

# Child Health Survey 2005-2006

Commissioned by



**Surveillance and Epidemiology Branch  
Centre for Health Protection  
Department of Health**

**December 2009**

(English version updated in April 2010)

## **Executive Summary**

The Department of Health commissioned the Department of Paediatrics and Adolescent Medicine and the School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, to conduct the Child Health Survey (CHS) in 2005/2006. The aim of the survey was to provide baseline data on the health and well-being of children aged 14 and below in Hong Kong in order to strengthen the Government's information base on the health status of the child population and to support evidence-based decision making in health policy, resources allocation, and provision of health services and programmes.

The fieldwork was carried out from September 2005 to August 2006, with the use of face-to-face interviews and self-administered questionnaires. Households were drawn from the Register of Quarters maintained by the Census and Statistics Department by systematic replicated sampling. The percentage of quarters successfully enumerated (including those without children aged 14 and below) was 73.3%. A total of 7 393 land-based non-institutionalized children aged 14 and below in Hong Kong were enumerated, excluding those with non-Cantonese speaking parents and those living in area segments in non-built-up area. The sample represented 884 300 children of the target population.

The survey instrument was developed by the Department of Paediatrics and Adolescent Medicine and the School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, in consultation with the Department of Health and a group of experts. Information was obtained from parent as proxy respondent for children aged 10 and below and from both parent and children for children aged 11 to 14.

The scope of the survey included the followings: 1) general and psychosocial health, 2) physical health, 3) diet and physical activities, 4) risk behaviours, 5) childhood injury and safety practices, 6) parenting, and 7) disease prevention and utilization of health care services.

### **General and Psychosocial Health**

The survey showed that 92.2% of children aged 0 to 5 and 91.9% of children aged 6 to 10 were rated to have "excellent", "very good", or "good" general health status by their parents. On the other hand, 82.9% of children aged 11 to 14 rated their own general health as "excellent", "very good" or "good".

The CHS collected information on ratings of physical and psychosocial well-being in children aged 0 to 14 using the Child Health Questionnaire (CHQ). In CHQ, higher scores indicate better perceived health or psychological well-being. Among the 12 multi-dimensional health concepts of the parent-reported CHQ-Parent Form 50, the highest mean scores in children aged 6 to 10 were bodily pain (96), followed by role or social limitations due to physical health (role/social-physical) (95) and physical functioning (95), while the lowest mean scores were general health perceptions (69) and self esteem (69), followed by family cohesion (75).

Among the 11 multi-dimensional health concepts of the self-reported CHQ-Child Form 87, the highest mean scores in children aged 11 to 14 were role or social limitations due to physical health (role/social-physical) (93), followed by role or social limitations due to behavioural difficulties (role/social-behavioural) (91) and family activities (91), while the lowest mean scores were similarly self esteem (67), family cohesion (68) and general health perceptions (69).

The CHS also collected information on emotional and behavioural problems in children aged 6 to 11 by using the Child Behaviour Checklist (CBCL), and in those aged 12 to 14 by using both the CBCL and Youth Self Report (YSR).

The survey showed that 0.7% and 0.9% of children aged 6 to 11 scored in the clinical range on the Internalizing and Externalizing Problems scales respectively. The specific syndromes most frequently identified in the clinical range were Withdrawn, Anxious/Depressed, Social Problems, Thought Problems, and Attention Problems, with a prevalence of 0.2% for each of these problems.

In children aged 12 to 14, based on the CBCL, 0.8% and 1.0% scored in the clinical range on the Internalizing and Externalizing Problems scales respectively, while the corresponding prevalence was slightly higher when using the YSR at 1.0% and 2.1% respectively. The specific syndromes most frequently identified in the clinical range by both the CBCL and YSR were Somatic Complaints and Delinquent Behaviour.

## Physical Health

The five most frequently reported acute health conditions encountered by children aged 14 and below in the 4 weeks preceding the survey were common cold or influenza-like illness (29.6%), snoring (4.8%), persistent cough for more than 2 weeks (2.6%), diarrhoea (2.0%) and vomiting (1.9%). Except for children aged below two, these five conditions were the most frequently reported problems across different age groups. As for children aged below two, the five most frequently reported acute health conditions were common cold or influenza-like illness (24.4%), snoring (2.7%), persistent cough for more than 2 weeks (2.5%), diarrhoea (2.0%) and wheezy attack (1.7%).

The five most frequently reported chronic health conditions in children aged 14 and below were visual problems (27.3%), allergic rhinitis (24.5%), eczema (12.4%), food allergy (5.1%) and asthma (4.1%). The prevalence of visual problems, allergic rhinitis, and asthma generally increased with age, while that of eczema and food allergy generally decreased with age.

Based on the International Study of Asthma and Allergies in Childhood questionnaire, the three most frequently reported allergic conditions or symptoms ever had in children aged 14 and below were allergic rhinitis (24.5%), sneezing or a runny or blocked nose without a cold or flu (14.5%) and eczema (12.4%).

Allergic to food items was reported in 5.1% of children aged 0 to 14. In children reported to have food allergy, the five most frequently reported food items causing food allergy were seafood (38.4%), egg (16.8%), broad bean (13.0%), milk and dairy products (11.4%) and fruit (8.8%), while the five most frequently reported types of allergic reaction were urticaria (30.5%), exacerbation of eczema (23.2%), anaphylaxis (14.9%), diarrhoea (11.9%) and facial edema (7.1%).

Pain is an under-recognized and under-treated health problem in children. Overall, 2.9% of children aged 4 to 14 were reported to have experienced musculoskeletal pain in the 4 weeks preceding the survey.

The prevalence of visual impairment in children aged 0 to 14 was 27.3%. Among these children, the three most frequently reported visual problems were short-sightedness (82.1%), astigmatism (35.8%) and long-sightedness (7.6%), while 83.2% of them were reported to use prescribed glasses or contact lenses.

In children aged 0 to 5, the prevalence of developmental delay was 1.3%, and more than half of them (57.4%) had speech delay.

Other childhood disabilities occurred with a prevalence of less than 1% included hearing impairment in children aged 0 to 14 (0.5%), stammering or stuttering in children 2 to 14 (0.6%), gross motor disability in children aged 6 to 14 (0.4%), fine motor disability in children aged 6 to 14 (0.4%) and mental handicap in children aged 6 to 14 (0.4%).

## **Diet and Physical Activities**

The CHS collected information on diet and physical activities, including nutrition, eating behaviour, breastfeeding, weaning, physical activities and sedentary activities.

A balanced diet is recommended in children aged 2 to 14. Overall, in children aged 2 to 14, 98.3% ate meat, 95.7% ate eggs, 94.8% ate fish, 81.0% ate beans and 48.9% drank one or more cups of milk in the 7 days preceding the survey. With regard to consumption of vegetables, 80.0% of children aged 2 to 14 ate less than 1 bowl per meal, 15.8% ate 1 or more bowls per meal and 3.3% never or rarely ate vegetables in the 7 days preceding the survey. As for fruit intake, 62.8% ate one or more units of fruit per day, 32.1% ate less than 1 unit per day and 4.4% never or rarely ate fruits in the 7 days preceding the survey.

Diet high in sugar, salt or fat is undesirable. The CHS explored the consumption of soft drink, fast food, fried food and junk food by children. Among children aged 2 to 14, 26.0% consumed at least one cup of soft drink each day, 26.7% consumed fast food for at least twice per week, 19.8% consumed fried food in main meals for at least 3 times per week and 14.4% consumed junk food at least once a day.

For consumption of health supplements, 22.5% of children aged 2 to 14 were reported to take vitamins including fish oil and 4.3% were reported to take calorie supplement per week.

With regard to eating habits and behaviours, majority (94.3%) of children aged 2 to 14 had 3 regular meals per day, 0.4% had 3 irregular meals per day, 3.7% omitted breakfast and 0.4% sometimes omitted breakfast. Moreover, about three-quarters (75.2%) of children aged 2 to 14 ate their meals while watching television for 5 days or more per week, 14.8% for 1 to 4 days per week, while 9.2% rarely or never took their meals while watching television.

The World Health Organisation recommends exclusive breastfeeding for the first 6 months of life on a population basis. The CHS included questions to assess breastfeeding practices in children aged 0 to 5. Overall, 45.5% of children aged 0 to 5 had ever been breastfed. Among them, 28.3% had been exclusively breastfed for 6 months or more and the median duration of exclusive breastfeeding was 2.0 months. Among children who had ever been breastfed, 71.3% consumed infant formula milk, 47.0% consumed water or glucose water, 36.7% consumed cow's milk and 36.3% consumed milk substitute before 6 months old. With regard to weaning, 7.4% of children aged 0 to 5 were given solid food regularly before 4 months old, 41.1% between 4 to 6 months old and 39.6% after 6 months old.

The Education Bureau recommended time allocated for Physical Education lessons in Primary 1 to 6 and Secondary 1 to 3 should be 5% to 8% of the whole curriculum, i.e. 2 to 3 sessions per week. The CHS assessed the level of physical activities in children aged 4 to 14. In the 4 weeks preceding the survey, about three-quarters (73.1%) of children aged 4 to 14 had participated in vigorous physical activities outside school hours, being more common in male (78.5%) than female (67.4%) children. The three most commonly reported vigorous physical activities were running (44.8%), racket sports (33.6%) and basketball (21.8%). Among children reported to have engaged in vigorous physical activities in the 4 weeks preceding the survey, the median frequency of engagement was 2 days per week.

Participation in moderate physical activities outside school hours in the 4 weeks preceding the survey was reported in 67.9% of children aged 4 to 14. The three most commonly reported moderate physical activities were jogging (49.1%), housework (28.3%) and leisure cycling (20.2%). Among those children who had engaged in moderate physical activities in the 4 weeks preceding the survey, the median frequency of participation was 2 days per week.

Physical inactivity in children in the 4 weeks preceding the survey was assessed. Overall, 88.0% of children aged 0 to 14 had watched TV or video in the 4 weeks preceding the survey, with a median frequency of 7 days per week and a median duration of 120 minutes per day. Moreover, 70.3% of children aged 4 to 14 had played video game or computer including access to internet in the 4 weeks preceding the survey, with a median frequency of 5 days per week and a median duration of 60 minutes per day.

With regard to other sedentary activities, 65.7% of children aged 4 to 14, being more common in females

(71.9%) than males (59.9%), were reported to have participated outside school hours in the 4 weeks preceding the survey. The three most common activities were arts and crafts (45.2%), singing (36.0%) and playing musical instruments (27.2%). Among those engaged in sedentary activities in the 4 weeks preceding the survey, the median frequency of participation was 2 days per week.

There was 89.3% of children aged 4 to 14 reporting that they had spent time on homework and reading for study or leisure in the 4 weeks preceding the survey with a median frequency of 5 days per week and a median duration of 90 minutes per day, while 28.6% had spent time on after school tutorial with a median frequency of 3 days per week and a median duration of 90 minutes per day.

## **Risk Behaviours**

Adolescents start to experiment health risk behaviours that are interrelated and may continue into adulthood. The CHS collected self-reported information on smoking, exposure to environmental tobacco smoke reported by parent, self-reported alcohol and drug use, dating and sexual experience, suicidal behaviour, violence-related behaviour and gambling in children aged 11 to 14.

The pattern of smoking and the intention to quit smoking were explored. Overall, 2.2% of children aged 11 to 14 reported that they had ever smoked. Among them, 22.1% had their first cigarette at aged 10 or younger, while 60.1% had their first cigarette at aged 11 to 14; and about two-thirds (64.6%) had at least one of their friends smoked. Current smoker, defined as smoking for at least one day in the 30 days preceding the survey, was reported in 0.8% of children aged 11 to 14. Among children who were current smokers, 34.7% had tried to quit smoking in the 12 months preceding the survey.

Adverse effects of exposure to environmental tobacco smoke on fetuses, infants and children were well documented. Maternal exposure to second hand smoking during pregnancy was reported in 31.6%, while maternal smoking during pregnancy was reported in 2.0% of children aged 0 to 14. Regarding the current smoking status of parents, 3.8% of children aged 0 to 14 had mothers and 23.7% had fathers who were current smokers. In children aged 0 to 14 whose mothers or fathers were current smokers, 72.0% of children had mothers and 68.6% of children had fathers smoked at home. Among children aged 0 to 14 whose mothers or fathers were current smokers and smoked at home, the proportion of children having mothers and fathers smoked within 10 feet from the children were 59.3% and 68.5% respectively.

The pattern of alcohol use was also explored. Overall, 5.0% of children aged 11 to 14 reported that they had ever drunk alcohol including beer. Among those who had ever drunk alcohol, slightly more than one-third (37.5%) had their first glass or can of alcohol at aged 10 or younger, and 44.3% at aged 11 to 14.

Among children aged 11 to 14, 0.2% reported that they had ever taken psychotropic drugs and 0.2% reported that they had been sold or given psychotropic drugs in the 30 days preceding the survey.

With regard to dating, 8.0% of children aged 11 to 14 reported that they had ever dated. Among them, 20.2% had their first date at aged 10 or younger; while about three-quarters (77.6%) had their first date at aged 11 to 14. Overall, 0.3% of children aged 11 to 14 reported that they had sexual experience.

Regarding suicidal behaviours, 1.3% of children aged 11 to 14 reported that they had suicidal ideation in the 12 months preceding the survey, the prevalence being higher in female (1.6%) than male (0.9%) children. Overall, 1.0% of children aged 11 to 14 reported that they had attempted suicide in the 12 months preceding the survey, with 0.6% having two or more attempts.

Participation in fight in the 12 months preceding the survey was reported in 6.4% of children aged 11 to 14, being significantly more common in males (9.6%) than females (2.9%). Overall, 0.9% of children aged 11 to 14 reported that they had ever been invited or threatened to join triad society.

Youth gambling is of growing concern. Overall, 2.5% of children aged 11 to 14 reported that they had participated in gambling activities involving money in the 12 months preceding the survey. Among children aged 11 to 14, the five most common types of gambling activities reported were poker (1.5%), mahjong (1.2%), sports gambling (0.5%), internet gambling (0.2%) and horse-racing (0.1%).

## **Childhood Injury and Safety Practices**

Injury is a significant health problem in children. The CHS collected information on prevalence and common types of injury in children, as well as the injury prevention behaviours.

The prevalence of injury that needed medical advice or treatment in the 12 months preceding the survey in children aged 0 to 14 was 4.4%, being higher in male (5.4%) than female (3.2%) children. In children

reported to have injuries that needed medical advice or treatment in the 12 months preceding the survey, the three commonest types were fall injury (31.6%), sports-related injury (29.3%) and bicycle-related injury (8.5%). In these children, the average number of injuries in the 12 months preceding the survey was 1.9, with those aged 11 to 14 had the highest average number of 2.3.

Among children aged 0 to 14 who had ever ridden a bicycle, only 2.6% reported always or for most of the time wearing a helmet when riding a bicycle.

Among children aged 0 to 10, the prevalence of never being left alone at home or being cared for by elder children aged below 16 was 64.0%.

In more than 80% of children aged 0 to 5, their parents reported the adoption of the following safety practices: keeping sharp objects like knives and scissors out of reach of children or in a locked cabinet (86.2%), keeping medicines out of reach of children or in a locked cabinet (85.5%), keeping matches or fire lighter out of reach of children or in a locked cabinet (82.0%), setting up window guards or other barriers (81.8%), keeping thermal flasks or electric dispensing pot out of reach of children (80.9%), and keeping cleaning agents like detergents and bleach out of reach of children or in a locked cabinet (80.3%).

On the other hand, only about half to two-thirds of children aged 0 to 5 had their parents adopting the following safety practices: lowering the temperature of water heater (68.8%), covering electrical sockets to avoid insertion of fingers or other objects (59.5%), and applying padding around sharp edges like dining table corners (54.8%).

In children aged 0 to 1, 78.8% of children had parents reported not leaving children alone in a bed without railing or on a sofa, and 46.1% had parents set up baby gates for stairs or doors to kitchen and toilets.

## **Parenting**

Families provide support for children and influence their life-style behaviours. Parents and primary carers of children hence play an important role in the child health status. The CHS collected information on parents, primary carers, parenting and parental participation in children's activities.

Mother was the primary carer in about three-quarters (75.5%) of children aged 0 to 14, helpers in 10.6%,

father in 6.9% and grandparents in 5.9%. Both father and mother were married in 94.6% and both parents were born in Hong Kong in 53.3% of children aged 0 to 14.

Overall, more than 80% of children aged 0 to 14 had fathers (82.9%) and mothers (84.1%) completed secondary or tertiary education. Slightly less than half of children aged 0 to 14 had both father and mother working (45.3%), and a similar proportion (45.1%) had father working only. Overall, 3.8% of children aged 0 to 14 came from households receiving Comprehensive Social Security Assistance.

With regard to parenting, 94.7% of children aged 0 to 14 had parents felt that they coped very well or quite well with day-to-day demands of parenthood, whereas 68.4% never or rarely felt frustrated with their children's behaviour.

The disciplinary action most frequently adopted by parents in children aged 0 to 5 was explanation to children why their behaviour was inappropriate (75.0%) while the least frequently adopted one was spanking (23.6%). Raising voice or yelling to discipline children was reported by parents in about half (50.5%) of children aged 0 to 5, giving time-out (i.e. making children refrain from whatever activities they were participating in) in slightly more than one-third (36.9%) and taking away toys in 26.1%.

Concerning parental participation in children's activities, about two-thirds (67.1%) of children aged 0 to 14 engaged in outdoor activities together with either parent, slightly less than half (46.2%) read with either parent and about one-third (32.1%) engaged in leisure activities with either parent in a week.

### **Disease Prevention and Utilization of Health Care Services**

The CHS collected information on the adoption of disease preventive practices, which include physical and developmental checkups, immunization, as well as utilization of health care services.

About half (46.5%) of children aged 0 to 14 had regular physical checkup in the 12 months preceding the survey in the absence of any symptom or discomfort. Among these children, the majority (88.5%) attended the public sector service.

In children aged 0 to 5, slightly more than one-third (36.8%) had regular developmental checkup in the

absence of suspected developmental problems in the 12 months preceding the survey. Among these children, about three-quarters (77.5%) attended the public sector service.

With regard to immunization, 93.6% of children aged 0 to 14 had received vaccinations according to the recommended immunization schedule. Among all children aged 0 to 14, the majority (92.7%) attended the public sector service, while 3.5% attended the private sector for vaccination. Moreover, 16.5% of children aged 0 to 14 received vaccines other than those in the recommended immunization schedule in the 12 months preceding the survey. The three most common types of non-routine vaccine were influenza (68.6%), chickenpox (28.2%) and hepatitis A (6.0%) at the time of the survey.

Most (90.8%) of the children aged 0 to 14 usually consulted western medicine practitioners only, 7.5% consulted both western and Chinese medicine practitioners and 1.4% consulted Chinese medicine practitioners only when they were sick. Among those who consulted western medicine practitioners only or both western and Chinese medicine practitioners, about two-thirds (68.6%) visited western medical practitioners in private clinics, while 13.3% attended the public clinics.

About one-third (36.0%) of children aged 0 to 14 had experienced symptoms in the 4 weeks preceding the survey. Among these children, about two-thirds (66.1%) visited private general practitioners' clinics, 12.5% visited doctors or family physicians in public clinics or hospitals including staff clinics, and 6.0% did not have medical consultation and just ignored it.

Hospital admission in the 12 months preceding the survey was reported in 2.2% of children aged 0 to 14. The prevalence of hospital admission decreased with increasing age from 6.3% in children aged 0 to 1 to 0.8% in those aged 11 to 14. There was a higher prevalence of hospital admission in male (3.1%) than female (1.4%) children. Among these children, 65.3% were admitted to hospitals under Hospital Authority only, 24.6% to private hospitals only, and 6.5% to both types of hospitals. As for the number of times of hospital admission, 74.0% were admitted once, 17.2% were admitted twice and 4.0% were admitted three times or more.

Regarding follow up for special health problems in children aged 0 to 14, 2.5% consulted doctors regularly for physical problems, 0.5% consulted physiotherapist, occupational therapist or speech therapist regularly for motor or speech problems and 0.2% consulted mental health professionals for mental problems.

The majority (98.7%) of children aged 0 to 14 had parents reported that they did not consider their children being failed to be treated properly or delayed in receiving treatment. The median satisfaction score of health care services of the private sector was 80 and that of the public sector was 65, with 0 being the lowest and 100 being the highest level of satisfaction.

For health insurance coverage, 41.2% of children aged 0 to 14 were covered by one or more of the following: medical insurance coverage provided by parents' current employer, family medical insurance policy and child's personal medical insurance policy.

## **Conclusion**

This survey revealed that our children population aged 0 to 14 had generally enjoyed good health prior to the study period. Nevertheless, there were areas that required improvement, including short-sightedness, eating behaviour, activity level and risk taking behaviours.

This survey has provided a rich body of information on a number of health issues concerning the child population in Hong Kong. The results should have significant reference value and served as baseline information for subsequent surveys. As such, the population based child health survey should be conducted regularly to strengthen and update the Government's information base on health status of child population, in order to support evidence-based decision making in health policy, resources allocation and provision of health services and programmes.