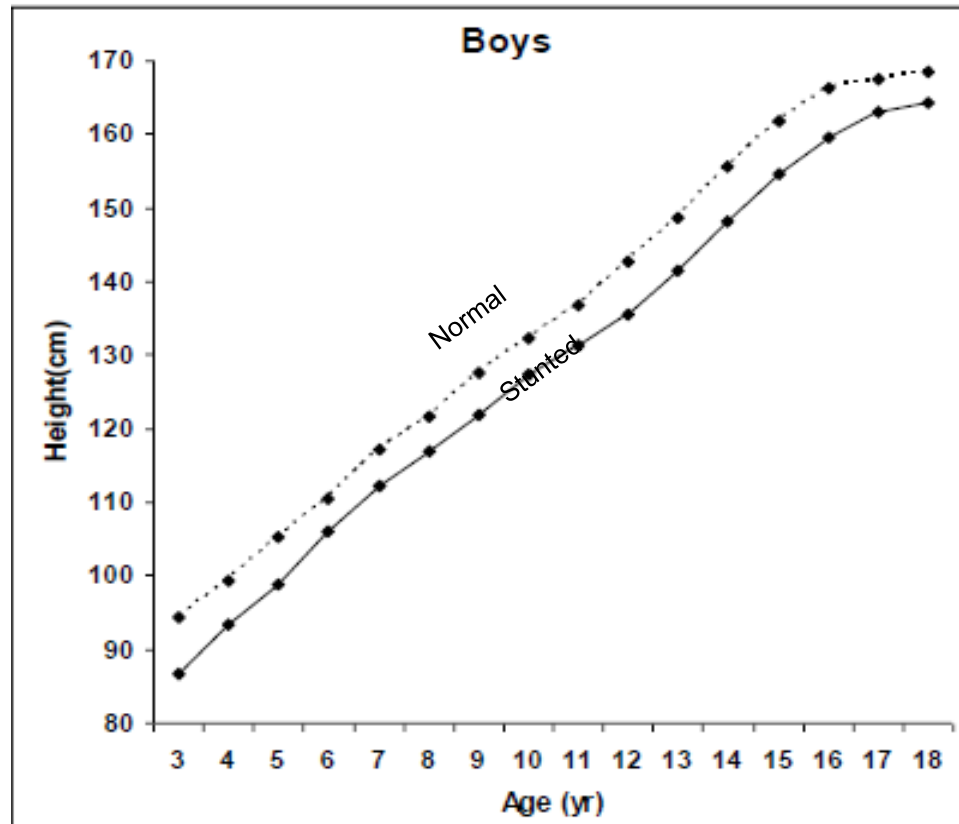
### Effect size on childhood stunting:

- ✧ Almost twice that of being the lowest education category
- ✧ 1.5 times that of being in the poorest quintile
- **Gaining optimum height crucial for "stop" stunting**

\*\*Analysis of 109 Demographic Health Surveys between 1991-2008

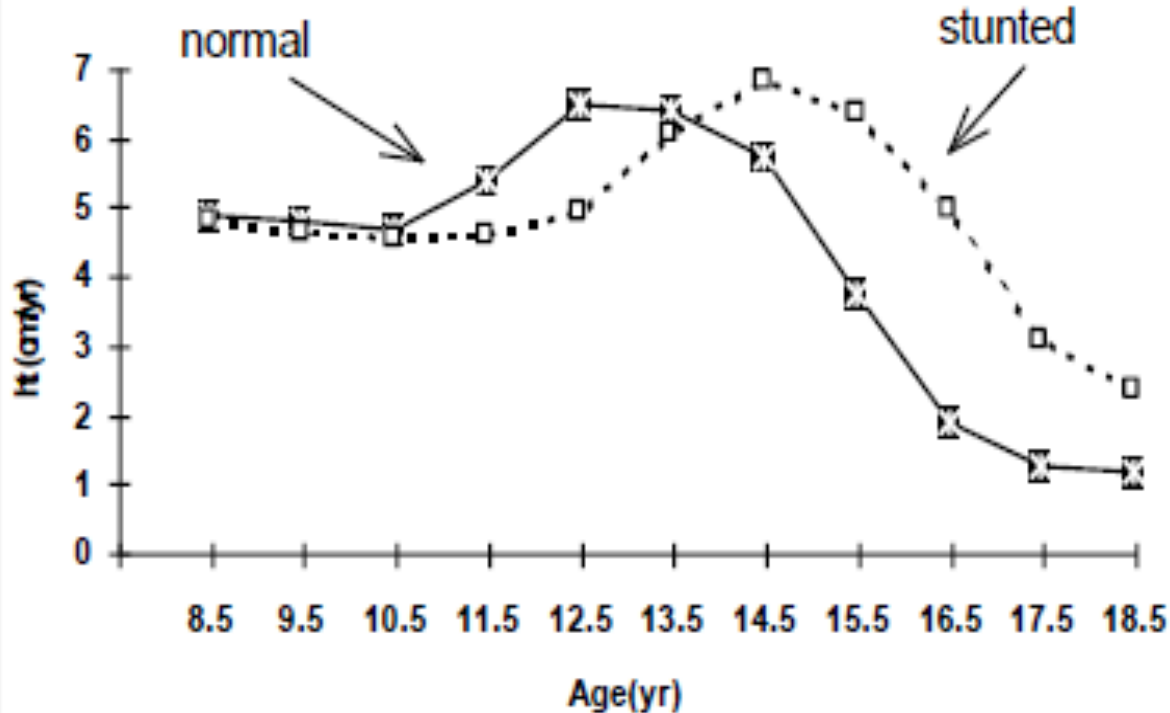
# Adolescent Height

## Implications of Early Childhood Stunting



Mean Height Between 3-18 years for Rural (India)  
Stunted and not stunted at 3 years

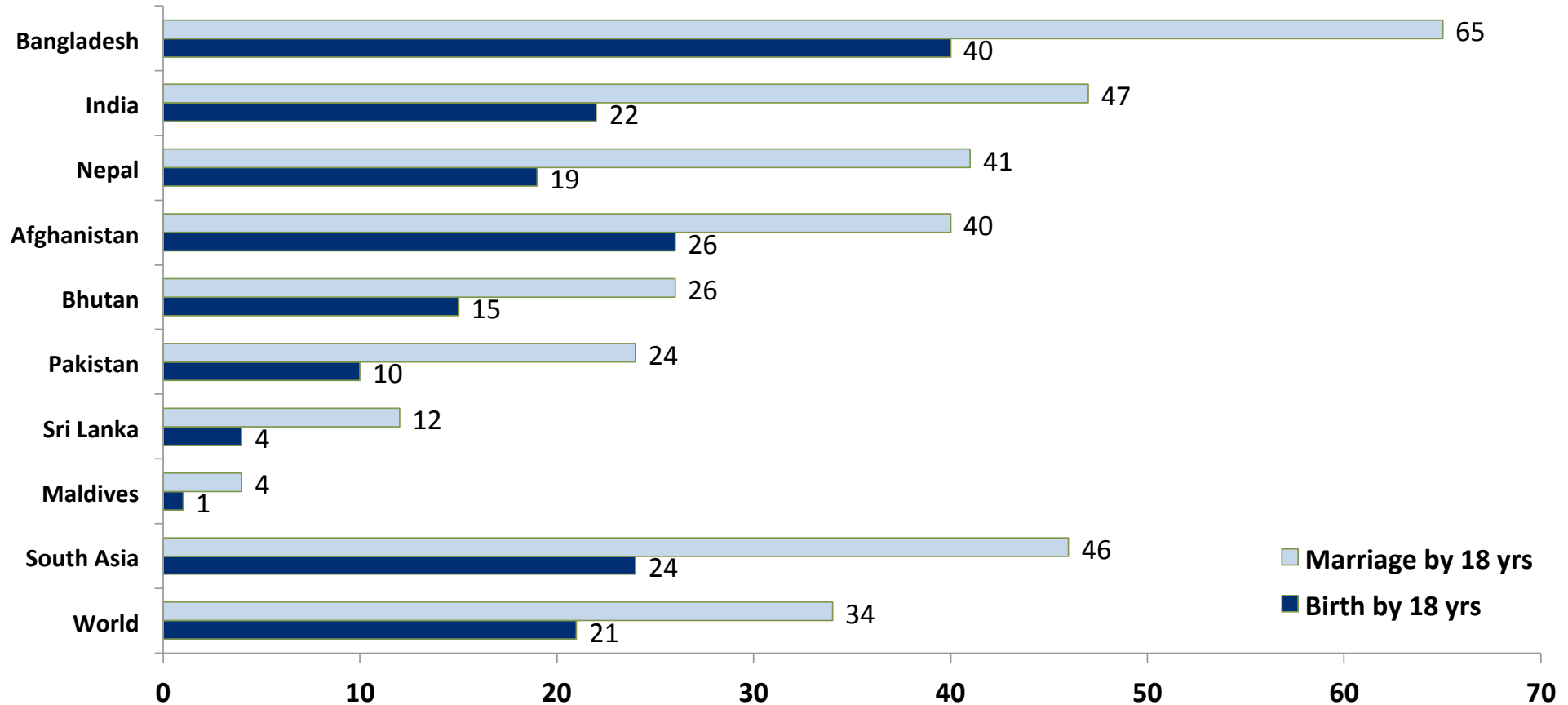
## Child stunting and height gain in adolescence



- Slower velocity and elongated growth spurt in stunted girls
- Height gain continues for a few years after the onset of menarche in undernourished girls

# Percentage Girls Married and Birth by 18 Years

Higher risk of child stunting (1.2 to 1.5 times)



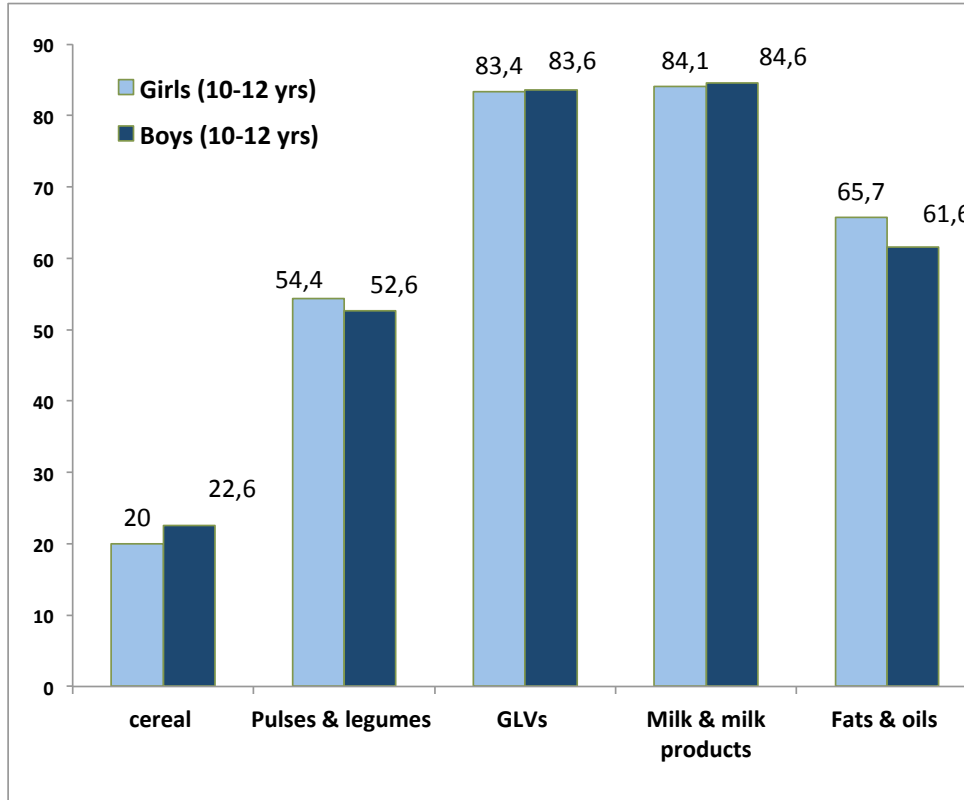
## Maternal Weight and Birth Weight: Contributes to LBW and Child Stunting

Mother weight (Kg)	No.	Mean Birth Weight (g)
<45	128	2639.6
45 - 54	251	2779.1
>55	96	3009.41
Total	475	2788.0

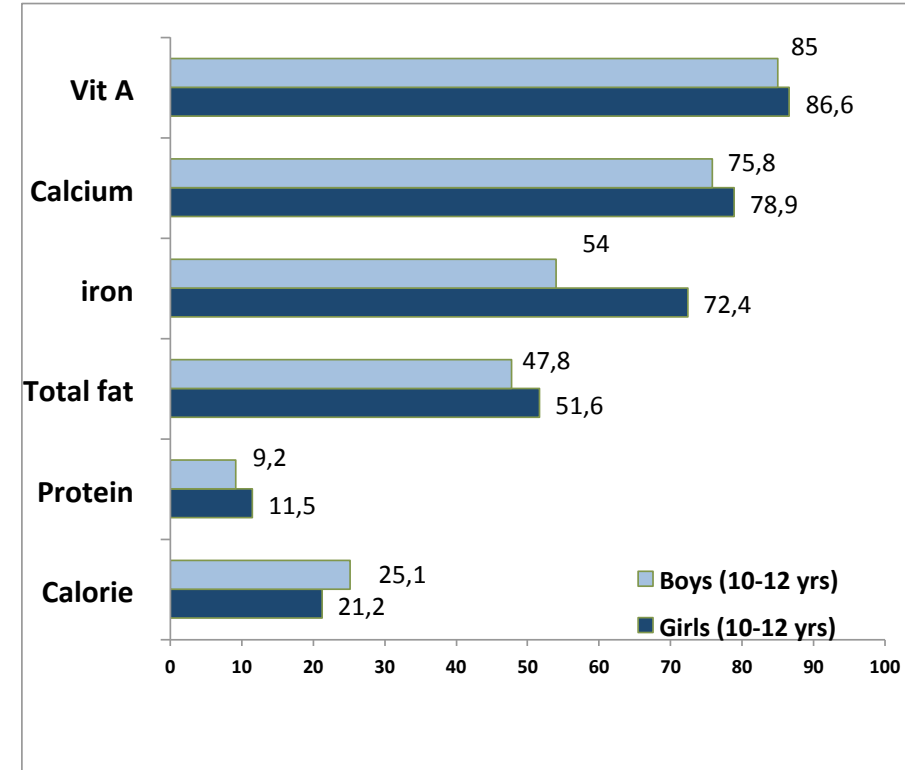


# Poor dietary intake in adolescence: Poor adult nutritional status

Women entering pregnancy thin/low BMI and poor micronutrient status

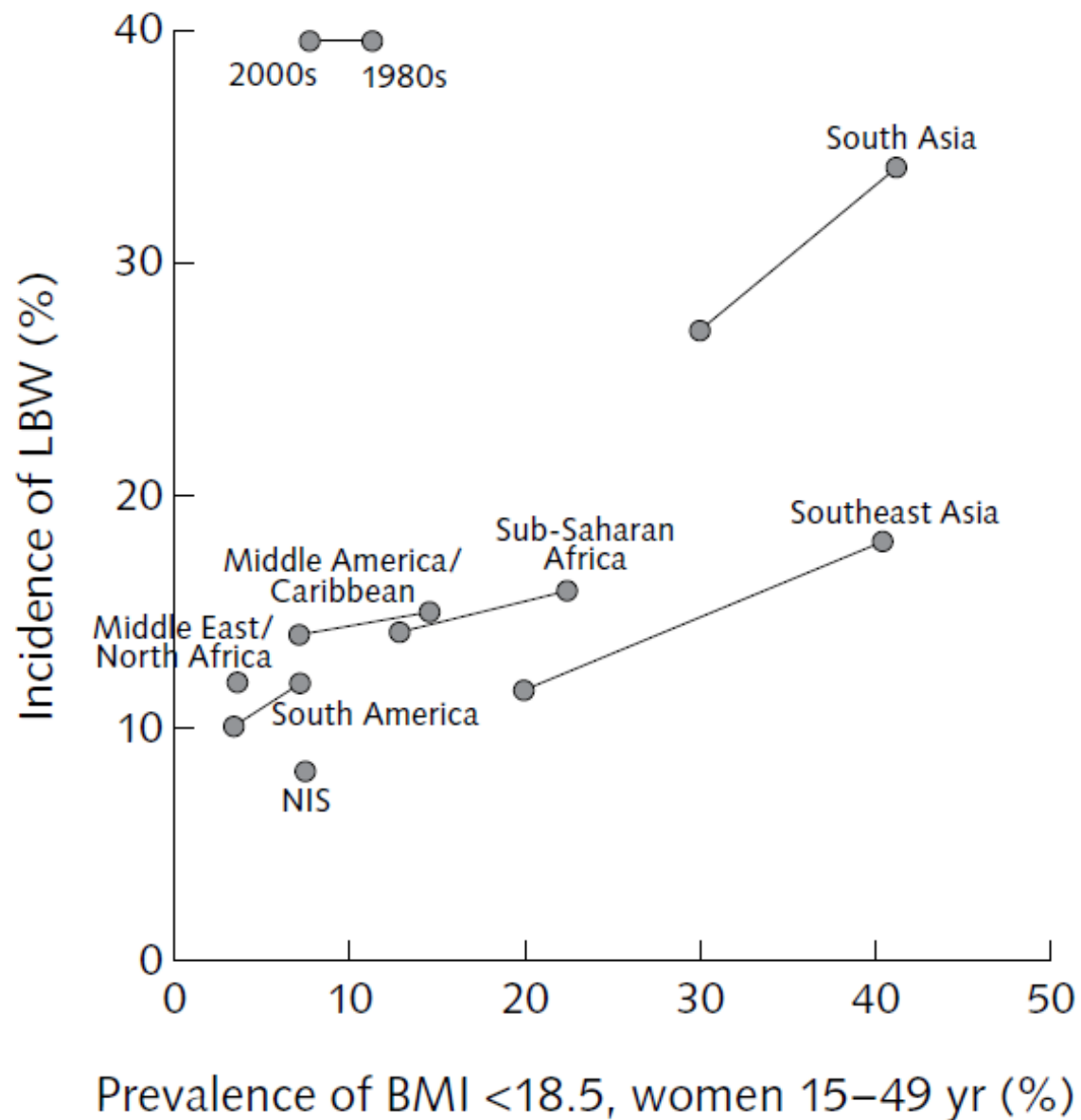


Percentage with daily consumption of food items < 50% RDI

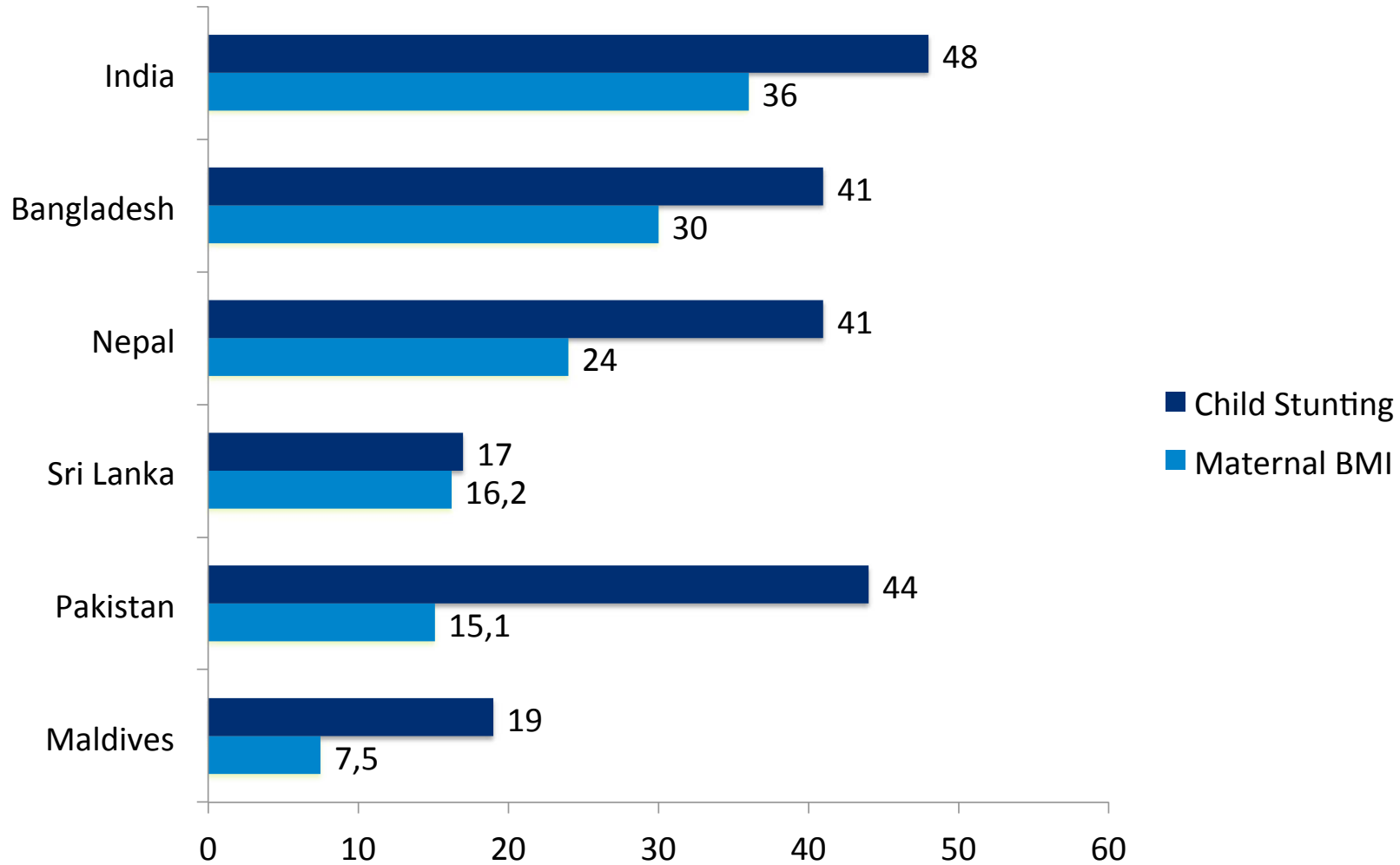


Percentage with daily intake of nutrients < 50% RDA

# Improvement in Women Body Mass Index (BMI) Reduces LBW (1980s-2000s)



# Poor Women's Nutrition (BMI) and Child Stunting

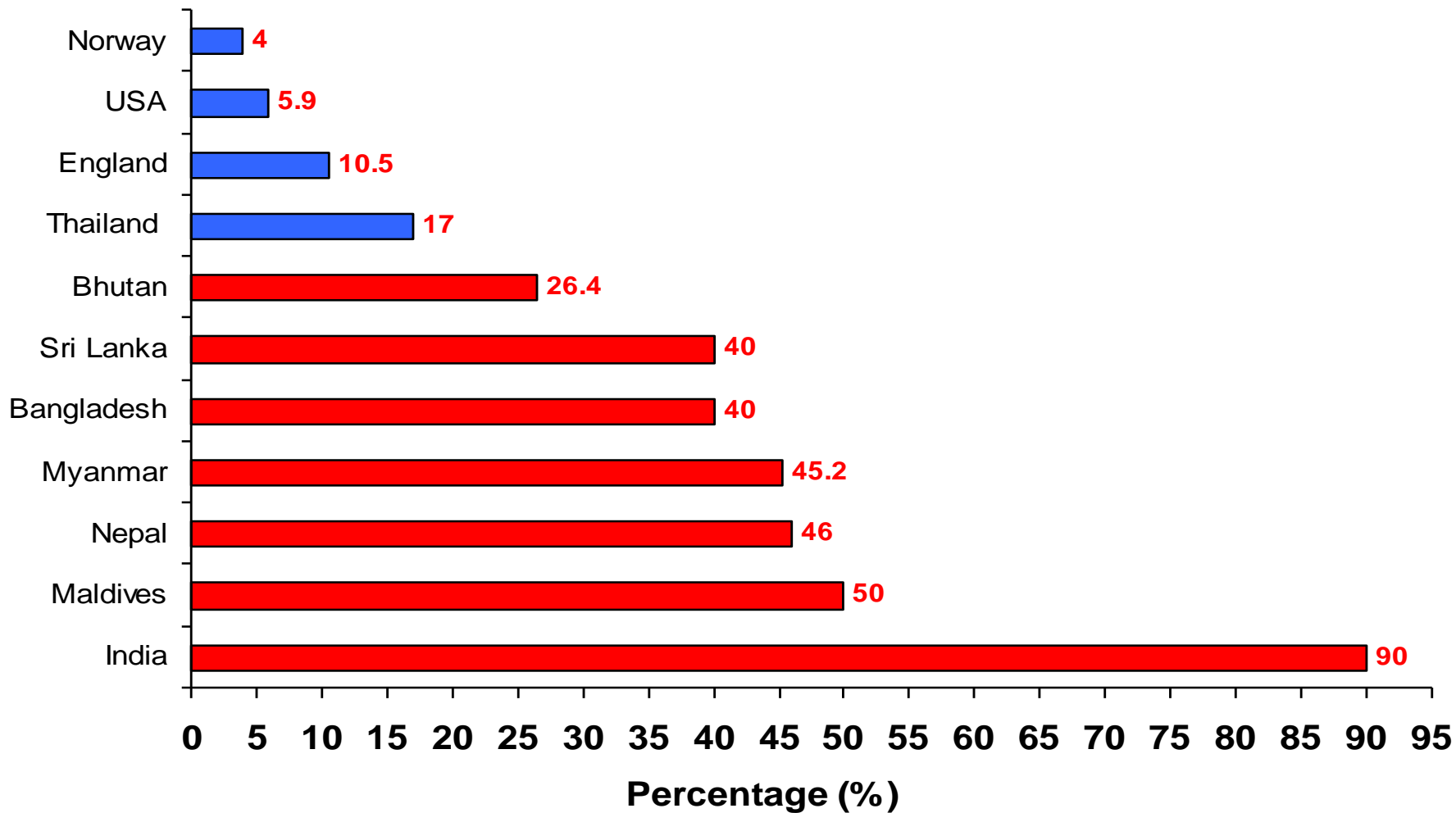


# Anaemia:

## Adolescent girls/preconception stage

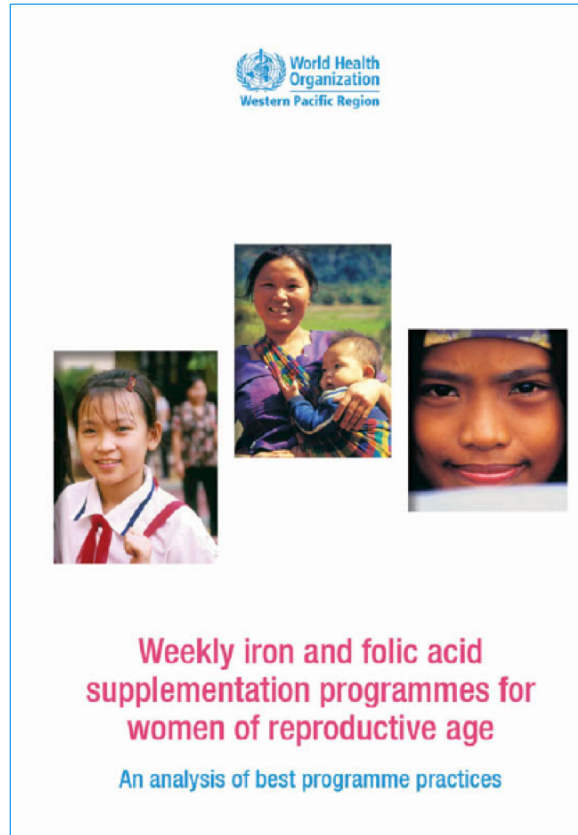


# Anaemia in Adolescent Girls:



# WHO Anaemia Prevention Guidelines for Women in Reproductive Age (WRA):

Pregnancy too short a period for anaemia correction.



## WIFS Dosage:

- WRA anaemia  $\geq 20\%$
- 60mg elemental iron and 2.8mg folic acid
- Weekly IFA Supplements (WIFS)



Blister packs of iron and folic acid tablets

# Weekly IFA Supplements (WIFS) Policy for WRA: Important Investment

- **WIFS and biannual deworming:** Evidence annual anaemia reduction by one third
- **“Fixed Day “ approach:** Facilitates coverage and compliance
- **Social Marketing effective:** Doable long term strategy (Cambodia, Vietnam, Philippines)
- **WIFS Policy in SA countries:** Only exists in India and Bangladesh - as of 2011
- **Comprehensive Anaemia and Folic Acid Deficiency Prevention Policy critical.**

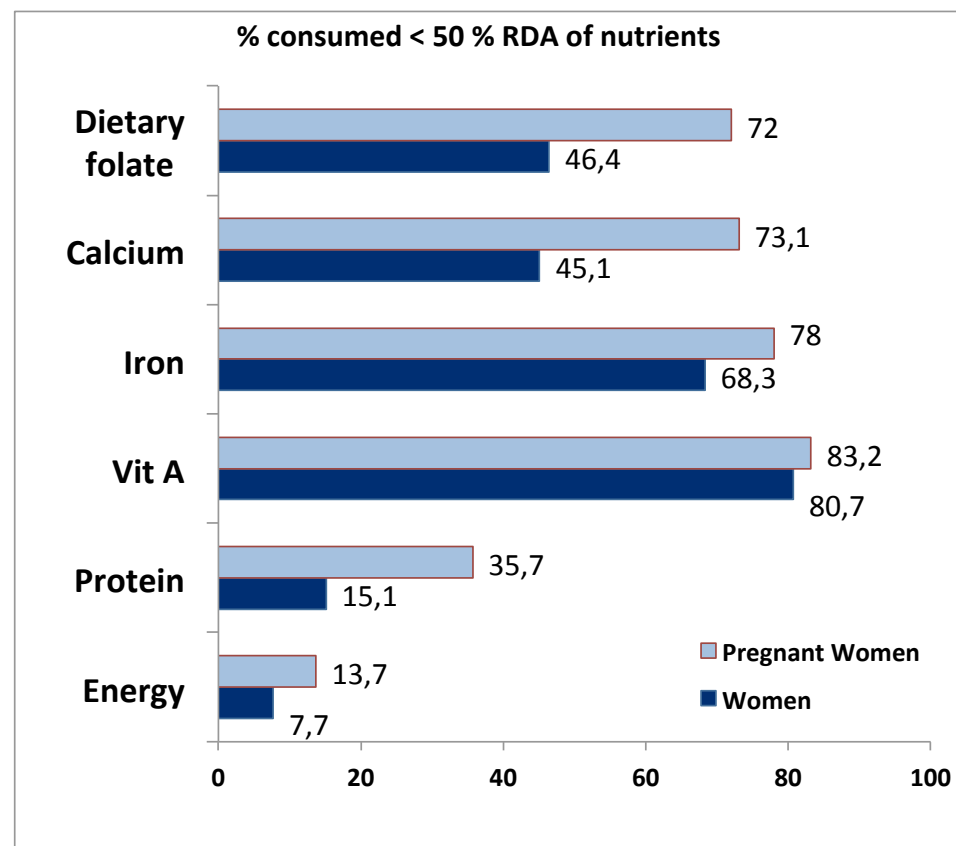
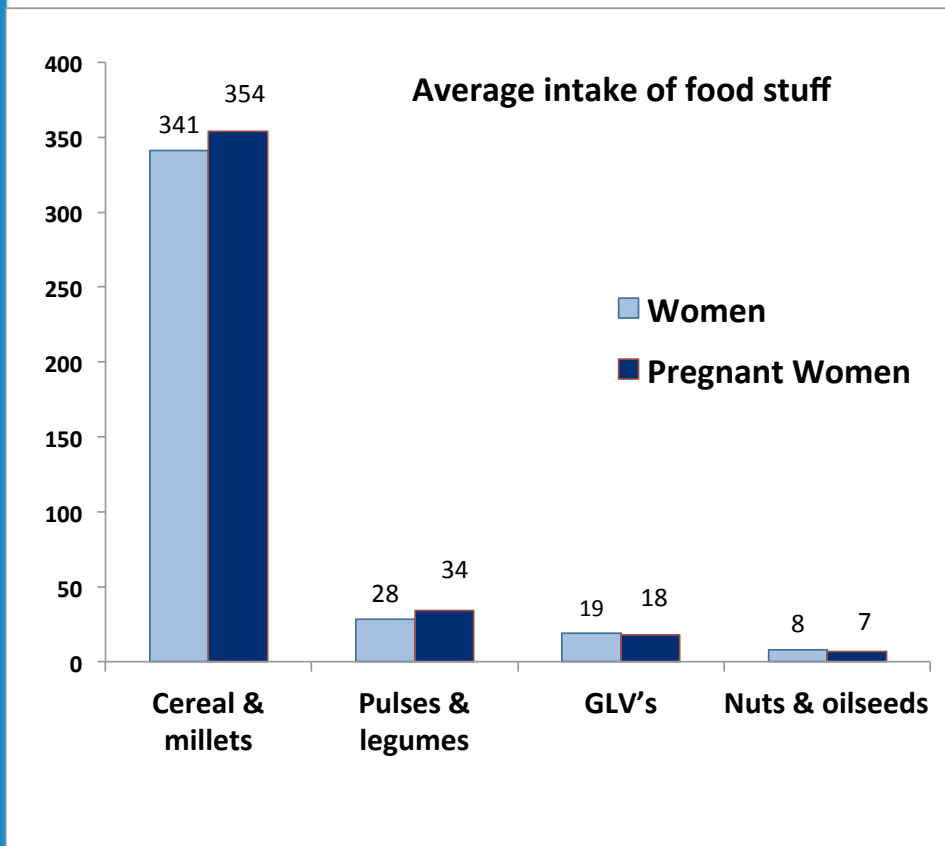


## **Pregnancy Care and Stunting:**

**Suboptimum Coverage of  
ANC, IFA supplement and  
poor nutrient intake**



# Dietary/ nutrient Intake: Pregnancy and non-pregnancy stage



\*States: Kerala, Tamilnadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Orissa, West Bengal, Uttar Pradesh



## **Non-Nutrition Factors: Influence Women's Nutrition and Stunting**

### **Emerging Evidence**

**Age of conception**

**Education**

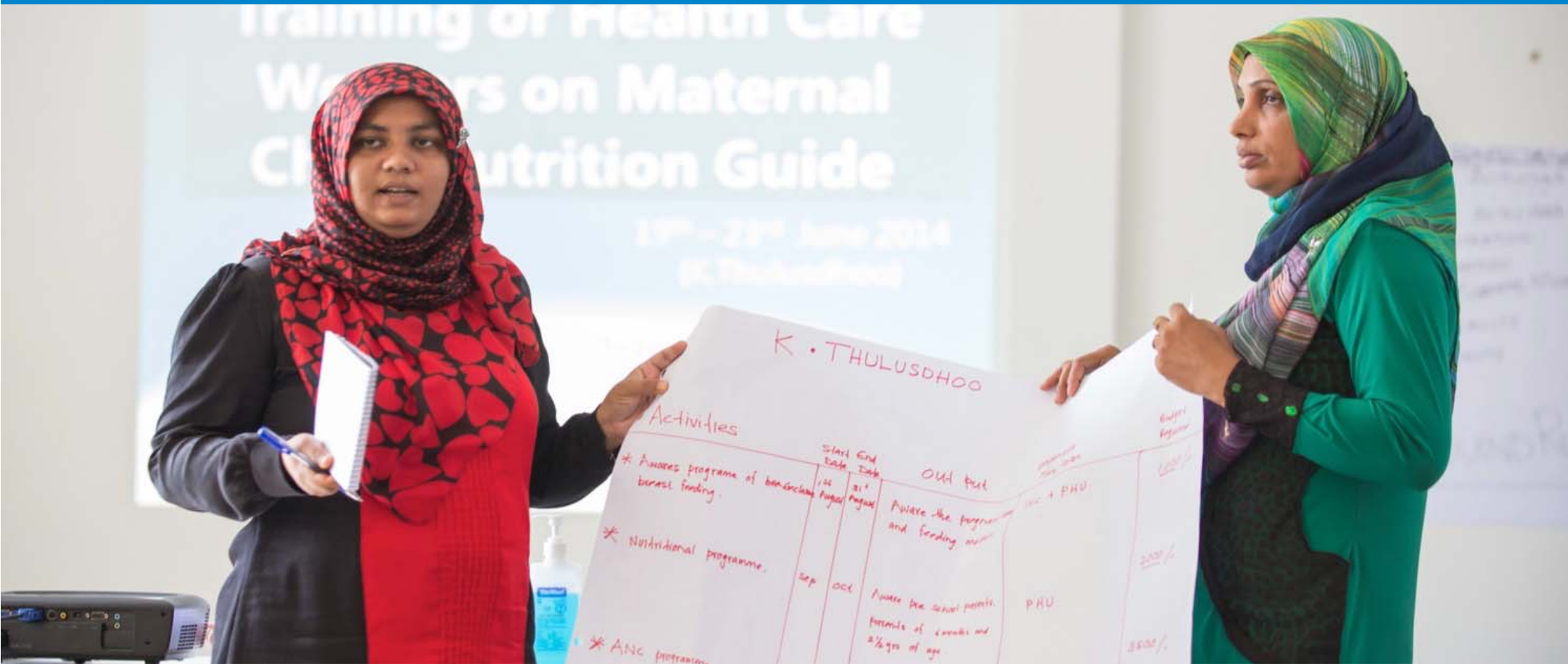
**Decision making Power**

**Domestic Violence**

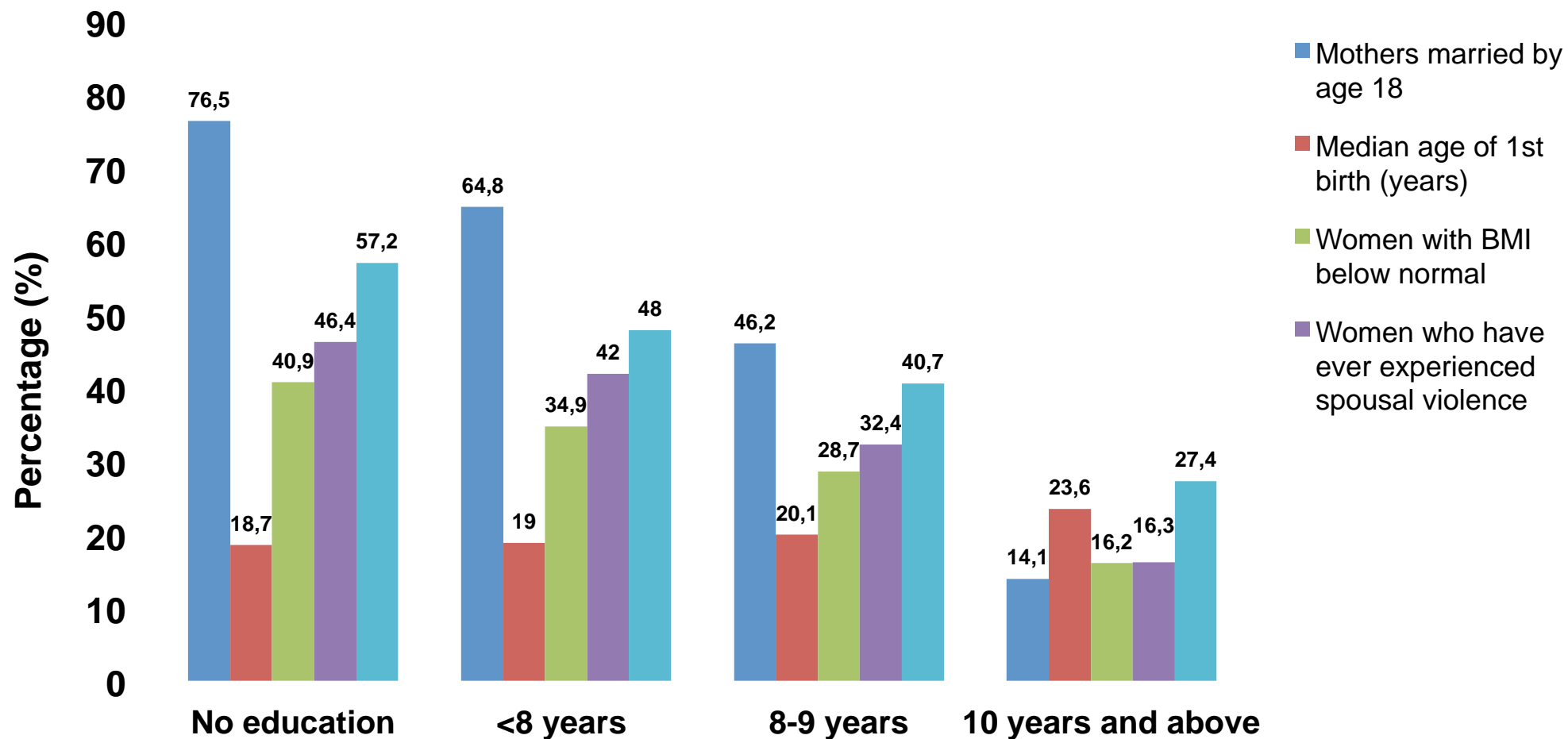
# Highest Risk Factors Associated with Stunting in Young Children: India, Nepal and Bangladesh

Risk factors for Stunting		
India	Bangladesh	Nepal
No education of mothers	Domestic violence	Maternal Height
Maternal Height	Decision making power	Water
Mothers with no Institutional delivery	Maternal Height	Open defecation
Households with low standard of living	Secondary education	Born in hospital
Households with no toilet facility	Wealth quintile	ANCs visits- or more
--	---	Maternal education

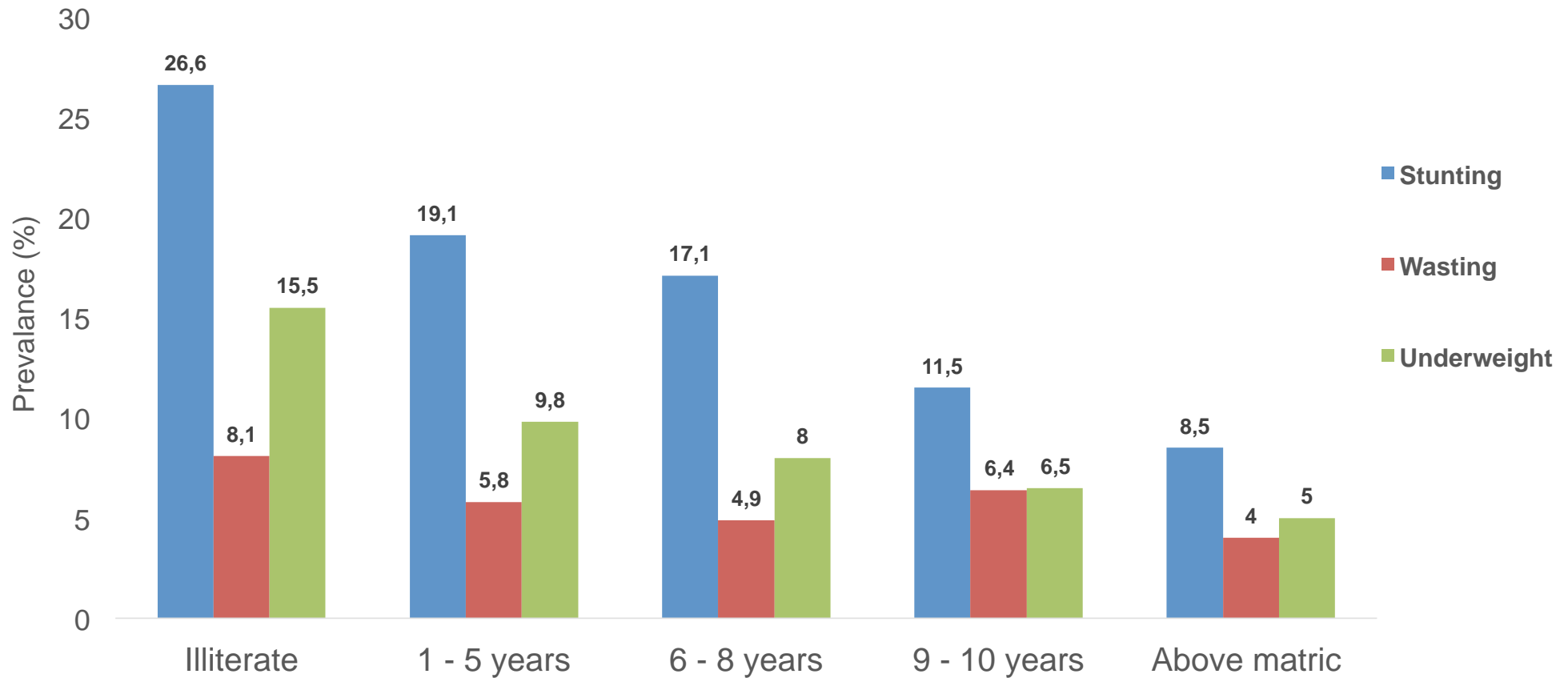
# Mother's Education Level, Decision Making Power influences Stunting in Children



# Women's education level and child stunting in India

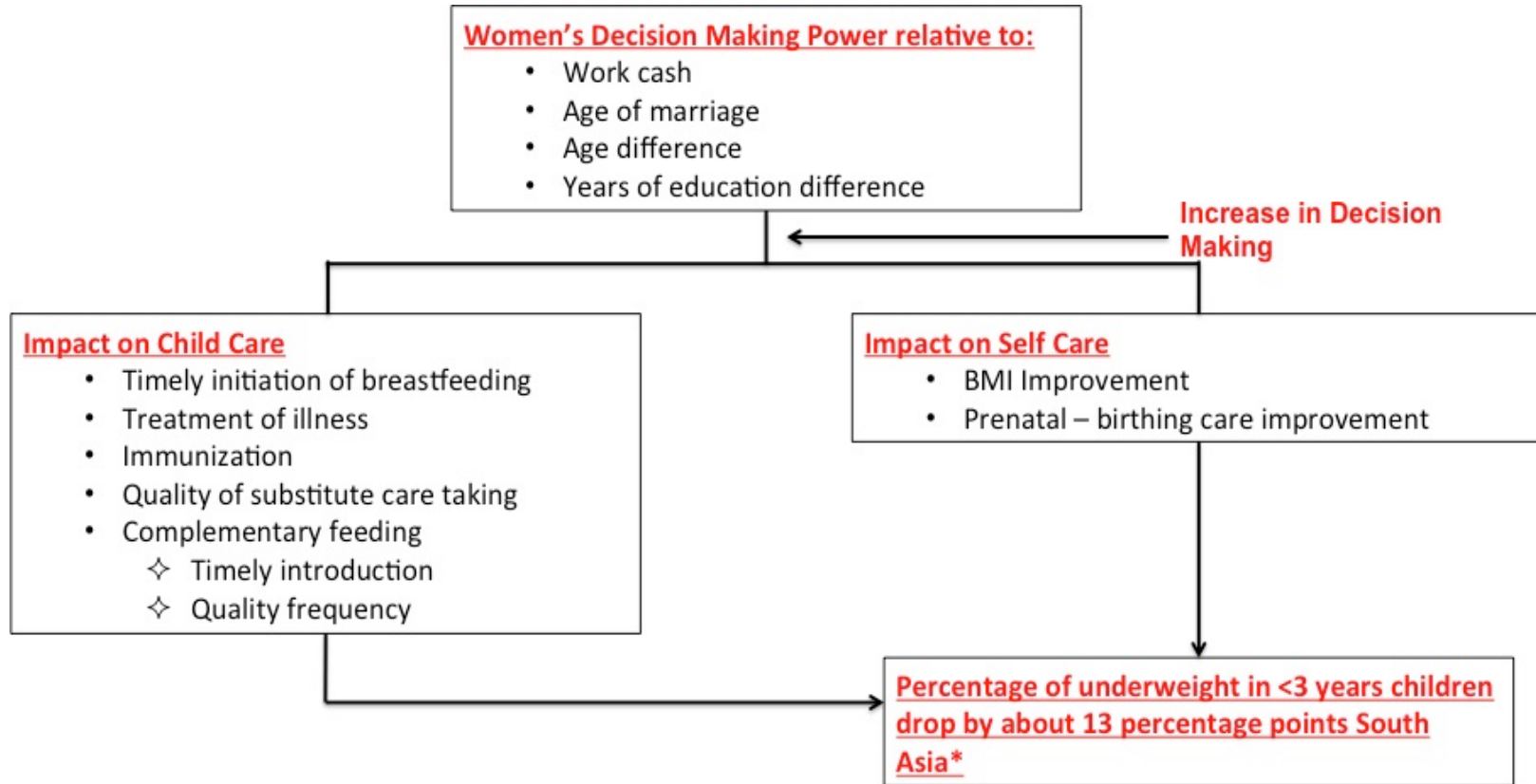


# Mother's Education and child undernutrition (Pakistan)



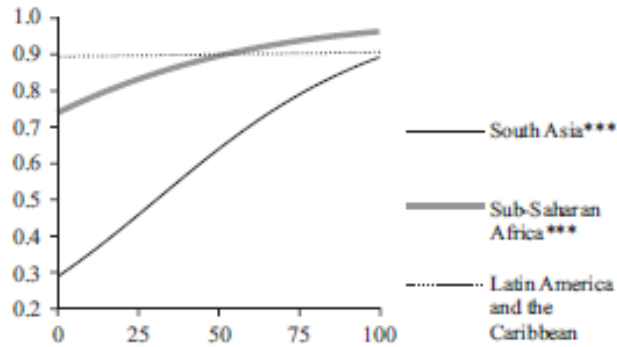
# Women Status

Positive impact on Child Nutrition Strongest in South Asia



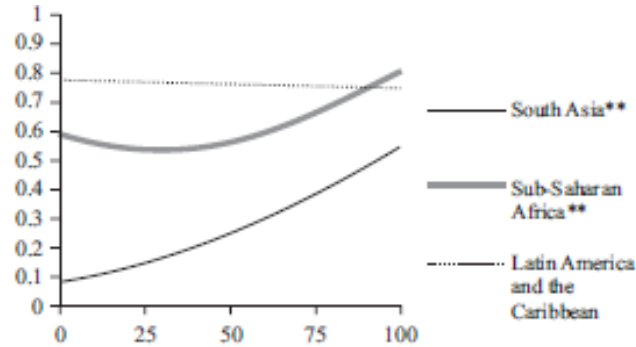
\*Positive impact stronger in South Asia (greatest effect on poorer households). In SSA, decrease estimated to be only 3 percent.

# Women's Decision Making Power: Impact on Complementary Feeding: 3 Regions



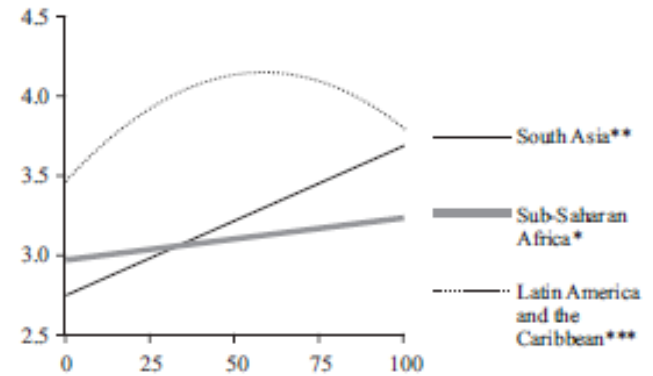
Women's relative decisionmaking power

Whether 6-12 months old  
receives complementary feeding



Women's relative decisionmaking power

Whether > 6 months old  
receives high quality food



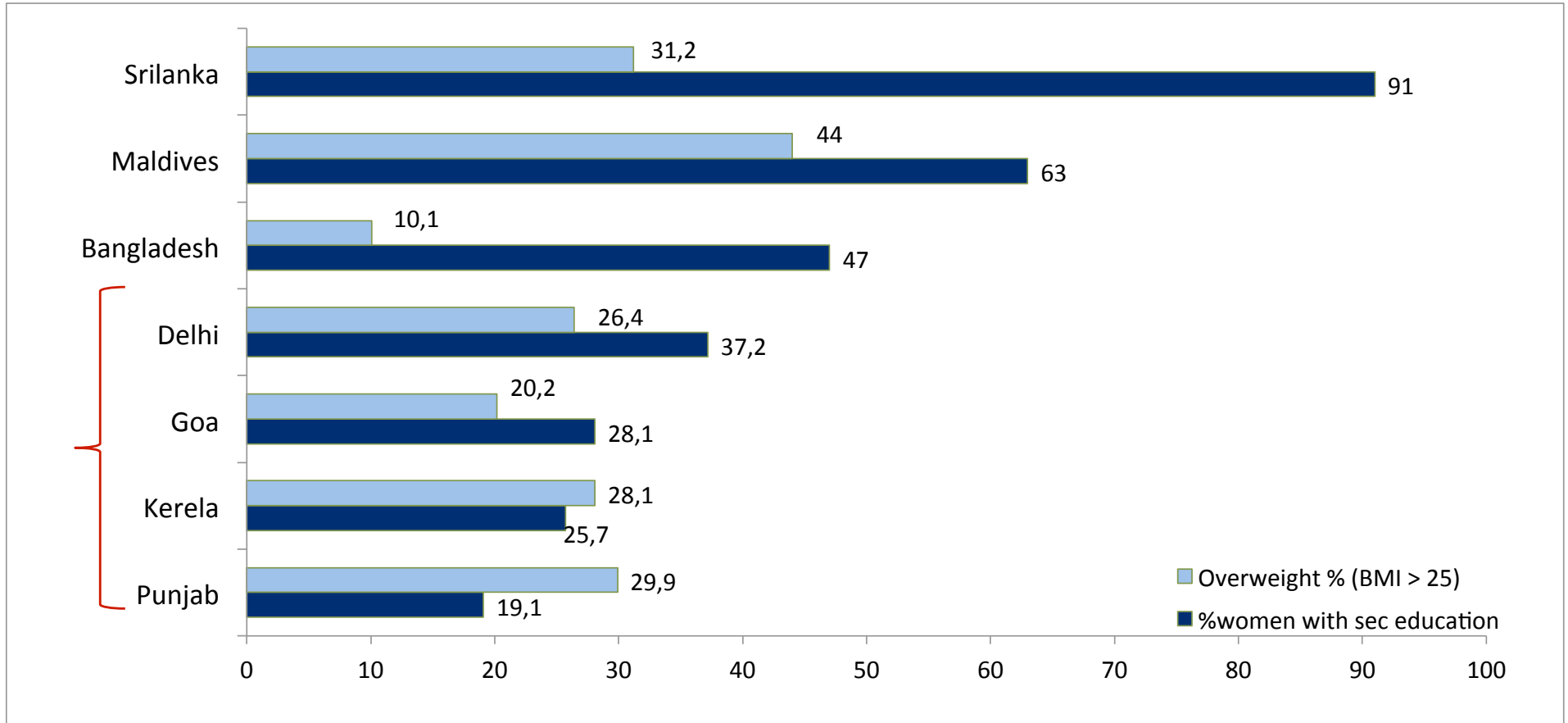
Women's relative decisionmaking power

Number of times per day  
> 6 months old eats



# Higher Maternal Education:

Decision Making: Accelerating Problem of Overweight in Women - Child Stunting?



Source: UNICEF, 2014; NFHS-3 (2005-06)

# Domestic Violence: Malnutrition

- **Evidence limited: association alarming (India, Bangladesh)**
- **Physical domestic violence/multiple incidents\*\***
  - Determinant of ill health
  - Anaemia women (odds ratio=1.11 )
  - Underweight women (odds ratio1.21)
- **Mechanisms not well understood**
  - Interferes with decision making/mobility/self-child caring



**“Stop Stunting”  
in South Asia:**

**Improving Women’s  
Nutrition Imperative**

# Women Nutrition: Renewed Commitment

- **UNICEF 1992:** GOBI-FFF (Female Literacy, Fertility Control, Food Supplementation)
- **WHA 2012:** Global target 2025 - Prioritizes Stunting and women's nutrition
  - **Target 1:** 40% reduction in global number of stunted children <5yrs
  - **Target 2:** 50% reduction in anaemia in reproductive age group.
  - **Target 3:** 30% reduction in LBW

# Rapid Decline in Stunting in Selected Countries: Adolescent and Women Care Special Strategy

State/country	Maharashtra (India) 2006-2012	Nepal 2001-2011	Bangladesh 1996/97 - 2011
Decrease in Stunting	39 % to 23.7 %	57% to 41 %	28 to 15%
Programme Focus	Under twos, IYCF	IYCF	IYCF
<b>Special Intervention</b>	<ul style="list-style-type: none"> <li>• <b>ANC - Adequate weight promotion</b></li> <li>• <b>Monitoring LBWs for “catch up”</b></li> <li>• <b>Adolescent girls - Nutrition education</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Pregnant women-IFA supplement</b></li> <li>• <b>Family planning</b></li> <li>• <b>Health Nutrition Education</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Maternal care</b></li> <li>• <b>Family/age at first marriage</b></li> <li>• <b>Secondary education of girls</b></li> </ul>

# Stop Stunting: Interventions Across Life Cycle

- **Young Child Nutrition:** First window of opportunity - growth and prevent stunting
- **Adolescence:** Second growth spurt - optimum height gain
- **Preconception**(newly-weds): Entering pregnancy at right age, well - nourished and informed
- **Pregnancy:** Enable optimum foetal growth

# We Must Act Now

- **Position women nutrition high in “stop stunting” agenda**
  - Strategic Investment
  - Political commitment for non-nutrition enabling factors (Secondary education/strong legal measures/family planning - delayed pregnancy)
- **Develop and implement women-child nutrition South Asia guidelines on “stop stunting” intervention package**
  - Coupling direct nutrition and non-nutrition interventions
  - Scaling up identified ‘doable’ direct nutrition interventions - conception to 24 months, adolescence and pre-conception stage
  - Universal registration and weighing of newborns - Follow up of LBWs
  - Comprehensive anaemia/multiple micronutrient strategy (diversified diet, pharmaceutical supplements, food fortification, sanitation)
- **Build evidence of good practices - Invest in evaluation, research and documentation**



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**Thank you**