Oral Health Status of 12-year-old Novices in Bangkok

Sermsiri Subhakorn MdSc*,
Prapatsorn Ploysangngam DDS*, Nuchjaree Pongnarisorn MdSc*,
Saeng Jaturanon DDS*, Somchai Chaisupamongkollarp DDS*

**Dental Department , Priest Hospital*

***Objective**: To analyze the oral health status of 12-year-old novices in Bangkok; to provide data to compare with national level and data for planning and evaluation of oral health care program.*
***Material and Method**: A cross-sectional oral health survey was performed. The 98 novices aged 12 from temples in Bangkok were examined following WHO methodology and criteria. The data of oral health behavior was collected from questionnaires.*
***Results**: Clinical recordings of dental caries (DMFT scores) and periodontal (CPI scores 0, 1 or 2) according to WHO were analyzed. The mean DMFT score was 3.4 (DT= 2.8, MT= 0.3 and FT= 0.2). The caries experienced in novices was significantly higher than the average score of children in Thailand (DMFT = 1.6), and considered high according to WHO goal for the year 2000 (DMFT = 3). Thus the need for treatment, 72.4% needed 1-surface filling and 21.4% needed extraction.*

The periodontal disease prevalence was also high. CPI score 2 (gingivitis and calculus) was dominant for this participants (88.8%). According to the questionnaire, only 52% perceived their own dental problems. The important problems that they answered were food retention, halitosis and calculus. Furthermore nearly 90% reported that they visit dentist once a year or less.
***Conclusion:** Even though the caries and periodontal disease prevalence of all Thai children were considered low by WHO criteria, this study showed the high prevalence from this unique subject (the novice). Therefore, if progress is to be made toward increasing tooth retention and improving oral health in the priest and novice society, additional research in dental health services and disease prevention need to be undertaken in this specific group to elucidate the underlying causes that promote oral health disparity.*

***Keywords:** Oral health, DMFT, CPITN, Novice*

J Med Assoc Thai 2008; 91 (Suppl 1): S139-44
***Full text. e-Journal:** http://www.medassocthai.org/journal*

Since in comparing dental diseases prevalence it is necessary to focus on similar age groups, the purpose of this study was to determine oral status in novices of about 12 years of age as this would provide data for continuous oral health promoting program for priests and novices society in Thailand.

By being focused broadly on the global level[1,2], it is hoped that it will encourage local action in the spirit of the United Nations Development Program's report: 'Think globally act locally[3]. In 1979 the most important goal ever to be formulated for global oral health was announce by World Health Organization (WHO). By the year 2000, the global average for dental caries was to be no more than 3 DMFT at 12 years of age[1,3]. Since then, several oral epidemiological studies have been carried out applying WHO methodology and criteria.

Initially, the data on DMFT for 12-year-olds were showed a high prevalence of caries in industrialized countries and generally low values in the developing countries. A database was established and over a number of years and increasing numbers of epidemiological studies documented a pattern of change in caries prevalence, i.e. increasing levels of caries in certain developing countries and a decline in caries in many industrialized countries[4].

Correspondence to: Subhakarn S, Dental Department, Priest Hospital, 445 Sri Ayuthaya street, Bangkok 10400, Thailand. Phone: 0-2354-4310, Fax: 0-2354-4287, Website: www.priest-hospital.go.th

The caries decline observed in many developed countries was result of a number of public health measures, coupled with changing living conditions, lifestyles and improved self-care practices. In some countries this positive trend could deter action to further improved oral health, or to sustain achievements. It might also lead to the belief that caries problems no longer exist, at least in developed countries, resulting in precious resources currently available for caries prevention being diverted to other areas. However, it must be stressed that dental caries, as a disease, was not eradicated but only controlled to a certain degree[1].

Against this, increasing levels of dental caries have been found in some developing countries, especially for countries where preventive programs have not been established.

According to the WHO Oral Health Data Bank, in the year 2000, data were available for 184 countries (including Thailand) as recorded in the WHO Oral Health Country/Area Profile Program. Of these, 68% had less than 3 DMFT[1,4,5].

In Asia, the prevalence of dental caries in children is reported to be low to moderate[6,7]. For example, in the People's Republic of China the mean caries experience of 12-year-olds has been observed at 1.1-1.9 DMFT. It is worth noting, however, that the D-component constitutes most of the caries index[8]. Moreover, gingival health status and oral hygiene habits of children seemed poor. In Thailand, the Fourth National Oral Health Survey was conducted in 1994. The dental caries level of 12-year-old children was lower (1.6 DMFT) than the figure recommended by the WHO being the goal for oral health for the year 2000, that is at age 12 no more than 3 DMFT should be found on an average[9,10]. That recent national oral health survey included information on the oral health status of certain age groups[10] whereas no data were collected on the selected groups and also no data on oral health habits and use of professional dental services were revealed.

Table 1. The mean caries experience (DMFT scores) and their components of 12-year-old novices

n = 98	Mean	SD
DT	2.8	2.4
MT	0.3	1
FT	0.2	0.8
DMFT	3.4	2.9

Material and Method

The study-population consisted of 12-year-old novices from temples in Bangkok. This survey is a part of the Sustained and Holistic Health Care Program for priests and novices in Commemoration of His Majesty the King's 60-years Accession to the Throne from February 2006 to July 2007. Only novices who were in their thirteenth year of life were excluded. The examinations were conducted by a team of 10 dentists. All subjects were examined and clinical data were collected on dental status and dental caries (DMFT) as described by the World Health Organization (WHO)[1,2]. The Community Periodontal Index (CPI) was used to record the periodontal conditions. However, the registrations only included score 0 (healthy), score 1 (gingival bleeding), and score 2 (calculus) as examined in children, no probing of pocket depths was performed. As part of the study, the questionnaires were provided and completed by participants. The interviews were carried out by trained nurses and dental assistants. The questionnaire included questions on perceived oral health status, self-perception of oral health, oral hygiene practice and utilization of oral health services.

Table 2. Comparison of the oral health status between the present study and the Thailand oral health survey 2000-1

Age range (years)	Location	mean no. of teeth present	DT	MT	FT	DMFT	DT/DMFT	Care index FT/DMFT	Treatment index (MT+FT) /DMFT	% of having periodontal pocket
12	Thailand	25.0	1.1	0.1	0.4	1.6	68.8%	25.0%	31.3%	0.0
12	Bangkok	24.0	1.4	0.1	0.5	2.0	70.0%	25.0%	30.0%	0.0
12	Priest H*.	25.9	2.8	0.3	0.2	3.4	82.4%	5.9%	14.7%	0.0

*Hospital

Data were collected and analyzed. The statistical Package for Social Sciences (SPSS) version 13 (SPSS, Inc., Chicago, IL, USA) was used for statistical analysis. A p-value of < 0.05 was considered statistically significant.

Results

After excluding the novices who did not meet the age criteria, data from 98 novices 12 years of age were analyzed. Overall, the analysis of data revealed that the DMFT index in our subjects was 3.4 which is considered high according to WHO criteria.

Table 1 presents the prevalence of dental caries and the mean caries experience for the participants. They had significantly high DMFT index. In all component s, the D-component constituted most of the caries index. *Table 2* illustrates the comparison of the oral health status with the Thailand oral health survey in 2000-2001. The disease indicators were significantly higher comparing with children in Bangkok and Thailand. The mean number of teeth affected was 3.4 DMFT in novices which is more than twice time of other groups. In contrast, there were the relatively lower scores of care index and treatment index. *Table 3* reveals that the majority of the novices required the treatment for dental caries.

CPI scores are shown in *Table 4*, healthy gingiva were seen in only three individuals. Almost 90% of 12 –year-old novices had gingival bleeding and higher scores.

Table 5 describes the distribution of participants' answers to questionnaire. Approximately half of participants reported that they had oral health problem. Food retention, calculus and halitosis are the most often experienced problems that they have. Most of the 12-year-old novices answered that they cleaned

Table 3. Treatment needs for dental caries of 12- year-old novices

Treatment need	Prevalence of need	Number of affected teeth per subject
One-surface filling	72.4%	1.5
Two-surface filling	42.8%	0.9
Root canal treatment	5.1%	0.05
Extraction	21.42%	0.4

Table 4. Percentage of the 12-year-old novice, according to their highest CPITN score

CPITN score	Number	Percentage
Score 0 (healthy)	3	3.1
Score 1 (bleeding)	7	7.1
Score 2 (calculus)	87	88.8
Score 9 (excluded)	1	1.0

Table 5. Percentage of the elderly priests according to the questionnaires

	Number
1. Do you have any oral health problems?	
- Yes	51
- No	16
- Don't know	31
2. What kinds of problems do you have?	
- Food retention	34
- Caries	17
- Calculus	30
- Chewing hard food	1
- Tooth mobility	5
- Halitosis	32
- Tooth sensitivity	26
- Gingivitis	5
- Toothache	10
- Poor denture	0
- Others	3
3. How do you clean your mouth?	
- None	0
- Tooth brushing	92
- Flossing	2
- Proxabrush	17
- Toothpick	15
- Others	1
4. How often do you visit dentists a year?	
- Once a year or lesser	86
- At least twice a year	9
5. Where do you usually see a dentist?	
- Dental clinic/ private hospital	22
- Priest Hospital	10
- Other public dental service facilities	21
- Temple	12
6. Why not going to Priest Hospital?	
- Too far	9
- No time	17
- No oral health problems	8
- Waiting for worse problems	3
- Do not know Priest Hospital	46
- No one took me to Priest Hospital	23
- No money	5

their teeth by tooth brushing. Less than 10 percent of the novices claimed that they had seen a dentist at least twice a year. They reported that usually have dental treatment in dental clinic or other hospitals. Only 10 out of 98 novices had come to Priest Hospital and when the question was "why not going to the priest hospital?" The answer of was: "I did not know of the priest hospital" from about half of the novices (46.9%). The other main reasons were "no one took me to the Priest Hospital" (23.5%) and no time (17.3%), respectively.

Discussion

Setting

This oral health study is valuable because it adhered to international standard[1,2,4,11]. The examinations of oral health status were carried out according to the WHO standard methods and criteria, therefore, comparisons of the data with similar studies would be possible. Nevertheless, the data collection may have certain limitations. The samples were somewhat smaller in this study; however, they can be the representative of their population figures. The examination was carried out in a dental unit using a plane mouth mirror, a standard explorer for registration of caries and the WHO/CPI probe for the recording of periodontal health status[1,2,4]. However the examination was not performed in the daylight[11] that would lead to the data which provided higher figures due to better vision. The information on self-perception of oral health, oral hygiene practice and utilization of oral health service was also collected by means of answering the questionnaires.

Caries experience

The results indicate that there are significant differences in DMFT score of 12-year-old novice in this study and Thai children in other studies[9,10,12]. The national oral health survey of Thailand reported the following figures[9]. For the 12- year-olds, the mean caries experience was 1.6 DMFT for all Thai children and 2.0 for Bangkokian children. In contrast with this study, at age 12, the mean DMFT of the subjects was 3.4 with prevalence significantly high. In detail, the D-component constituted most of the dental caries experience while the F-component contributed a very few number.

Therefore, it is necessary to implement special programs for the specific target such as the novices which have a higher DMFT index than the global target line. Nevertheless, we should note that the decay component is the major one among DMFT components. Efforts should be made to change the "decayed" (D) component to "filled"[6].

Periodontal experience

The proportions in the CPI group scores show a low level of periodontal health, since almost no one had a healthy periodontium. For this subject, only bleeding and calculus were recorded in order to avoid recording deep gingival sulci associated with eruption as periodontal pockets[13-15]. The low periodontal health probably reflects the lack of oral hygiene that is common in children especially novices. Nearly 90% of participants required professional cleaning and removing calculus and other plaque-retentive factor. Indeed, the questionnaire confirmed a lack of self-perception of oral health, oral hygiene practices and not finding of dental services which were expected when they were not living with their parents and low or no income[16,12].

The intention of the study was to provide systematic information on the oral health situation of novices in Bangkok that the results would aid the planning and evaluation of oral health promoting programs. That will support the goal of the Sustained and Holistic Health Care Program for priestsw and novices.

Conclusion

Overall, compared to the results with other studies, caries and periodontal disease prevalence of the participants were high in this group. The DMFT in the novices in Bangkok can be considered high according to international standards (nearly 3-fold increase). Similarly, the CPITN scores revealed the poor periodontal experience among the novice. Since the country has become more industrialized in recent years and the people, especially youngsters (including novices), consume more sugar foods, it is necessary to implement programs to decrease this low level. This is not possible without further research, project especially on diet and training methods. Improving access to dental care and promoting the channel to use dental care utilization are the other support conditions which may require a renewed oral health care programs approach directed toward all groups. Thus, the continuous implementation of oral health promotion and prevention is needed, particularly in particular groups with still increasing levels of oral health problem.

References

1. Petersen PE. The World Oral Health Report 2003:

continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 2003; 31(Suppl 1): 3-23.
2. World Health Organization. Oral health surveys: basic methods. 4th ed. Geneva: WHO; 1997.
3. Hobdell M, Petersen PE, Clarkson J, Johnson N. Global goals for oral health 2020. Int Dent J 2003; 53: 285-8.
4. Schulte AG, Momeni A, Pieper K. Caries prevalence in 12-year-old children from Germany. Results of the 2004 national survey. Community Dent Health 2006; 23: 197-202.
5. Brindle R, Wilkinson D, Harrison A, Connolly C, Cleaton-Jones P. Oral health in Hlabisa, KwaZulu/ Natal—a rural school and community based survey. Int Dent J 2000; 50: 13-20.
6. Vargas CM, Dye BA, Hayes KL. Oral health status of rural adults in the United States. J Am Dent Assoc 2002; 133: 1672-81.
7. Varenne B, Petersen PE, Ouattara S. Oral health status of children and adults in urban and rural areas of Burkina Faso, Africa. Int Dent J 2004; 54: 83-9.
8. Wang HY, Petersen PE, Bian JY, Zhang BX. The second national survey of oral health status of children and adults in China. Int Dent J 2002; 52: 283-90.
9. Department of Health, Ministry of Public Health. Report of the Fifth national oral health survey in Thailand in 2000-01. Nonthaburi: Dental Health Division, Department of Health, Ministry of Public Health; 2003 (In Thai).
10. Leelasithorn S, Prasertsom P, Rityoue A, Rattanarangsima K. Caries prevalence and related factors in Thailand 1983-1997. Dent Health J 2001; 2: 7-24 (In Thai).
11. Petersen PE, Hoerup N, Poomviset N, Prommajan J, Watanapa A. Oral health status and oral health behaviour of urban and rural schoolchildren in Southern Thailand. Int Dent J 2001; 51: 95-102.
12. Prasertsom P, Leelasithorn S, Jirapongsa W. Periodontal status and related factors in Thais during 1983-1997. Dent Health J 2001; 2, 25-44 (In Thai).
13. Albandar JM, Brown LJ, Loe H. Clinical features of early-onset periodontitis. J Am Dent Assoc 1997; 128: 1393-9.
14. Page RC, Krall EA, Martin J, Mancl L, Garcia RI. Validity and accuracy of a risk calculator in predicting periodontal disease. J Am Dent Assoc 2002; 133: 569-76.
15. Abdellatif HM, Burt BA. An epidemiological investigation into the relative importance of age and oral hygiene status as determinants of periodontitis. J Dent Res 1987; 66: 13-8.

สภาวะทันตสุขภาพของสามเณรอายุ 12 ปี ในกรุงเทพมหานคร

เสริมศิริ สุภากรณ์, ประภัสสร พลอยแสงงาม, นุชจรี พงษ์นริศร, แสง จตุรานนท์, สมชัย ชัยศุภมงคลลาภ

วัตถุประสงค์: *เพื่อวิเคราะห์สภาวะช่องปากของสามเณรอายุ 12 ปี เพื่อให้ได้ข้อมูลในการเปรียบเทียบกับข้อมูลระดับชาติ สำหรับการวางแผนและประเมินสภาวะทันตสุขภาพ*

วัสดุและวิธีการ: *สามเณรอายุ 12 ปี จำนวน 98 รูป จากวัด ในกรุงเทพมหานคร ได้รับการตรวจสุขภาพช่องปากตามเกณฑ์การวินิจฉัยโรคขององค์การอนามัยโลก ข้อมูลพฤติกรรมด้านสุขภาพช่องปากได้จากการตอบแบบสอบถาม*

ผลการศึกษา: *บันทึกค่าเฉลี่ยโรคฟันผุ (DMFT) และ สภาวะปริทันต์ (CPI) ตามเกณฑ์การวิเคราะห์ขององค์การอนามัยโลก ค่าเฉลี่ยโรคฟันผุ เท่ากับ 3.4 ซี่ต่อคน (ผุ 2.8, ถอน 0.3 และ อุด 0.2 ซี่) ค่าเฉลี่ยโรคฟันผุของสามเณรนี้มีค่าสูงเมื่อเทียบกับค่าเฉลี่ยของเด็กวัยเดียวกันของประเทศไทย (DMFT เท่ากับ 1.6) สูงกว่าค่าเฉลี่ยที่เป็นเป้าหมายขององค์การอนามัยโลกสำหรับปี พ.ศ. 2544 (DMFT เท่ากับ 3) และมีความต้องการในการรักษาคืออุดฟัน 1 ด้านเท่ากับร้อยละ 72.4 และ ร้อยละ 21.4 ต้องได้รับการถอนฟัน*

สภาวะโรคปริทันต์มีความชุกสูง ค่า CPI ในระดับ 2 (มีสภาวะเหงือกอักเสบ และมีหินปูน) เป็นกลุ่มที่มีจำนวนมากที่สุด (ร้อยละ 88.8) สำหรับการตอบแบบสอบถาม มีเพียง ร้อยละ 52 เท่านั้นที่ทราบว่าตนเองมีปัญหาสุขภาพช่องปาก โดยปัญหาที่ตอบมากที่สุดคือ ปัญหาเศษอาหารติดฟัน, มีกลิ่นปาก และมีหินปูน นอกจากนี้มีสามเณรรายงานว่า ได้ไปพบทันตแพทย์เพียงปีละครั้งหรือน้อยกว่านั้น มีถึงร้อยละ 90

สรุป*: แม้ว่าค่าเฉลี่ยความชุกของโรคฟันผุและสภาวะโรคปริทันต์ของเด็กไทยทั่วประเทศ นับว่าน้อยเมื่อเทียบกับเกณฑ์ขององค์การอนามัยโลก แต่จากการศึกษานี้พบว่า ยังคงพบความชุกของโรคที่สูงในกลุ่มสามเณร ดังนั้นหากจะมีการพัฒนาเพื่อเพิ่มการมีฟันคงอยู่ในช่องปาก และพัฒนาสุขภาพช่องปากที่ดีในสังคมของพระสงฆ์และสามเณร ควรมีการวิจัยเพิ่มเติมในด้านการบริการทันตกรรมและป้องกันโรคในช่องปากในผู้ป่วยเฉพาะกลุ่มนี้เพื่อขจัดต้นเหตุของปัญหาในการพัฒนาสุขภาพช่องปาก*