



Background of the Hong Kong Student Health Survey (2012-2016)

- **Background.** The Hong Kong Student Health Survey was initiated by the Centre for Health Education and Health Promotion of the Chinese University of Hong Kong (CHEHP) in 1999, with the aim of measuring health behaviours and related factors in school-aged children and adolescents. It has been serving as an evaluation method for schools participating in the Centre's "healthy school" projects to identify needs and trends in terms of students' health behaviours. In 2010, there was a major revision of the survey questionnaire and a five-year plan to collect data systematically to expand the survey's objective from project evaluation to a reflection of the health behaviours of the overall population studying in Primary 4 (P4) and Secondary 3 (S3).
- **Respondents.** The overall population of Hong Kong in 2012 and 2016 was 7,177,900 and 7,377,100 respectively (Census and Statistics Department, 2013 & 2017). Excluding international schools and special schools, there were 528 local primary schools in Hong Kong in the school year 2012/13 and 532 in 2016/17; local secondary schools numbered 490 in 2012/13 and 475 in 2016/17 (Education Bureau, 2018a & 2018b). According to the figures of student enrolment in local schools, 48,336 students were studying in Primary 4 in 2012/13, and 55,890 in 2016/17, while 66,437 students studied in Secondary 3 in 2012/13 reducing to 53,439 in 2016/17 (Education Bureau, 2013 & 2017). All local schools are eligible to join a project called "Quality Education Fund Thematic Network on Healthy Schools", which was funded by the Quality Education Fund of the Education Bureau and carried out by CHEHP. CHEHP sent invitations to eligible schools every year and participating schools were required to conduct a school-based survey in P4 (for primary schools) or S3 (for secondary schools) with the aim of identifying needs and trends in terms of students' health behaviours. Students of these schools who were studying in the two grades were eligible to participate in the survey.

Table 1. Number of schools participating in the survey, questionnaires completed and used in analysis in each school year between 2012/13 and 2016/17

School year	2012/13	2013/14	2014/15	2015/16	2016/17
No. of local primary schools in Hong Kong (international schools not included)	528	526	526	528	532
No. of P4 students in all local primary schools [#]	48,336	47,621	49,289	51,865	55,890
No. of local primary schools participating in the survey	47	54	53	56	30
No. of P4 students in those primary schools participating in the survey ^{&}	4,461	5,090	5,126	6,007	3,464
No. of questionnaire completed (P4) [*]	3,280	3,881	3,814	4,206	2,234
No. of questionnaires used in analysis (P4) ⁺	3,231	3,814	3,794	4,176	2,222
No. of local secondary schools in Hong Kong (international schools not included)	490	485	479	476	475
No. of S3 students in all local secondary schools [#]	66,437	60,875	60,959	56,224	53,439
No. of local secondary schools participating in the survey	27	38	37	40	25
No. of S3 students in those secondary schools participating in the survey ^{&}	3,399	4,541	4,542	4,461	3,090
No. of questionnaire completed (S3) [*]	3,019	3,950	4,059	3,874	2,650
No. of questionnaires used in analysis (S3) ⁺	2,963	3,896	4,036	3,852	2,642

[#] Figures of student enrolment in local schools were provided by the Education Bureau.

[&] The number of students in each class was provided by the schools participating in the survey.

^{*} The reasons for students not participating in the survey were that their parents did not agree for them to participate, the students were absent from the class on the day of survey, or the students indicated in the class that they did not want to participate.

⁺ Those questionnaires that had less than 20 remaining responses after editing, or did not provide the respondent's date of birth and gender were excluded from analysis.

- **Questionnaire.** The Student Health Survey questionnaire for P4 students (2012 version) contained 59 questions. The parameters on social and economic **background** included: date of birth, gender, parental education, parental employment, family's access to the Comprehensive Social Security Assistance Scheme

(CSSA), and whether the respondent's family lives in public housing (6 questions). The survey also used the Family Affluence Scale (FAS) to reflect the economic status of the respondent's family from the following criteria (4 questions): number of vehicles owned by the respondent's family; whether the respondent has a separate bedroom; number of family trips; and number of computers owned by the family (Boyce, Torsheim, Currie, & Zambon, 2006; Currie, 2008). Self-perception and parental expectations (2 questions) were used in the survey to reflect the respondent's **academic performance**. The parameters on **physical health** included: body height and weight; sleep time; self-perceived health status; dental cleaning habits; and the time when the respondent last received a dental checkup (7 questions). The parameters on **safety** included: use of protective devices when riding a bicycle; following the signals of pedestrian crossing lights; and use of seat belts (3 questions). The parameters on **dietary habits** included: frequencies of consuming snacks or beverages which are high in fat, sugar or salt content; consumption of vegetables, fruits, dairy products and water; having breakfast during the previous 7 days; and what factors would influence the respondent in deciding which kind of meals and snacks to select (8 questions). The parameters on **physical activities** included: number of days during the previous 7 days that a respondent performed moderate to vigorous physical exercise; types of exercise; the time spent on sedentary activities (such as watching TV, playing video games, surfacing social networking sites in the Internet); and the perceived impacts of spending long hours in these activities on one's health (6 questions). The parameters on **body weight and shape** included: self-perception about one's body weight; attempts at weight control, and the methods used (3 questions). The Multidimensional Students' Life Satisfaction Scale (MSLSS) by Huebner (1994) was used in the survey to reflect respondents' **life satisfaction** (1 question with a table of 6 sentences). The K6 non-specific distress scale by Kessler et al (2003) was used in the survey to explore the **level of distress** that the respondent was feeling during the previous month (1 question with a table of 6 sentences). Other parameters on **mental health** included: number of close friends that the respondent has (1 question), prolonged feeling of despair (1 question), self-harm and seeking help during the previous 12 months (5 questions). The parameters on **bullying** included: bullying happening in school and in the cyber world during the previous 30 days; mentality of the bullies and hard feelings in those being bullied (5 questions). The parameters on **substance abuse** included: attempts at smoking and drinking, and attempts at drug abuse (5 questions). The last part of the questionnaire asked about **sexual experience** (1 question). The questionnaire for S3 students (2012 version) included an additional question for those respondents who are sexually active on the contraceptive method used during the last sexual intercourse (1 question).

- **Modification.** From 2012 to 2016, minor modifications on the questionnaire had been made to improve its design in collecting data on emerging health aspects in children and adolescents. In the questionnaire for P4 and S3 students (2016 version), 1 question with a table of 17 sources of information was added to explore how the respondent acquired health information during the past 12 months. Two questions about the usual sleep and waking-up time for S3 students were replaced by The Pittsburgh Sleep Quality Index (PSQI, 8 questions) to understand more deeply the quality of sleep among S3 students. One question was added to ask if a S3 respondent had bullied others in the cyber world during the previous 30 days. To allow more room for these new questions, some original questions had been deleted from the questionnaire (both P4 and S3 versions), such as whether the respondent's family lives in public housing; consumption of water; factors that would influence the respondent in deciding which kind of meals and snacks to select; the mentality of bullies and hard feelings in those being bullied (6 questions). Some wording used in the questionnaire was adjusted to fit in with the changed local situation. For instance, the questions on sedentary behaviours were modified to include the time the respondent spent on watching videos online, in addition to television programmes, and more examples of social networking sites and applications were quoted. The questionnaires were available in both Traditional Chinese and English.
- **Data collection.** Survey procedures were designed to protect students' privacy by allowing for anonymous and voluntary participation. In primary schools, all P4 students were eligible to participate and parental consent was obtained in advance. Information on socio-economic background was collected from parents anonymously in addition to the consent form. In secondary schools, parental consent/ school consent was obtained in advance. Students completed the self-administered questionnaire in one class period (ranging from 35 to 45 minutes) and recorded their responses directly on the questionnaire, which is computer-scannable. The Survey and Behavioural Research Ethics Committee of the Chinese University of Hong Kong approved the protocol for the survey. Trained interviewers were assigned to participating schools to brief students on the purpose of the survey and the measures taken to protect the confidentiality of information

collected in the survey. As part of the standardized survey administration procedure, students were assured that their responses could not be linked to them and that completing the questionnaire would not affect their grade in the class. The interviewers were also responsible for answering students' enquiries regarding the survey, as well as offering assistance to those students who found reading and completing the questionnaire difficult. Although teachers in the classrooms helped at the beginning of the survey to identify students whose parents had agreed for their children to participate in the survey, the teachers did not participate in answering students' enquiries, nor did they look at the questionnaires that students had answered.

Table 2. Demographic characteristics of study respondents by years (weighted figures)

Demographic	2012/13	2013/14	2014/15	2015/16	2016/17
Gender and grade					
P4 boys (%)	51.8%	51.6%	51.9%	51.7%	51.9%
P4 girls (%)	48.2%	48.4%	48.1%	48.3%	48.1%
S3 male adolescents (%)	52.0%	52.2%	51.9%	52.6%	51.9%
S3 female adolescents (%)	48.0%	47.8%	48.1%	47.4%	48.1%
Mean age* \pm standard deviation					
P4 (years)	9.8 \pm 0.49	9.7 \pm 0.51	9.8 \pm 0.51	9.8 \pm 0.51	10.0 \pm 0.45
S3 (years)	15.0 \pm 0.79	15.0 \pm 0.77	15.0 \pm 0.74	15.1 \pm 0.72	15.3 \pm 0.71
Weighted percentage of P4 respondents' fathers who... [^]					
had a current job	93.6%	93.6%	93.3%	93.8%	94.1%
were unemployed or homemakers	6.4%	6.4%	6.7%	6.2%	5.9%
Weighted percentage of P4 respondents' mothers who... [^]					
had a current job	57.5%	56.0%	55.2%	56.4%	56.0%
were unemployed or homemakers	42.5%	44.0%	44.8%	43.6%	44.0%
Weighted percentage of S3 respondents' fathers who... [#]					
had a current job	92.1%	91.7%	93.8%	92.1%	92.2%
were unemployed or homemakers	7.9%	8.3%	6.2%	7.9%	7.8%
Weighted percentage of S3 respondents' mothers who... [#]					
had a current job	65.6%	66.1%	64.3%	64.5%	66.7%
were unemployed or homemakers	34.4%	33.9%	35.7%	35.5%	33.3%
Weighted percentage of P4 respondents whose families were supported by CSSA [@]					
	10.7%	9.9%	9.5%	8.7%	8.1%
Weighted percentage of S3 respondents whose families were supported by CSSA ^{@#}					
	9.8%	8.3%	8.3%	8.5%	9.5%
Weighted percentage of P4 respondents whose families were categorised as...					
"low" in FAS ⁺	26.9%	22.6%	26.0%	21.6%	18.7%
"middle" in FAS ⁺	55.9%	58.1%	53.0%	53.2%	52.4%
"high" in FAS ⁺	17.2%	19.3%	21.0%	25.2%	28.9%
Weighted percentage of S3 respondents whose families were categorised as...					
"low" in FAS ⁺	27.0%	25.7%	25.8%	27.0%	29.1%
"middle" in FAS ⁺	60.0%	59.7%	53.8%	54.0%	51.5%
"high" in FAS ⁺	13.0%	14.6%	20.4%	19.0%	19.3%

* Figures refer to the mean age of respondents on the day of completing the questionnaire.

[^] Children's parents who provided this information via a reply slip regarding the survey but were not sure about the answer or considered the question not applicable to the child were excluded.

[#] Respondents who were not sure about the answer or considered the question not applicable to them were excluded.

[@] CSSA refers to the Comprehensive Social Security Assistance Scheme.

⁺ To calculate the Family Affluence Scale (FAS), only data from those respondents who had answered all four items of the scale were used.

- **Data Processing Procedures.** From 2012/13 to 2016/17, 34,967 questionnaires were completed. A dataset for each year was cleaned and edited for inconsistencies. Among the 34,967 completed questionnaires, 341 failed quality control, in that each questionnaire had less than 20 remaining responses after editing or did not provide the respondent's date of birth and gender. These questionnaires were excluded from analysis, resulting in 34,626 usable questionnaires. Table 1 shows the number of schools participating in the survey, the

number of questionnaires completed and the number used in analysis in each school year. Images of the questionnaires were stored in a computer and the answers were identified with Remark Office OMR 8.0 (Gravic Inc., Malvern, PA, USA). Answers of open-ended questions were input into the dataset, and the researcher verified that all answers were valid. When calculating the score of a scale such as K6 and PSQI, only those records with all items completed were included in the analysis. SPSS for Windows 20.0 (SPSS Inc., Chicago, IL, USA) was used for all statistical analyses. Analyses were stratified by grade. Prevalence and confidence intervals were computed for all variables and in all five data sets. To test statistical significance of between-group differences (e.g., males versus females), chi-square and One-way Analysis of Variance tests were used. Differences between prevalence were considered statistically significant if the *p-value* was <0.05.

- **Weighting.** To produce data more representative of all students in P4 and S3 in Hong Kong, a weight based on corresponding school district and student's gender and age was applied to each record to adjust for aggregate discrepancies between the sample distributions and population distributions. Although schools in Hong Kong are usually categorised into 18 districts based on location, a broader categorisation of the following 4 districts has been adopted in this survey for weighting purposes: (1) Hong Kong Island and Kowloon (which has the longest history of urbanisation in Hong Kong), (2) New Territories East (which has a history of urbanisation for over 40 years), (3) New Territories South (which has a history of urbanisation for over 40 years), and (4) New Territories West (which has a history of urbanisation for about 30 years). Weighting is based on the figures provided by the Education Bureau regarding student enrolment by district, gender, age and grade in each corresponding school year. The weighted proportions of sample students match the local population proportions. Therefore, weighted estimates are more representative of all students in P4 and S3 attending local primary and secondary schools in Hong Kong than the raw scores. Table 2. shows the demographic characteristics of study respondents by years.

We hope that public health practitioners and school teachers will find useful information from the results of this survey. We also aim to inspire you and assist you in your important work in delivering quality health education and health promotion for young people. Other fact sheets of the Hong Kong Student Health Survey (2012-2016) include:

- Fact Sheet No.1: Dietary Behaviours and Oral Health
- Fact Sheet No.2: Physical Activity, Sedentary Behaviours, Sleeping Habits, and Weight Control
- Fact Sheet No.3: Mental Health, Safety, Intentional Injuries, and Sexual Behaviours
- Fact Sheet No.4: Inappropriate Social Behaviours and Substance Abuse

This fact sheet is prepared by Centre for Health Education and Health Promotion, Jockey Club School of Public Health and Primary Care, Faculty of Medicine, The Chinese University of Hong Kong in August, 2018. For additional information, please visit the Centre's website (<https://www.chep.cuhk.edu.hk>) or send an email to chep@cuhk.edu.hk. Centre's address: 4/F, Lek Yuen Health Centre, 9 Lek Yuen Street, Sha Tin, New Territories, Hong Kong.

Reference

- Boyce, W., Torsheim, T., Currie, C. & Zambon, A. (2006). The Family Affluence Scale as a Measure of National Wealth: Validation of an adolescent self-report measure. *Social Indicators Research*, 78, 473-487. doi: 10.1007/s11205-005-1607-6
- Census and Statistics Department of the Government of the Hong Kong Special Administrative Region (2013, August 13). Mid-year Population for 2013 [Press release]. Retrieved from https://www.censtatd.gov.hk/press_release/pressReleaseDetail.jsp?charsetID=1&pressRID=3159
- Census and Statistics Department of the Government of the Hong Kong Special Administrative Region (2017, August 10). Mid-year Population for 2016 [Press release]. Retrieved from https://www.censtatd.gov.hk/press_release/pressReleaseDetail.jsp?charsetID=1&pressRID=4075
- Currie, C., Molcho, M., Boyce, W., Holstein, B., Torsheim, T. & Richter, M. (2008). Researching health inequalities in adolescents: The development of the Health Behaviour in School-Aged Children (HBSC) Family Affluence Scale. *Social Science & Medicine*, 66, 1429-1436. doi: 10.1016/j.socscimed.2007.11.024
- Education Bureau of the Hong Kong Special Administrative Region (2013). *Student enrolment statistics, 2012/13 (Kindergarten, Primary and Secondary Levels)*. Retrieved from http://www.edb.gov.hk/attachment/en/about-edb/publications-stat/figures/Enrol_2012.pdf
- Education Bureau of the Hong Kong Special Administrative Region (2017). *Student enrolment statistics, 2015/16 (Kindergarten, Primary and Secondary Levels)*. Retrieved from http://www.edb.gov.hk/attachment/en/about-edb/publications-stat/figures/Enrol_2016.pdf
- Education Bureau of the Hong Kong Special Administrative Region (2018a). Primary education. Retrieved from <http://www.edb.gov.hk/en/about-edb/publications-stat/figures/pri.html>
- Education Bureau of the Hong Kong Special Administrative Region (2018b). Secondary education. Retrieved from <http://www.edb.gov.hk/en/about-edb/publications-stat/figures/sec.html>
- Huebner, E. S. (1994). Preliminary development and validation of a multidimensional life satisfaction scale for children. *Psychological Assessment*, 6(2), 149-158. doi: 10.1037/1040-3590.6.2.149
- Kessler, R.C., Barker, P.R., Colpe, L.J., Epstein, J.F., Gfroerer, J.C., Hiripi, E., ...Zaslavsky, A.M. (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry*, 60(2), 184-189. doi: 10.1001/archpsyc.60.2.184.