

CPCE HEALTH CONFERENCE 2017

HEALTHCARE DELIVERY AND FINANCING REFORM

Implications for Business, Healthcare Providers and Patients

Promotion of Weight Control in Hong Kong

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1. Introduction of obesity



Obesity

➤ Definition by the Centre for Health Protection (CHP)

- ✓ **Overweight:** BMI between 23kg/m² and 24.9 kg/m²
- ✓ **Obese:** BMI > 24.9 kg/m²

**OBESITY IS NOW A
GLOBAL EPIDEMIC!**



➤ Effects of obesity

- Poor body appearance
- Heart attacks
- Type II diabetes
- Death

(Gregg, 2013)

➤ Epidemical in the world

Prevalence of obesity over the world

Age-standardised prevalence of overweight and obesity in children and adolescents aged 2 to 19 for developed and developing countries by sex, 1980 and 2013

Level of development	Sex	Year	
		1980	2013
Developed countries	Boys	16.9%	23.8%
	Girls	16.2%	22.6%
Developing countries	Boys	8.1%	12.9%
	Girls	8.4%	13.4%

Source: Global Burden of Disease Study 2013.

Percentage of overweight & obesity for boys and girls
↑ by 50%

Figure 1: Age-Standard prevalence of overweight and obesity in children and adolescents aged 2 to 19 for developed and developing countries by sex, 1980 and 2013

(Source: Global Burden of Disease Study 2013)

Behavioural Risk Factor Survey

Detection rate of overweight and obesity among secondary school students by sex, 1996/97 – 2013/14

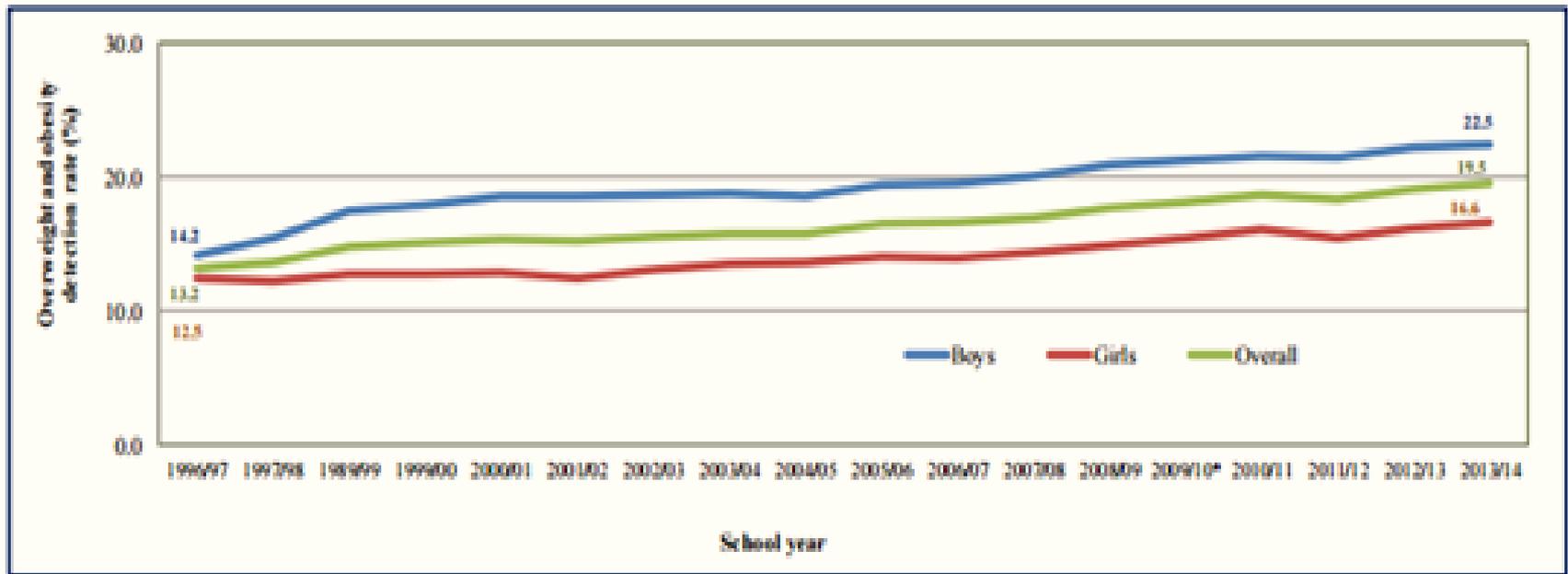


Figure 2: Detection rate of overweight and obesity among secondary school students by sex, 1996/97-2013/14

(Source: Non-Communicable Diseases Watch: Healthy Weight Healthy Kids 2015)

2. Major risk factors of obesity

2.1 Family history

2.2 Parenting styles

2.3 Unhealthy diet

2.4 Inadequate exercise

Family history

- * Different selected genes are associated with obesity phenotype
- * Phenotypes of adipose tissue distribution: 40-55%

(Research Chair in Obesity, 2016)



heredity of obesity



(Bell, Walley & Froguel, 2005)

National Heart, Lung and Blood Institute (NHLBI) Twin Study (1977)

Table 2 | A selective list of genes that are associated with obesity phenotypes

Gene*	Gene name*	Location [†]	Phenotypes measured [‡]	References
<i>ACDC</i>	Adipocyte, C1Q and collagen domain containing, adiponectin	3q27	BMI, waist circumference BMI	137 138,139
<i>ADRA2A</i>	Adrenergic receptor α -2A	10q24–q26	Skinfold ratio, abdominal fat Skinfold ratio	140,141 142
<i>ADRA2B</i>	Adrenergic receptor α -2B	2p13–q13	Basal metabolic rate, weight-gain	143,144
<i>ADRB1</i>	Adrenergic receptor β -1	10q24–q26	Weight, fat mass, BMI	145
<i>ADRB2</i>	Adrenergic receptor β -2 surface	5q31–q32	WHR, obesity, BMI, subcutaneous fat Fat accumulation, obesity Adipocyte lipolysis	146–152 151,152 153
<i>ADRB3</i>	Adrenergic receptor β -3	8p12–p11.2	WHR, BMI, weight-gain capacity, earlier onset	154–160
<i>LEP</i>	Leptin (obesity homologue, mouse)	7q31.3	Obesity, BMI	161–164
<i>LEPR</i>	Leptin receptor	1p31	BMI, fat mass, overweight Fat mass, overweight Fat mass	165–167 168 169
<i>NR3C1</i>	Nuclear receptor subfamily 3, group C, member 1 (glucocorticoid receptor)	5q31	Obesity, overweight	170–172
<i>PPARG</i>	Peroxisome proliferative activated receptor, γ	3p25	BMI, weight, fat mass BMI, overweight, fat mass	173–182 175,177,183
<i>UCP1</i>	Uncoupling protein 1 (mitochondrial, proton carrier)	4q28–q31	Weight, BMI WHR	184–188 189
<i>UCP2</i>	Uncoupling protein 2 (mitochondrial, proton carrier)	11q13	Obesity BMI, obesity, skinfold thickness	190 191–194
<i>UCP3</i>	Uncoupling protein 3 (mitochondrial, proton carrier)	11q13	Caloric intake, fat intake, fat mass, WHR, BMI Skinfold thickness BMI	189,195,196 196 197,198

Figure 3: A selective list of genes that are associated with obesity phenotypes
(Source: National Heart, Lung and Blood Institute (NHLBI) Twin Study 1977)

Unhealthy diet

Cultural factors

- High-tempo lifestyle
- Prices
- Availability of food



Poor may not have “healthier”
foods in their eating culture
(Chung & Myers, 1999)

Psychological factors

- Stress
- Low income (Financial Pressure)
(Skelton et al., 2012)



Binge eating



Energy imbalance: Energy intake > energy output

(Cummins & Macintyre, 2006)

Inadequate exercise

Factors leading to inadequate exercises

- Degenerative joint diseases
- Heavy workload
- ↓ community awareness towards the importance of exercise

(Frost, 2015)



↓ utilized muscle glycogen
↓ insulin sensitivity



↑ accumulated fats + carbohydrate



Obesity

Inadequate community awareness towards exercise

Comparison on physical exercise habits of the young, the adults and the elderly

	The young (aged 12-24)	The adults (aged 25-59)	The elderly (aged 60 or above)	
Did physical exercise in the past 3 months	92.3%	75.5%	80.4%	The young and the adults indicated that they did physical exercise. However, the frequency and the amount were not adequate
Did physical exercise 3 times per week and spending on average 30 minutes or above in each occasion	24.6%	21.6%	53.1%	
Did physical exercise daily	12.1%	28.3%	85.5%	
Spending on average an hour or above in each occasion	73.9%	45.9%	42.2%	
Spending on average less than half an hour in each occasion	10.5%	25.2%	24%	
Preferred time period to do physical exercise	Afternoon (40%) Evening (27.5%)	Morning (38.3%) Evening (30.2%)	Morning (84.1%)	
Primary reason for doing physical exercise is "enhance health"	28.6%	59.1%	70.9%	

Figure 4: Comparison on physical exercise habits of the young, the adults and the elderly
(Source: Public Opinion Survey on Physical Exercise Participation in Hong Kong 2006)

Current Weight Control Measures

- 3.1 Promoting healthy eating through food pyramid and calories calculation apps
- 3.2 Promoting exercise programmes
- 3.3 Nutrition labelling scheme
- 3.4 Weight control education for the public

Healthy eating

Food pyramid

- E.g. Adults
 - ✓ 3 servings of vegetables
 - ✓ 2 servings of fruits



↑ dietary fibres



↓ total energy intake

Calories calculation apps

- E.g. “My Wellness Tracker” app (CUHK, 2012)
 - ✓ Lists different calories intakes in the food



Keep an energy balance in diet



Advantages

- Understand the advantages of weight management
- ↑ perceived benefits of the promotion

(Papathanasopoulos & Camilleri, 2010)

(Department of Health, 2015)

Adequate exercise

Hong Kong Leisure and Cultural Services Development (LCSD)

Exercise programmes

- Sports for All Day
- Healthy Exercise for All Campaign
- Outdoor Activities Carnival
- Water Carnival

(GovHK, 2016)

Fitness programmes for:

- Children
- Elderly
- People with disabilities



participation for at least 30 minutes every day



Calories burnt

+

✓ Control body weight

(Myao Clinic, 2014)

Nutrition labelling scheme

United States Food and Drug Administration (FDA)

- Nutrition Facts Panel
- Ingredient statement
- Net contents



Mandated on the food label

Hong Kong Government

- Food and Drug (Composition and Labelling) Regulation (2008)



Nutrition labels in pre-packaged food



- ✓ Make informed food choices
- +
- ✓ Control body weight

Nutrition Facts	
Per 1 burger (130 g)	
Amount	% Daily Value
Calories 200	
Fat 9 g	14 %
Saturated Fat 2 g	4 %
+ Trans Fat 1 g	2 %
Cholesterol 70 mg	14 %
Sodium 800 mg	33 %
Carbohydrate 4 g	1 %
Fibre 0 g	0 %
Sugars 0 g	0 %
Protein 25 g	50 %
Vitamin A 0 %	Vitamin C 0 %
Calcium 4 %	Iron 2 %



(Centre for food safety, 2010)

(Institute of Food Technologists, 2016)

Weight control education

Teachers and nutritionists

- Infuse knowledge about obesity to students, (Causes & Bad consequences)



↑ students' perceived severity arising from obesity



Department of Health

- Holds health talks
- Produces leaflets
- Produces posters



↑ people get access to weight control information



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4. Factors affecting current weight control promotion

4.1 Health literacy

4.2 Personal interest

4.3 Allocation of technical and financial resources

Health literacy

- Capability to obtain and understand healthcare information in order to make appropriate health choices (Hewitt, 2012)

↑ Health literacy



↑ effectiveness of weight control promotion

Inadequate knowledge in the technology



↓ Health literacy



Influence

- use of health services
- quality of communication between patients and health practitioners
- attitudes towards the strategies of weight loss in children

↓ prevention or management of obesity

(Selwyn, 2004)

(Australian Primary Health Care Research Institute, 2016)

Personal interest

Blogging culture



Share experiences in success and failures of weight loss programs through the internet

Gender difference



Ladies:

- Affected by social norms relating to ideal “leanness”
- Experience more negative body satisfaction than men

Motivation
(willingness to lose weight to improve the body shape)



Sources & natures of motivation:

E.g. Instructions from the health practitioners (Authoritative?)



Influence the attitudes towards weight control programmes



Affect weight control promotion



Allocation of technical & financial resources

Technical resources

- Specialist skills



✘ sufficient nutritional knowledge to advice on healthy food choices



Misleading public

Financial resources

- Depends on the government policy and regulations in economy



✘ enough funding for promotional programmes



Difficult to promote weight control



5. Recommendations

5.1 Increase sources of funding

5.2 Build a health-literate community

5.3 Professional trainings for health professionals

Increase sources of funding

- ✓ Community fundraising
- ✓ Forming partnerships with charity organizations
(Tung Wah Group of Hospitals and the Hong Kong Jockey Club)



Government

- Examine adequacy of funds
- Monitor allocation and benefits of financial resources on promotional programmes



Health organizations

- Use **financial incentives** (discount vouchers and prizes)
- Encourage the public to join various weight management programmes



Build a health-literate community

- ✓ Health-literate politicians
- ✓ Health-literate health professionals
 - ✓ Health-literate public



Government

- ✓ Promote weight management by:
 - Leaflets
 - Posters
 - Newspapers
 - Television

Organizations of buses, ferries & MTR

- ✓ Post weight control advertisement in busy public areas

Nutritionists & health educators

- ✓ Carry out promotion at:
 - Schools
 - Elderly centres
 - Hospitals

For
elderlies



Professional training for health professionals

- E.g. Hong Kong Institute of diabetes and obesity (HKIDO) and CUHK
 - ✓ A certificate course in obesity and weight management

(HKIDO, 2015)



Roles of Health professionals

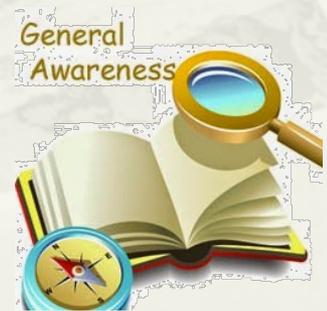
- ✓ Possess enough promotion skills and knowledge in weight management
- ✓ Implement evidence-based health promotion
- ✓ Develop alternative goals for health promotion
- ✓ Providing advices on developing an effective weight management plan



Update knowledge about weight control promotion

+

 effectiveness



(ACHA, 2014)

(Australian Primary Health Care Research Institute, 2016)

Conclusion

❖ “Globesity”

- Epidemic of obesity over the world

❖ Risk factors of obesity

1. Family factors
2. Unhealthy eating habits
3. Lack of exercise

❖ Barriers in health promotion

1. Inadequate health literacy,
2. Inadequate personal interest,
3. Inadequate technical & financial resources

❖ Effective & sustainable promotion of weight control

- ✓ Continue professional training
- ✓ Enhance public awareness
- ✓ Provide a wide coverage of education in weight management
- ✓ Raise funds

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