

Associations of Overweight and of Weight Dissatisfaction among Palestinian Adolescents

**Findings from the National Study of Palestinian Schoolchildren
(HBSC-WBG2004)**

Haleama Al Sabbah

Outline

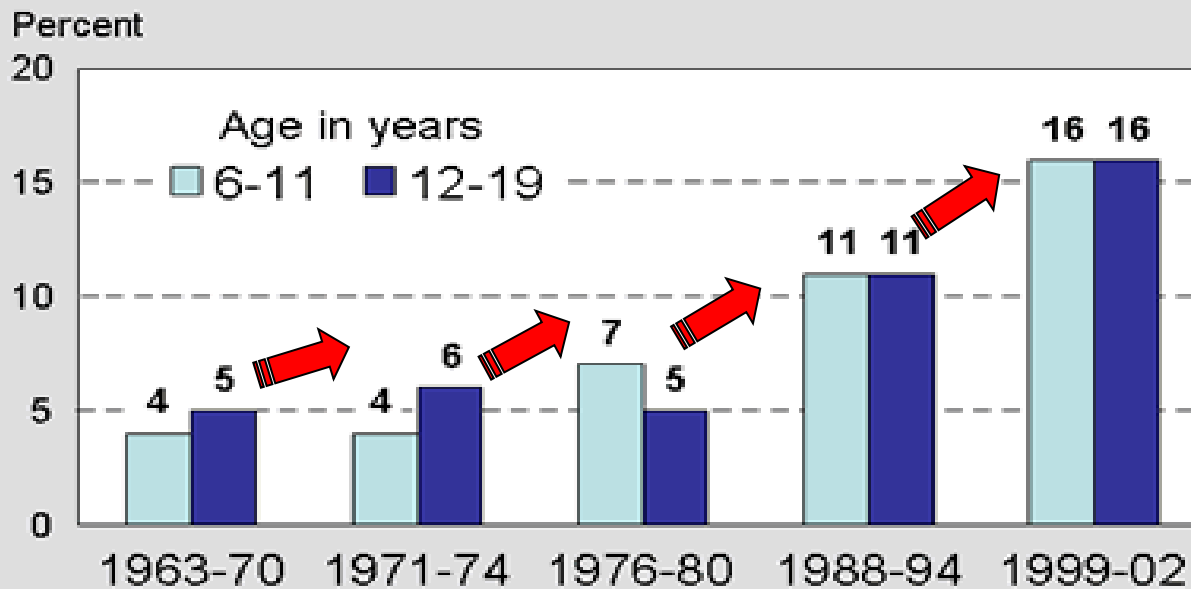
- **General introduction**
- **Objectives**
- **Methodology**
- **Results**
- **General discussion**
- **Conclusion**

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1. Overweight Status

Prevalence of overweight among children and adolescents ages 6-19 years



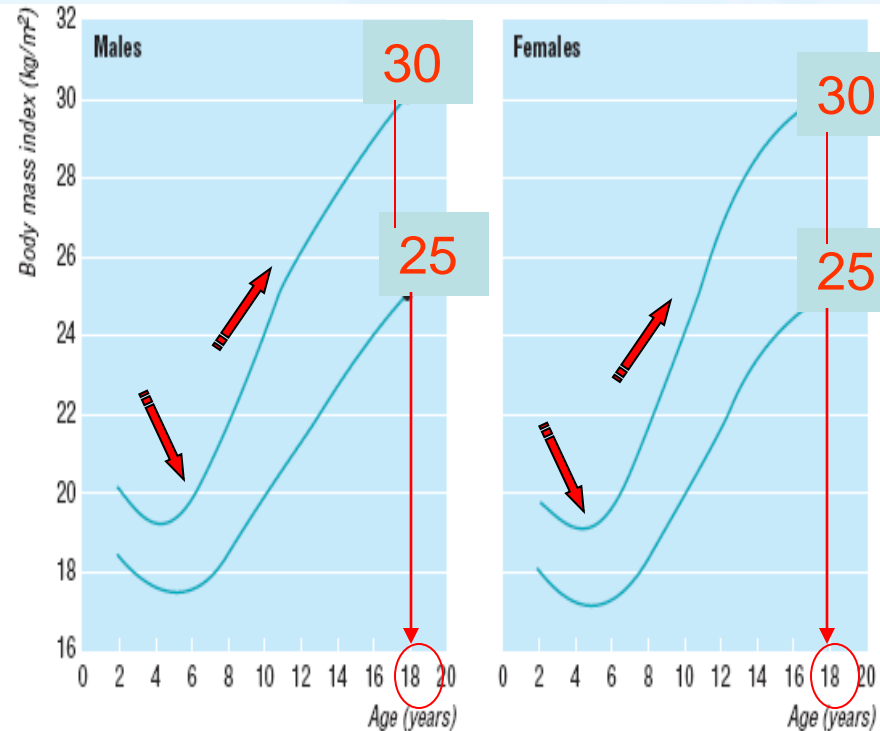
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SOURCE: CDC/NCHS, NHES and NHANES

Body Mass Index (BMI)

General Introduction

- **BMI = [weight (kg)/ height (m²)]**
- **BMI normally decreases until age 5–6 years, and then increases through adolescence**



Ref: Cole et al. British Medical Journal 2000

2. Body weight dissatisfaction

Weight dissatisfaction is the strongest predictor of **disordered eating** behaviours
And leads to **unhealthy** and **extreme** weight loss behaviours

Ref: (WHO 2005)

Ref: Strauss RS, Archives of Pediatrics & Adolescent Medicine
1999



Correlates of body weight dissatisfaction

- ↑ BMI
- ↑ Weight perception of overweight
- ↓ Negative body image
- ↓ Self-esteem and depression
- ↑ Exposure to media and body comparison
- Family factors
- Peer influence

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Objectives

- 1) To describe the **prevalence** of **overweight** and of **weight dissatisfaction** among adolescents in Palestine.
- 2) To investigate **associations of overweight** and of **weight dissatisfaction** with demographic characteristics, body image, health complaints, risk behaviors and physical (in)activity in adolescents in Palestine.

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- This Study is part of the National Study of **Palestinian Health Behaviour in School-aged children (HBSC-2004)** cross-sectional study
- The Health Behaviour in School Aged Children (HBSC), a **World Health Organisation (WHO) cross-national** survey, is an **international** research study on health and health behaviour of adolescents **across more than 40 countries**
- The **aim** of the international HBSC study is to **understand youth health behaviour and lifestyle**
- The **2004 Palestinian HBSC** was the first large population-based survey conducted in Palestine. The survey was repeated in **2006**

Instrument

Methods

The **questionnaire** was developed using the World Health Organization (WHO) **international HBSC (2001-2002) mandatory questions** and **optional questions**

The questionnaire contained **6 optional packages**:

- ***Form A:*** contained the optional questions on **smoking, violence & injuries, and social inequalities**. In addition to all mandatory questions
- ***Form B:*** contained the optional questions on **physical activity, eating & dieting, and mental & physical health**. In addition to all mandatory questions

The English version of the questionnaire was **translated** into the native language (**Arabic**) and **piloted** within **300 students**

Sampling

The sample was drawn based the international HBSC protocol and the 2003 Palestinian list of schools and classrooms (which included the number of students per classroom)

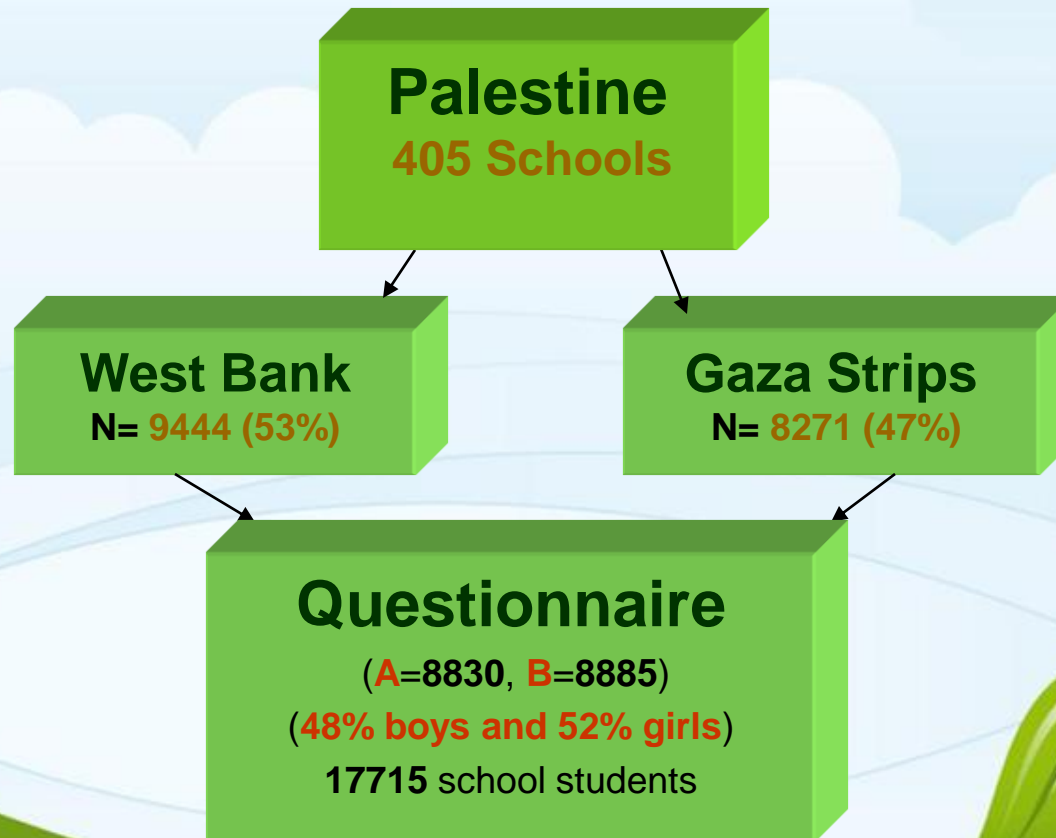
School children (Girls and Boys) in:

- 1) Grade 6th (12y)
- 2) Grade 8th (14y)
- 3) Grade 10th (16y)
- 4) Grade 12th (18y)

Data collection was conducted in April and May 2004

Flowchart depicting participation

Methods



Key Measures

Dieting status: At present are you on a diet or doing something else to lose weight?

Responses:

1. no, my weight is fine
2. no, but I need to lose weight
3. no, I need to put on weight
4. Yes

Weight Dissatisfaction:

- 1) **Satisfied** with weight' if the response was **weight is fine**
- 2) **Dissatisfied** with weight' if the responses indicated 'yes' or 'no, but I **need to lose weight**'

Those reporting they **want to put on weight** were **excluded**

Overweight status: calculated by using **self-reported weight** and **height**. BMI cut-off points defined by **Cole et al., overweight & obese** adolescents were **classified** as '**overweight**'

Measures

- FAS (Family Affluence Scale)
- Parental education
- Body image
- perception of body weight
- perception of looks
- Self reported health
- Life satisfaction
- Somatic and Psychological health complaints
- Feeling lonely
- Risk behaviours (fighting, carrying a weapon in school, been bullied, bullying, smoking, physical activity, physical inactivity)

Statistical analysis

Binary logistic regression analyses were run to investigate the associations between:

Weight dissatisfaction and other **health determinants** (body image, health complaints, risk behaviours, PA & TVV **controlling for**: region, grade, weight status and weight dissatisfaction)

Interaction effects between **weight status** and **weight dissatisfaction** have been assessed.

The only significant interaction effects found were related to **somatic health and feeling lonely** among **boys** and **physical activity** among **girls** ($P < 0.05$); therefore, no separate analyses were run for overweight and nonoverweight adolescents

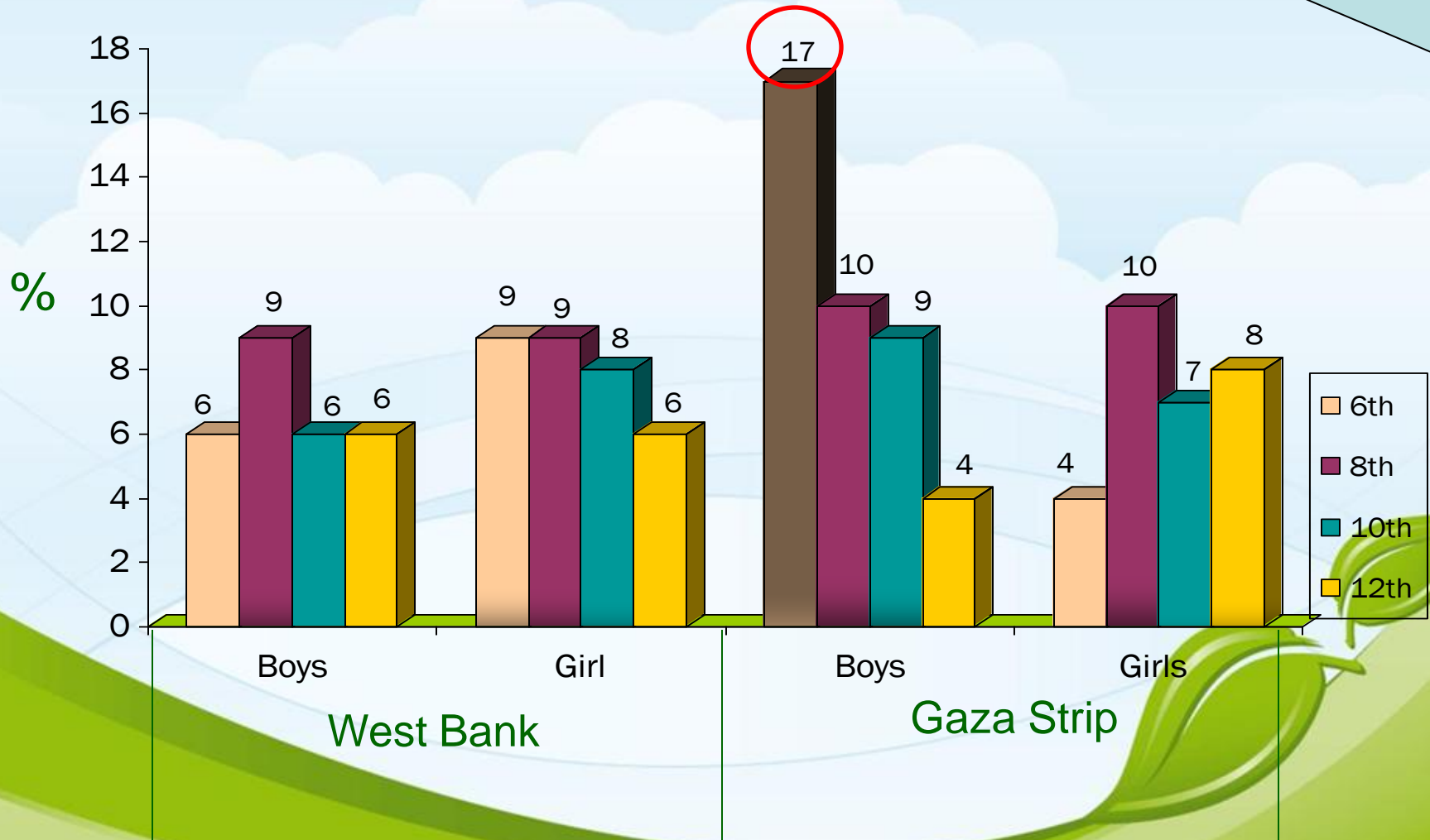
A level of **significance** of **0.05** was used and **odds ratios (OR)** were considered **significant** if **95% confidence interval (95%CI)** did **not include 1.0**

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Current Dieting Status by Region, Gender and Grade

Results



Overweight %

Results

Characteristics	Boys		Girls	
		P		P
Total 16.5	20.4	-	13.0	-
Region:				
West Bank	21.2	0.088	12.5	0.277
Gaza	19.4		13.4	
Grade:				
6th Grade	19.8	0.100	14.7	0.017
8th Grade	18.4		13.8	
10th Grade	21.0		11.8	
12th Grade	22.0		11.6	
Mother's education:				
Low education	19.5	<0.001	13.1	0.435
High education	24.0		12.3	
Father's education:				
Low education	20.8	0.499	13.0	0.845
High education	20.1		13.1	
Family Affluence Scale (FAS)				
FAS 1 (Low)	19.5	<0.001	13.2	0.434
FAS 2 (Moderate)	21.7		12.1	
FAS 3 (High)	29.5		11.4	

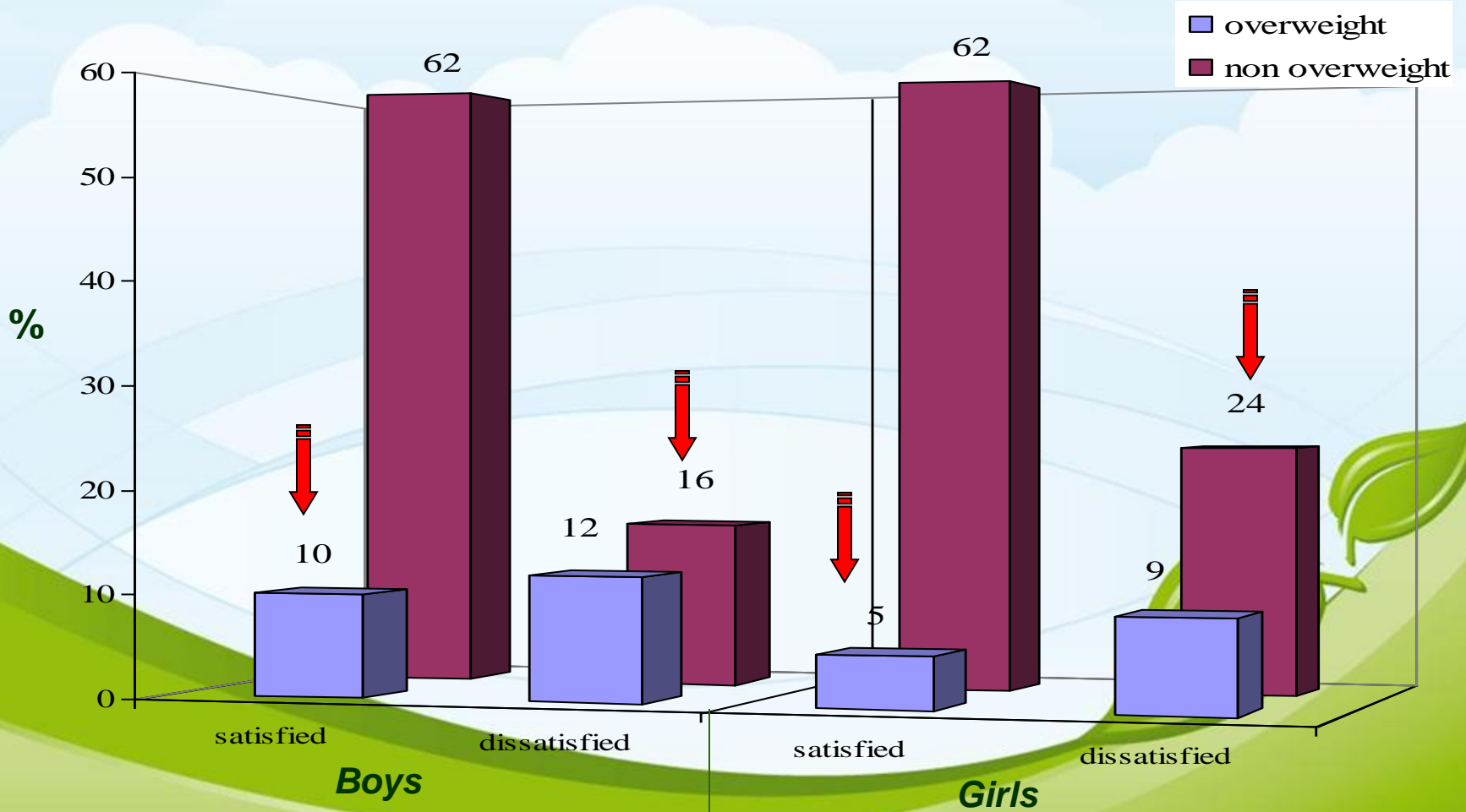
Body weight dissatisfaction (%)

Results

Characteristics	Boys		Girls	
		P		P
Total	32.1	-	29.9	33.9
Region:				
West Bank	28.4		37.4	
Gaza	31.7	0.003	30.2	<0.001
Grade:				
6th Grade	30.2		25.7	
8th Grade	35.1		37.2	
10th Grade	28.6		37.7	
12 th Grade	25.5	<0.001	35.6	<0.001
Mother's education:				
Low education	28.4		34.0	
High education	34.2	<0.001	34.1	0.952
Father's education:				
Low education	29.1		34.0	
High education	31.0	0.110	34.7	0.837
Family Affluence Scale (FAS)				
FAS 1 (Low)	28.0		33.2	
FAS 2 (Moderate)	32.6		36.5	
FAS 3 (High)	38.3	<0.001	35.6	0.049

Weight Status and weight dissatisfaction by gender

Article 2



Body image

Weight Status (OR + 95%CI)

Boys

Body perception: too fat
Appearance perception: not attractive

This forest plot shows the Odds Ratio (OR) and 95% Confidence Interval (CI) for weight status in boys. The x-axis is on a logarithmic scale with markers at 0.5, 1.5, 2.5, 3.5, and 4.5. A vertical red line is at OR = 1.0. Two data points are shown: 'Body perception: too fat' with an OR of approximately 3.8 and 95% CI of 3.2-4.5; and 'Appearance perception: not attractive' with an OR of approximately 1.2 and 95% CI of 1.0-1.5.

Category	OR (approx.)	95% CI (approx.)
Body perception: too fat	3.8	3.2 - 4.5
Appearance perception: not attractive	1.2	1.0 - 1.5

Girls

Body perception: too fat
Appearance perception: not attractive

This forest plot shows the Odds Ratio (OR) and 95% Confidence Interval (CI) for weight status in girls. The x-axis is on a logarithmic scale with markers at 0.5, 1.5, 2.5, 3.5, and 4.5. A vertical red line is at OR = 1.0. Two data points are shown: 'Body perception: too fat' with an OR of approximately 3.8 and 95% CI of 3.2-4.5; and 'Appearance perception: not attractive' with an OR of approximately 1.8 and 95% CI of 1.5-2.2.

Category	OR (approx.)	95% CI (approx.)
Body perception: too fat	3.8	3.2 - 4.5
Appearance perception: not attractive	1.8	1.5 - 2.2

Weight Dissatisfaction (OR + 95%CI)

Boys

Body perception: too fat
Appearance perception: not attractive

This forest plot shows the Odds Ratio (OR) and 95% Confidence Interval (CI) for weight dissatisfaction in boys. The x-axis is on a logarithmic scale with markers at 0.1, 5.0, 10.0, 15.0, and 20.0. A vertical red line is at OR = 1.0. Two data points are shown: 'Body perception: too fat' with an OR of approximately 15.0 and 95% CI of 12.0-18.0; and 'Appearance perception: not attractive' with an OR of approximately 2.0 and 95% CI of 1.5-2.5.

Category	OR (approx.)	95% CI (approx.)
Body perception: too fat	15.0	12.0 - 18.0
Appearance perception: not attractive	2.0	1.5 - 2.5

Girls

Body perception: too fat
Appearance perception: not attractive

This forest plot shows the Odds Ratio (OR) and 95% Confidence Interval (CI) for weight dissatisfaction in girls. The x-axis is on a logarithmic scale with markers at 0.1, 5.0, 10.0, 15.0, and 20.0. A vertical red line is at OR = 1.0. Two data points are shown: 'Body perception: too fat' with an OR of approximately 15.0 and 95% CI of 12.0-18.0; and 'Appearance perception: not attractive' with an OR of approximately 1.5 and 95% CI of 1.2-1.8.

Category	OR (approx.)	95% CI (approx.)
Body perception: too fat	15.0	12.0 - 18.0
Appearance perception: not attractive	1.5	1.2 - 1.8

Boys OR + 95%CI

Weight dissatisfaction

Health Complaints

General health: fair or poor

Som. Health complaints: high

Psych health complaints: high

Life satisfaction: low

Feeling lonely: often

Risk Behaviours

Fighting last year

Injured in fight last year

Been bullied past 2 months

Bullying others

Ever smoked

Smoked nargilah

PA & TVV

Physical act. ≥ 5 d/week

TV viewing ≥ 4 h/day



Girls OR + 95%CI

Weight dissatisfaction

Health Complaints

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Main findings

- The highest percentage of dieting, boys in grade 6 in Gaza (17%)
- Overweight (16.5%)
- Weight dissatisfaction (32.1%)
- **2 groups**: overweight-satisfied with weight and nonoverweight-dissatisfied with weight

- **Many negative correlates of dissatisfaction with weight among as well overweight as non overweight adolescents.** These findings are consistent with findings in Europe and US
- **Almost no correlates with overweight.** These findings are consistent with findings in Europe and US (e.g. Neumark-Sztainer et al, Obesity Research, 1996; Crow et al, J. Adol Health, 2006)
- **More overweight and dissatisfied boys had highly educated mothers.** Findings different from most European and US studies.
- **More overweight and dissatisfied boys had highly educated mothers.** Findings different from most European and US studies

Limitations and Strength

- **Study design:** **Cross-sectional** design it is **not possible** to determine a **cause-effect relationship** (*e.g: how environmental changes may predict changes in individual behaviours*)
- **Measurements:** **Self-reported** data may be subject to socially desirable answers (*e.g: overweight people underreporting their weight*). However, the questionnaires of the students are anonymous.
 - **Self reports of height and weight**
 - **Weight dissatisfaction**
 - **Puberty**

Limitations and Strength

The questionnaire was **piloted** to **determine** some aspects of **validity** and **reliability** of the **instrument**. The pilot study made clear that data collection was possible

Sample size: it is a strength of the research to include a large sample of **17,715** adolescents from **405 schools**

Outline

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Conclusion And Recommendation

Conclusion and recommendation

This Study revealed **high prevalences** of: dieting, overweight, weight dissatisfaction

Weight dissatisfaction, **independent** of weight status, is **associated** with body image, health complaints, risk behaviours, and TV viewing

*Raising awareness to encourage **healthy eating, dieting, positive body image and healthy physical activity***

- **Weight dissatisfaction** seems to be part of a cluster of adolescent problems
- **Interventions on weight loss should be integrated in (mental) health programs for adolescents**
- **Need to address the societal importance and value attached to thinness**

For More information:

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Thank you

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