

SECTION 5

35 to 44-year old adults

Introduction

The 35 to 44-year old age group has been specified by the World Health Organization as the standard monitoring group for health conditions of adults. The full effect of tooth decay, the level of severe gum involvement, and the general effects of oral health care services provided can be monitored using data collected from this age group.

Survey objectives

The objectives of the survey of the 35 to 44-year old adult population were :

1. to assess the oral health status (mainly tooth decay and gum disease status);
2. to collect information on the oral health care behaviour;
3. to collect information on the knowledge on dental diseases;
4. to collect information on attitudes towards oral health; and
5. to collect information on attitudes towards oral health care service.

A brief description on the survey methods employed is presented in the following paragraphs. Details on data collection, methodology and statistical methods in sampling and computation of results, can be referred to in a separate Technical Report of the Oral Health Survey 2001. Readers who wish to go direct to survey findings can proceed to quick reference sections found in green text boxes.

Sample design

The survey on the 35 to 44-year old adults was conducted at the time the Thematic Household Survey of the first quarter in 2001 was in progress.

Thematic Household Survey is carried out by contracting-out mode under the coordination and management of the Census and Statistics Department on a regular basis, to meet the requests from Government policy bureaux and departments for statistical data and information on various social issues. It makes use of the frame of quarters maintained by the Census and Statistics Department as the sampling frame, which covers the land-based non-institutionalized population. Samples of quarters are selected from the frame in accordance with a scientifically designed sampling scheme.

A sub-sample of 35 to 44-year old subjects was selected from the Thematic Household Survey sample using a systematic random sampling method for the Oral Health Survey. The sample size was determined by taking into consideration the precision level, prevalence of gum pocket, sample design effect, anticipated response rate and resources availability.

Data collection method

Data on oral health status were collected by clinical examination performed by a team of dental officers (examiners). The examination procedure and recording criteria were based on the recommendation of the World Health Organization¹. Clinical examination was performed using portable equipments, either at the home of the selected subject, or at a designated examination center set up by the Department of Health.

Data on personal behaviour, knowledge and attitudes related to oral health and usage of oral health service were collected through structured interview conducted by a team of trained dental surgery assistants.

Training sessions were arranged for both the dental officers and dental surgery assistants to familiarize them with the data collection methods and to calibrate them to ensure consistency. Calibration exercises were arranged once every two weeks during the survey period to ensure consistent performance of all staff involved in data collection.

Enumeration results

A sub-sample of 1 391 adults was selected, and the survey was successfully completed on 375 adults. The response rate was 27%. A follow up survey was performed with the purpose of evaluating the characteristics of the 1 016 non-respondents against the 375 respondents. The follow up survey was conducted on a sample of 80 quarters with eligible residents from the 1 016 subjects who declined to participate initially. Intensive enumeration and response enhancing procedures were applied during the follow up survey. There were 64 adults who responded to the follow up survey.

No significant difference was found in either oral health status or key oral health care behaviour between the respondents and non-respondents. With statistical adjustment and weighting, the final results could be inferred to some 1 354 700 adults aged 35 to 44 in Hong Kong. According to the 2001 Population Census, there were 1 360 500 adults of the same age at the time of survey. Hence, this survey had covered 99.6% of the 35 to 44-year old population in Hong Kong.

Limitations

The findings were reported at the aggregate level. For Tables presented in the report, figures may not add up to the totals due to rounding off.

Results of the Oral Health Survey may be subject to errors. The estimates contained in this report were based on information obtained from a particular sample, which was one of a large number of possible samples that could be selected using the same sample design. By chance, estimates derived from different samples would differ from each other. Due to this possible variation of results, a zero figure may mean a non-zero figure of small magnitude. These estimates should be interpreted with caution. Some results were derived from small sub-group of the sample and the limitation should be noted in its interpretations.

What was the oral health status of the 35 to 44-year old adults in Hong Kong ?

Teeth status - how many teeth were there ?

None of the adults surveyed had total tooth loss (edentulous). 8.6% (116 500) of the adults had the full complement of 32 permanent teeth. However, it is not the goal of the dental profession for every individual to possess 32 teeth. There is also no optimal number nor minimum acceptable number of teeth agreed by the dental profession. For comparison purpose, 20 teeth has been used as the arbitrary minimum number of teeth for minimum level of function. From this survey, it was found that 99.2% (1 343 800) adults had ≥ 20 teeth. Retained roots, i.e. severely broken down teeth with only the roots left behind, were found in 9.6% (130 000) adults. The results are summarized in Table 5.1. The mean number of teeth present was 28.1. Of the teeth present, a mean of 0.1 tooth was retained root.

Table 5.1
Number and percentage of adults according to
various indicators related to teeth status

Teeth status	Number	Percentage
No teeth left (edentulous)	0	0
With ≥ 20 teeth left	1 343 800	99.2
With 32 teeth left	116 500	8.6
With roots left	130 000	9.6

Teeth status - replacement of missing teeth

The proportion of 35 to 44-year old adults with various types of dental prostheses are shown in Table 5.2.

Table 5.2
Number and percentage of adults
with dental prostheses

Type of dental prostheses	Number	Percentage
With any type of prostheses	252 000	18.6
With dental bridges	205 500	15.2
With partial dentures	56 900	4.2

Teeth status - what was the level of tooth decay ?

The level of tooth decay among the adult population are shown in Table 5.3. The level of root surface decay is shown in Table 5.4. Almost all adults had tooth decay experience. Most of this experience was manifested as missing teeth (MT). Untreated tooth decay (DT) was found in about a third of the adult population. Root surface decay (DF-root) was found in a small proportion of adults, and majority of the root surface decay was untreated (D-root).

The proportion of adults with root surface decay (Table 5.4) was already included in the proportion of adults with tooth decay (Table 5.3). Hence, it can be said that 10.6% of the adults with tooth decay in fact had root surface decay (3.4% out of 32.0%).

Table 5.3
Level of tooth decay as measured by the DMFT index among adults

	DMFT	DT (decayed)	MT (missing)	FT (filled)
Mean value	7.4	0.7	3.9	2.8
% Among population	97.5	32.0	91.4	66.6

Table 5.4
Level of root surface decay among adults

	DF-root	D-root (decayed)	F-root (filled)
Mean value	0.1	<0.05	<0.05
% Among population	4.2	3.4	1.0

Gum condition as measured by the loss of gum attachment (LOA)

The level of loss of gum attachment among the 35 to 44-year old adults are shown in Table 5.5. About two-thirds of the adults experienced some loss of gum attachment. Moderate to severe loss of gum attachment (≥ 6 mm) affected less than one-fifth of the adult population.

Table 5.5
Loss of gum attachment (LOA) among adults

	≥ 4 mm	≥ 6 mm	≥ 9 mm	≥ 12 mm
Mean number of sextants affected	1.9	0.3	0.1	<0.05
% Among population	67.0	16.8	4.5	1.4

Gum condition as measured by the Community Periodontal Index (CPI)

The gum condition as measured by the CPI can be found in Table 5.6. Only 0.7% (9 500) adults had healthy gums in all the six sextants. On average, calculus deposit was found in more than half of the mouth in every adult. Gum pockets were present in almost half of the adult population, and deep gum pockets were found in 7.1% (96 200) adults.

Table 5.6
Gum condition as measured by the highest CPI score among adults

	Healthy	Bleeding	Calculus	Shallow pocket	Deep pocket
Mean number of sextants affected	0.4	0.9	3.5	1.1	0.1
% Among population	0.7	3.4	49.9	38.9	7.1

As seen from Table 5.5, 67% (907 600) of the adults had loss of gum attachment of $\geq 4\text{mm}$. Table 5.6 showed that 46% (623 100) of the adults had gum pockets, i.e. a loss of gum attachment of $\geq 4\text{mm}$. At least 21% (284 500, by subtracting 46% from 67%) of adults had loss of gum attachment not in the form of gum pocket, but in the form of gum recession, as assessed by examining one tooth in each of the six sextants in the mouth.

About one-third of adults had untreated decay. There was a mean of 0.7 tooth with untreated decay among the adults. On average, each adult with untreated decay had more than two teeth that were affected.

Decay on root surfaces which was found in a small proportion of adults were mostly untreated. 3.4% of adults had root surface decay.

Both gum pockets and recession were common. 46% of adults had gum pockets in at least one of their teeth and at least 21% of adults had loss of gum attachment in the form of gum recession resulting in exposed root surfaces.

Tooth loss in the present adult population was not a major problem, but without effective intervention, tooth loss in the future cannot be ruled out. More than 90% of the 35 to 44-year old adult had missing teeth, but each adult still had 28.1 teeth on average. Very few had tooth loss to the extent of having less than 20 teeth present. None of the adults surveyed had total tooth loss. However, 1.4% of adults had at least one tooth with severe loss of gum attachment ($\geq 12\text{mm}$) and 9.6% adults had at least one of their teeth severely broken down with only the roots left. These were stages of tooth decay or gum disease beyond restoration or treatment where the loss of the affected teeth was imminent. Progressive destruction arising from the spectrum of existing tooth decay and gum disease, and the possibility of consequential tooth loss can be prevented with effective intervention.

A small proportion of adults had dental prostheses. Almost one in every five adults had either fixed or removable dental prostheses. As the use of dental prostheses can lead to dental plaque retention, its use justifies special attention on teeth cleaning practices.

What was the experience in oral health problems among the adult population ?

Aside from assessing the level of tooth decay and gum disease in adults, it was also the objective of the Oral Health Survey to have a better understanding of oral health in terms of their perception of well being. Part of the structured interview was designed to investigate their experience of oral health problems, and the care seeking behaviour when oral health problems had been perceived.

How many adults had experienced oral health problems, and what did they do to deal with the problems ?

The proportion of adults who had perceived oral health problems in the previous 12 months are shown in Table 5.7. *Bad breath* was a very common condition reported by three out of every four adults. However, *bad breath* is a complex oral problem that may or may not be directly related to teeth. The most common reported problems that were directly related to teeth were *bleeding gums*, followed by *tooth sensitivity to hot and cold*. Both problems were experienced by more than half of the adults. *Abscess* and *severe pain* were the least reported problems, but they were perceived by around one out of six adults, indicating that those problems were not that uncommon.

The actions taken by the affected adults for the problems perceived are also shown in Table 5.7. For problems that were directly related to teeth, such as *bleeding gums*, *tooth sensitivity to hot and cold* and *mobile teeth*, more than half of the affected adults did not take any action. For non-specific problems like *bad breath* and *dryness of mouth*, more than 75% of the affected adults managed the problems on their own. The seeking of professional advice and care was the least likely course of action. The tendency to seek oral health care was relatively higher in situations like mobile teeth, abscess and severe pain. However, less than half of those affected sought care even for the most severe condition of *pain that disturbed sleep*.

Table 5.7
Perceived oral health problems
by adults and the actions taken

Condition	Percentage	Actions taken by the affected adults			
		No action	Self manage	TCM* / Doctor	Dentist
Bad breath	74.3	15.4%	76.2%	4.5%	3.9%
Bleeding gums	59.5	57.2%	36.2%	1.2%	5.4%
Sensitivity to hot or cold	54.5	57.8%	28.0%	0	14.2%
Dryness of mouth on eating	33.1	17.7%	78.9%	2.8%	0.6%
Mobile teeth	23.5	56.3%	10.8%	0.9%	32.0%
Difficulty in chewing	22.4	35.7%	37.5%	3.6%	23.2%
Abscess	17.5	34.7%	28.9%	5.2%	31.2%
Pain that disturbed sleep	15.4	9.2%	35.5%	7.9%	47.4%

* TCM = traditional Chinese medicine practitioner

Some oral health problems that may or may not be directly related to teeth were also apparent, such as mobile teeth, abscess and pain that disturbed sleep.

The affected adults tended to manage the perceived oral health problems by themselves. To seek professional oral health care was the less likely course of action. Less than half of those affected sought care from dentist, even for the most severe condition of pain that disturbed sleep.

What was the impact of the conditions of the teeth, mouth and dental prostheses on the daily life of the adult population ?

The impact of oral conditions on adults' various aspects of daily life was measured by a locally validated set of questions, ie. Oral Health Impact Profile (OHIP-14).

The proportion of adults who responded negative impact on various aspects of daily life are shown in Table 5.8. The two aspects of daily life with the highest reported negative impact were related to eating, but such negative impact was only reported by 6% of the adults. The negative impact on other aspects of daily life in OHIP-14 was even lower.

Table 5.8
Percentage of adults expressing negative impact on
aspects of daily life in OHIP-14

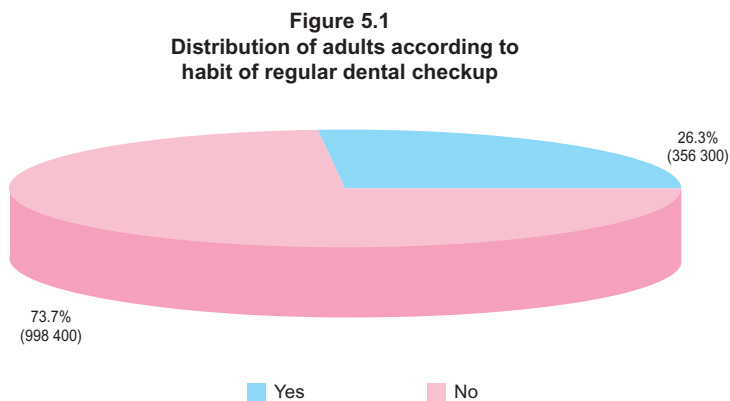
Impact on daily life	Percentage
Have had to interrupt meals	6.0
Have found it uncomfortable to eat any food	6.0
Have been a bit embarrassed	2.9
Have had difficulty chewing any food	2.4
Have had trouble pronouncing any words	2.3
Have had sore spots in mouth	1.7
Have been miserable	1.5
Have been worried	1.4
Have felt that there has been less flavour in food	1.4
Have been upset	0.9
Have been unable to work to full capacity	0.4
Have been totally unable to function	0.2
Have avoided going out	0.2
Have had troubles getting along with other people	0.2

Only 6% of the adult population in Hong Kong expressed negative impact arising from their oral health conditions on eating. Negative impact on other aspects of daily life was even lower. This may have been due to either a true low impact (adults did not perceive functional difficulty arising from their oral health conditions) or the inability to express the negative impact (functional difficulty arising from their oral health conditions was perceived but the adults were not used to expressing such difficulty).

What was the pattern of usage of oral health care services like among the 35 to 44-year old adults ?

How many adults had the habit of seeking regular dental checkup ?

About one-fourth of the adult population reported that they had the habit of seeking dental checkup. (Figure 5.1)



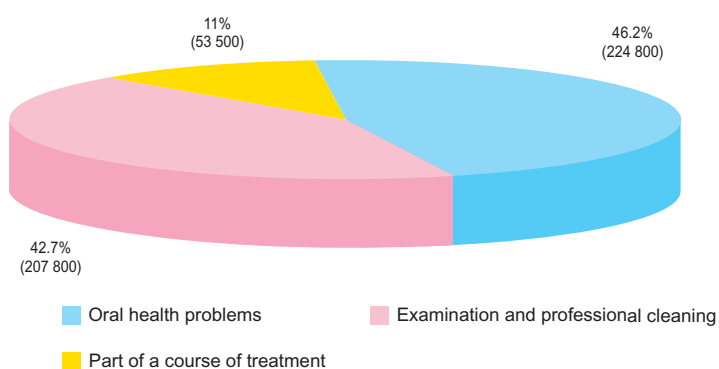
When was the last dental visit made by the adults ?

The time when the adults made their last visit to dentist is shown in Table 5.9. Almost one-third of the adult population had not visited a dentist for at least 3 years. More than one-third had visited a dentist within the past year. Among those who had visited a dentist in the previous 12 months, 46.2% did so because of oral health problems (Figure 5.2) while 42.7% went for oral examination or cleaning.

Table 5.9
Distribution of adults according to time of last dental visit

Time of last dental visit	Number	Percentage
1 year or less	486 100	35.9
1 to 3 years	408 200	30.1
More than 3 years	330 300	24.4
Never visited dentist	110 600	8.2
Could not remember	19 500	1.4

Figure 5.2
Distribution of adults who had visited dentist in the previous year
according to the reported reason of visit



Only about a quarter of the adult population reported the habit of regular dental checkup and only about a third had visited the dentist in the previous year. About one-quarter of the adults had not visited a dentist for at least three years, and almost one out of ten adults reported that they had never visited a dentist before.

Most of the dental visits made in the previous year were curative treatment for oral health problems. Oral health problems actually accounted for almost half of the dental visits made. Checkup visits constituted less than half of all visits.

How did the 35 to 44-year old adults practise oral self-care ?

Toothbrushing - how often did the adults brush ?

The toothbrushing habit reported by the adults is shown in Table 5.10. Almost all adults reported the habit of daily toothbrushing.

Table 5.10
Distribution of adults according to toothbrushing habit

Toothbrushing habit	Number	Percentage
Brushed everyday	1 341 600	99.1
Brushed occasionally	3 300	0.2
Never brushed	9 000	0.7

Toothbrushing - what time did the adults usually brush ?

The time of brushing is shown in Figure 5.11. Among those who reported a habit of daily toothbrushing, almost all did so in the morning. Brushing before going to bed was reported by three out of every four adults. Only 0.5% reported brushing after every meal.

Table 5.11
Number and percentage of adults who brushed everyday
according to time of toothbrushing

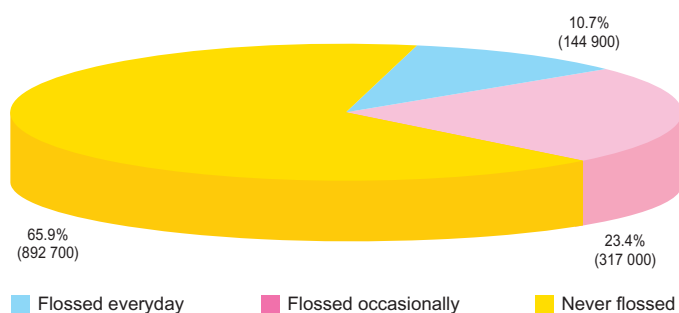
Time of day	Number	Percentage
In the morning	1 330 900	99.2
Before bed	1 012 900	75.5
After dinner	71 100	5.3
After lunch	53 700	4.0
After eating	6 700	0.5

Respondents allowed to choose multiple answers

How many adults flossed as part of interdental cleaning ?

The habit of flossing is shown in Figure 5.3. Only 10.7% of adults reported that they flossed on a daily basis.

Figure 5.3
Distribution of adults according to flossing habit



What were the barriers to those adults who did not floss ?

Those who reported that they had never flossed were asked the reason for not doing so. The reported reasons are shown in Table 5.12. Among those who responded, the most common reason was *don't know how to floss*, followed by *don't want to take the time or trouble to floss*, and *flossing is useless*. This was an indication on the lack of awareness regarding the value of flossing and a lack of personal skill in flossing. The reason for the large proportion who gave *no answer* was not fully known. It might be an indication that a large proportion of adults was actually not aware of such teeth cleaning method.

Table 5.12
Number and percentage of adults who did not floss everyday
according to reasons for not doing so

Reasons for not flossing	Number	Percentage
Did not know how to floss	279 400	23.1
Did not want to take time / trouble	229 800	19.0
Considered flossing as useless	99 200	8.2
No time	87 100	7.2
No answer	337 500	27.9

Respondents allowed to choose multiple answers

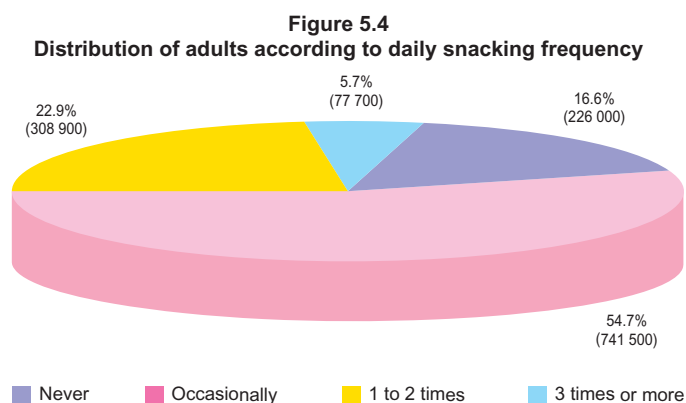
Virtually all adults reported the habit of daily toothbrushing, and about three out of every four adults brushed twice daily.

Only one in every ten adults flossed their teeth everyday, and two out of every three adults had never flossed. Among those who provided a reason, the most common reason reported for not flossing was *don't know how to floss*, followed by reluctance to spend time or take the trouble to floss.

What was the dietary pattern in relation to oral health among the 35 to 44-year old adults ?

Snacking habit

Snacking was referred to as any food, snack or drink (except water) intake in between normal meals. The reported snacking habit of the 35 to 44-year old adults is shown in Figure 5.4. The habit of daily snacking was reported by 28.6% of adults, while 5.7% of adults reported three or more snack intake everyday.



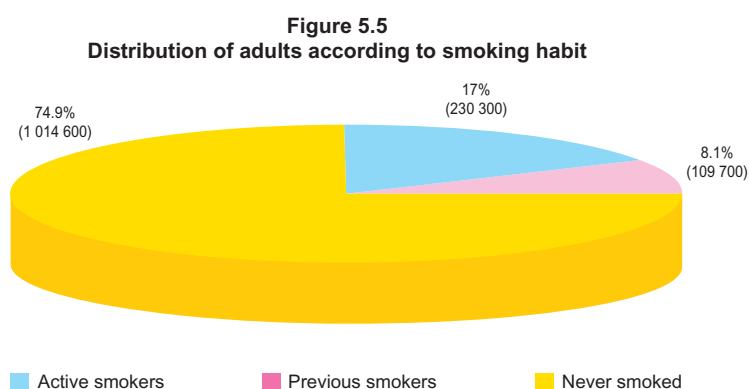
Snacking did not seem to be a major problem among the adult population.

Only 5.7% of adults reported snacking three or more times a day. High snacking frequency is considered by the dental profession worldwide as a risk factor in developing tooth decay.

What was the smoking habit among the 35 to 44-year old adults ?

Smoking

The smoking habit of the adults is shown in Figure 5.5. About one in every four adults had experienced smoking. 17% (230 300) were active smokers.



Smoking habit was reported by 17% of the adult population.

Summary on oral health status and oral health behaviour

Tooth loss was not a problem in the adult population. However, one-third of adults had untreated tooth decay and almost half of the adults had gum pockets. With only slightly more than a quarter of the adult population who had the habit of regular dental checkup, most of these existing diseases may progress without being noticed by the affected individual. Even when some of these diseases were to progress to a stage to cause discomfort, it was likely that some of the adults would not seek professional care based on the surveyed behaviour. In other words, the observed behaviour was unlikely to prevent further deterioration of the diseases.

The presence of gum recession and exposed root surfaces, abundant calculus deposits, and use of dental prostheses, along with inadequate teeth cleaning practice, low usage of regular dental checkup, were all risk factors to the development of new tooth decay and gum disease and deterioration of existing diseases.

In summary, there were possibilities that adults would have new tooth decay and gum disease, and/or further disease progression leading to tooth loss. However, such prospects should not be too pessimistic if there were opportunities for improvement in the oral health life-style. Tooth loss can be prevented and oral health can be maintained with positive changes in oral health behaviour.

What were the possible explanations to the inadequacies in oral health related behaviour ?

What did the adults know about the factors leading to tooth decay ?

The factors leading to tooth decay as perceived by the adult population are shown in Table 5.13. The main factor perceived was *eating too much candies or sweet food*. However, only 1.6% could precisely point out that *frequent intake of food or drinks* was related to tooth decay. The second most commonly cited factor was *improper cleaning of teeth*. Other factors were reported by less than 10% of the adults, and 7.0% replied *don't know*.

Table 5.13
Number and percentage of adults
according to perceived factors leading to tooth decay

Perceived factors	Number	Percentage
Eating too much candies / sweet food *	1 017 000	75.1
Improper cleaning of teeth *	795 200	58.7
Sour food	122 700	9.1
Dental plaque / bacteria *	48 300	3.6
Lack of calcium / nutrients	39 500	2.9
Inherited	36 800	2.7
Poor general health	21 700	1.6
Too frequent food / drink intake *	21 800	1.6
No regular dental checkup *	13 800	1.0
Don't know	94 300	7.0

Respondents allowed to choose multiple answers

* Relevant factors

What did the adults know about the factors leading to gum disease ?

The factors leading to gum disease as perceived by the adult population are shown in Table 5.14. *Improper cleaning of teeth* was the mostly reported factor, followed by *traditional Chinese medicine beliefs* - mainly "requ" (internal heat 熱氣). *Smoking* was only cited by 1.0% of adults. The adult population were not too certain about the factors leading to gum disease, as illustrated by the higher proportion which replied *don't know*.

Table 5.14
Number and percentage of adults
according to perceived factors leading to gum disease

Perceived factors	Number	Percentage
Improper cleaning of teeth *	513 800	37.9
"requ" / traditional Chinese medicine beliefs	362 900	26.8
Dental plaque / bacteria *	153 600	11.3
Accumulation of calculus	69 800	5.2
Poor general health	60 000	4.4
Lack of vitamin / nutrients	39 800	2.9
No regular dental checkup *	36 900	2.7
Smoking *	13 400	1.0
Don't know	332 000	24.5

Respondents allowed to choose multiple answers

* Relevant factors

What did the adults know about prevention of tooth decay ?

When asked what could be done to prevent tooth decay, the adults considered *proper cleaning of teeth* as the most important measure. Other methods are listed in Table 5.15. Although eating *too much candies or sweet food* was the most commonly given factor leading to tooth decay (75.1% in Table 5.13), *reduce consumption of candies or sweet food* was only reported by 23.5% as a measure to prevent tooth decay. *Seek regular dental checkup* was reported by 15.2% of adults. Only a very small proportion of adults (1.7%) mentioned *reduce frequency of food/drink intake*, while 6.9% replied *don't know* to this question.

Table 5.15
Number and percentage of adults
according to perceived methods to prevent tooth decay

Perceived methods	Number	Percentage
Proper cleaning of teeth *	1 132 300	83.6
Reduce consumption of candies/sweet food *	317 900	23.5
Seek regular dental checkup *	205 600	15.2
Rinsing with water / salt water	192 600	14.2
Use commercial mouth wash	109 000	8.0
Take calcium / nutrients supplement	53 800	4.0
Avoid certain food	50 200	3.7
Reduce sour food	39 500	2.9
Reduce frequency of food / drink intake *	23 000	1.7
Don't know	93 100	6.9

Respondents allowed to choose multiple answers

* Relevant factors

What did the adults know about prevention of gum disease ?

The mostly cited way to prevent gum disease was *proper cleaning of teeth*, followed by *avoidance of certain food*. Other methods reported are listed in Table 5.16. 14.5% (195 800) of adults cited *regular dental checkup* and very few (1.1%) mentioned *avoid smoking*. The uncertainty of the adult population about gum disease was again illustrated by the relatively high proportion (33.1%) who replied *don't know* to this question. A host of other methods were also suggested, albeit by a small proportion of adults, on ways to prevent gum disease. Methods like *taking Chinese medicine or herbal tea*, *eating nutritious food (vitamin supplements, fruits)*, and *have good rest* were more related to the traditional Chinese medicine beliefs. The actual use and benefits of commercial mouthwashes may need attention, as the public may have received an inappropriate message that using mouthwash alone was effective in preventing dental disease.

Table 5.16
Number and percentage of adults
according to perceived methods to prevent gum disease

Perceived methods	Number	Percentage
Proper cleaning of teeth *	554 100	40.9
Seek regular dental checkup *	195 800	14.5
Avoidance of certain food	142 700	10.5
Rinsing with water / salt water	79 300	5.9
Use commercial mouthwashes	75 200	5.6
Taking Chinese medicine / herbal tea	74.300	5.5
Nutrition, vitamin supplements, fruits	45 600	3.4
Have good rest	34 000	2.5
Avoid smoking *	15 000	1.1
Don't know	448 200	33.1

Respondents allowed to choose multiple answers

* Relevant factors

There were more adults who were not certain about gum disease than about tooth decay. More adults replied *don't know* to the factors leading to gum disease and the preventive methods than to those of tooth decay. Traditional Chinese medicine beliefs were commonly referred to for gum disease.

Proper cleaning of teeth was the main preventive method for both tooth decay and gum disease as cited by the adults. Only very few could point out *dental plaque* or *bacteria* as the causative agent and the removal of dental plaque as a preventive method. It was very likely that the adults did not have the knowledge that the purpose of brushing is to remove dental plaque. Also very few pointed out the importance of flossing. With respect to snacking, three-quarters of adults mentioned *eating too much candies or sweet food* as a factor leading to tooth decay. It was not clear what context the adults referred to in this reported factor. As only 1.6% pointed out that *frequent intake of food or drinks* as a relevant factor, it was probable that the meaning of *too much* by adults was "quantity" rather than *frequency of intake*. Besides, most adults mentioned *candies and sweet food* as related to tooth decay. There seemed to be a lack of awareness that any sugar-containing food or drinks consumed outside normal meal are risk factors for tooth decay.

Some other factors considered as important by the dental profession, such as *regular dental checkup* and *smoking* were rarely mentioned by the adults in relation to tooth decay and gum disease.

Toothbrushing - as perceived by the adults, what were the most effective ways to brush their teeth ?

The adults were asked to indicate what they thought were the most effective ways to brush their teeth. The results are shown in Table 5.17. The most commonly reported answer was the brushing methods acquired from non-professional sources (e.g. acquired from family during childhood) or professional messages not delivered on a personal basis (e.g. posters, pamphlets, video demonstration). Only 19.8% of adults perceived that the most effective way to brush their teeth were to follow *personal instruction given by dental professionals*.

Table 5.17
Number and percentage of adults
according to perceived effective toothbrushing method

Perceived effective toothbrushing method	Number	Percentage
Methods from non-professional / non-personal sources	788 900	58.8
Personal instruction by dental professionals	265 600	19.8
Brush longer time / harder	119 400	8.9
Use toothpaste	85 900	6.4
Use electric / special design toothbrush	37 600	2.8
Don't know	88 500	6.6

Respondents allowed to choose multiple answers

Proper teeth cleaning was the most commonly reported method to prevent tooth decay and gum disease. As perceived by the adults, the most effective toothbrushing method was derived from non-professional sources (e.g. acquired from family during childhood) or professional messages not delivered on a personal basis (e.g. posters, pamphlets, video demonstration). Without proper instruction and reinforcement, people practising teeth cleaning might not be able to recognize the inadequacies in their teeth cleaning practices.

What were the reasons for not seeking regular dental checkup ?

The reasons for not seeking regular dental checkup were sought from the 998 400 adults who did not have this habit. The results are shown in Table 5.18. The most commonly reported reason was *no perceived need* due to their perception of having good teeth and also to absence of pain. The second most commonly reported reason was *no time / could not get off work*, followed by *uncertainty of cost / worry of high cost*. Some were not aware or had never thought about dental checkup. A small proportion of adults felt that they had some oral health problems but did not perceive the need for checkup.

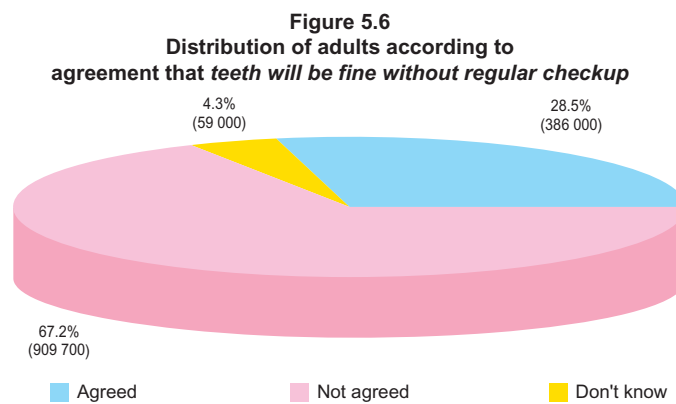
Table 5.18
Number and percentage of adults
who did not seek regular dental checkup
according to the reported reasons for not doing so

Reasons	Number	Percentage
Teeth were good / no pain / no need	292 500	29.3
No time, could not get off work	275 600	27.6
Uncertainty of cost / worry of high cost	193 700	19.4
Did not know / never thought about checkup	144 800	14.5
Did not know how to find dentist	38 900	3.9
Teeth had minor problems only, no need	36 900	3.7

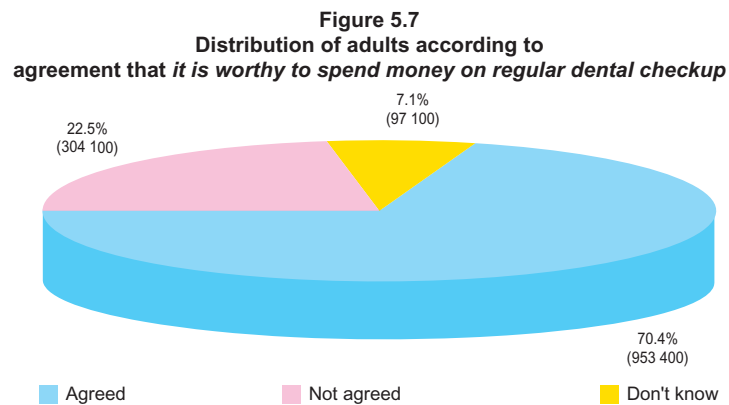
Respondents allowed to choose multiple answers

Perceived benefit and worthiness of regular dental checkup

The perceived benefit of regular dental checkup was inferred by the agreement to the statement *teeth will be fine even without regular checkup*, and the results are shown in Figure 5.6. Majority of the adults disagreed, but more than one-fourth did not perceive any benefit from regular dental checkup.



As shown in Figure 5.7, majority of the adults agreed that *it is worthy to spend money on regular dental checkup*, but then again about one-fourth disagreed with the statement.



No perceived need was the reason provided by almost a third of adults for not seeking regular dental checkup. The perception of no need was due to the self-perceived good teeth and also to absence of pain.

There were conflicting attitudes concerning regular dental checkup. More than two-thirds of the adults perceived that regular dental checkup may help to keep their teeth fine and it was worthy to spend money on dental checkup. This should be an indication that some kind of need and value regarding dental checkup had been perceived by around two-thirds of the adults. However, only one out of every four adults sought regular dental checkup. Among some of the adults with perceived need for regular dental checkup, there were barriers to the transformation of perceived need into demand.

How was the adults' perceived need for dental treatment as compared to the need assessed by the survey method ?

The treatment need perceived by the adult population was compared to the assessed need based on the survey method in Table 5.19. Generally speaking, the perceived need was lower than the assessed need. The disparity was especially noted in preventive treatment such as oral hygiene instruction and scaling.

Table 5.19
Dental treatment need perceived by the adults
compared with the assessed need based on the survey method

Dental treatment need	Perceived	Assessed
Oral hygiene instruction	2.6%	99.3%
Scaling	18.4%	95.9%
Tooth filling	22.5%	27.4%
Tooth extraction	5.5%	11.9%
Dental prostheses	7.8%	8.2%
Advanced periodontal treatment	3.8%	7.1%
Dental pulp care	2.5%	1.6%
Crown fabrication	1.2%	1.0%

The treatment need perceived by the adults was found to be lower than the assessed need. Low perceived need was the main reason given for not seeking regular dental checkup. The problem was that some of the treatment need assessed using the survey methods had not been perceived by the adults, especially the need for preventive treatment.

In the structured interview, a set of hypothetical tooth decay situations were presented to the adults, and they were asked to propose their course of action when confronted with such situations. The purpose was to study the considerations in adults' proposed actions under different tooth decay situations, and to investigate if there were any difference in the management of problems of front teeth or back teeth, and when the problems were associated with pain or not .

What would the adults do in case of tooth decay problems ?

The proposed actions of the adults under the various tooth decay situations are summarized in Table 5.20.

Table 5.20
Proposed actions of the adults
under various tooth decay situations

	Front teeth	Back teeth
Decayed with no pain	27.0% no action 0.2% self manage 3.9% seek removal of tooth 67.2% see dentist 0.6% see medical doctor 1.1% could not decide	41.2% no action 0.4% self manage 3.2% seek removal of tooth 53.7% see dentist 0.6% see medical doctor 0.9% could not decide
Decayed with pain	0.7% no action 3.1% self manage 11.5% seek removal of tooth 82.6% see dentist 1.7% see medical doctor 0.4% could not decide	1.1% no action 4.0% self manage 14.6% seek removal of tooth 78.4% see dentist 1.7% see medical doctor 0.2% could not decide

Under the hypothetical tooth decay situations, majority of the adults proposed to see dentist and very few proposed self-management. The proposed actions were not consistent with the actual behavior reported in the previous experience of other oral health problems, where majority of the adults tended to manage the problems by themselves and relatively few sought professional care (Table 5.7).

The proposed actions under hypothetical situations were not consistent with the actual behaviour reported when problems had been perceived.

Majority of the adults proposed to see dentist in all hypothetical situations, whereas in their previous experience with oral health problems, majority of them tended to manage the problems by themselves.

The value of the front teeth was higher than the back teeth. More adults would take action for the front teeth even if there was no pain, and fewer adults considered taking the front teeth out if there was pain.

Pain was an important determining factor in taking action. It was observed that 27% to 41.2% of adults would not take action if there was no pain, even if decay was apparent.

The removal of the offending tooth was an expedient solution among a small proportion of the adults. About 3.2% to 3.9% would seek removal of a decayed tooth even if there was no pain, and 11.5% to 14.6% indicated the same action if there was associated pain.

What were the reasons for not proposing to seek oral health care services in hypothetical situations ?

The reasons given by the adults for not seeking care in hypothetical tooth decay situations are listed in Table 5.21. Irrespective of the presence of pain, the main reason given was that *the condition would relieve by itself*. When there was pain, the proportion of adults that did not see dentist because of *worry about the cost of care* increased significantly.

Table 5.21
Proportion of adults who did not propose to seek care
in hypothetical tooth decay situations
according to reasons for not doing so

Reasons	No pain	Pain
Minor problem will relief by itself	60.8%	36.8%
Uncertainty of cost / worry of high cost	13.6%	30.1%
No time / could not get off from work	14.3%	16.9%
Fear of pain	5.5%	3.8%
Fear (could not specify)	3.3%	6.9%
Don't know how to find dentist	1.4%	3.4%

Respondents allowed to choose multiple answers

Tooth decay and pain had been perceived as minor problems which could be relieved by itself. There was also an apparent lack of knowledge that both tooth decay was progressively destructive, and the fact that pain usually followed at a very late stage.

There were barriers to seeking oral health care service. Similar to the reasons reported for not seeking regular dental checkup, some of the reasons were related to the oral health care service. These included the *uncertainty of cost / worry of high cost, no time and could not get off work*.

What were the attitudes of the adult population towards oral health care services ?

The attitudes of the adults towards oral health care services were evaluated by their agreement to a series of statements / questions related to oral health services. The results are shown in Table 5.22. Quite a substantial number of adults replied *don't know* to some of the questions. The proportion of adults answering *don't know* ranged from 1.9% to 14.1% (25 400 to 191 600) among all adults. The adults might have replied *don't know* simply because they did not understand the question, or they had no knowledge whatsoever.

Table 5.22
Attitudes of adults towards oral health care services

Statements / questions	Responses	Number of adults	Percentage
Do you agree that dentists can solve your oral health problems ?	Yes	1 283 800	97.8
	No	29 300	2.2
	41 600 replied don't know		
Dentists are more concerned on treatment than to teach people how to prevent dental diseases.	Agree	687 300	52.9
	Disagree	612 400	47.1
	55 000 replied don't know		
Do you think dentists will perform treatment for you that is unnecessary?	Yes	352 400	27.9
	No	910 800	72.1
	91 500 replied don't know		
Visiting a dentist must be painful and uncomfortable?	Agree	638 800	49.2
	Disagree	659 700	50.8
	56 100 replied don't know		
Are you worried about contracting contagious diseases from dentists' equipment?	Yes	533 800	40.2
	No	795 500	59.8
	25 400 replied don't know		
The dentists' fees are worthy of the value.	Agree	561 700	48.3
	Disagree	601 300	51.7
	191 600 replied don't know		

Generally speaking, the adult population had confidence in the dental profession. The adult population had confidence in the dentists' technical ability to solve their oral health problems. As to the issue of unnecessary treatment, majority of the adults also had confidence in dentists.

The dental profession should take note of the views of a minority from this group. There were conflicting views on aspects like clinic hygiene standard, and the possibility of pain and discomfort associated with dental visit. As to the worry of unnecessary treatment, it was still a significant revelation when 27.9% of adults had this concern. Such perceptions and attitudes are not to be interpreted as the presence of such phenomenon among the dental profession. Yet, these attitudes are viewed as potent barriers to the use of oral health care services.

Almost half of the adults disagreed to the statement that dentists' fees are worthy of the value. The problem might be due to the inability of the adults to appreciate the worth of the dentists' fees, or perhaps they had simply considered that dentists' fees as too high.

What was the perceived cost for dental visit ?

The *uncertainty of cost / worry of high cost* was one of the factors given for not visiting the dentist. To evaluate the perceived cost of dental visit, the adults were asked to estimate the cost for a dental checkup plus professional tooth cleaning (scaling). 6.5% (88/100) adults could not give an estimate. Among those who could estimate the cost, the 25th percentile was HK\$250, the median was HK\$300, and the 75th percentile was HK\$500.

Dental schemes and the usage of oral health care services

The proportion of adults with coverage by dental schemes is shown in Table 5.23. 14.1% (191 200) of adults reported being covered by dental schemes. More than three quarters of such schemes were provided by employers.

Table 5.23
Distribution of adults according to
coverage by dental schemes

Types of dental schemes	Number	Percentage
No coverage	1 163 300	85.9
Employer provided dental benefits (public service)	80 800	6.0
Employer provided dental benefits (private service)	74 700	5.5
Dental benefits provided by credit card company	19 200	1.4
Self-purchased dental insurance	13 600	1.0
Self-purchased medical insurance (with dental)	2 900	0.2

The usage of oral health care services based on the dental schemes is shown in Table 5.24. The proportion who reported the habit of regular dental checkup and the proportion who reported dental visit within the previous 12 months were significantly higher in the group of adults with dental scheme coverage. Furthermore, there was a higher proportion among adults with such coverage to have visited the dentist for checkup in the previous 12 months.

Table 5.24
Use of oral health care services by adults
and dental scheme coverage

Behaviour	Covered	Not covered
Regular dental checkup	65.8%	19.6%
Visited dentist within previous 12 months	68.1%	31.4%
Visited in previous 12 months for checkup	61.3%	35.2%

Coverage by dental schemes was found to be associated with a more favourable pattern on the usage of oral health care services. However, this was not sufficient to suggest that dental schemes led to better use of oral health care services. It could well be, that such schemes might have enhanced regular dental checkup by removing part of the financial barriers, or removing the uncertainty on cost. Despite the coverage by dental schemes, around one-third of the adults did not seek regular dental checkup nor visited a dentist in the previous 12 months.

What were the attitudes of 35 to 44-year old adults towards tooth loss ?

The adults were asked whether they agreed to the statement *tooth loss is a part of aging*. The results are shown in Table 5.25. Although the majority disagreed with the statement, which was a favourable response, there were 41.2% who agreed to the statement, which was a cause for concern.

Table 5.25
Distribution of adults according to
agreement that *tooth loss is a part of aging*

Agreement to the statement	Number	Percentage
Agree	558 700	41.2
Disagree	754 800	55.7
Don't know	41 200	3.0

SECTION 5 - SUMMARY

Tooth loss was not a major problem for the adult population, but there was still the risk of further tooth loss in the future.

There were existing tooth decay and gum disease, and there were also risk factors for the development of new tooth decay and gum disease. The observed oral health behaviour, both in terms of self-care and the use of professional oral health care, was not favourable to maintaining a healthier level of oral health.

Inadequate oral health behaviour may likely be related to the inadequate knowledge on tooth decay and gum disease, barriers to oral health care services, and attitude regarding tooth loss and oral health.

Proper teeth cleaning had been perceived as an important preventive method for both diseases, and yet there was an apparent lack of awareness that proper interdental cleaning is complimentary to toothbrushing, and an apparent lack of knowledge that teeth cleaning might have been inadequate without reinforcement. Other important factors like dental plaque, frequency of snacking and smoking were less familiar among the adults.

The low proportion of adults who mentioned *regular dental checkup* in the preventive methods, may be one of the factors to the low usage of oral health care services. However, the higher proportion of disagreement to the statements *teeth will be fine even without regular dental checkup* and *it is worthy to spend money on regular dental checkup* indicated that there might be other factors behind the expressed low perceived need for dental checkup.

It was found that the adult population had confidence in the dental profession as a whole. However, there were varying perceptions, despite reported by a relatively smaller proportion which is worth taking note of. Such perceptions included *dentists are more concerned with treatment than to teach people how to prevent dental diseases*, *dentists may perform treatment that is unnecessary*, *visiting a dentist must be painful*, and the *worry of contracting diseases from dentists' equipments*. About half of the adults did not agree that *dentists' fees as worthy of the value*. The cited median cost of a dental checkup and professional cleaning was estimated to be \$300. It was not conclusive as to whether this had been considered as too costly or the services had not been considered as worthy of this value.

The coverage by dental schemes was found to be associated with relatively better usage of oral health care services. Even so, about one-third of the adults with dental scheme coverage did not seek oral health care service. The proper use of

oral health care services might have been influenced by a host of other factors and barriers. Findings from the current survey was not sufficient to provide a clearer understanding of the matter.

Tooth loss was considered by almost half of the adult population as part of aging.

This may be the biggest challenge to attaining desirable behavioural change. The value of teeth and oral health in the minds of 35 to 44-year old adult is difficult to evaluate. Findings from this survey suggested that teeth were not seen as a priority issue by some of the adult population. In one of the hypothetical tooth decay situations raised when there was decay with no pain, 27% of adults would not take action for the front teeth and 41% of them would not take action for the back teeth. Around 3% to 4% of adults would seek removal of teeth directly. The proportion who indicated removal of teeth rose to 11.5% and 14.6% for front teeth and back teeth, respectively, if there was associated pain. There were apparent risks of more tooth loss in the future for the adult population, and such loss may be prevented. To motivate the adult population to act early to prevent tooth loss, the population has to be convinced first that the possibility of tooth loss at old age can be minimized.