Non-Communicable Diseases Watch

May 2014





The Faces of Eating Disorders Key Facts

- Eating disorders refer to a variety of complex illnesses associated with significant disturbances **※** in eating attitudes and behaviours, such as eating extremely small or large amounts of food.
- Eating disorders have been reported worldwide. The onset of eating disorders usually emerges during **※** adolescence. If left untreated, they can lead to wide-ranging physical and psychosocial complications, irreversible damages to the body or even death.
- In Hong Kong, disordered eating attitudes and behaviours are not uncommon among adolescents. * A study in 2007 found that about one in five secondary school students aged 12-18 were at risk of disordered eating.

Prevention Tips

For Parents and Carers

- Be a role model with healthy attitudes and behaviours towards food and eating, exercise and weight.
- * Show an acceptance of different body shapes. Refrain from making inappropriate comments about children and adolescents' weight, shape, appearance or specific body parts.
- Help children and adolescents understand their self-worth. Place more emphasis on their talents, * strengths and positive internal qualities such as friendliness, integrity and thoughtfulness.
- Listen to children and adolescents' perceptions on weight and body image. Teach them about * the detrimental effects of disordered eating.
- Encourage children and adolescents to critically examine the messages they receive from the media or peers about ideals of appearance and dieting. Teach them strategies to handle negative peer pressure.
- * Help children and adolescents to express their negative emotions in healthy ways.
- Pursue knowledge and understanding of eating disorders. Be aware of the warning signs and * symptoms associated with eating disorders of children and adolescents.
- Consult your family doctor for early assessment, treatment or referral, if children and adolescents * are suspected of having or at risk of an eating disorder.

For Adolescents and Young People

- Be aware of your emotions and eating behaviours. *
- * Learn to accept yourselves and regulate negative emotions in a healthy way.
- Know what an optimal body weight is for you, and be cautious to the 'thin is beauty' fallacy, unhealthy slimming culture or other negative influences linked to body image dissatisfaction.

The Faces of Eating Disorders

Eating disorders refer to a variety of complex illnesses associated with significant disturbances in eating attitudes and behaviours, such as eating extremely small or large amounts of food, food faddism or rituals. Severe distress or concern about body weight or shape may also typify an eating disorder. The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) recognises several major diagnostic categories for eating disorders, including anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED).²

Briefly, AN is characterised by distorted body image and excessive dieting that leads to severe weight loss with a pathological fear of becoming fat. This disorder primarily affects adolescent girls and young women who see themselves as overweight, even when they are clearly underweight. For BN, it comprises frequent episodes of binge eating followed by some form of inappropriate compensatory behaviours (such as self-induced vomiting, misuse of laxatives or diuretics) to avoid weight gain. Unlike AN, people with BN usually maintain a normal weight. BED is defined as recurring episodes of eating significantly large amounts of food in a short period of time marked by feelings of lack of control. Different from BN, periods of binge eating are not followed by compensatory behaviours. Hence, people with binge eating behaviours often are overweight or obese. 1, 2 Of note, it is not uncommon for a person to progress from one eating disorder to another. For example, somebody with AN may later develop BN or BED, and vice versa.3

Eating Disorders around the Globe

Problem of the West?

Eating disorders have been reported worldwide. Using strict diagnostic criteria for eating disorders, population-based household surveys of adults aged 18 and above in the United States (U.S.) and

six European countries (including Spain, Italy, Germany, Belgium, France and the Netherlands) between 2001 and 2003 found that the lifetime prevalence estimates of eating disorders ranged from about 0.5% to 0.6% for AN, 0.5% to 1.0% for BN, and 1.1% to 2.8% for BED. The problems were more prevalent in females than males. In Australia, more than 913 000 people (or around 4% of the total population) had eating disorders in 2012. Among people with eating disorders in Australia, majority suffered from BED (47%) and other eating disorders (38%), while BN and AN accounted for 12% and 3% respectively.

Although eating disorders have been predominantly viewed as closely associated with Western culture, they are not restricted to Western populations. A literature review reported that prevalence of abnormal eating attitudes among females in Western countries ranged from 8.3% (college students in Switzerland) to 26% (females aged 16 – 22 years in the U.S.) and that among males in Western countries ranged from 0.4% (students aged 14 - 19 years in Spain) to 10% (college students in the U.S.) by the Eating Attitudes Test-26 (EAT-26, an instrument designed to examine the level of abnormal eating attitudes and behaviours to identify individuals at risk for an eating disorder). In non-Western countries, the corresponding prevalence among females ranged from 0.8% (adult females in their 30s in Japan) to 39.5% (female nursing college students in their first year of study in Pakistan) and among males ranged from 2.4% (high school students in Japan) to 10.9% (teenagers in Oman).

Increasing Trend around the World

Furthermore, epidemiological studies observed an increase in eating disorder behaviours over the past decades. For example, the annual age-standardised incidence rates of eating disorders for ages 10-49 increased from 32.3 to 37.2 per 100 000 population from 2000 to 2009 (incidence rate for females increased from 51.8 to 62.6 per 100 000 population,

while rate for males increased from 5.6 to 7.1 per 100 000 population) in the United Kingdom (U.K.). Findings from two sequential community surveys in South Australia found 1.4- to 1.9-fold increases in the prevalence of binge eating, purging (selfinduced vomiting, and/or laxative or diuretic misuse) and strict dieting or fasting for weight or shape control between 1995 and 2005. These behaviours increased in both men and women.9 In Asia, eating disorder appeared to be increasing too. According to Japan's National Institute for Mental Health, the number of cases of clinical anorexia across Japan soared nearly 10 times from about 2 in 100 000 individuals in 1980 to 19 in 100 000 1998.¹⁰ individuals in An Eating Disorder Programme at Singapore General Hospital also observed 30% increase in new cases of patients diagnosed with eating disorders between 2011 and 2012.11

Peak Age of Onset at Adolescence

Although eating disorders may occur in young children¹² or elderly¹³, the onset of eating disorders usually emerges during adolescence.¹⁴ For example, a face-to-face interview survey of 10 123 U.S.

adolescents aged 13 – 18 years observed that the median ages for onset of AN, BN and BED were about 12 to 13 years old. ¹⁵ Another study of eating disorders from primary care register in U.K. showed that the peak age of diagnosis for AN and BN was between 15 and 19 years. ⁸ In fact, the World Health Organization has identified eating disorders among the priority mental health issues for children and adolescents. ¹⁶

Local Situation

In Hong Kong, disordered eating attitudes and behaviours are not uncommon among local adolescents and the situation seems to be getting worse in recent years. In 2007, a study of 893 students aged 12 − 18 from a secondary school found that the disordered eating defined by EAT-26 score ≥20 was present in 22.1% of adolescents with a mean EAT-26 score of 14.9 and 12.4 in girls and boys respectively.¹¹ When compared with the findings reported in the previous local studies, the adolescents in the 2007 study showed a much higher prevalence of disordered eating (Table 1).

Table 1: The Reports of EAT-26 scores among local adolescents

	2007 study ¹⁷	2005 study ¹⁸	1993 study ¹⁹
Survey subjects	> 893 secondary students aged 12 – 18 years (mean age for girls: 14.9; mean age for boys: 14.6)	➤ 2 382 secondary students aged 10 – 21 years (mean age for girls: 14.8; mean age for boys: 14.6)	> 294 Chinese adolescent females
% with a EAT- 26 score ≥20	> 22.1% (26.6% in girls; 8.5% in boys)	> 5.1% (6.5% in girls; 3.9% in boys)	▶ 6.5%
Mean EAT-26 score	> 14.9 in girls; 12.4 in boys	➤ Not available	➤ 8.4

Major Risk Factors for Eating Disorders

Like most mood disorders or psychiatric illnesses, eating disorders are very often the result of a complex interplay of biological/physiological factors, personality traits/psychological factors,

social and cultural factors at both individual and community levels as well as personal experiences (Box 1).

Box 1: Major risk factors for eating disorders 14, 20, 21

Biological/ Physiological factors

- * female gender
- * genetic susceptibility
- physiological changes associated with life stages, such as puberty
- * imbalance of certain chemicals in the brain, e.g. serotonin
- physical health conditions, such as obesity and overweight
- * dieting

Personality traits/ Psychological factors

- * low self-esteem
- * perfectionism
- * obsessive or impulsive behaviours
- comorbid psychiatric conditions, such as depression, anxiety
- * feeling of inadequacy
- * conformity/a need to please others
- * highly concerned with others' opinion
- * fear of adulthood
- * fear of conflict

Social and Cultural factors

- cultural ideals for appearance, such as thin or muscular ideal
- media (TV, movies or magazines) advertising images of the 'perfect' body or toys (such as dolls) with distorted bodily proportions
- social pressure to succeed, to be competitive and engage in self-comparison
- professions with an emphasis on body shape, such as models, dancers and elite athletes

Personal experiences

- * peer pressure
- bullying and teasing related to appearance
- * sexual or physical abuse
- parental attitudes, behaviours and comments regarding appearance, eating or dieting
- * troubled personal or family relationship
- life events involving major changes, such as loss of a family member or friend, changing schools or jobs

Consequences of Eating Disorders

Physical manifestations of eating disorders are related to the weight-control behaviours and effects of malnutrition.²² While no organ is spared the effects of eating disorders, the extent of damage is usually dependent upon the type, duration, severity, and age of onset of the eating disorder. If left untreated, eating disorders can lead to wide-ranging medical complications, irreversible damages to the body or even death.

Apart from extreme thinness, people with AN over time can have brittle hair and nails, dry and yellow skin, growth of fine hair all over the body, anaemia, muscle wasting and weakness, low blood pressure, postural dizziness, slowed breathing and pulse, severe constipation, lack of menstruation (in females), lethargy and cold intolerance. Self-starvation in anorexic people can also result in the heart muscle shrinking and heart arrhythmias.

On the other hand, people with BN usually maintain a normal weight, but can present with chronic sore throat, swollen salivary glands in the neck and jaw area, tooth decay, severe dehydration and electrolyte imbalance as a result of their compensatory weightcontrol behaviours. While dehydration and electrolyte imbalances can precipitate heart arrhythmias and lead to kidney stones formation and kidney failure, self-induced vomiting can result in tear, bleeding or rarely rupture of oesophagus. For people with BED, excessive consumption of foods high in sugar or fat content can lead to elevated blood sugar, cholesterol and triglyceride levels, thereby increasing the risk of developing type 2 diabetes mellitus, gallbladder disease, hardening of the arteries and heart disease. 1, 23, 24 Although most medical complications can improve with nutritional rehabilitation and recovery from the illness, some damages may not be totally restored or can have later repercussions on health. 22, 25 Among adolescents, potentially irreversible physical problems can include structural and functional brain abnormalities, pubertal delay, growth failure or short stature, low bone mass and oesteoporosis in later age. 22, 24

The **psychological effects** of eating disorders are nearly as devastating as the physical ones. Compared to individuals without an eating disorder during adolescence, those with an eating disorder during adolescence were around 4 times as likely to have anxiety disorders, depressive disorders, and suicide attempts during early adulthood.²⁶

Furthermore, a meta-analysis of 36 studies of **death** in eating disorders reported that people with AN were around 5 times as likely to die as compared with people without AN. Those with BN or other eating disorders would also have about 90% higher risk of death.²⁷ As the Global Burden of Disease Study 2010 estimated, the number of people who died of eating disorders worldwide had increased 35.0% from 5 400 in 1990 to 7 300 in 2010.²⁸

Prevention and Early Identification of Eating Disorders

Eating disorders should be recognised as a public health priority, in light of increasing prevalence and profound impacts on the well-being of those affected. While primary prevention of an eating disorder is optimal, early identification and intervention can promote recovery and better treatment outcomes.

As many risk factors of eating disorder are known to develop during early adolescence, **parents and carers** have an important role to play in the prevention and early identification of eating disorders. To reduce the risk of developing an eating disorder among children and adolescents, here are some suggestions –

- * Be a role model with healthy attitudes and behaviours towards food and eating, exercise and weight. For example, do not diet or skip meals, eat a balanced diet with variety of foods in moderation, avoid using food as bribes or punishment, regular exercise for fitness and fun, and maintain an optimal weight.
- * Show an acceptance of different body shapes. Refrain from making inappropriate comments about children and adolescents' weight, shape, appearance or specific body parts.
- * Help children and adolescents understand their self-worth. Place emphasis on their talents, strengths and positive internal qualities such as friendliness, integrity or thoughtfulness instead of appearance.
- * Listen to children and adolescents' perceptions on weight and body image. Teach them about the detrimental effects of disordered eating.
- * Encourage children and adolescents to critically examine the messages they receive from the media and peers about dieting, ideals of appearance or 'perfect body'. Teach them strategies to handle negative peer pressure, such as say no to weight- or shape-related teasing, seek support from trusted friends or adults, or make an excuse and leave if in a difficult situation.

- * Help children and adolescents to express their negative emotions in healthy ways. Instead of using food to cope with stress, encourage them try going for a walk, listening to or playing music, drawing or painting, progressive muscle relaxation exercise, deep breathing or quiet time alone.
- * Pursue knowledge and understanding of eating disorders. Be aware of the early warning signs associated with eating disorders of children and adolescents (Box 2). Do not rationalise any witnessed disordered eating behaviours and warning signs. Seek professional help if indicated.

If suspecting children and adolescents have or are at risk of an eating disorder, it is important for parents and carers to show concern, support and understanding. Remember, eating disorders are treatable and recovery is possible. Never criticise or blame children and adolescents for their disordered eating behaviours or wrong-doings. Consult your family doctor for early assessment, treatment or referral.

Box 2: Warning signs and symptoms associated with eating disorders²⁹

Behavioural

- * constant or repetitive dieting, e.g. skipping meals, fasting, replacing meals with fluids
- * evidence of binge eating, e.g. eating in secret, hoarding large amounts of food in their room
- * using laxative and diuretics, e.g. frequent trip to the bathroom during or shortly after meals
- * compulsive exercising, e.g. exercising even when injured or in bad weather, refusal to interrupt exercise for any reason
- * obsessed with calorie counting, or changes in food preferences, e.g. refusing to eat certain foods, claiming to dislike foods previously enjoyed
- * frequent avoidance of eating meals by giving excuses, e.g. claiming they have already eaten or have allergy to particular foods
- * obsessive with body checking, e.g. repeated weighing of self, excessive time spent looking in mirrors

Physical

- * rapid weight loss
- * frequent changes in weight
- * loss or disturbance of menstrual periods in females
- * signs of frequent vomiting swollen jawline, calluses on knuckles, or damage to teeth
- * feeling cold most of the time, even in warm environments (caused by poor circulation)
- * fainting and dizziness as a result of dehydration
- * fatigue always feeling tired, unable to perform normal activities

Psychological

- * increased preoccupation with body shape, weight and appearance
- * intense fear of gaining weight
- * extreme body dissatisfaction / distorted body image, e.g. complaining of being/feeling/looking fat when actually at a normal weight or underweight
- * preoccupation with food or with activities relating to food
- * heightened sensitivity to comments or criticism about body shape or weight, eating or exercise habits
- * heightened anxiety around meal times
- * low self-esteem, e.g. feelings of shame, guilt or self-loathing
- * feeling of being unable to control behaviours around food

For adolescents and young people, you should:

- * Be aware of your emotions and eating behaviours.
- * Learn to accept yourselves and regulate negative emotions in a healthy way.
- * Know what an optimal body weight is for you, and be cautious to the 'thin is beauty' fallacy, unhealthy slimming culture or other negative influences linked to body image dissatisfaction.

Of note, the Student Health Service of the Department of Health has developed an App for iPhone and iPad (in Chinese only) as a tool for students (primary and secondary) to check their body weight for height and find out if they are at a healthy weight for their age or their weight status categories based on the "Weight for Height" percentiles. The App also provides health tips on diet and physical activity which are the most healthy and effective ways to control body weight. Members of the public are welcomed to download it from the iTunes website or Hong Kong App Store. For more information about Student Health Service, please visit http://www.studenthealth.gov.hk/.

References

- Eating Disorders. Rockville, MD: National Institute of Mental Health, U.S. Department of Health and Human Services, 2011.
- 2. Feeding and Eating Disorders. Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5). Arlington, VA: American Psychiatric Publishing, 2013.
- 3. What is an Eating Disorder. Eating Disorder Victoria, 2012.
- 4. Hudson JI, Hiripi E, Pope HG, Jr., Kessler RC. The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. Biol Psychiatry 2007; 61(3):348-58.
- 5. Preti A, Girolamo G, Vilagut G, et al. The epidemiology of eating disorders in six European countries: results of the ESEMeD-WMH project. J Psychiatr Res 2009; 43(14):1125-32.
- 6. Paying the Price. The Economic and Social Impact of Eating Disorders in Australia. The Butterfly Foundation 2012.
- Makino M, Tsuboi K, Dennerstein L. Prevalence of eating disorders: a comparison of Western and non-Western countries. Med Gen Med 2004; 6(3):49.
- 8. Micali N, Hagberg KW, Petersen I, Treasure JL. The incidence of eating disorders in the UK in 2000-2009: findings from the General Practice Research Database. BMJ Open 2013; 3(5).
- 9. Hay PJ, Mond J, Buttner P, Darby A. Eating disorder behaviors are increasing: findings from two sequential community surveys in South Australia. PLoS One 2008; 3(2):e1541.

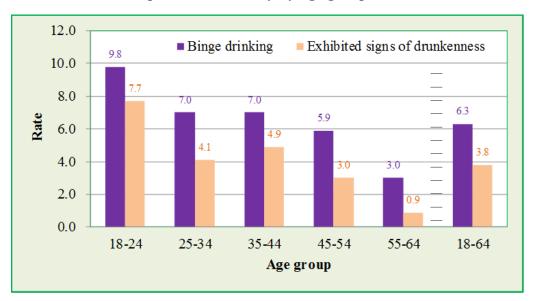
- Ruelle A. Starving Consumers: Culture, Gender, and Consumerisn in the Aetiology of Anorexia in Japan. Occasional Paper No.30. Centre for Asia-Pacific Initiatives 2004.
- 11. Lee HY, Hoodbhoy Z. You are worth more than what you weigh: preventing eating disorders. Ann Acad Med Singapore 2013; 42 (2):64-5.
- 12. Atkins DM, Silber TJ. Clinical spectrum of anorexia nervosa in children. J Dev Behav Pediatr 1993; 14(4):211-6.
- 13. Lapid MI, Prom MC, Burton MC, et al. Eating disorders in the elderly. Int Psychogeriatr 2010; 22(4):523-36.
- Eating Disorder. The Way Forward. An Australian National Framework. Sydney: National Eating Disorders Collaboration, 2010.
- 15. Swanson SA, Crow SJ, Le Grange D, et al. Prevalence and correlates of eating disorders in adolescents. Results from the national comorbidity survey replication adolescent supplement. Arch Gen Psychiatry 2011; 68(7):714-23.
- Caring for Children and Adolescents with Mental Disorders.
 Setting WHO Directions. Geneva: World Health Organization, 2003.
- 17. Mak KK, Lai CM. The risks of disordered eating in Hong Kong adolescents. Eat Weight Disord 2012; 16(4):e289-92.
- 18. Tam CK, Ng CF, Yu CM, Young BW. Disordered eating attitudes and behaviours among adolescents in Hong Kong: prevalence and correlates. J Paediatr Child Health 2007; 43 (12):811-7.
- 19. Lee AM, Lee S. Disordered eating and its psychosocial correlates among Chinese adolescent females in Hong Kong. Int J Eat Disord 1996; 20(2):177-83.
- Eating Disorders Risk Factors. NSW: National Eating Disorders Collaboration, 2012.
- White JH. The prevention of eating disorders: a review of the research on risk factors with implications for practice. J Child Adolesc Psychiatr Nurs 2000; 13(2):76-8.
- 22. Golden NH, Katzman DK, Kreipe RE, et al. Eating disorders in adolescents: position paper of the Society for Adolescent Medicine. J Adolesc Health 2003; 33(6):496-503.
- 23. Brown CA, Mehler PS. Medical complications of self-induced vomiting. Eat Disord 2013; 21(4):287-94.
- 24. Katzman DK. Medical complications in adolescents with anorexia nervosa: a review of the literature. Int J Eat Disord 2005; 37 Suppl:S52-9; discussion S87-9.
- 25. Treasure J, Claudino AM, Zucker N. Eating disorders. Lancet 2010; 375(9714):583-93.
- Johnson JG, Cohen P, Kasen S, Brook JS. Eating disorders during adolescence and the risk for physical and mental disorders during early adulthood. Arch Gen Psychiatry 2002; 59(6):545-52.
- 27. Arcelus J, Mitchell AJ, Wales J, Nielsen S. Mortality rates in patients with anorexia nervosa and other eating disorders. A meta -analysis of 36 studies. Arch Gen Psychiatry 2011; 68(7):724-31.
- 28. Lozano R, Naghavi M, Foreman K, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet 2012; 380(9859):2095-128.
- 29. Eating Disorders: Warning Signs and Symptoms. Vol. 2013: Eating Disorders Victoria, 2012.

Say 'NO' to Drinking Games

Recently, a controversial game called 'nek nomination' on social networking websites has attracted much attention. Players of the game have to make a video clip of themselves finishing an alcoholic beverage (usually a pint of beer) in one gulp, and then upload the footage to the web. The players then nominate others to do the same, often within a specified time frame. As the game gets more and more popular, nominees drink beverages of a higher and higher alcoholic content, subjecting themselves to unintended or unforeseeable risks. This kind of binge-drinking game, as reported by the British media, is suspected to be directly linked to at least three deaths.

In Hong Kong, the Behavioral Risk Factor Survey conducted by the Department of Health showed that in 2012, 6.3% and 3.8% of community-dwelling people aged 18-64 had engaged in binge drinking (i.e. consuming at least 5 glasses or cans of alcoholic beverages on one occasion) and had drunk so much that they exhibited signs of drunkenness (such as flushed face or reddish eyes, slurred or incoherent speech, unsteady or staggering gait, vomiting and hangover) during the thirty days prior to the survey respectively. Young people aged 18-24 were more likely to report so than their older counterparts.

Rate of community-dwelling people aged 18-64 who reported binge drinking and had drunk so much that they exhibited signs of drunkenness during the thirty days prior to the survey by age group



Source: Behavioural Risk Factor Survey 2012.

Many young people may think that drinking is no big deal after all. In fact, alcohol has harmful effects on their developing brain. As a strong agent of disinhibition, alcohol can put them at risk of accidents, violence and unsafe sex. Excessive consumption of alcohol may lead to acute intoxication, coma and sudden death. In the long run, alcohol affects the digestive system and damages the liver. It also increases the risk of developing certain types of cancer. Young people should realise that true friends would never nominate, not to say force, them to accept death-defying challenges or games of such nature.

In case you're nominated on the web, the smartest way to respond is to decline the invitation, and say 'NO' to the person who has nominated you. Just ignore the binge-drinking 'challenge'. Besides, you can 'untag' yourself from tagged posts and delete them from timeline pages on social networking websites. You can even change the privacy settings of your accounts so that no tags about you can be posted without your prior approval. The followings are the seven ways that you can use to decline invitations to drinking games:

#1: Ignore the request

Turn a blind eye / deaf ear to the invitation.

#2: Speak firmly and refuse directly

'No, thanks.'

#3: Give a reason or excuse

'I have something to do tomorrow. I'm not doing the drink.'

'My mom will be mad at me if I drink.'

#4: Find an ally to back you up

'Yeah, we are the No-to-Alcohol Buddies!'

#5: Suggest something else which is safer and more healthy

'Drinking is expensive and unhealthy. Let's go out for a movie instead.'

#6: Repeat your refusal

'I said I don't feel like drinking. I repeat: I-don't-feel-like-drink-ing.'

#7: Walk away from the situation

Say: 'sorry, some urgent business has flashed through my mind' or 'someone from family has just called' and walk away quickly.

To find out more about drinking and health, please visit the 'Change4Health' website of DH: http://www.change4health.gov.hk/en/alcohol aware/index.html.

Non-Communicable Diseases (NCD) WATCH is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to so_dp3@dh.gov.hk.

Editor-in-Chief Dr Regina CHING Members Dr Thomas CHUNG Dr Eddy NG Dr Anne FUNG Dr Karen TSO Dr Linda HUI Ms Faith WAN Dr Winnie LAU Dr Lilian WAN Dr Ruby LEE Dr Monica WONG Mr YH LEE Dr Priscilla WONG