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Department of Health

HIGHLIGHTS

ORAL HEALTH SURVEY

2021

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INTRODUCTION

Oral health is integral to general health and enables individuals to perform essential functions, such as eating, breathing and speaking, and encompasses psychosocial dimensions, such as self-confidence, well-being and the ability to socialize and work without pain, discomfort and embarrassment. In response to the recommendation of the World Health Organization (WHO), surveillance of oral health on community level thus has to be done at regular intervals.

Since 2001, the Department of Health (DH) has committed to conduct a territory wide Oral Health Survey (OHS) in Hong Kong every 10 years, the purposes of which are to collect up-to-date information on the oral health status of citizens and provide a useful database for planning and development of public dental services that suit the needs of the population.

The Oral Health Survey (OHS) 2021 was conducted 10 years after the second territory-wide survey in 2011. The objectives of the OHS 2021 were to obtain relevant information on i) the oral health condition of the people of Hong Kong; ii) the oral health related behaviours of the population; and iii) the factors that facilitate behaviours conducive to good oral health and barriers which prevent people from adopting positive behaviours. The survey methodology followed the basic principles of the WHO recommendation. Same as the two previous OHSs 2001 and 2011, the OHS 2021 report also focuses on two most common but preventable oral diseases, tooth decay (dental caries) and gum disease (periodontal disease), which affect many people. In OHS 2021, the following index age and age groups were selected: (a) 5-year old children to evaluate the status of primary teeth; (b) 12-year old students, representing the complete change from primary dentition to permanent dentition stage, to monitor the diseases trends of permanent teeth; (c) 35 to 44-year old adults to evaluate the oral health condition of the adult population; (d) 65 to 74-year old non-institutionalized older persons (NOP) to obtain information on the oral health condition of this age group which is becoming more important as the Hong Kong population is aging; and (e) the aged 65 and above Social Welfare Department long term care services (LTC) users to assess the oral health condition and needs of functionally dependent older persons receiving long term care services. These LTC users may have difficulties in daily oral hygiene and access to professional care, and they require our special attention.

Measurement of tooth decay experience (DMFT/dmft index)

In this survey, tooth decay was defined as the occurrence of cavity extended into dentine. The number of permanent teeth with untreated decay (cavity) is referred to as DT (decayed teeth, and dt for decayed primary teeth). The number of permanent teeth with decay in the past but have already been repaired by restorative procedures is referred to as FT (filled teeth, ft for filled primary teeth). The number of permanent teeth that were removed (extracted) due to decay is referred to as MT (missing teeth, mt for missing primary teeth). The sum of DT, MT and FT is referred to as the DMFT score or value, which reflects the total number of permanent teeth that has been affected by tooth decay in the past and at present. DMFT score or value is used for decay experience of permanent teeth, and dmft for decay experience of primary teeth. The level of tooth decay experience in a population can be represented by the mean values of DT, MT, FT and DMFT, as well as by the proportion of population affected by each type of decay experience.

Measurement of gum disease (index teeth, half mouth and full mouth)

Traditionally, gum health is assessed by dividing all teeth in the mouth into six segments called sextants according to the WHO recommendation. Not all teeth in a sextant are examined, but only an index tooth or index teeth as specified by the WHO are examined. A sextant would be excluded from examination if less than two teeth are remaining, and a person would be excluded if all 6 sextants are excluded from examination.

Similar to tooth decay, gum disease may affect only some of the teeth present in a mouth. The measurement of the level of gum disease ideally should include all the teeth present. The current international trend is to examine at least all teeth on one side of the mouth (called half-mouth examination) or preferably to examine all teeth present (called full-mouth examination). The use of only index teeth in each of the six sextants may under-estimate the level of gum disease. However, the choice of examination method is dependent on the health status of the subjects in general as well as the environment in conducting the oral examination.

In this Oral Health Survey, there was time constraint in examining large groups of 5- and 12-year old students with minimal interruption of their daily routines, thus half-mouth examination was performed so as to get sufficient amount of information without causing too much disturbance to the students and schools.

For the adults and NOP groups, full mouth examination was performed although it is more time-consuming and could be more stressful to the individuals being examined. The investigators carrying out oral examination were experienced in doing this kind of oral health survey. They could perform the examination orderly within a reasonable time. In this way, the information collected will be more closer to the actual status of the individual.

For the long-term care service (LTC) users groups, they had difficulties in tolerating lengthy oral examination. Therefore, the examination of index teeth by sextants was adopted.

This highlight version contains key results of the Survey only. For detailed descriptions and findings of the OHS 2021, please refer to the full report. The full report can be viewed or downloaded from the website https://www.toothclub.gov.hk/ of the Department of Health Oral Health Promotion Division.

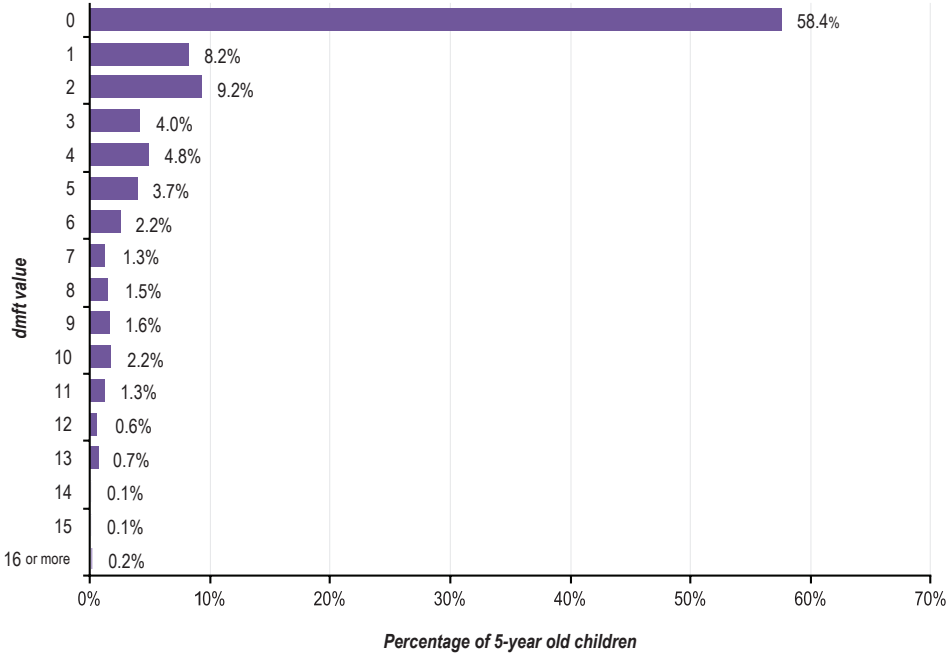
SECTION 1

5-year old children

Tooth Status – what was the level of tooth decay experience

The level of tooth decay experience in the 5-year old children as measured by the mean decayed, missing, and filled teeth (dmft) value was 1.8. Most of the tooth decay experience (dmft) was the decay component (dt) with 88.9% (1.6/1.8) of the affected teeth untreated. The distribution of decayed teeth among the children was skewed (Figure 1.1). Up to 58.4% had no decay, but about 20.2% of the rest had four or more teeth with tooth decay experience (dmft > 3) which accounted for 78.8% of all the teeth with decay experience among the 5-year old children.

Figure 1.1 ***Distribution of 5-year old children according to dmft value***



Base: All 5-year old children
2021: (N = 39 700)

The level of the tooth decay experience among 5-year old children and the percentage of children affected in the 2001, 2011, and 2021 surveys are listed in Table 1.1 and Table 1.2.

Table 1.1 ***Level of tooth decay experience as measured by the dmft index among 5-year old children in 2001, 2011 and 2021***

Tooth decay experience	2001 (N = 67 300)	2011 (N = 52 300)	2021 (N = 39 700)
Mean dmft	2.3	2.5	1.8
Mean dt (decayed)	2.1	2.3	1.6
Mean mt (missing)	< 0.05	< 0.05	< 0.05
Mean ft (filled	0.2	0.2	0.2

Base: All 5-year old children

Table 1.2 ***Percentage of 5-year old children with tooth decay experience in 2001, 2011 and 2021***

Tooth decay experience	2001 (N = 67 300)	2011 (N = 52 300)	2021 (N = 39 700)
dmft	51.0%	50.7%	41.6%
dt (decayed)	49.4%	49.4%	39.2%
mt (missing)	1.3%	0.7%	1.2%
ft (filled	7.4%	7.3%	6.0%

Base: All 5-year old children

Dental abscess was present in 0.9% (3 00) of the 5-year old children. Most of these abscesses were probably associated with extensively decayed teeth. The percentage of children with abscess was lower than that found in the 2001 and 2011 survey (around 6%).

Tooth status – how clean were the teeth ?

The cleanliness of the children's teeth was measured by the percentage of tooth surfaces with visible dental plaque. The mean percentage of tooth surfaces with visible dental plaque in the 5-year old children was 17.3%. In 2001 and 2011, the mean percentages were 23.5% and 22.1% respectively.

What was the oral health related behaviour of the 5-year old children?

- About 77.9% of the 5-year old children brushed their teeth twice or more daily while only 3.3% of them brushed less than once a day.
- Up to 59.7% of parents reported that they sometimes assisted their children in toothbrushing while 30.7% of parents always did so.
- Almost all parents (97.0%) reported that their children always used toothpaste when they brushed their teeth. However, 60.7% of them reported that the toothpaste contained fluoride while 14.4% of them used non-fluoridated toothpaste and 24.9% of them did not know its content.
- Around 67.4% of the parents reported that their children snacked daily and 9.9% would give snacks to their children three times or more per day.

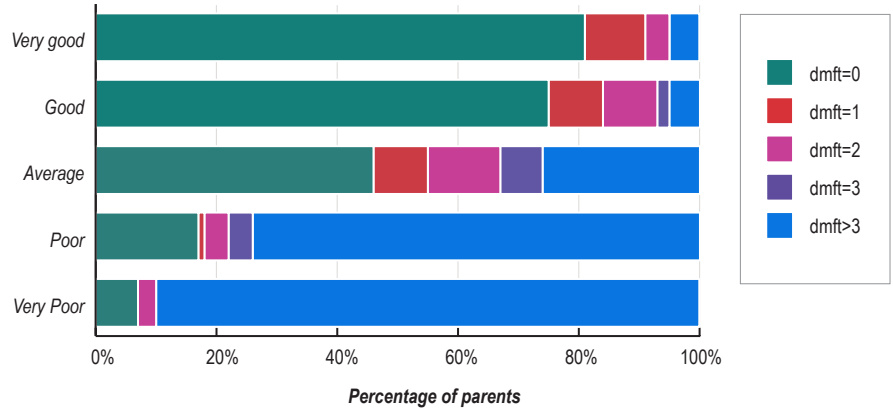
What did the parents know about dental diseases?

- Up to 97.5% of the parent considered taking too much sugary food or drink as a risk factor for tooth decay. About half (49.4%) of them could identify eating or drinking too frequently as a factor.
- Almost half (49.8%) and one-third (36.7%) of the parents had the misconceptions that not rinsing after meal and lack of calcium were relevant factors for increasing the risk of tooth decay.
- The majority of parents (86.1%) could identify that inadequate brushing along the gum line was a risk factor for gum disease while almost half (44.3%) of them knew that not using dental floss was also a risk factor.
- Among the parents, 40.1% of them knew that smoking was a risk factor for gum disease.

What were the parents' perceptions of the oral health of their 5-year old children?

The parents' perception of very poor oral health aligned with their children's actual oral health condition, as 93.7% of the children whose parents rated them as having very poor oral health condition had more than three teeth with decay experience (dmft>3). However, the parents' perception of good or very good oral health were less precise. Up to 12.5% and 15.3% of the children whose parents rated them as having very good oral health and good oral health respectively actually had dmft value of 2 or above.

***Figure 1.2** Oral health condition of 5-year old children as perceived by their parents and the children's decay experience*



Base: All parents of 5-year old children 2021: (N = 39 700)

What was the pattern of utilization of oral health care services among the 5-year old children?

- Only 25.9% of the parents had brought their 5-year old children to visit dentist.
- Among the children who had visited dentist, up to 39.8% of the parents reported that the major reason for the visit was checkup.

Table 1.3 Distribution of 5-year old children with dental visit experience according to the reported major reason for their latest dental visit

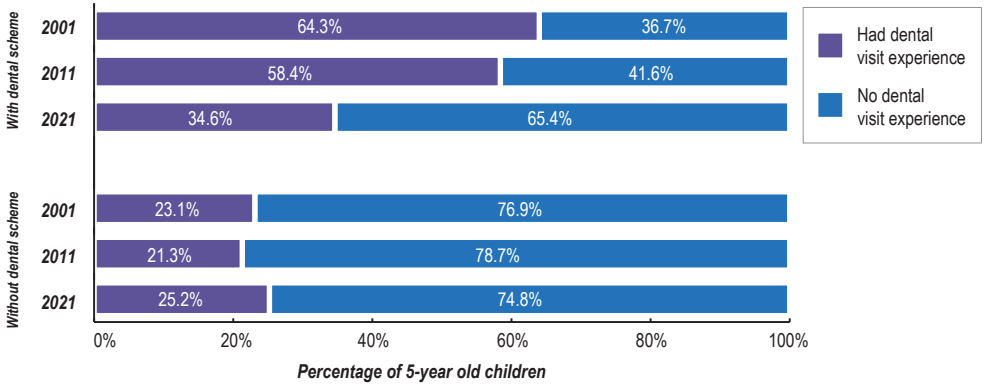
Major reason for the children's latest dental visit	Percentage	Sub-categories of major reason for the children's latest dental visit	Percentage
Checkup	39.8%	Checkup	39.8%
Tooth problem	46.5%	Suspect tooth decay	29.1%
		Toothache	10.6%
		Trauma	6.8%
Other reasons	13.7%	Other reasons	13.7%

Base: All 5-year old children who had previous dental visit and whose parents responded to the question 2021: (N = 10 300)

- Around 61.8% of the parents preferred to have their children's decayed teeth restored and only 12.1% preferred to have them extracted. About 20.4% of the parents did not know what to do or chose to leave the decayed teeth alone.

- Up to 34.6% of the parents of those children who were covered by dental scheme had brought their children to visit dentist while only 25.2% of parents of those children without dental scheme coverage had done so (Figure 1.3).

Figure 1.3 Distribution of children according to dental scheme coverage and their dental visit experience in 2001, 2011 and 2021



Base (with dental scheme):
All 5-year old children covered by dental scheme and whose parents answered the questions
2001: (N = 7 100) 2011: (N = 5 200) 2021: (N = 3 300)

Base (without dental scheme):
All 5-year old children not covered by dental scheme and whose parents answered the questions
2001: (N = 60 200) 2011: (N = 47 000) 2021: (N = 36 400)

Summary and way forward

Compare with the past twenty years, there was a further improvement in the level of tooth decay experience. However, the population of 5-year old children with decay experience remained high and skewed over the latest ten years and up to 88.9% of the decayed teeth in children were untreated. Regarding the oral health home care behavior of the 5-year old children, most of them always brushed their teeth with toothpaste, and a higher proportion of them got parental assistance when they brushed. The slow improvement in the decay experience could thus partly be attributed to the fact that most of the children did not go for dental checkup where they could receive individualized oral health education and early preventive intervention. In this survey, nearly 75% of the 5-year old children had never visited a dentist. During the COVID-19 pandemic, only 25.9% of the parents of 5-year old children had brought their children to visit dentist. Around half of them (46.5%) did so mainly because of dental problems. The low dental checkup rate, together with the wrong perception of some parents that the oral health of their children was good or very good while in fact they had tooth decay with dmft value of 2 or above, could result in many decayed teeth remain undetected or untreated.

Looking at the way forward, the dental profession needs to further strengthen oral health education to parents of young children and encourage them to have regular dental checkup from as early as 6 months after the eruption of the first tooth. Early screening programme of the infant could help early identification of the high risk group for dental decay. Parents should also be further motivated to help their children with toothbrushing and reduce snacking frequency. This survey showed that the use of fluoride toothpaste of the parents was polarized. About 60% of the parent used fluoride toothpaste for their children. On the other hand, more than 10% of the parents used non-fluoridated toothpaste. Continual promotion of using fluoridated toothpaste and establishing good dietary habit are required. The initiation of dental programmes that focus on pre-school children and risk assessment may help in early diagnosis, prevention and intervention of oral diseases.

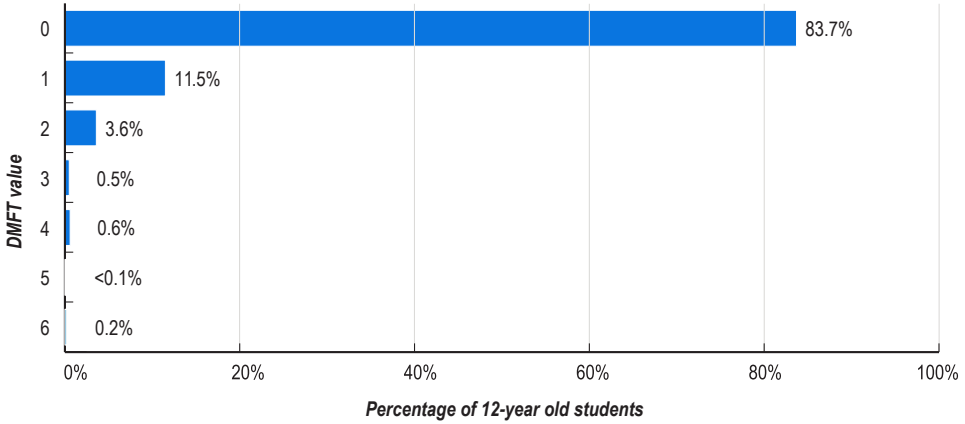
SECTION 2

12-year old students

Tooth Status – what was the level of tooth decay experience

The level of tooth decay experience in the 12-year old students as measured by the mean Decayed, Missing and Filled Teeth (DMFT) index was found to be very low with a mean DMFT value of 0.24. Only 16.3% of the students had tooth decay experience in their permanent teeth. For the students with tooth decay experience, most of them had only one affected tooth (Figure 2.1).

Figure 2.1 ***Distribution of 12-year old students according to DMFT value***



Base: All 12-year old students
2021: (N = 50 000)

The level of tooth decay experience in the 12-year old students and the proportion of students affected as found in the 2001, 2011 and 2021 surveys are showed in Table 2.1 and Table 2.2.

***Table 2.1** Level of tooth decay experience as measured by the DMFT index among 12-year old students in 2001, 2011 and 2021*

Tooth decay experience	2001 (N = 67 100)	2011 (N = 56 900)	2021 (N = 50 000)
Mean DMFT	0.8	0.4	0.24
Mean DT (decayed)	0.1	0.1	0.05
Mean MT (missing)	0.1	< 0.05	0
Mean FT (filled	0.6	0.3	0.19

Base: All 12-year old students

***Table 2.2** Percentage of 12-year old children with tooth decay experience in 2001, 2011 and 2021*

Tooth decay experience	2001 (N = 67 100)	2011 (N = 56 900)	2021 (N = 50 000)
DMFT	37.8%	22.6%	16.3%
DT (decayed)	6.9%	5.4%	4.2%
MT (missing)	3.1%	0.5%	0.0%
FT (filled	33.8%	19.3%	13.3%

Base: All 12-year old students

What was the gum condition of the students?

The gum condition of the 12-year old students as measured by the Community Periodontal Index (CPI) are shown in Table 2.3 and Table 2.4.

Table 2.3 ***Gum condition as measured by CPI among 12-year old students***

Gum condition	No bleeding gum and calculus detected	Bleeding gum + no calculus	Calculus +/- bleeding gum
Percentage among population	16.0%	62.8%	21.2%

Base: All 12-year old students who received examination on gum condition 2021: (N = 49 100)

Table 2.4 ***Mean number of sextants with healthy gum, bleeding gum and calculus in 12-year old students***

Gum condition	No bleeding gum and calculus detected	Bleeding gum + no calculus	Calculus +/- bleeding gum
Mean number of sextants (6 sextants per person)	3.6	2.1	0.3

Base: All 12-year old students who received examination on gum condition 2021: (N = 49 100)

Comparing the results of this survey to that of 2001 and 2011 surveys, the gum condition of the 12-year old students had shown some improvement. In the present survey, an increased proportion of students (16.0% as compared with 5.5% and 13.8% in the 2001 and 2011 surveys respectively) had healthy gum in all parts of their mouth with no bleeding gum and calculus and a decreased proportion of them (21.2% as compared with 59.5% and 22.4% in the 2001 and 2011 survey respectively) had calculus present in some parts of the mouth.

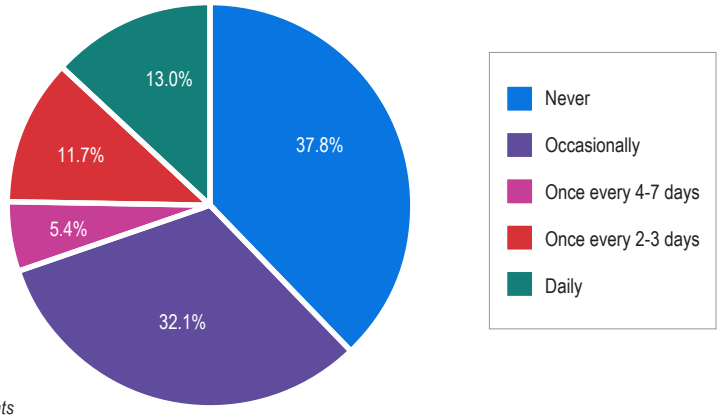
Tooth status – how clean were the teeth?

The cleanliness of the teeth of the 12-year old students as measured by the mean percentage of tooth surfaces with visible dental plaque was found to be 21.7%. In 2001 & 2011, the mean percentage of tooth surfaces with visible dental plaque are 36.8% and 27.0% respectively. There had been continual improvement in the cleanliness of the students' teeth.

How did the 12-year old students practice oral self-care?

- Up to 80.2% of the students brushed twice or more a day. Only (2.7%) of the students brushed less than once a day.
- Almost all (95.5%) of the students reported that they always used toothpaste when they brushed their teeth. However, only 58.8% of them knew that the toothpaste they were using contained fluoride.
- Up to 62.2% of the students reported that they used dental floss. However most of the them floss only used it occasionally (Figure 2.2).
- About 70% of the students had no snacking habit but 9.7% snacked three times or more per day.

Figure 2.2 Distribution of 12-year old students according to frequency of using dental floss



Based: All 12-year old students 2021: (N=50 000)

What did the students and their parents know about dental diseases?

- Majority of students and parents (92.5% and 90.8% respectively) knew that taking too much sugary food or drink could increase the risk of tooth decay. More than 40% of them (40.4% of students and 49.9% of parents) knew that eating or drinking too frequently was a risk factor for tooth decay.

- About 60% of the students and parents (57.0% and 66.0% respectively) could identify not brushing the teeth with fluoride toothpaste in the morning and at night was a risk factor for tooth decay.

- Up to 68.1% of the students and 81.5% of the parents could identify inadequate brushing along the gum line as a risk factor for gum disease while 31.2% of the students and 42.5% of their parents knew that not using dental floss was a risk factor.

- About half (50.3%) of the student and one third (31.2%) of the parents knew that smoking was a risk factor for gum disease.

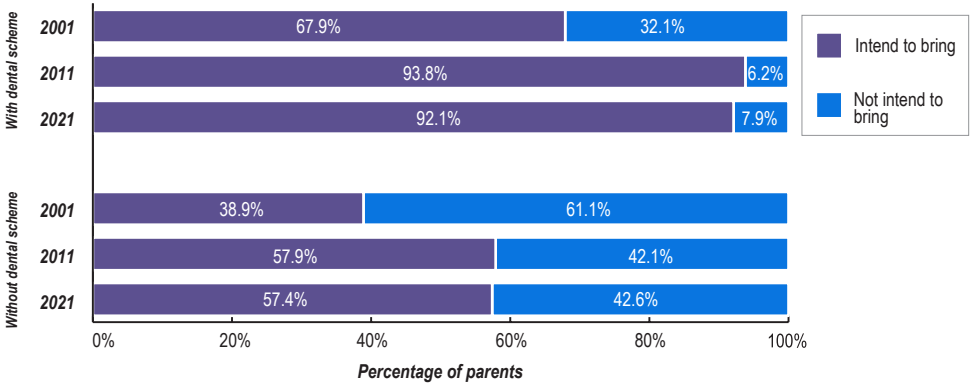
What was the pattern of utilization of oral health care services among the 12-year old children?

- About 70% of the students and their parents (67.8% and 68.6% respectively) considered regular dental checkup was a way of preventing tooth decay. Whereas, about half (56.5%) of the students and two-third (67.0%) of parents considered regular dental checkup was a way of preventing gum disease.

- When the parents were asked whether they intended to bring the 12-year old students to seek regular dental checkup, 62.5% of them indicated that they would do so. Up to 24.5% of the 12-year old students had visited the dentist after entering secondary school, and the main type of treatment received was professional tooth cleaning (scaling).

- Up to 92.1% of the parents of those students who were covered by dental scheme reported the intention to bring the students to seek regular dental checkup while only 57.4% of parents of those students who were not covered by dental scheme intended to do so (Figure 2.3).

Figure 2.3 ***Distribution of parents of 12-year old students according to whether they intended to bring the students to seek regular dental checkup in 2001,2011 and 2021***



Base (with dental scheme): All parents of those 12-year old students covered by dental scheme who answered the questions
2001: (N = 9 600) 2011: (N = 9 800) 2021: (N = 7 400)

Base (without dental scheme): All parents of those 12-year old students not covered by dental scheme who answered the questions
2001: (N = 57 500) 2011: (N = 47 100) 2021: (N = 42 700)

Summary and way forward

The findings of the 2001, 2011 and 2021 surveys indicated that the level of tooth decay experience of the 12-year old students was on a downward trend continuously, and had dropped to a very low level. Also, further improvement was found in their gum health, whereas the oral health knowledge and the oral care habit were maintained. Over 60% of parents responded that they intended to bring the students to checkup.

In general, most students still had bleeding gum and calculus in parts of their mouth. Many of them used floss occasionally and daily flossing habit had not yet been established among the students. The survey also showed there was room for improvement in some aspects of their oral health knowledge and perception over the years. As before, a sizeable proportion of students and parents were still unaware of the fact that frequent eating or drinking was a risk factor for tooth decay. Only half of the students could relate smoking to gum disease. The risk and harmful effect of frequent eating or drinking on teeth and smoking on the gum should be reinforced in future oral or general health education by dental professionals. In addition, although tooth decay is not a great concern for this age group, their knowledge on oral health should be enhanced. There was still a significant proportion of students who were not aware of the benefits of fluoride and regular dental check-up. As this group of students had already left the School Dental Care Service administered for primary school children, some form of dental checkup scheme could be considered by the Government for secondary school students as a follow up of their oral health condition. In fact, the Hong Kong Government is going to launch a primary dental care scheme for adolescents to encourage regular dental checkup among the age groups. We hope that through the scheme, their oral health knowledge and habits could be strengthened, and they can take good care of their oral health themselves and maintain good oral health until old age without losing any of their teeth.

SECTION 3

35 to 44-year old adults

Tooth loss condition

It was recognized by the World Health Organization that a functional and aesthetic dentition required no less than 20 well distributed teeth. The proportion of adults who had 20 teeth was assessed in this survey. In this survey, each adult had an average of 28.9 teeth and 99.9% (983 800) of them had at least 20 teeth (Table 3.1). Almost all adults had at least 10 occluding pairs (99.1%) (Table 3.2).

Table 3.1 ***Percentage of adults with at least 20 teeth left in 2001, 2011 and 2021***

Number of teeth left	2001 (N = 1 354 700)	2011 (N = 1 062 900)	2021 (N = 985 200)
≥ 20 teeth left	99.2%	99.8%	99.9%

Base: All Adults

Table 3.2 ***Percentage of adults with number of occluding pairs in 2021***

No. of occluding pairs*	Percentage
0 – 9 pairs	0.9%
≥ 10 pairs	99.1%

Base: All Adults
2021: N = 985 200
**Occluding pairs formed by natural tooth with natural tooth/fixed prosthesis are counted.*

Only 6.1% of adults were found with dental prostheses, irrespective of the type. 6.0% of adults had dental bridges and 3.2% had dental implants (Table 3.3).

Table 3.3 ***Percentage of adults with different types of dental prostheses in 2021***

Type of dental prostheses	2021 (N = 985 200)
With any prostheses	6.1%
With dental bridges	6.0%
With removable partial dentures	0.3%§
With full dentures	0.0%§
With dental implants	3.2%

Base: All adults

§ *This estimate was compiled based on a very small sample. Readers are advised to interpret this estimate with caution.*

Level of tooth decay experience

The mean DMFT value among the adult population was 6.6. When compared with 2001 and 2011, adults had slightly more teeth remaining (from 28.1 in 2001, 28.6 in 2011 and 28.9 in 2021) (Table 3.4).

Table 3.4 ***Level of tooth decay experience as measured by the DMFT index among adults in 2001, 2011 and 2021***

Tooth decay experience	2001 (N = 1 354 700)	2011 (N = 1 062 900)	2021 (N = 985 200)
Mean DMFT	7.4	6.9	6.6
Mean DT (Decayed)	0.7	0.7	0.7
Mean MT (Missing)	3.9	3.4	3.1
Mean FT (Filled)	2.8	2.8	2.8

Base: All Adults

The proportion of adults with tooth decay experience remained more or less the same over the years (Table 3.5).

Table 3.5 ***Percentage of adults with tooth decay experience in 2001, 2011 and 2021***

Tooth decay experience	2001 (N = 1 354 700)	2011 (N = 1 062 900)	2021 (N = 985 200)
DMFT	97.5%	96.1%	95.9%
DT (Decayed)	32.0%	31.2%	31.7%
MT (Missing)	91.4%	89.7%	86.2%
FT (Filled)	66.6%	67.4%	67.0%

Base: All Adults

Although the level of coronal caries remained stable, there was an increase observed in the proportion of adults with decayed and untreated root surface (5.9% in 2021, 3.0% in 2011) (Table 3.6).

Table 3.6 ***Percentage of adults with root surface decay experience in 2001, 2011 and 2021***

Root surface decay experience	2001 (N = 1 354 700)	2011 (N = 1 062 900)	2021 (N = 985 200)
DF-root	4.2%	4.0%	7.2%
D-root (Decayed)	3.4%	3.0%	5.9%
F-root (Filled)	1.0%	0.9% §	1.4%

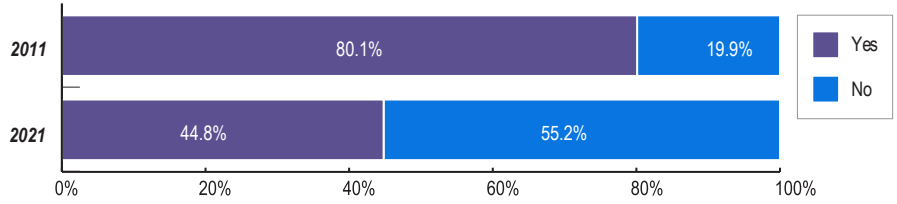
Base: All Adults

§ This estimate was compiled based on a very small sample. Readers are advised to interpret this estimate with caution.

Gum condition

There were 44.8% (441 200) of adults having half or more of their teeth with bleeding gums, which was significantly lower than adults in 2011 (80.1%) (Figure 3.1). There was an increase in the proportion of adults with deeper gingival pockets of 4 mm or above (Table 3.7). It was noted that higher proportion of back teeth (molars) had shallow or deep pockets than other tooth types (Table 3.8).

Figure 3.1 ***Percentage of adults having half or more of the teeth with bleeding gums***



Base: All adults
2011: N = 1 062 900
2021: N = 985 200
(The same data was not available in 2001 for comparison)

Table 3.7 ***Percentage of adults according to the highest pocket depth in 2001. 2011 and 2021***

Highest pocket depth	2001 (N = 1 354 700)	2011 (N = 1 062 900)	2021# (N = 985 200)
0-3 mm (Not considered as pocket)	54.0%	60.4%	42.6%
4-5 mm (Shallow pocket)	38.9%	29.8%	42.6%
≥ 6 mm (Deep pocket)	7.1%	9.8%	14.8%
Total	100.0%	100.0%	100.0%

Base: All Adults
 # The diagnostic methodology was extended to include all teeth in the mouth in 2021 instead of half mouth in 2011 and index teeth in 2001

Table 3.8 ***Mean percentage of teeth according to the pocket depth of adults in 2021***

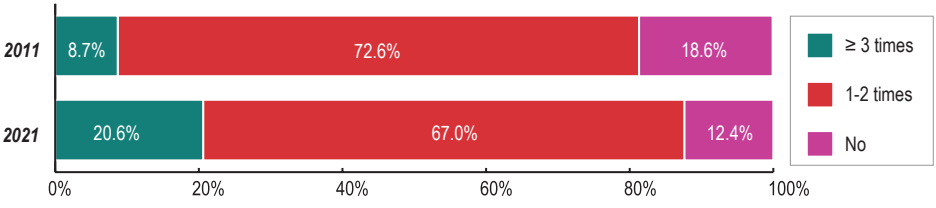
	Molars (back teeth)	Premolars	Incisors and canine
Shallow pockets (pocket depth 4-5 mm)			
Upper teeth	24.0%*	13.7%	8.4%
Lower teeth	15.2%*	8.1%*	6.2%
Deep pockets (pocket depth 6 mm+)			
Upper teeth	3.4%	1.1%**	1.0%
Lower teeth	3.3%**	0.4%**	0.4%
Missing			
Upper teeth	3.2%	5.1%	1.1%
Lower teeth	6.2%	3.7%	1.3%

Base: All adults
** bleeding on probing was detected in >80% of this teeth group*
***bleeding on probing was detected in >90% of this teeth group*

Oral health related behaviours

There was a surge in the proportion of adults reported having snack or food consumption at least three times daily other than normal meals (8.7% in 2011 to 20.6% in 2021) (Figure 3.2).

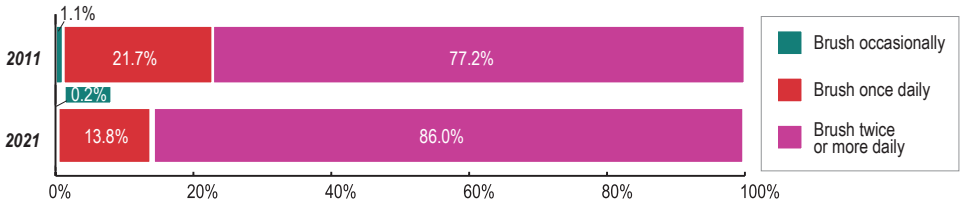
Figure 3.2 ***Percentage of adults according to daily frequency of snacking or food consumption other than normal meals***



Base: All adults
2011: N = 1 062 900
2021: N = 985 200

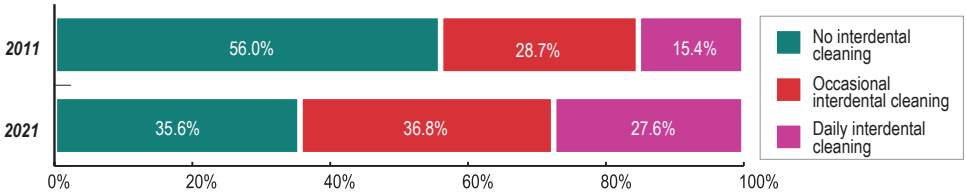
Toothbrushing twice daily had become a well-established oral hygiene habit (Figure 3.3). At the same time, the proportion of adults who practised daily interdental cleaning has nearly doubled (Figure 3.4). Proportion of adults with smoking habit remained stable over the past 10 years (Figure 3.5).

***Figure 3.3** Percentage of adults according to toothbrushing habit*



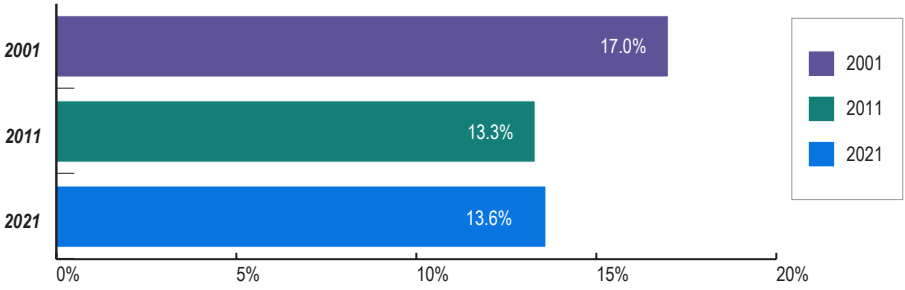
Base: All adults
2011: N = 1 062 900
2021: N = 985 200

***Figure 3.4** Percentage of adults according to the intercleaning habit*



Base: All adults
2011: N = 1 062 900
2021: N = 985 200

***Figure 3.5** Percentage of adults with smoking habit*

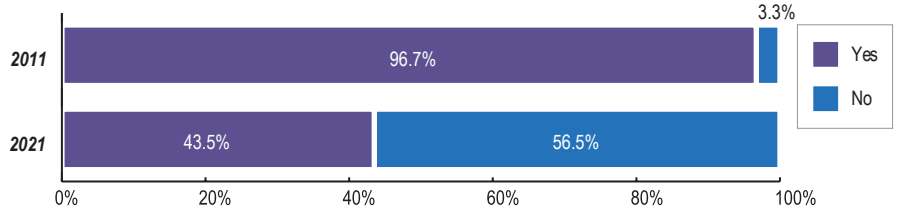


Base: All adults
2001: N = 1 354 700
2011: N = 1 062 900
2021: N = 1 010 700 (Population Health Survey 2020-2022 Data)*

Cleanliness of teeth

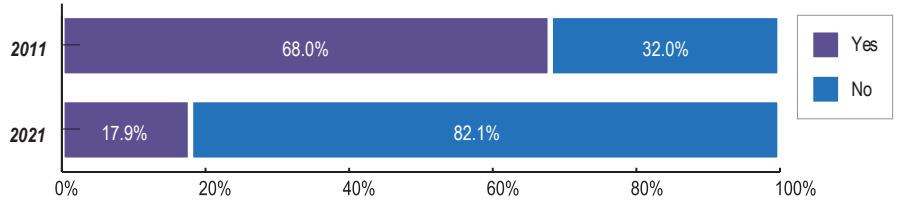
There was an improvement in the level of plaque control which was supported by a noticeable decline in the number of adult's teeth being covered by visible dental plaque and calculus (Figure 3.6 and 3.7).

***Figure 3.6** Percentage of adults having visible dental plaque on half or more of their teeth*



Base: All adults
2011: N = 1 062 900
2021: N = 985 200

***Figure 3.7** Percentage of adults having calculus on half or more of their teeth*

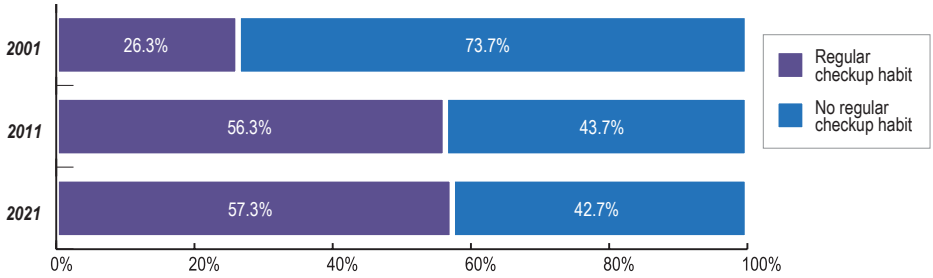


Base: All adults
2011: N = 1 062 900
2021: N = 985 200

Dental checkup habit

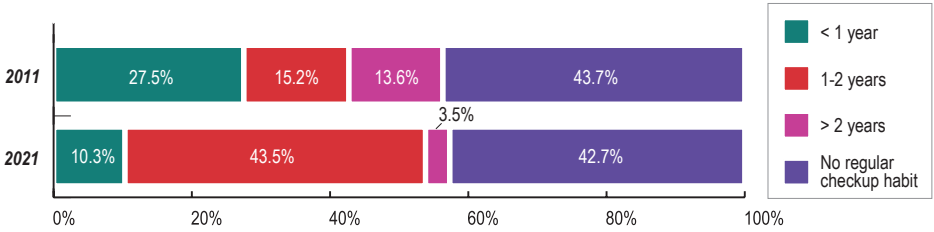
In 2021 survey, the proportion of adults with habit of seeking dental checkup for scaling or checkup remained similar with a decade ago (57.3% (564 400) in 2021, 56.3% (598 400) in 2011) (Figure 3.8). There was an extended interval between dental checkup when compared with 2011 (Figure 3.9).

***Figure 3.8** Percentage of adults according to the dental checkup habit (2001, 2011 and 2021)*



Base: All Adults
2001: N = 1 345 700
2011: N = 1 062 900
2021: N = 985 200

***Figure 3.9** Percentage of adults according to the dental checkup habit*



Base: All adults
2011: N = 1 062 900
2021: N = 985 200

Facilitators and barriers to interdental cleaning habit

- 'Removing food trapped between teeth' was the most common reason for adults to maintain their interdental cleaning habit, followed by 'teeth became cleaner after use'.
- Less than 6% of adults could relate their flossing or use of interdental brush habits with prevention of either tooth decay or gum disease.
- 'Lazy/trouble to use/ did not want to use' (34.8%) and 'Did not know how to use' (18.4%) were the two common reasons for adults not using dental floss
- 'No such need' (24.3%) was the most common reason for adults not using interdental brush

Reasons and beliefs behind regular dental checkup habit

- Adults with regular dental checkup habits were defined as individuals who made dental visits within two years' interval in the absence of any oral problem.
- Three-quarter (75.2%) of regular attenders stated that 'they will go for regular dental checkup in order to have early detection of tooth problems'.
- For adults with the habit of seeking regular dental checkup, two-third (68.1%, 360 700) stated that they had this habit because they wanted to go for scaling or dental checkup.
- 25.9% (137 400) of regular attenders went for prevention of dental problems based on the belief that prevention was better than cure.
- About 15% of adults attended regularly because they took full benefit from their entitlement to insurance plan / employment benefit.

Reasons and beliefs behind the irregular dental checkup habit

- Majority (56.9% (259 200) in 2021) of the irregular attenders felt that their teeth were good / had no pain or they had no need to have regular dental checkup, similar to their counterparts a decade ago (60.0% (365 200) in 2011).

- Around 50% of irregular attenders thought that 'practising good oral hygiene at home can replace regular scaling' (51.8%) and they also claimed that 'dare not visit a dentist because the total cost of dental treatments at the end is often unpredictable' (60.6%).

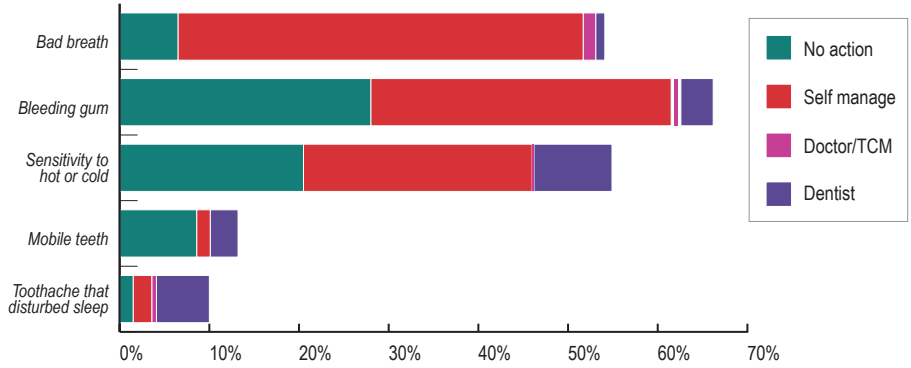
- A proportion of the irregular attenders claimed that they did think of going for regular checkup but had encountered problems.

- Among the barriers mentioned, no time (13.5%, 61 700) and charge was unaffordable / didn't want to spend money on checkup (7.3%, 33 300) were the two comparatively more frequently mentioned.

Action taken when experiencing oral symptom

When experiencing oral symptoms, majority of the affected adults either did not take any action or manage the oral symptoms by themselves rather than attending dental consultation, even for toothache that disturbed sleep (Figure 3.10).

***Figure 3.10** Proportion of adults according to the oral symptom experienced in the 12 months before the survey and the action taken in 2021*



Base: All adults
2021: N = 985 200
The bases for specified oral symptoms refer to adults who had the corresponding specified oral symptoms in the 12 months before the survey.
** TCM – Traditional Chinese medical practitioners*

Possible barriers to seeking professional dental care when experiencing oral symptom

- It was noted that even when experienced severe toothache that disturbed sleep, there was still 40.8% of adults did not attend dental consultation.
- A number of adults with oral symptoms knew that they needed to seek professional dental care but were hindered from doing so because of certain barriers.
- The most frequently reported barrier was ‘No time’ for all symptoms including mobile teeth and toothache that disturbed sleep which would likely affect their daily functions.

Summary and way forward

The oral health of the Hong Kong adult population has improved over the past decade, with less visible dental plaque, bleeding gums, and calculus in over half of their teeth. However, there are areas that require attention and behavioral modifications. Untreated root decay has doubled that of 2011. The proportion of adults with gum pockets has increased despite less visible plaque and less gum bleeding. Some adults believe they have good daily oral hygiene, but the presence of untreated tooth decay and gum pockets in the back teeth region suggests that current oral hygiene practices may not be effective. The use of professional dental care is also low, with less frequent checkup interval. Most adults still ignore or self-manage their perceived oral discomforts, which is unfavorable to timely management of dental diseases. The dental profession should address time constraints and perceived high cost of care as they were reported as reasons for not seeking dental care.

Despite daily toothbrushing, back teeth oral hygiene remains subpar. Proper daily oral hygiene requires professional instruction in cleaning aid selection and technique, especially in the back teeth region. Gum bleeding and pockets are common in this area. Dental checkups provide opportunities for professional instruction, risk assessment, and preventive dental treatment. Dentists can perform detailed examinations and special investigations for early identification and timely management of dental diseases. Citizens should manage their own oral health, and the dental profession should assist in improving the oral health of citizens through promotion, education, and addressing barriers from dental clinics.

SECTION 4

65 to 74-year old non-institutionalised older persons (NOP)

Tooth loss condition

The proportion of NOP who had lost all their teeth reduced markedly from 5.6% in 2011 to 0.9% in 2021 (Table 4.1). The mean number of teeth among NOP in 2021 (22.8) has further increased when compared with 2011 (19.3) and 2001 (17.0).

It was recognised by the World Health Organization that a functional and aesthetic dentition requires no less than 20 well distributed teeth. The proportion of NOP who had 20 teeth was assessed in this survey. In this survey, 77.4% of NOP had 20 or more teeth which were about 18 percentage points higher when compared with 2011 (59.5%). 66.7% of NOP had at least 10 occluding pairs (Table 4.2).

Table 4.1 ***Percentage of NOP according to the number of teeth in 2001, 2011 and 2021***

Tooth number	2001	2011	2021
	(N = 445 500)	(N = 450 800)	(N = 883 200)
Total tooth loss	8.6%	5.6%	0.9%
≥ 20 teeth left	49.7%	59.5%	77.4%

Base: All NOP

Table 4.2 ***Percentage of NOP with number of occluding pairs in 2021***

No. of occluding pairs*	Percentage
0 – 9 pairs	33.3%
≥ 10 pairs	66.7%

Base: All surveyed NOP
2021: N = 883 200
**Occluding pairs formed by natural tooth with natural tooth/fixed prosthesis are counted.*

Fewer NOP were found with any prosthesis (50.7% (447 700) in 2021, 63.2% (284 900) in 2011, 68.1% (303 400) in 2001). For those who had dental prostheses made, there was a change in the types of prosthesis used. There was a 4-fold increase in the proportion of them having dental implants (10.0% (88 100) in 2021, 2.5% (11 300) in 2011) accompanied with a major drop of NOP using removable and/ or full dentures to replace their missing teeth in 2021 (26.6% (234 900) in 2021, 46.7% (210 500) in 2011) (Table 4.3).

Table 4.3 ***Percentage of NOP with different types of dental prostheses in 2001, 2011 and 2021***

Type of dental prostheses	2001 (N = 445 500)	2011 (N = 450 800)	2021 (N = 883 200)
With any prostheses	68.1%	63.2%	50.7%
With dental bridges	30.2%	31.4%	32.1%
With removable partial dentures	33.6%	35.5%	22.8%
With full dentures	19.8%	11.2%	3.8%
With dental implants	*	2.5%	10.0%

Base: All NOP
** this parameter was not measured in 2001*

Level of tooth decay experience

The mean DMFT value among the NOP population was 13.5 which had further declined when compared with 2011 (16.2) and 2001 (17.6), mainly due to reduction in missing teeth (Table 4.4).

Table 4.4 ***Level of tooth decay experience as measured by the DMFT index among NOP in 2001, 2011 and 2021***

Tooth decay experience	2001 (N = 445 500)	2011 (N = 450 800)	2021 (N = 883 200)
Mean DMFT	17.6	16.2	13.5
Mean DT (Decayed)	1.3	1.3	1.2
Mean MT (Missing)	15.1	12.7	9.2
Mean FT (Filled)	1.2	2.3	3.1

Base: All NOP

The proportion of adults with tooth decay experience remained more or less the same over the years. Similar to 10 years ago, about one-half of NOP had untreated tooth decay (Table 4.5).

Table 4.5 ***Percentage of NOP with tooth decay experience in 2001, 2011 and 2021***

Tooth decay experience	2001 (N = 445 500)	2011 (N = 450 800)	2021 (N = 883 200)
DMFT	99.4%	99.3%	99.6%
DT (Decayed)	52.9%	47.8%	47.1%
MT (Missing)	98.1%	98.1%	97.8%
FT (Filled)	40.3%	59.5%	69.9%

Base: All NOP

The proportion of NOP with root surface decay experience was on an increasing trend (28.8% (253 900) in 2021, 24.6% (110 900) in 2011, 22.6% (110 700) in 2001). There was about 80% of root decay (23.3%/28.8%*100%) were left untreated (Table 4.6).

Table 4.6 ***Percentage of NOP with root surface decay experience in 2001, 2011 and 2021***

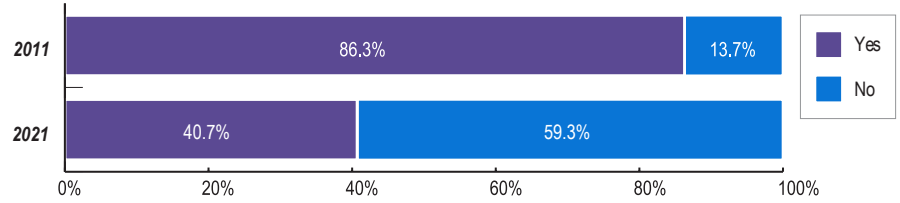
Root surface decay experience	2001 (N = 445 500)	2011 (N = 450 800)	2021 (N = 883 200)
DF-root	22.6%	24.6%	28.8%
D-root (Decayed)	21.5%	21.8%	23.3%
F-root (Filled)	3.1%	4.1%	8.4%

Base: All NOP

Gum condition

There were 40.7% (355 800) of NOP having half or more of their teeth with bleeding gums, which was significantly lower than NOP in 2011 (86.3%) (Figure 4.1). There was an increase by about 10% in the proportion of NOP with deeper gingival pockets of 4 mm or above (Table 4.7). It was also noted that 33.8% of upper molars and 42.3% of lower molars were already extracted in the NOP (Table 4.8).

Figure 4.1 ***Percentage of dentate NOP having half or more of the teeth with bleeding gums***



Base: Dentate NOP
2011: N = 386 200
2021: N = 874 900
(The same data was not available in 2001 for comparison)

Table 4.7 ***Percentage of dentate NOP according to the highest pocket depth in 2001, 2011 and 2021***

Highest pocket depth	2001 (N = 358 700)	2011 (N = 386 200)	2021# (N = 874 909)
0-3 mm (Not considered as pocket)	44.7%	40.8%	30.0%
4-5 mm (Shallow pocket)	44.3%	38.8%	44.1%
≥ 6 mm (Deep pocket)	11.0%	20.4%	25.8%
Total	100.0%	100.0%	100.0%

Base: All dentate NOP

 # The diagnostic methodology was extended to include all teeth in the mouth in 2021 instead of half mouth in 2011 and including only index teeth in 2001

Table 4.8 ***Mean percentage of teeth according to the pocket depth of NOP in 2021***

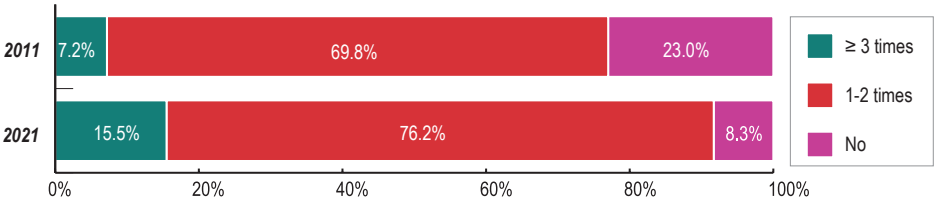
	Molars (back teeth)	Premolars	Incisors and canine
Shallow pockets (pocket depth 4-5 mm)			
Upper teeth	17.1%*	15.6%*	10.9%
Lower teeth	11.2%*	10.2%*	8.5%*
Deep pockets (pocket depth 6 mm+)			
Upper teeth	4.7%*	2.1%	2.2%**
Lower teeth	2.6%	2.1%	1.6%*
Missing			
Upper teeth	33.8%	23.8%	14.3%
Lower teeth	42.3%	17.6%	11.5%

Base: All dentate NOP
**bleeding on probing was detected in >70% of this teeth group*
***bleeding on probing was detected in >80% of this teeth group*

Oral health related behaviours

There was a surge in the proportion of NOP reported having snack or food consumption at least three times daily other than normal meals (15.5% (137 300) in 2021, 7.2% (32 500) in 2011) (Figure 4.2).

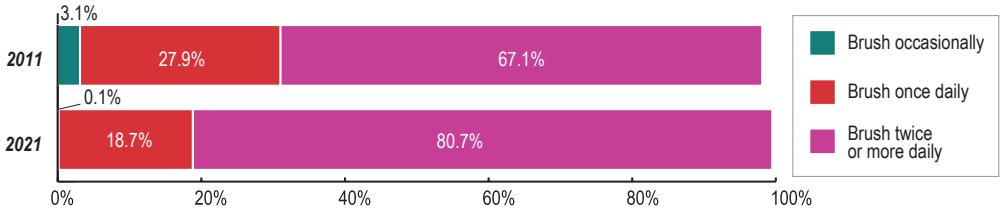
***Figure 4.2** Percentage of NOP according to daily frequency of snacking or food consumption other than normal meals*



Base: All NOP
2011: N = 450 800
2021: N = 883 200

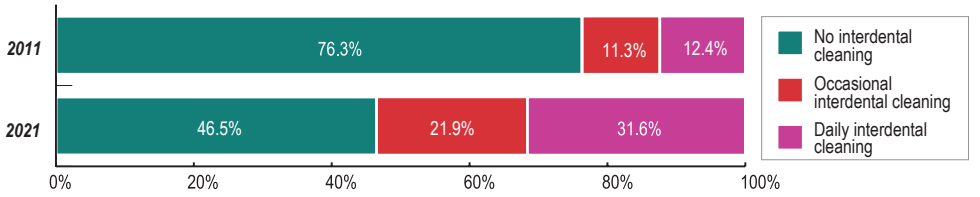
Almost all (99.4%, 869 000) of dentate NOP brushed their teeth every day. There is a significant increase of dentate NOP who brushed twice or more daily in 2021 (80.7%, 705 800) when compared with 2011 (67.1%, 285 400) (Figure 4.3). More than half of dentate individuals reported having the habit of interdental cleaning, with about one-third of them doing it on a daily basis. (Figure 4.4). Proportion of NOP with smoking habit were found reducing over the past 20 years (Figure 4.5).

***Figure 4.3** Percentage of dentate NOP according to toothbrushing habit*



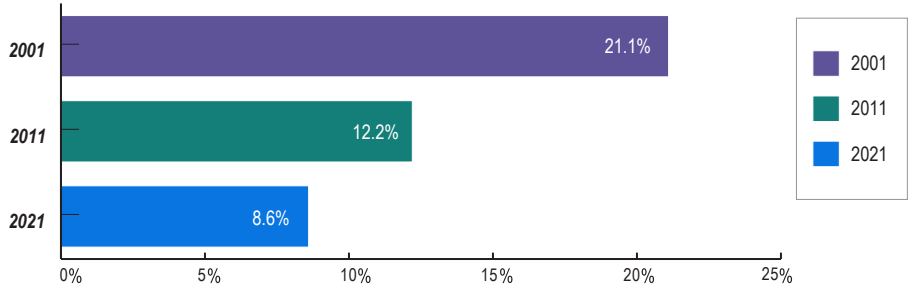
Base: Dentate NOP
2011: N = 425 500
2021: N = 874 900

***Figure 4.4** Percentage of dentate NOP according to the interdental cleaning habit*



Base: Dentate NOP
2011: N = 425 500
2021: N = 874 900

***Figure 4.5** Percentage of NOP with smoking habit in 2001, 2011 and 2021*

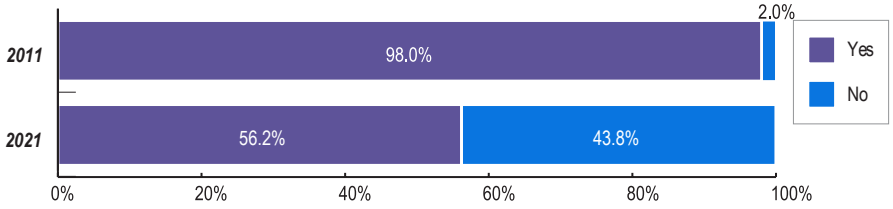


Base: All NOP
2001: N = 445 500
2011: N = 450 800
2021: N = 837 900 (Population Health Survey 2020-2022 Data)

Cleanliness of teeth

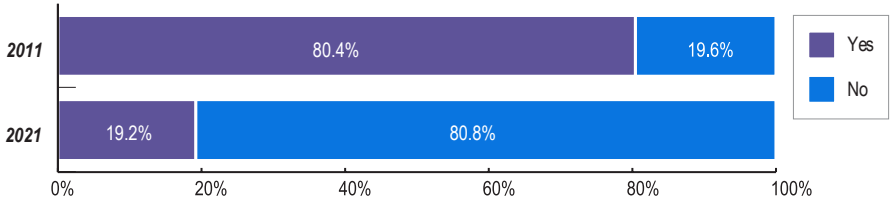
There was an improvement in the level of plaque control which was supported by a noticeable decline in the number of NOPs teeth being covered by visible dental plaque and calculus (Figure 4.6 and 4.7).

Figure 4.6 ***Percentage of dentate NOP having visible dental plaque on half or more of their teeth***



Based: Dentate NOP (represented by the NOP with gum examination performed)
2011: N = 386 200
2021: N = 874 900

Figure 4.7 ***Percentage of dentate NOP having calculus on half or more of their teeth***

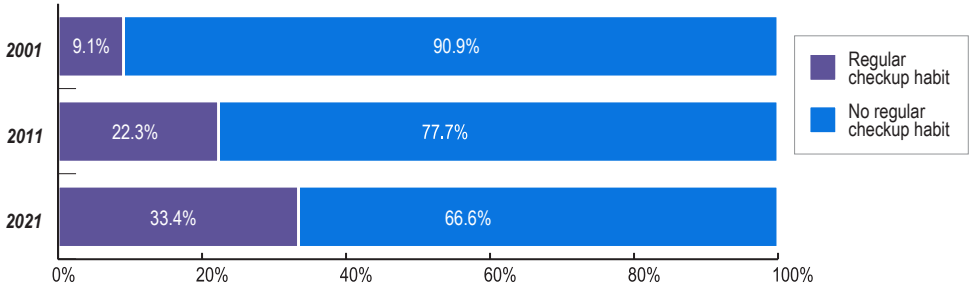


Based: Dentate NOP (represented by the NOP with gum examination performed)
2011: N = 386 200
2021: N = 874 900

Dental checkup habit

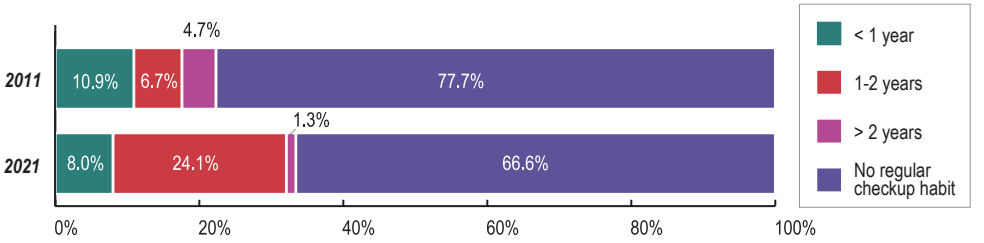
The proportion of NOP with regular dental checkup habit had continued to increase over the past three decades, from under 10% in 2001 to over 30% in 2021 (Figure 4.8). There was an extended interval between dental checkup when compared with 2011 (Figure 4.9).

***Figure 4.8** Percentage of NOP according to the dental checkup habit (2001, 2011 and 2021)*



Base: All NOP
2001: N = 445 500
2011: N = 450 800
2021: N = 883 200

***Figure 4.9** Percentage of NOP according to the dental checkup habit*



Base: All NOP
2011: N = 450 800
2021: N = 883 200

Facilitators and barriers to interdental cleaning habit

- 'Removing food trapped between teeth' was the most common reason for NOP to maintain their interdental cleaning habit, followed by 'teeth became cleaner after use'.
- Only about 1-3% of NOP could relate their flossing or use of interdental brush habits with prevention of either tooth decay or gum disease.
- 'Did not know how to use' (30.8%) and 'Lazy/trouble to use/ did not want to use' (22.7%) were two most common reasons for NOP not using dental floss.
- 'Did not know what it is' (25.8%) and 'No such need' (25.0%) were the common reasons for NOP not using interdental brush.

Reasons and beliefs behind regular dental checkup habit

- NOP with regular dental checkup habits were defined as individuals who made dental visits within two years' interval in the absence of any oral problem.
- 72.7% of regular attenders stated that 'they will go for regular dental checkup in order to have early detection of tooth problems'.
- For NOP with the habit of seeking regular dental checkup, 61.5% stated that they had this habit because they wanted to go for scaling or dental checkup.
- 21.1% of regular attenders went for prevention of dental problems based on the belief that prevention was better than cure.
- About 13.9% of NOP attended regularly because they took full benefit from their entitlement to insurance plan / employment benefit.

Reasons and beliefs behind the irregular dental checkup habit

- Majority (61.0% in 2021) of the irregular attenders felt that their teeth were good / had no pain or they had no need to have regular dental checkup, similar to their counterparts a decade ago.

- Around 64% of irregular attenders thought that 'practising good oral hygiene at home can replace regular scaling' and they also claimed that 'dare not visit a dentist because the total cost of dental treatments at the end is often unpredictable' (58.3%).

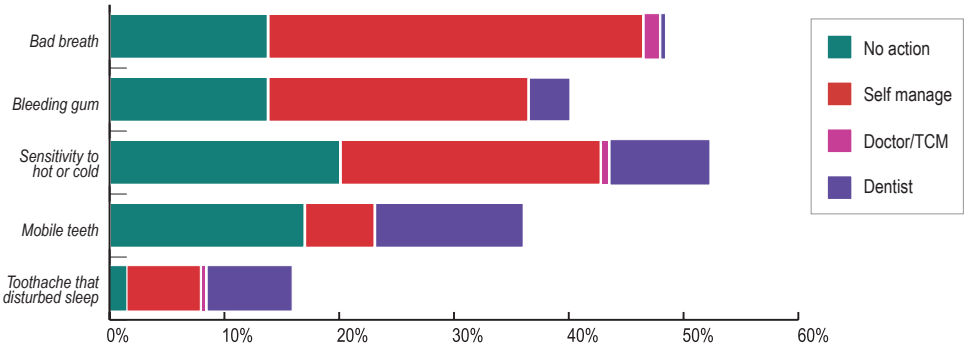
- A proportion of the irregular attenders claimed that they did think of going for regular checkup but had encountered problems.

- Among the barriers mentioned, charge was unaffordable / didn't want to spend money on checkup (12.7%) were the one frequently mentioned.

Action taken when experiencing oral symptom

When experiencing oral symptoms, majority of the affected NOP either did not take any action or manage the oral symptoms by themselves rather than attending dental consultation, even for toothache that disturbed sleep (Figure 4.10).

***Figure 4.10** Percentage of NOP according to the oral symptom experienced in the 12 months before the survey and the action taken in 2021*



Base: All NOP
2021: N = 883 200
The bases for specified oral symptoms refer to NOP who had the corresponding specified oral symptoms in the 12 months before the survey.
** TCM – Traditional Chinese medical practitioners*

Possible barriers to seeking professional dental care when experiencing oral symptom

- It was noted that even when experienced severe toothache that disturbed sleep, there was still considerable proportion of NOP did not attend dental consultation.
- A number of NOP with oral symptoms knew that they needed to seek professional dental care but were hindered from doing so because of certain barriers.
- The main reported barriers were unaffordable charge and reluctance to spend money on dental care.

Impact of oral health on the quality of life

- Compared with 2001, more NOP reported they had to interrupt meals because of problems with their teeth, mouth or dentures. Psychologically, more NOP worried, a bit embarrassed by dental problems and upset because of problems with their teeth, mouth or dentures.

Summary and way forward

The survey found that NOP have more teeth and cleaner teeth, with less plaque and calculus. However, gum condition is still worth attention, and more NOP having untreated decay on root surfaces. One-third of NOP have fewer than 10 occluding pairs of teeth, with missing back teeth being mainly molars. Some NOP do not attend regular dental checkups due to belief in good home care is sufficient, but this belief is inaccurate. Moreover, some NOP do not attend regular dental checkups due to self-perceived good oral health, leading to delayed identification of dental problems. The oral health care system may also hinder utilisation by NOP, with cost being a concern. The dental profession should address the perceived high cost of care as a reason for not seeking dental care.

Maintaining good oral health is crucial for overall health of elders. However, missing teeth in older adults are alarming, with 30-40% of molars missing when they reach the stage of NOP. Primary dental care, focusing on prevention, should be commenced early and regularly throughout an individual's life to prevent future tooth loss and minimize the need for costly curative treatments. Dental professionals should also provide professional self-care instructions, risk assessments, lifestyle advice, and preventive dental treatments. To improve overall health management, NOP and private dental professionals may consider joining the Electronic Health Record Sharing System.

SECTION 5

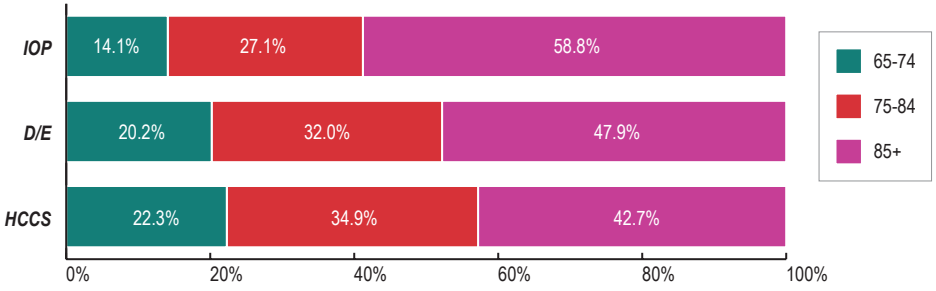
Aged 65 and above users of Social Welfare Department Long-term Care Services

The three categories of Long-term Care (LTC) services users that had been covered in this survey were listed as following:

1. Users of Residential Care Services (IOP)
2. Users of Day Care Centres or Units for the Elderly (DE)
3. Users of Enhanced Home & Community Care Services and Integrated Home Care Services (Covered Frail Cases only) (HCCS).

For the age distribution of all three categories of LTC users (Figure 5.1), the youngest age group (65-74) constituted the minority and the majority was aged 85 and above. The IOP had the highest proportion of users aged 85 and above (58.8%) compared to DE users (47.9%) and HCCS users (42.7%).

***Figure 5.1** Distribution of LTC users according to age*

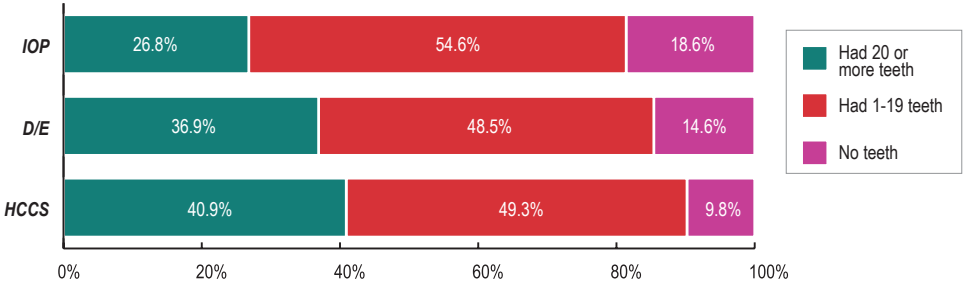


Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Oral status – number of remaining teeth

The degree of tooth loss among LTC users was summarised in Figure 5.2. IOP had the highest degree of tooth loss with 12.1 remaining teeth on average, and had the highest proportion with no remaining teeth (18.6%). HCCS users had 14.9 remaining teeth on average and 9.8% had no remaining teeth. DE users were in between with 14.0 remaining teeth on average and had 14.6% had no remaining teeth. Overall, there were lower proportion of LTC users with complete tooth loss and there were more remaining teeth compared to 2011.

Figure 5.2 Distribution of LTC users according to the number of remaining teeth

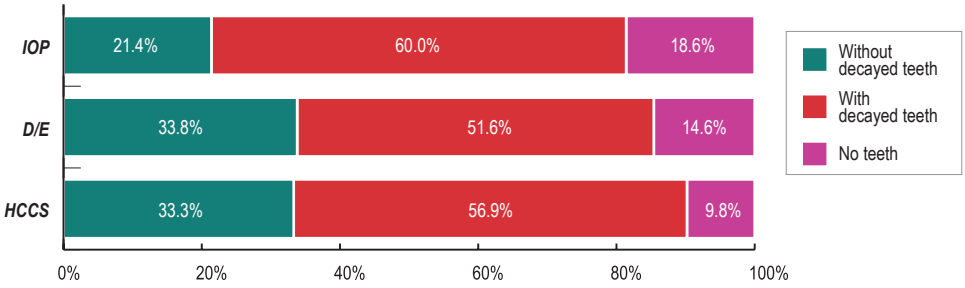


Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Status of remaining teeth – tooth decay

Untreated decayed teeth were found in more than half of the LTC users with at least one tooth remaining. 73.7% of dentate IOP (60%/81.4%), 60.4% of dentate DE users (51.6%/85.4%) and 63.1% of dentate HCCS users (56.9%/90.2%) had at least one decayed teeth (Figure 5.3). The mean number of teeth with different tooth decay experience among LTC users was shown in Table 5.1.

Figure 5.3 ***Proportions of LTC users affected by untreated tooth decay***



Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Table 5.1 ***Tooth decay experience among LTC users***

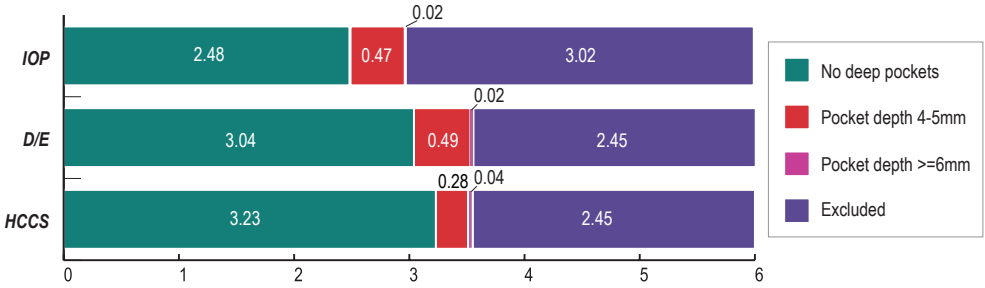
LTC	Tooth decay experience	Remaining teeth	DT (Decayed)	FT (Filled)
IOP	Mean	12.1	2.7	1.3
	% affected	81.4%	60.0%	39.2%
DE	Mean	14.0	2.0	1.7
	% affected	85.4%	51.6%	48.2%
HCCS	Mean	14.9	2.2	1.8
	% affected	90.2%	56.9%	53.4%

Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Status of remaining teeth – oral hygiene and gum condition

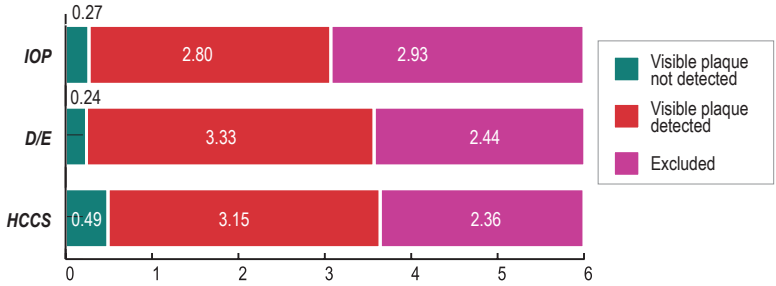
Deep gum pockets were not common among LTC users (Figure 5.4). However, cleanliness of teeth was a concern as visible dental plaque was found in most of the sextants[1] in vast majority of the LTC users with remaining teeth (Figure 5.5).

Figure 5.4 ***Mean number of sextants of LTC users with presence of gum pocket***



Base: All LTC users with remaining teeth and received gum examination
IOP: (N =46 300)
DE users:(N =5 910)
HCCS users: (N = 14 200)

Figure 5.5 ***Mean number of sextants of LTC users with presence of visible plaque***



Base: All LTC users with remaining teeth and received gum examination
IOP: (N =46 300)
DE users:(N =5 910)
HCCS users: (N = 14 200)

1 In the section about oral hygiene and gum condition, the unit of measurement is 'sextant'. A person has 6 sextants:

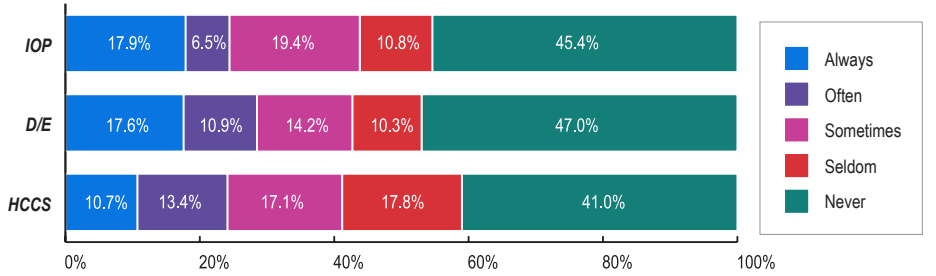
1. Upper right back teeth (3 molars and 2 premolars)
2. Upper front teeth (4 incisors and 2 canines)
3. Upper left back teeth (3 molars and 2 premolars)
4. Lower right back teeth (3 molars and 2 premolars)
5. Lower front teeth (4 incisors and 2 canines)
6. Lower left back teeth (3 molars and 2 premolars)

Positive findings for any one tooth within a sextant is regarded as positive finding for that sextant. If a sextant has only 1 tooth or no teeth left, the sextant is reported as 'excluded'. LTC users who are not suitable for receiving gum examination due to medical reasons or having no teeth are excluded. Therefore, the result in this section can reflect to 46 300 IOP, 5 910 DE users and 14 200 HCCS users.

Impact on daily life due to oral condition

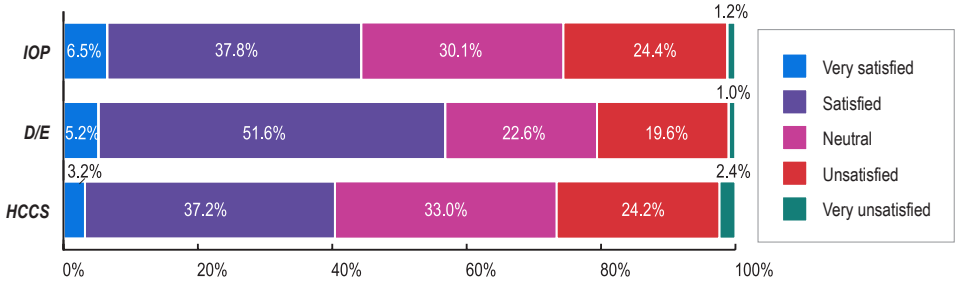
More than half of the three groups of LTC users reported the need to avoid or being unable to choose certain food in the past year (Figure 5.6) and almost all LTC users were not very satisfied with the appearance of their teeth (Figure 5.7).

Figure 5.6 ***Impact of oral condition – limitation of food choices***



Base: All LTC users who could complete questionnaires
IOP: (N = 45 500)
DE users:(N = 6 340)
HCCS users: (N = 15 000)

Figure 5.7 ***Impact of oral condition – satisfaction to their appearance***

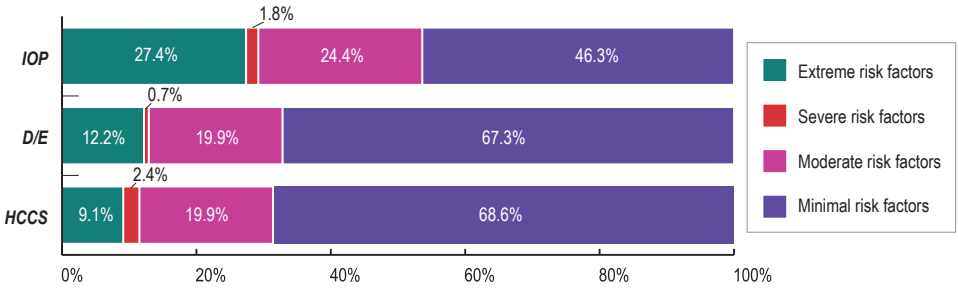


Base: All LTC users who could complete questionnaires
IOP: (N = 45 500)
DE users:(N = 6 340)
HCCS users: (N = 15 000)

Oral risk related to tooth decay and periodontal disease

Oral risk is an indicator for the chance in developing dental disease in future. The risk factors might be contributed by their risk behaviour toward oral health, for example snacking habit and smoking habit, which usually are modifiable. Around one-fourth of IOP (29.2%, 11 200) was categorised as having extreme[2] and severe oral risk, followed by (12.9%, 710) of DE users and (11.5%, 1 560) for HCCS users (Figure 5.8). LTC users exhibited different level of oral risk especially a number of LTC users showed compromised ability to perform daily oral cleaning. The involvement of carers is necessary for this group of LTC users to maintain good oral hygiene and denture hygiene. It is essential to implement behavioural interventions to tackle those modifiable oral risk, such as comprehensive oral care training to carers, in order to promote sustainable and healthier oral habits among LTC users.

***Figure 5.8** Impact of oral condition – oral risk classified by mild to severe level*



Base: All LTC users who could complete questionnaires and had at least one tooth
IOP: (N = 38 100)
DE users:(N = 5 510)
HCCS users: (N = 13 500)

2 'Extreme oral risk' referred to the LTC users who do not perform regular oral cleaning by themselves or their carers; with frequent snacking and current having a habit of smoking; and those who had unclear status of tooth brushing frequency, brushing assistance and smoking habit. 'Severe oral risk' referred to the LTC users who had 3 times per day of snacking or more, did not brush their teeth, brush their teeth irregularly or need assistance for toothbrushing. 'Moderate oral risk' referred to the LTC users who brush their teeth once daily and did not fall into previous categories, and 'minimal oral risk' referred to the LTC users who brushed their teeth twice daily and did not fall into previous categories.

The assessed and realistic dental treatment need of LTC users

According to the recommendations from the World Health Organization, tooth-based treatment should be planned according to the crown and root status, the periodontal status, and mobility of the tooth. The assessed treatment need was presented to the individual and the individual's acceptance of treatment was recorded as the realistic treatment need. The distribution of LTC users according to their assessed treatment need and their treatment acceptance was summarised in Table 5.2 and 5.3.

Table 5.2 ***Percentage of LTC users in 2021 according to the level of assessed treatment need***

	IOP (N=60 000)	DE (N=7300)	HCCS (N=17 700)
No assessed need	14.6%	12.6%	6.8%
Had assessed need	85.4%	87.4%	93.2%

Table 5.3 ***Percentage of LTC users in 2021 according to the level of realistic treatment need (acceptance of assessed treatment)***

	IOP (N=60 000)	DE (N=7300)	HCCS (N=17 700)
No assessed need	14.6%	12.6%	6.8%
Accepted assessed need	50.5%	60.5%	76.1%
Rejected assessed need	18.7%	16.1%	11.1%
Unable to express accpetance	16.2%	10.8%	6.0%

While the acceptance of dental treatment was found to be low among LTC users in this round of Oral Health Survey, the acceptance level was already much higher than that found in Oral Health Survey 2011. Older persons born in different generations experienced different social and economic environment and might have different perceptions towards oral health, thus their expectation and demands in oral health and dental care might also be different. This may be an indication of increasing expectations in oral health and higher demands for dental care over the past 10 years. Also, the differences in self-perception of oral health and reported oral problem between HCCS users, IOP and DE users may contribute to their difference in level of acceptance of dental treatments.

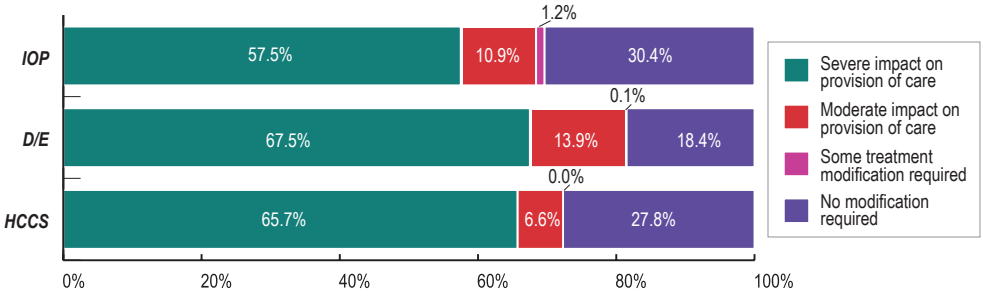
It is worth to note that some LTC users were unable to express their acceptance, ranging from 6.0% of HCCS users to 16.2% of IOP. These LTC users may also had difficulties in giving consent in actual provision of dental services.

The complexities involved in providing dental services to LTC users

LTC users may present challenges to dentists providing dental care due to their medical, physical, cognitive and social status. To systematically assess the complexities involved in providing dental services to LTC users, this survey has set the assessment criteria with reference to an evaluative instrument adapted from an internationally recognised tool[3]. This instrument measures the barriers that dentists face while attending to persons requiring special dental care.

Medical condition of the LTC users reflects if modification is required for provision of dental care due to the patient's complex medical conditions which multi-disciplinary approach might be required. The distribution of impact on provision of dental care due to medical status were summarised in Figure 5.9. Over half of the LTC users in all 3 groups had been categorised as having severe impact of medical condition on provision of dental care. This finding suggested that the majority had multiple medical problems, or with specific medical condition, for example, cancer or stroke, that could greatly interfere with the delivery of their necessary dental care.

Figure 5.9 Distribution of LTC users according to impact on provision of dental care due to medical status

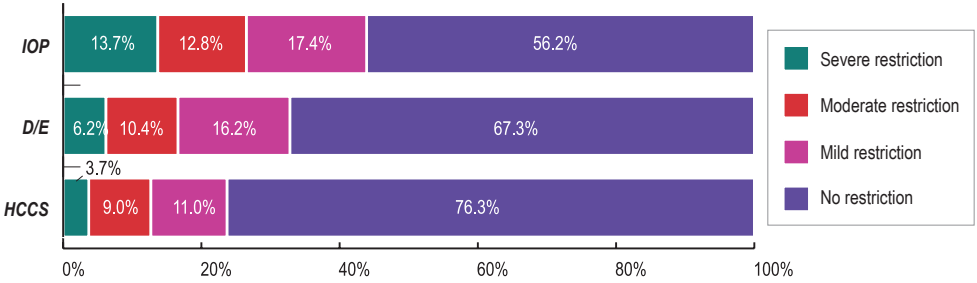


Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

3 'Case Mix 2019' developed by the British Dental Association (https://www.bda.org/about-us/our-structure/representative-committees/community-and-public-dental-services/case-mix/)

Communicative capacity reflects the issues of communication between the dental team and the LTC users and/or carers to determine if any restriction in communication and if extra aids are required. Restriction in communication was more common among IOP, with 13.7% of them had severe restriction in communication (Figure 5.10). It indicated that they had only limited or no ability to communicate and their family and carers were not readily available, or third-party interpreter was required to facilitate the communication. More time and extra resource were required in provision of care to them.

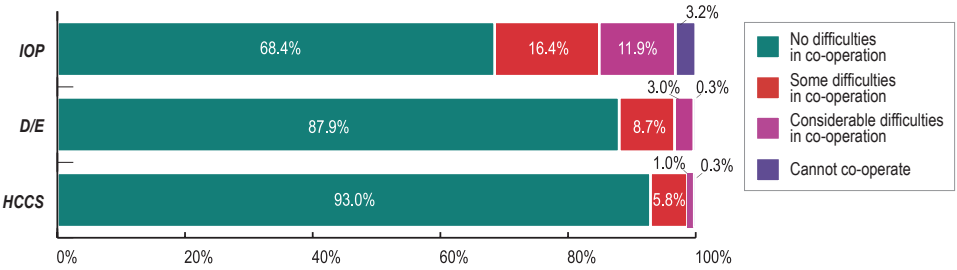
***Figure 5.10** Distribution of LTC users according to barriers on communication assessed by the examining dentists*



Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Willingness to co-operate reflects the difficulties the dental team faces when delivering dental care to determine what behavioural management technique (including sedation and general anaesthesia) is required to enable the person to accept the treatment. Cooperation barrier was also more common among IOP (Figure 5.11). For severely uncooperative cases, they require dentists to have special training to assess the medical risk and to coordinate with medical team for provision of dental treatments under such modalities. Extra facilities and hospital operating theatre are often required to accommodate such barrier.

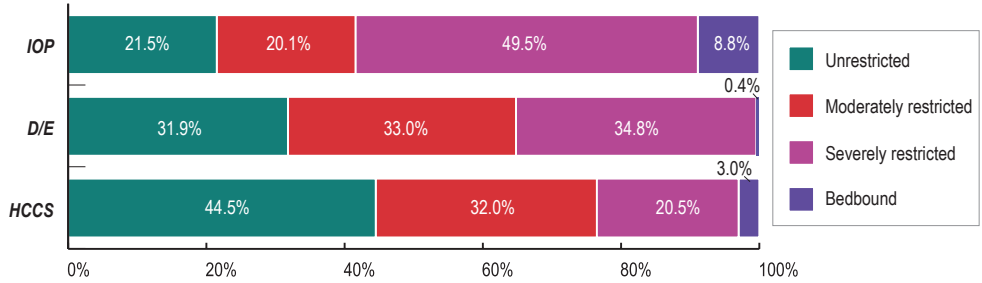
Figure 5.11 ***Distribution of LTC users according to cooperativeness on cooperation assessed by the examining dentists***



Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Accessibility of dental care services reflects difficulties or barriers the LTC users face during the complete course of dental care. Access barrier to dental care was common among all LTC users (Figure 5.12). 78.5% of IOP, 68.1% of DE users and 55.5% of HCCS users required escort to access the dental clinic. 8.8% of IOP and 3.0% of HCCS users were bedbound, which required outreach dental service to provide regular on-site dental service. However if more complicated dental treatments had to be provided, additional transportation arrangement was necessary to transfer them to the dental clinic.

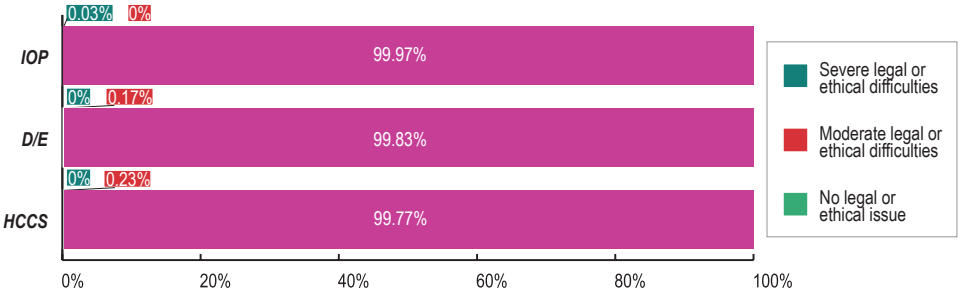
Figure 5.12 ***Distribution of LTC users according to barriers on physical access assessed by the examining dentists***



Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Legal and ethical constraints identify the difficulties which the dental team might face when obtaining consent with the LTC users or the carers of the users, including the situations when the LTC user concerned is mentally incapacitated. Only a small proportion of LTC users was found with uncertain capacity (Figure 5.13). In this survey, consent had been obtained from all subjects and their family members as pre-requisite. The finding indicated that there were no subject with severe legal or ethical difficulties would underestimate the proportion of such LTC users in the population. For individuals with severe legal or ethical difficulties, the best interest decision for dental treatment would require second doctor's opinion or guardianship board's assistance in accordance to the Mental Health Ordinance (Cap. 136).

Figure 5.13 Distribution of LTC users according to legal/ethical barrier assessed by the examining dentists



Base: All LTC users
IOP: (N = 60 000)
DE users: (N = 7 300)
HCCS users: (N = 17 700)

Summary and way forward

Findings from this Oral Health Survey revealed that both the number of LTC users and the proportion of the older sub-groups among LTC users in Hong Kong population had increased. The above facts accompanied with that more natural teeth were retained but cleanliness of teeth and denture were both problematic. Tooth decay affecting majority of those with teeth remaining while gum pockets were relatively less common. Emphasis and resources should be put into prevention in this population prior to the deterioration of their oral health due to loss of self-care ability and accelerating oral risk, at a stage before the use of long-term care service. Cleanliness of teeth was a concern as visible plaque and calculus was found in vast majority of the LTC users with remaining teeth, which indicated inadequate daily oral hygiene care and lack of professional cleaning. The importance of daily oral care must be promoted not only to the LTC users but also to people involved in the care of LTC users. In parallel, continuous professional dental care should be available and accessible no matter the LTC users are resided in institutions or in community.

Oral discomfort and negative impacts were perceived by some LTC users. Acceptance of dental treatment was still low, but already much higher than in Oral Health Survey 2011. During clinical examinations, dentists encountered varying degrees of difficulty in both assessing and planning treatment for individuals across the different LTC categories. It would be challenging for dentists to address the treatment needs of LTC users as there were large proportion of LTC users faces non-modifiable barriers, including medical comorbidities, limited access to dental care, and challenges with communication and cooperation, which exacerbated the complexity of dental management. These barriers exacerbated the complexity of dental management and required dentists with additional training, specialised additional facilities or special arrangements in provision of dental care. Cases with complex medical conditions and with cooperation problem often require medical input (e.g., require modification of medication or blood check before treatment) for dental treatment planning and require dental treatments to be performed under hospital setting. Training for dental profession on management of patients with needs in special care dental service, and availability of hospital services and facilities including sedation and hospital operating theatre are essential to address the dental needs of this vulnerable population. To maintain the oral health and sustain the result of dental treatment for LTC users, a holistic approach with considerations on their medical, dental, and social challenges should be adapted. Cross-disciplinary collaboration with the social services, medical practitioners, staff from LTC institutions, relatives and carers of the LTC users is required to cope with the raising dental need of this population. Coordinated efforts from different levels are crucial to enabling the LTC users to receive a comprehensive dental care ranged from preventive to curative treatment that is on par with the general population.

SECTION 6

Overview

'The World Health Assembly urged member states to reorient the traditional curative approach, which is basically pathogenic, and move towards a preventive promotional approach with risk identification for timel , comprehensive and inclusive care…'

(World Health Assembly Resolution 74.5, 2021)

Heading towards the same direction, the Government of Hong Kong Special Administrative Region (the Government) established the Working Group on Oral Health and Dental Care (Working Group) in December 2022 to review the existing dental care services and advise the Government on the long-term strategy for oral health and dental care, as well as matters including enhancement of the scope and mode of the services. It was established that the goal of primary dental care is to enhance the oral health of the community through retention of natural teeth.

Over the years, the general public has been focusing on curative dental services such as dental fillings, extraction and the prosthetic replacement of missing teeth in the demand for oral health care. However, the Working Group acknowledged that tooth loss should be tackled by preventive rather than by curative dental services. Curative dental services may repair the consequences of dental diseases (such as filling a decayed cavity by a dental restoration) but are unable to affect the disease processes (such as the mineral loss leading to the decayed cavity). Therefore, such services are unable to resolve dental problems and dental diseases are likely to recur (such as the appearance of new decayed cavity). It is more likely for people to prevent tooth decay and gum diseases if they can adopt the lifestyle conducive to oral health (refer to Chapter 2) and use preventive dental services such as topical fluoride or fissure sealant.

The strategies of prevention, early identification and timely intervention of chronic diseases promulgated in the Primary Healthcare Blueprint shall be applied in the development of primary dental services. The change in the mindset of the public to support these initiatives is crucial for their effectiveness.

The Interim Report of the Working Group stated that tooth decay and gum diseases are the major dental public health threats to be tackled in Hong Kong. The findings of OHS 2021 substantiate this belief as untreated tooth decay was found in 39% of 5-year old children, 32% of adults and 47% of NOP. Gum pockets were also found in 57% of adults and 70% of NOP. Much work needs to be done to prevent these levels of dental diseases from occurring again in future.

Maintaining personal daily oral hygiene habit and adopting a lifestyle conducive to oral health are the keys to promoting oral health at the individual level. The OHS 2021 found that the reported oral hygiene practices had improved, but this may give a false sense of security to the public. The results of the OHS 2001, 2011 and 2021 all indicated that the habit of regular dental check-ups was not common in all the target age groups. Possibly due to the lack of personalised instruction provided by a dental professional, the reported oral hygiene practices had left the back teeth inadequately cleaned with high risk of developing further dental diseases. The results of OHS 2021 support and reinforce the need to develop primary dental services appropriately for different age groups in order to cope with lifestyle change among the citizens.

The periodic assessment of oral health risks should be an integral part of the primary dental services to be developed. Oral health risks are usually elevated when a person suffers from a medical condition, due to the medical condition per se or due to the side effects of medical treatment. Early initiation and sustained preventive dental care in parallel with medical treatment is necessary to reduce the high level of dental diseases observed among the long-term care service users seen in OHS 2021.

The vision of the Global Strategy on Oral Health adopted in May 2022 at the 75th World Health Assembly (A75/10 Add.1 and WHA75(11)) is universal oral health coverage for all individuals and communities by 2030, enabling them to enjoy the highest attainable state of oral health and contributing to healthy and active lives. Shifting the focus of both the oral healthcare system and people's mindset from curative-oriented to preventive-oriented to increase the likelihood of retaining natural teeth should be the priority of public investment.

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