SECTION 8

Overview

What was the level of oral health of the Hong Kong population when compared with those of other countries ?

Global oral health data are collated and maintained under the Oral Health Country / Area Profile Programme by the World Health Organization (http://www.whocollab.od.mah.se/index.html). Tooth decay level of the 12-year old age group is a major indicator for monitoring the oral health at the global level. The 35 to 44-year old age group has also been specified by the World Health Organization as the standard monitoring group for international comparison. The main oral health indices of this age group were compared to several selected countries, chosen for its geographical proximity to Hong Kong and similarity in economic development.

International comparison - tooth decay level of 12-year old students

As at September 2001, the mean DMFT value from a global perspective was 1.7. The mean DMFT values of 12-year old students of the different countries are shown in Table 8.1. The mean DMFT value for Hong Kong's 12-year old students was 0.8, which ranked as the most favourable alongside the Australian counterparts.

Table 8.1
Level of tooth decay as measured by the DMFT index of 12-year old students compared with those of other countries[4]

Country	DMFT
Australia	0.8
Hong Kong	0.8
England & Wales	0.9
China	1.0
Singapore	1.0
USA	1.4
New Zealand	1.5
Malaysia	1.9
Macau	2.0
Japan	2.4

International comparison - oral health of 35 to 44-year old adults

It can be seen from Table 8.2 that none of Hong Kong's 35 to 44-year old adults had total tooth loss (edentulous). In fact, compared with the countries tabulated, Hong Kong's adults ranked the best in this respect. Their tooth decay level ranked as the lowest at 7.4. In terms of gum conditions, Hong Kong's adults appeared better than the American and British counterparts.

Table 8.2
Oral health indicators of 35 to 44-year old adults compared with those of other countries[4]

Country	%Edentulous	DMFT	DT	%With pockets
Hong Kong	0	7.4	0.7	46
USA	2.5-5.8	13.3	0.8	58
UK	1.0	16.6	1.4	59
Australia	N/A	17.3	1.3	N/A
Japan	N/A	13.7	1.3	N/A
Singapore	0.6	9.8	0.8	N/A

N/A : data not available

From a global perspective, the oral health of the Hong Kong population was found to be in the same ranking if not better than most developed countries in the world. The level of tooth decay among the 12-year old students was actually among the world's lowest. Furthermore, with a global mean DMFT of 1.7, Hong Kong's 12-year olds ranked as among the world's lowest at 0.8. The oral health status of Hong Kong's adult population, in terms of tooth decay level (DMFT) and gum condition, had the same ranking if not better, than the counterparts from most developed countries in the world. In fact, of the countries compared with, only Hong Kong's adults boasted a 0% in terms of total tooth loss.

What was the level of oral health of the Hong Kong population in 2001 when compared with past data?

Comparison with previous oral health surveys done in Hong Kong is useful to show the changes in oral health status over the years. However, interpretation made on any observed changes should be guarded at best, as the changes may be the result of one or a combination of the following factors :

- a genuine change in oral health status
- variation in examination methods and criteria
- variability amongst examiners
- statistical variation arising from survey on a sample instead of a total enumeration.

In the following comparisons, previous surveys selected were confined to those which used the methodology recommended by the World Health Organization.

The level of tooth decay among the 5-year old children over the past 13 years are shown in Table 8.3. In terms of proportion with decay experience and the mean dmft, the tooth decay level had decreased as compared with 1988. However, the high proportion of untreated decay (dt) among those with decay experience remained the same. Similar to the 1988 data, over 90% of those with decay experience (dmft) was untreated decay (dt).

Table 8.3
Level of tooth decay as measured by the dmft index of 5-year old children from 1988 to 2001

Year	% Experienced tooth decay	dmft	dt	mt	ft
1988 [5]	63	3.2	2.9	<0.05	0.2
1995 [2*]	66	3.0	2.3	0.2	0.5
2001	51	2.3	2.1	<0.05	0.2

*Results of 6-year old children in primary schools

The oral health indices among the 12-year old students over the past 19 years are shown in Table 8.4. The tooth decay level both in terms of proportion with decay experience and the mean DMFT had decreased dramatically over the years. The proportion of untreated decay (DT) among those with decay experience (DMFT) dropped significantly from 75% in 1982, to 12.5% in 2001. As for gum conditions, almost 60% of the students had calculus deposits. Whether this reflected a deterioration of the gum condition from 1995 to 2001 would have to be guarded at best, since the 1995 survey sample were drawn from the primary school population, and that of 2001 were drawn from the secondary school population.

Table 8.4
Oral health indices of 12-year old students from 1982 to 2001

Year	% Experienced tooth decay	DMFT	DT	%With bleeding gums	%With calculus
1982 [6]	N/A	2.8	2.1	N/A	N/A
1986 [7]	60	1.5	0.6	N/A	N/A
1995 [2]	48	0.9	0.2	41	50
2001	37.8	0.8	0.1	35	59.5

N/A : data not available

The oral health indices among the 35 to 44-year old adults over the past 17 years are shown in Table 8.5. The proportion of adults affected by tooth decay increased from 1984 to 1991, after which it remained unchanged, and the proportion of untreated decay (DT) among those with decay experience (DMFT) dropped steadily from 13.7% in 1984 to 9.5% in 2001. Although there had been an improvement in terms of proportion of adults with gum pockets as compared with the data in 1984, the fact remained that almost half of Hong Kong's adults were found with calculus deposits and similarly with gum pockets.

Table 8.5
Oral health indices of 35 to 44-year old adults from 1984 to 2001

Year	% Experienced tooth decay	DMFT	DT	% With bleeding gums	% With calculus	% With pockets
1984 [8]	90.0	7.3	1.0	0	28	72
1991 [9,10]	98.0	8.7	1.0	0	26	74
2001	97.5	7.4	0.7	3.4	49.9	46

The oral health indices among the 65 to 74-year old non-institutionalized older persons (NOP) over the past 10 years are shown in Table 8.6. The proportion of NOP with total tooth loss (edentulous) had decreased, relative to the data obtained in 1991. Over this period of time, the proportion of NOP affected by tooth decay remained rather stable, and the ratio of untreated decay (DT) among those with decay experience (DMFT) remained at 7.4%. Although there had been an improvement in terms of proportion of NOP with gum pockets as compared with the data in 1991, the fact remained that more than a third of Hong Kong's NOP were found with calculus deposits and more than half of this population group had gum pockets.

Table 8.6
Oral health indices of 65 to 74-year old NOP from 1991 to 2001

Year	% Edentulous	% Experienced tooth decay	DMFT	DT	% With calculus	% With pockets
1991 [9.10]	12	100	18.9	1.4	34	66
2001	8.6	99.4	17.6	1.3	43	55

The oral health of the Hong Kong population showed improvement over the years. The level of tooth decay showed a definite downward trend among the 5 and 12-year olds, but had remained relatively stable among the adult and older persons groups. Hong Kong's 12 year-olds had one of the world's lowest decay experience. Calculus deposits, however, were present in more than half of the 12-year old population. Hong Kong could boast the fact that none of its adults had total tooth loss (edentulous), and this condition among the NOP showed a downward trend. For the adult and NOP groups, the gum conditions had generally improved over the years. However, calculus deposits and gum pockets remained prevalent, as almost half of the adults had calculus deposits and also close to half had gum pockets, while more than a third of NOP had calculus deposits and more than half had gum pockets. Although Hong Kong's standing compared to that of other developed countries was encouraging, the area of concern in this context, would be on the gum health of our population.

Since the introduction of water fluoridation in 1961, the prevalence and severity of tooth decay has declined in Hong Kong. Together with the wide availability of fluoride containing toothpastes and its use over the years, we have seen a further reduction in the level of tooth decay especially in the younger age population.

There were other significant milestones in the field of dentistry in Hong Kong, near and around the time the earlier sets of data were drawn from. In 1980, the Faculty of Dentistry, University of Hong Kong was established and took in its first batch of dental student trainees, who then became qualified dentists in 1985. Also in 1980, the then Medical and Health Department (now known as the Department of Health) started the School Dental Care Service to provide oral health care to the primary school children in Hong Kong. In 1989, the then Medical and Health Department set up an Oral Health Education Unit to fulfil Government's objective of promoting oral health to the community. Back in 1980, there were 638 registered dentists, and in 2001, the number increased to 1 663.

The effects from these important developments, no doubt, have collectively contributed to some of the positive changes over the years.

What is to be expected in the oral health of the Hong Kong population in the years to come ?

The oral health indices in the age groups examined in this survey are shown in Table 8.7. Care should be taken not to view this as a definitive trend for future development. However, looking at the findings tabulated in Table 8.7, the future does appear somewhat promising. This optimistic note starts with the expected and continued improvement in prevalence of tooth decay, as the post-fluoridation generation with a lower level of tooth decay progressively lives through the sequential age spectrum. The fact that 99.2% of Hong Kong's adults were found to have ≥ 20 teeth in 2001, it would be most unlikely to expect a downward spiral to the 8.6% (the proportion of NOP with total tooth loss based on 2001 findings) with total tooth loss, for these adults who will become Hong Kong's future NOP in 30 years' time. It would also be hard to imagine having almost every adult affected by tooth decay 30 years down the road, when only 37.8% of the 12-year old students had experienced tooth decay in 2001.

Table 8.7
Oral health indices in 2001 according to age groups

	5	12	35-44	NOP	IOP
% With no teeth	N/A	N/A	0	8.6	27.2
% With ≥ 20 teeth	N/A	N/A	99.2	49.7	24.1
dmft / DMFT	2.3	0.8	7.4	17.6	24.5
% dmft / DMFT	51.0	37.8	97.5	99.4	99.8
dt / DT	2.1	0.1	0.7	1.3	2.6
% dt / DT	49.4	6.9	32.0	52.9	55.2
Mean number of teeth with untreated root decay	N/A	N/A	<0.05	0.3	0.4
% Untreated root decay	N/A	N/A	3.4	21.5	22.7
% with bleeding gum	N/A	35.0	3.4	1.7	0
% with calculus	N/A	59.5	49.9	43.0	49.8
% with gum pockets	N/A	N/A	46.0	55.3	49.9

N/A=not applicable

However, there is no room for complacency nor false sense of security either. From Table 8.7, it can be observed that as a whole, the level of tooth decay and gum disease had continued to increase with age. The presence of gum inflammation and calculus deposits found at age 12, was an early indication of risk detection in the development of gum disease, while tooth decay on the other hand, was of a lesser problem from age 12 to adulthood, judging from the low level of tooth decay at age 12 in 2001. There were also early warning signs on the emerging problem of root surface decay, as seen in the adult and older persons age groups. With the increasing trend of having teeth retained in the mouth for a longer span in the lifetime, such exposure of root surfaces due to loss of gum attachment, and its risks to tooth decay, make root surface decay a threat and problem to watch out for in the future adults and older persons groups. The fact remains that oral health problems detected early on in life would gradually progress and build-up, unless preventive efforts are enhanced, early intervention provided and maintenance care is sustained.

Although the oral health of the Hong Kong population compared with those of other countries was relatively good, **both tooth decay and gum disease are still imminent threats to the oral health of the local population**. To reduce the undesirable consequence of tooth loss, it is essential to prevent the onset of new diseases, and to prevent the deterioration of existing diseases. **Prevention is the key to better oral health**.

How did the Hong Kong population fare in terms of oral health care maintenance?

Simple, safe and proven measures to prevent tooth decay and gum disease and improve oral health, are available for everyone to adopt. Conscious and repeated efforts and partnership of the dental profession and the community are required. At the individual level, it has been accepted by the dental profession worldwide that optimal oral health may be achieved by adopting an appropriate life-style.

Life-style conducive to optimal oral health

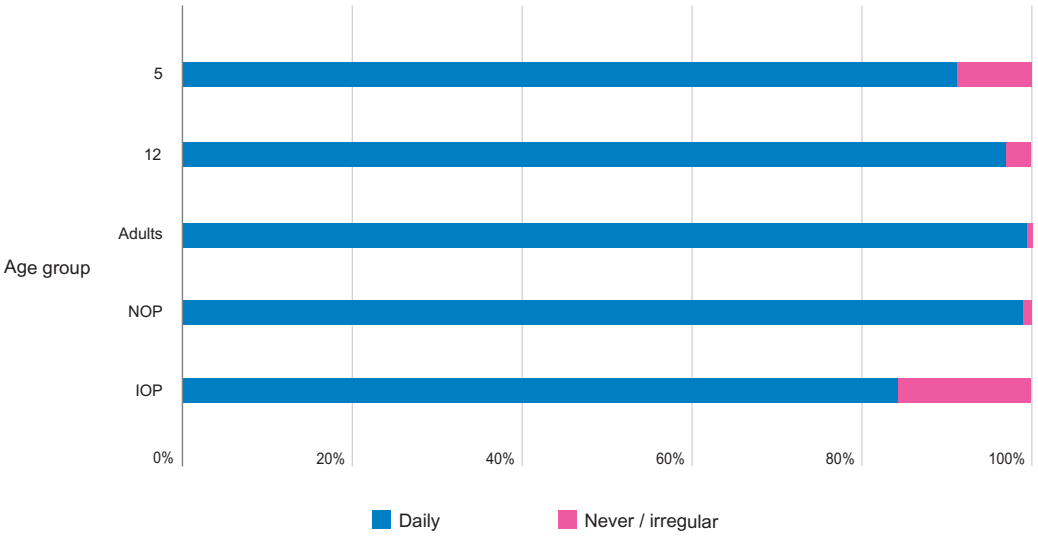
- **Perform teeth cleaning preferably twice everyday, by proper toothbrushing with fluoride-containing toothpaste and by appropriate interdental cleaning.**
- **Make use of oral health care services, by seeking regular dental checkup for prevention, early detection and management of oral health problems.**
- **Adopt a good dietary habit by reducing snacking frequency, especially sugar-containing snacks, and by seeking medical advice for special dietary requirement, one which also compliments oral health needs.**
- **Refrain from smoking, or quit smoking if you are a smoker, and reduce the consumption of alcohol.**

Teeth cleaning - toothbrushing

Toothbrushing was found to be a social norm. The habit of daily toothbrushing had been established at a young age. It can be observed from Figure 8.1 that except for the IOP group, over 90% of individuals of all the age groups reported the habit of daily brushing.

The regular use of toothpastes was common in both the 5-year old children (83.9%) and 12-year old students (94.5%) groups. Toothbrushing with toothpaste was almost universally reported among those with daily toothbrushing habit.

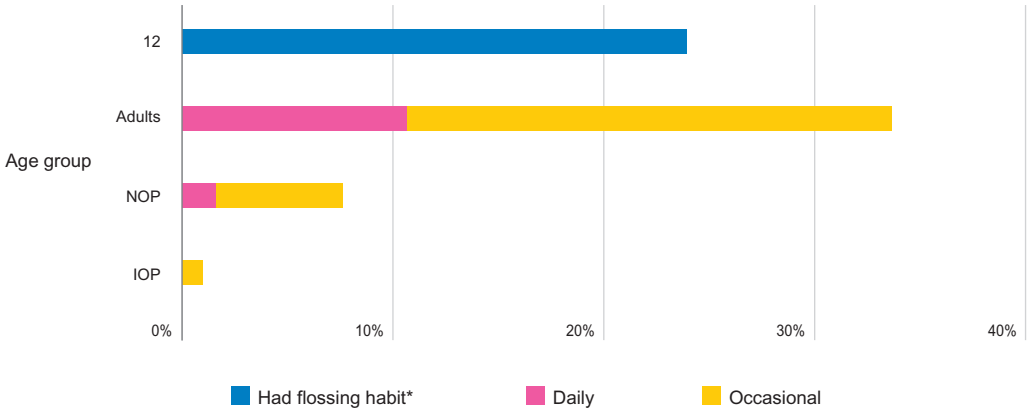
Figure 8.1
Reported toothbrushing habit of all age groups



Interdental cleaning - flossing

The reported flossing habit in all age groups (not applicable to the 5-year old children) are shown in Figure 8.2. The habit of flossing was still far from common for Hong Kong's population as a whole.

Figure 8.2
Reported flossing habit of all age groups@



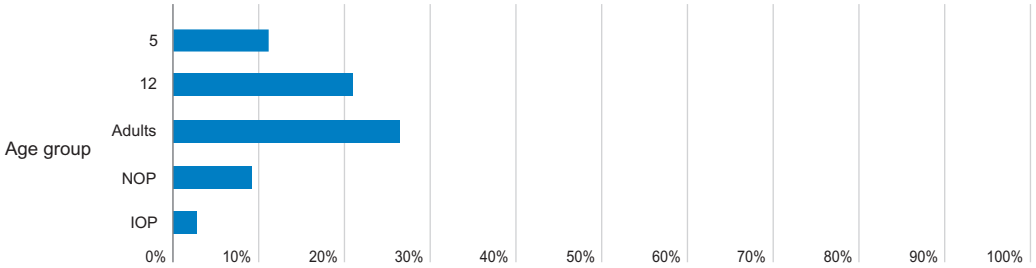
* Frequeucy of flossing unknown
@ Not applicable to 5-year old children

The purpose of proper teeth cleaning is to remove the dental plaque daily, and prevent its build up for it to cause damage to the teeth and gums. Mechanical cleaning is the only effective means to remove dental plaque. For toothbrushing to be effective in young children, parental assistance has to be provided. Toothbrushing, if properly performed, is effective for removing dental plaque on most tooth surfaces except the tight areas between adjacent teeth (interdental). Hence, toothbrushing is best complemented with proper interdental cleaning.

Usage of oral health care services - regular dental checkup

The proportion of people who claimed to have the habit of regular dental checkup is shown in Figure 8.3. Regular checkup was not at all a common practice. Although adults had the highest proportion with reported checkup habit, there were almost three out of four adults who still did not seek regular dental checkup.

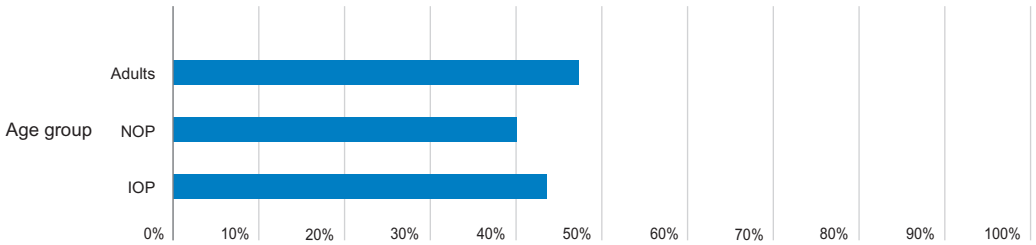
Figure 8.3
Reported habit of regular dental checkup of all age groups



Usage of oral health care services when there were perceived severe oral health problems

It was found that less than half of the adults and older persons with perceived severe oral health problems visited the dentist. (Figure 8.4) The proportion of people who did not seek attention was even higher for other "milder" perceived oral health problems.

Figure 8.4
Reported behaviour in seeking oral health care services when there were perceived severe oral health problems



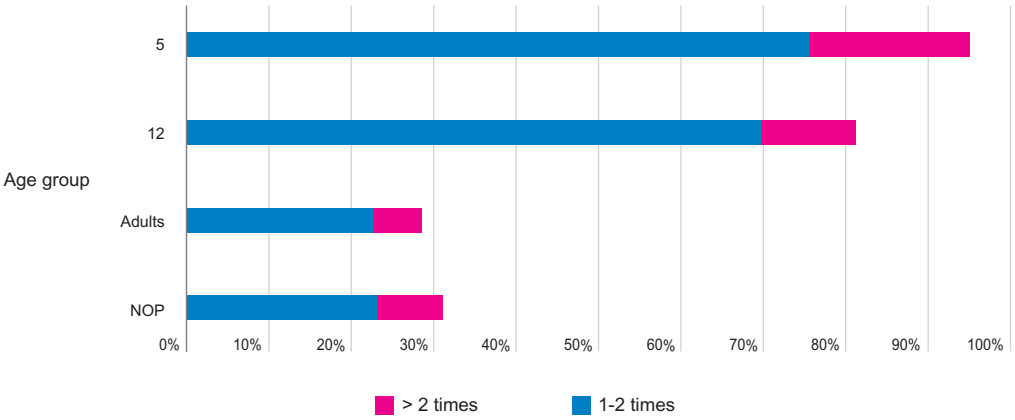
Regular dental checkup is not just about screening to detect the presence of disease. Its primary aim is to fortify the preventive aspects of care to prevent the onset of oral diseases. During regular checkup, family dentists can make appropriate personal advice on individual life-style and behaviour, give personal and individual instructions on the skill of teeth cleaning, and monitor the effectiveness of such home care behaviour, all in the name of improving oral health. It is evidence-based that one of the most effective ways to ensure proper dental plaque removal was for people to receive simple but individualized advice from dental personnel on a regular and repetitive basis[11]. It has also been shown in a local exploratory study that the usage rate of dental floss was significantly higher among regular dental visit attenders than among the irregular counterparts[12].

During dental checkup, family dentists can also provide preventive treatment such as fluoride application and fissure sealants. The diagnosis of diseases and the provision of curative treatment should not be the main thrust of the overall aim of regular dental checkup.

Dietary habit in relation to oral health - snacking

The reported snacking habit in all age groups are shown in Figure 8.5. Snacking habit was found to be more common among the younger population, and the proportion of the 5 and 12-year olds who snacked more than twice a day, was comparatively higher than the adult and older persons groups.

Figure 8.5
Reported snacking habit of all age groups

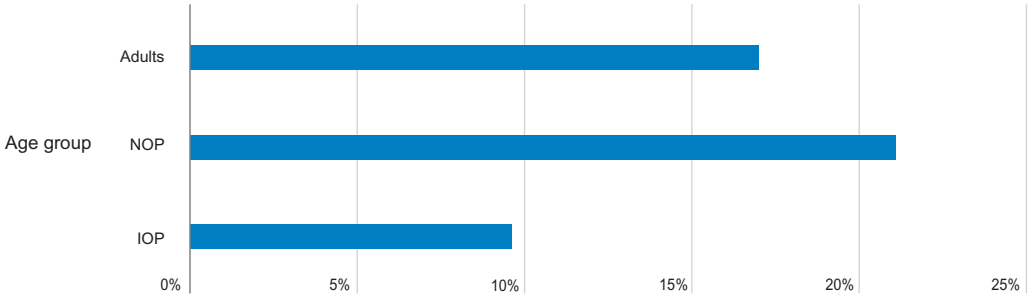


Diet is a complex issue with various considerations such as nutrition, content and frequency of food intake, which are important to both oral health and general health. In the context of oral health, the significant aspects of diet are the sugar content of food and the snacking frequency. Any food substances containing sugar, either artificially added or naturally occurring (such as lactose in milk and other sugar in fruits) can cause tooth decay. It is thus important to reduce the frequency of such food intake (including snacks, milk and fruits) as far as possible. Promotion of a healthy eating habit can be carried out on a community basis as well as individually. Dentist, ancillary dental personnel, doctor, and other health care workers, have roles to play in motivating their clients to adopt healthy eating habits.

Smoking habit

The reported smoking habit in the adult and older persons groups are shown in Figure 8.6. Smoking habit was relatively more common among NOP compared with the adults and the IOP.

Figure 8.6
Reported smoking habit
of the adult and older persons groups



Smoking is associated with a higher risk of developing destructive gum disease and oral cancer. Smoking is also a contributory factor to bad breath, not to mention the unsightly extrinsic stains on tooth surfaces from tobacco. The avoidance of tobacco use is an important factor in promoting general health and oral health.

There is room for improvement in the current life-style and behaviour conducive to optimal oral health.

Toothbrushing was the only oral health habit that was mostly practised, while interdental cleaning by flossing was not commonly practised. Effective teeth cleaning practices needs to be reinforced. Dental plaque was commonly found among the 5-year old children and 12-year old students. Calculus was present in nearly 60% of the 12-year old students. These were indications that the toothbrushing practice was not adequate in removing dental plaque. Only a small number of parents regularly helped their 5-year old children when they brushed their teeth.

The habit of seeking regular dental checkup was not common in the population. Of all the groups surveyed, the adults had a relatively higher percentage who had the regular dental checkup habit. Still, almost three out of four adults did not seek regular dental checkup. Short of this prescribed habit, the opportunities for professionally applied prevention therapy, as well as early diagnosis and early intervention would not be possible. Furthermore, the delay in seeking professional care in case of oral health problems may lead to the progressive deterioration of existent tooth decay and gum disease.

Frequent snacking and smoking are also risk factors. Of all age groups surveyed, snacking habit was more common among the 5 and 12-year olds. Smoking habit was reported by 17% of adults and 20% of NOP.

What were the perceived methods to prevent tooth decay and gum disease ?

Data from the children and student groups were collected by self-completed questionnaires where multiple choice answers had been provided. Data from the adults and older persons groups were collected through structured interviews and no choice in answers had been provided. Hence, attempts at directly comparing the knowledge level of these groups ought to be guarded at best.

Except for the 5-year old children themselves, the students, their parents, adults and older persons, were asked about their perceived methods of preventing tooth decay and gum disease, and the results are summarized in Table 8.8 and Table 8.9.

Table 8.8
Three most commonly perceived methods to prevent tooth decay as reported by different age groups

12-year old students	Parents of 5-year olds	Parents of 12-year olds	Adults	NOP
Toothbrushing in morning & night	Toothbrushing in morning & night	Toothbrushing in morning & night	Proper cleaning of teeth	Proper cleaning of teeth
Use fluoride toothpaste	Proper toothbrushing	Proper toothbrushing	Rinsing with water / salt water	Rinsing with water / salt water
Reduce consumption of candies	Reduce consumption of candies	Reduce consumption of candies	Reduce consumption of candies	Reduce consumption of candies

Table 8.9
Two most commonly perceived methods to prevent gum disease as reported by different age groups

12-year old students	Parents of 5-year olds	Parents of 12-year olds	Adults	NOP
Toothbrushing in morning & night	Toothbrushing in morning & night	Toothbrushing in morning & night	Proper cleaning of teeth	Proper cleaning of teeth
Avoid smoking	Proper toothbrushing	Proper toothbrushing	Avoidance of certain food	Avoidance of certain food

The commonly given responses for all age groups regarding the prevention of tooth decay were *toothbrushing in the morning and at night*, and the *reduction of consumption of candies*. It was encouraging to note that the knowledge of the 12-year old students were better than the adults, as more of them pinpointed the *use of fluoride toothpaste* as an effective means to prevent tooth decay.

For gum disease, the knowledge was found to be lacking, as a substantial proportion of the adults and older persons replied *don't know* (noting that they were not provided with any choice in answers). For those who responded, the commonly reported methods for prevention of gum disease were *toothbrushing* and *avoidance of certain food* (related to traditional Chinese medicine beliefs). Of all the age groups surveyed, it was encouraging to note that the 12-year old students cited *avoid smoking* as one of the other most commonly perceived methods to prevent gum disease.

Factors related to traditional Chinese medicine beliefs had been mentioned in relation to tooth decay and gum disease. Problems such as loosening of teeth were considered to be an expression of the imbalance between "yin" and "yang" (regarded as the two vital forces in the universe in traditional Chinese medicine) in the kidneys, and the remedy was to take nutritious food to strengthen and balance kidney function. Gum bleeding or swelling, and bad breath were believed to be caused by intense heat or "flaring fire" in the stomach, and the cure was to take herbal tea to "cool down the fire"[13]. The traditional Chinese medicine beliefs may have explained why the *avoidance of certain food* had been reported by adults and older persons in the prevention of gum disease.

The knowledge on ways to prevent tooth decay and gum disease were mostly mainstream ones. Other relevant factors in the prevention of these diseases, such as *reduce frequency of intake of food or drinks* (snacking), *avoid smoking*, and *seek regular checkup*, were not among the most commonly perceived methods cited. Except for the 12-year old students, where the *use of fluoride toothpaste* and *avoid smoking* were the commonly cited methods to prevent tooth decay and gum disease, respectively.

How did the people perceive the seeking of oral health care services ?

In the evaluation of people's attitudes towards oral health care services, it was observed that a relatively large proportion (52.9% adults, 64.9% NOP & 42.3% IOP) of respondents chose the response that *dentists are more concerned on treatment than to teach people how to prevent dental disease*.

In general, the adult and older persons groups had a high confidence on the dental profession, in terms of *their competence at solving oral health problems*. However, there were still concerns among these two groups on issues like the *worry of contracting contagious disease* and *pain* and *discomfort in dental treatment*. Furthermore, 27.9% adults and 17.1% NOP worried that *dentist may perform treatment that was unnecessary*.

The *uncertainty of cost* / *worry of high cost* had always been mentioned as one of the reasons for not visiting the dentist. There was an apparent lack of knowledge on the cost of oral health care, especially among the NOP. 6.5% of adults and 29.5% of NOP could not give an estimate of the cost of a dental checkup and professional cleaning (scaling). Among those who could give an estimate, the median estimate cost in both the adult and NOP groups was $300.

There was an expression of doubt on the value of oral health care services compared with the cost as shown by 51.7% adults and 37.6% NOP. The problem of cost of oral health care services might be the lack of price information, or the affordability of services, or it might well be the lack of appreciation and value placed on the cost of care. More in-depth evaluation is required in this respect.

Dental schemes might be a consideration to remove the cost barrier by removing the uncertainty of cost or actually reducing the cost, as the coverage by dental schemes was found to be associated with better usage of oral health care services in all age groups. It should be noted that even with dental schemes coverage, around one-third of people in all age groups still did not seek oral health care services.

Many respondents did not perceive dentists as being associated with prevention.

Coverage by dental schemes was found to be associated with better usage of oral health care services. Whether the coverage by dental schemes was the cause of the more favourable usage of oral health care services could not be ascertained by this survey. Even with coverage, other barriers might still deter some people from seeking oral health care services.

Pain was found to be an important determining factor in the oral health care seeking behavior in all age groups. The absence of pain was often interpreted by students, parents, adults and older persons as a sign of good oral health and hence, did not warrant dental checkup. When their perceived dental treatment need was compared with the assessed need based on the survey criteria, it was found in all age groups that most of the preventive and curative treatment needs had not been perceived.

There was the expected disparity between the perceived oral health care need and the assessed need. It was generally observed that the assessed oral health care need was higher than what was perceived. In other words, in the absence of pain or discomfort, people did not perceive that they had any oral health care needs, when in fact they needed preventive and/or curative treatment.

Even in the presence of discomfort, it was found that the seeking of care was often delayed. It was generally perceived that the discomfort would relieve by itself. People tended to ignore pain and discomfort, or attempted to manage the discomfort by themselves. Similar results were obtained from another study, where majority of the people who experienced various types of dental pain still did not visit the dentist. A lot of them had tried to use various alternative methods, including Chinese herbs, over-the-counter medication, acupuncture, homeotherapy, and aromatherapy, to control their pain, and these methods were reported to be effective by the majority[14].

Tooth decay and gum disease are usually described as **silent epidemics**, since they are progressively destructive without obvious symptoms during its early stages of development, nor are the conditions perceptible by the affected person. When oral health problem is perceived, the condition is usually in the moderate or advanced stage of tissue destruction. Thus, it has been advocated by the dental profession that individuals should seek regular dental checkup, to detect disease early, and to initiate intervention early, in order to minimize the extent of the damage.

Minor but perceptible signs are usually tell-tale signs of underlying problems. Tooth sensitivity may be a sign of tooth decay, or exposed root surfaces. Bleeding gums may be a sign of gum inflammation. More apparent signs and symptoms such as mobile teeth, abscess and severe pain are already an indication of advanced stages of tooth decay or gum destruction. When an individual has perceived oral health problems, professional care is already urgently required.

There were barriers to the demand for oral health care services. The problem of cost of oral health care services may be the lack of price information, or the affordability of services, or it may well be the lack of appreciation and value placed on the cost of care. More in-depth evaluation is required in this respect. Among adults and NOP, there were some who worried about issues like *contracting contagious disease and pain* and *discomfort in dental treatment.* It was not conclusive as to whether the problem of cost was the affordability factor or its perceived value.

What was the people's attitude towards tooth loss ?

More than one-third of the parents had opined either to leave any decayed teeth in their children's mouth untreated, or have them removed. The removal of the offending tooth appeared to be an expedient solution to oral health problems, as observed among some of the adults and more so among the NOP.

It was observed among the NOP where the level of tooth loss was associated with more negative impact on daily life, that the aspect affected was on the eating function. Where the problem of tooth loss was more prominent among the IOP, disturbance in speech and psychological discomfort due to dissatisfaction to appearance were also raised.

The removal of teeth was a common solution to teeth-related oral health problems especially among the adults and older persons groups.

Tooth loss was considered by most as a natural eventuality in life. To 41.2% adults, 62.7% NOP, and 70% IOP, tooth loss was considered as a part of aging.

Tooth loss at old age can be avoided, and actions to achieve this must start as early as possible. The pan-population view of the survey findings suggested that tooth loss at old age was most probably the result of years of lack in appropriate oral health care during their younger stages of life. The historical comparisons showed that the degree of tooth loss in Hong Kong has been decreasing. Looking into the future, funther reduction in tooth loss and better improvement in oral health are still possible. Individuals in our community may still improve their oral health by adoption of a life-style conducive to optimal oral health.

Tooth loss at old age is not a natural eventuality in life. Attaining optimal level of oral health requires conscious efforts by each individual, along with the concerted efforts of the Government, the dental profession, the dental school, and the community as a whole. **Prevention holds the key to good oral health, which is essential to everyone's personal health and well-being**.