Oral Health Status, Dental Caries Risk Factors of the Children of Public Kindergarten and Schools in Phranakornsriayudhya, Thailand

Sirikarn Sutthavong*, Suthisa Taebanpakul*,
Chidchai Kuruchitkosol**, Thananan Isarangul Na Ayudhya**,
Teerapol Chantveerawong**, Sarayoot Fuangroong**,
Supak Cae-ngow***, Ram Rangsin****

** Dental department, Phramongkutklao Hospital, The Royal Thai Army, Bangkok, Thailand*
*** Phramongkutklao College of Medicine, The Royal Thai Army, Bangkok, Thailand*
**** Office of Research Development, Phramongkutklao College of Medicine, The Royal Thai Army, Bangkok, Thailand*
***** Department of military and community medicine, Phramongkutklao College of Medicine, The Royal Thai Army, Bangkok, Thailand*

Background: *Dental caries remains a public health problem even though it is preventable. There are several risk factors that relate to dental caries, especially in children in suburban and rural areas, where they normally receive their first dental examination in primary schools by teachers or health care personnel. Their oral health depends primarily on their parents' awareness.*
Objective: *To identify prevalence and severity of dental caries and their risk factors among children in public education centers in Phranakornsriayudhya, Thailand.*
Material and Method: *A cross-sectional total study was conducted among children attending public education centers in Koh-Rean Subdistrict, Phranakornsriayudhya District, Phranakornsriayudhya Province, Thailand including a day care center, 2 kindergartens and 2 elementary schools, during the academic year of 2005. All children were invited to attend a dental health survey including general oral examination and a face to face interview for the participants' parents as well as children attending grade 1-6. Standardized questionnaires were used to identify the participants' oral health care behaviors.*
Results: *There were 157 (99.4%) from 158 children aged 2-12 years participated in the survey, 152 (96.8%) students had dental caries. The prevalence of dental caries among pre-school children was 95.4%. The overall average Decay Missing Filling for primary teeth (dmft) was 7.4 (± 4.6) and the overall average Decay Missing Filling for permanent teeth (DMFT) was 3.7 (± 1.8). The dmft among pre-school children was 9.1 (± 5.2). The prevalence of gingivitis was 95.5%. The independence risk factors for dental caries for primary teeth were brushing under supervision of teacher when compared with the parents (Odds ratio = 12.1 (95% CI, 2.6-55.4)), and not brushing after breakfast (Odds ratio = 3.7 (95% CI, 1.1-12.1). There were no significant risk factors of dental caries for permanent teeth.*
Conclusion: *A relatively high prevalence of dental caries was observed among children in suburban area in Thailand, especially in early childhood. It was shown that having the parents supervising their tooth brushing and having tooth brushing after breakfast may protect the dental caries for primary teeth. The public health interventions among this population are therefore urgently needed.*

Keywords: *Dental caries, Risk factors*

J Med Assoc Thai 2010; 93 (Suppl. 6): S71-S78
Full text. e-Journal: *http://www.mat.or.th/journal*

Dental caries remains a public health problem in many countries, even though it is preventable. It is one of the most common diseases of childhood, which can develop as early as the primary teeth begin to erupt. There are several risk factors that were significant related to the early childhood caries (ECC), *e.g.* the age that child becomes colonized, mutans streptococci levels, the present of visible plaque on their teeth, dietary habits; frequent sucrose intakes; sugared drinks, and frequently consumed sweet snacks between meals were pointed out by several opinions as the most important relationship to caries[1-9]. However, oral health of the infants and young children are factors which

Correspondence to:
Sutthavong S, Department of Dental, Phramongkutklao Hospital, Rajvithi road, Bangkok 10400, Thailand.
Phone: 0-2354-7600-28 ext. 93059
E-mail: oisiri@yahoo.com

infants and young children are unable to rely on themselves, especially oral hygiene, dietary habits and the other oral habits[10]. It substantially depends upon the practices of parents and their caretakers, themselves influenced by the amount of education, and their socioeconomic status[1,11-14]. The parent's role models have been shown to correlate with children caries experience; their own decay, missing, filling scores (DMFT), their feeding habits were strong risk indicators for the colonization of Streptococcus mutans and ECC[14,15]. In addition, early professional intervention also has a great effect since it can reduce or eliminate such oral diseases in diminutive scale. Otherwise, extensive deterioration of the teeth, which brings painful and early loss of teeth and several consequences, can be anticipated. However, oral health services may be not completely available at the local community level as a result of the shortage of dental manpower and economic constraints, especially in the low income countries[1]. Similarly, for the children in Koh-rean sub-district, Phranakornsriayudhya province sub-urban area of Bangkok, this was the community chosen as for training of the Department of Family Medicine, Phramongkutklao College of Medicine. Their first dental check up might have been delayed until 6 years of age when they are enrolled in public primary schools, which are under the governmental public health care system. However, this process was mainly conducted by class teachers or non dental health care personnel who work in the sub-district primary care unit (PCU). The oral health of these children depended on the awareness of their parents and caretakers.

This study was a cross-sectional survey conducted for obtaining the avenue of prevention and oral health promotion for the target population. The objectives were to obtain the prevalence, severity and dental caries risk factors of the preschool and school aged population.

Material and Method

Study population

The total study was performed at all public education centers including two public primary schools, two public kindergartens and a day-care center in Koh-rean subdistrict, Phranakornsriayudhya province, Thailand. All students were given informed consent by their parents to participate in the study.

Oral examination

The standardized oral examination was conducted by the two pediatric dentists. Each child was examined for dental caries, gingivitis and dental deposit using a mouth mirror and an explorer. No radiographic images were taken. Caries lesions of the tooth were diagnosed by a catch of explorer on molars fissures and a visible caries in incisors. The decay, missing and filling teeth were recorded in standard dental chart. In addition, each sextant of the mouth was examined and recorded for calculus deposit, gingivitis and also the sextant needed to be improved for oral hygiene. Gingivitis was recorded when redness and swollen gum were observed.

The questionnaires

Participating students were interviewed by trained medical students using standardized questionnaires to obtain the demographic data, dental care, dietary habits and dental utility. The questionnaires for the parents included parental knowledge, attitude and practices towards cariogenic foods, habits of their children, and the practices of dental care for their children.

Data analysis

To demonstrate the dental health status, the average DMFT score for permanent tooth, or average dmft score for primary tooth, were used to measure the average number of tooth decay, missing due to caries, or filling tooth per child. In addition, each sextant of the mouth that had gingivitis and calculus were counted.

Independent t-test was used to compare the mean score of dmft and DMFT among groups. Univariate and multivariate logistic regression analysis were used to evaluate the independent risk factors of dental caries (age, dental care, dietary habits and dental utility. parental knowledge, attitude and practices towards foods, habits, and the practices of dental care of their children). Analyses were performed using Statistical Program for Social Science program (SPSS), (SPSS version 13, Chicago, USA).

The research protocol was reviewed and approved by the Ethics Committee of the Royal Thai Army Medical Department.

Results

From 158 students, 157(99.4%) were participated in this study. Among these were 75 (47.8%) male and 82 (52.2%) female. The mean age was 7.8 ($\pm$ 4.6) years old. There were only 138 parents participated in the survey because some students were siblings. Most of the parents were non-skilled workers

Table 1. Characterization of the children

Characterization	Number of participant (%)	Children with caries (%)	Dmft (tooth/child) primary teeth	DMFT (tooth/child) permanent teeth
Gender				
Male	75 (47.8)	71 (94.7)	7.81 ± 4.59	3.77 ± 1.78
Female	82 (52.2)	81 (97.6)	6.97 ± 4.70	3.61 ± 1.79
Total	157 (100)	152 (96.8)	7.35 ± 4.64	3.67 ± 1.77
	Independent t-test		p < 0.297	p < 0.476
Age				
2-5.9	44 (28.0)	42 (95.4)	9.14 ± 5.15	4.0 ± 1.79
6-12	113 (72.0)	110 (97.3)	6.57 ± 4.19	3.7 ± 1.73
Total	157 (100)	152 (96.8)	7.35 ± 4.64	3.67 ± 1.77
	Independent t-test		p < 0.003	p < 0.001
Parental occupation				
Employee	99 (63.1)	96 (96.7)	6.18 ± 4.74	2.97 ± 2.2.24
Other	58 (36.9)	56 (96.6)	6.71 ± 5.45	2.67 ± 2.14
Total	157 (100)	152 (96.8)	6.59 ± 4.95	2.90 ± 2.18
	Independent t-test		p < 0.528	p < 0.458
Parental education				
Middle school and lower	130 (82.8)	127 (97.7)	6.41 ± 5.01	2.89 ± 2.22
Other	27 (17.2)	25 (92.6)	2.68 ± 2.16	2.68 ± 2.16
Total	157 (100)	152 (96.8)	6.38 ± 5.01	2.85 ± 2.19
	Independent t-test		p < 0.862	p < 0.693

and more than half of them had education at elementary school level. Demographic data of these students was shown in Table 1.

The oral examination found that 152 (96.8%) of the children had dental caries, ranging from 1-21 teeth (93% preschool children (aged 2-5 years), and 97.3% school age children (6-12 years old)). Among school-age children, there were at least one permanent tooth erupted in their mouths, and 80.5% of these already had dental caries on permanent teeth ranging 1-8 teeth. Twenty five children had permanent second molars, and 13 (52%) of them had caries on permanent second molar. The distribution of their average dmft and DMFT among groups of children was shown on Table 1.

Among carious children (n = 152), 94.7% were untreated, only 2 (1.3%) children had dental restorations and sealants on permanent teeth, and a child already lost permanent molar by extraction. There were 5 (3.3%) children, who had primary teeth extraction prematurely. All of dental caries found in preschool children were untreated.

There were 150 (95.5%) of the study population who had gingivitis along with plaque deposit while 77 (48.7%) had gingivitis with calculus deposit. The average number of sextants with gingivitis and calculus deposit observed was 4 out of 6 sextants. Of 157 students, 109 (69.4%) were interviewed. Most of them (89.9%) had their first dental check done by their class teachers or the nurses from a primary care unit, 13.6% of the students visited private clinics for dental check up. Nevertheless, 56.9% had never visited a dental clinic.

Since there was an after lunch-brushing program in the schools 74.3% of the students reported that they brushed their teeth every school-day. There was 71.6% of the children admitted that they consumed snacks before the bed time and forgot to brush their teeth. Additionally, 52.8% had their parents remind or encourage them to brush at home, while 36.8% self brushed without any external encouragement. For inter-proximal cleaning, 93.6% of the students reported that they had never used dental floss, while 58.7% did not recognize such a practice.

According to the national survey in 2000[16], the average dmft of 3.6 was found among preschool children, Therefore, we classified the children into two groups *i.e.* those who had average caries experience less or equal to the national average dmft $\leq$ 3.6 and those who had average caries experience more than

Table 2. Risk factors of dmft > 3.6

Risk Factors	No. (%)	Prevalence of	Odds ratio	p-value	*Adjusted Odds ratio	p-value
Brushing under supervision						
by parents, caretakers	21 (26.6)	4 (19.0)	1		1	
			10.3 (3.0-35.0)		12.1 (2.6-55.4)	
by teacher	58 (73.4)	41 (70.7)		<0.001		0.001
Time of brushing						
After breakfast						
yes	57 (53.3)	28 (49.1)	1		1	
no	50 (46.7)	37 (74.0)	2.9 (1.3-6.7)	0.01	3.7 (1.1-12.1)	0.03
Before bedtime, no snack after brushing						
no snack	84 (78.5)	46 (54.8)	1			
snack	23 (21.5)	19 (82.6)	3.9 (1.2-12.5)	0.017		
Brushing technics						
other	89 (81.7)	50 (56.2)	1			
Scrub technics	20 (18.3)	17 (85.0)	4.4 (1.2-16.2)	0.021		
other	54 (71.1)	54 (71.1)	1			
Roll technics	13 (39.4)	13 (39.4)	0.3 (0.1-0.6)	0.003		
Mouthwash						
yes	45 (47.3)	20 (44.4)	1			
no	50 (52.6)	34 (68.0)	2.7 (1.2-6.1)	0.024		
Interproximal cleaning						
Using toothpicks						
no	48 (45.3)	23 (47.9)	1			
yes	58 (54.7)	42 (72.4)	2.9 (1.3-6.4)	0.016		

*Adjusted by brushing guidance, time, technics, cleaning aid and mouthwash

the national average dmft > 3.6 for determining the risk of dental caries. The univariate and multivariate logistic regression analysis determined the risk factors of dental caries shown on Table 2. The study result showed that children who did not brush after breakfast were 3.7 (95% CI 1.1-12.1) times more likely to acquire dental caries than those who did. Children who were supervised by teachers had 12.1 (95% CI 2.6-55.4) greater risk of having dental caries compared with those who were supervised by parents. There were no significant risk factors for dental caries for permanent teeth among school-age population.

From 139 parents who answered the questionnaires about their knowledge and attitude towards dietary habit and dental care, the average score was 72% (3.6/5, SD = 0.34 out of 5). The parental practices towards dietary habit and dental care of their children were 43.8% (1.75/4, SD = 0.35). However, there was no association observed between parental knowledge and attitude towards dietary habit and dental care with dmft $p < 0.824$ and DMFT $p < 0.686$ as well as the parental practices with dmft $p < 0.665$ and DMFT $p < 0.560$.

Discussion

A relatively high prevalence of dental caries among preschool and school-age population was observed in this study; preschool children 95.4%, school aged children 97. 3%. Unfortunately, there were only few dental care possibilities provided for the affected children. Of 152 children who had dental caries, only 8 (5.3%) received treatments, *i.e.*, tooth fillings (n = 2), primary teeth extracted prematurely (n = 5), and permanent tooth extracted (n = 1). All of the reported lifetime dental care treatments were initiated at the schools by the designated health care personnel.

Early childhood caries (ECC) was known as the virulent form of dental caries that can destroy the primary teeth of toddlers and preschool children[12]. In addition, early infected or colonization by S. mutans is a major risk factor for ECC and future dental caries[12]. According to Alaluuasua, et al, children who harbored

S. mutans in their plaque at their early age (2 years old) appeared to be the most caries-active individuals[17]. In this study, the preschool group with the average dmft scores = 9.6, early infected or colonized by S. mutans seems to offer an explanation for the high prevalence of dental caries, because by the time the children reach the age of 3, almost all of them have caries an average 50% of their teeth in the mouth. Since there were untreated for all dental caries in this group, dental caries founded were in active stages. Short-term consequences of lack of professional intervention of dental caries such as pain, abscesses and premature loss of primary teeth were also found in some children. The prevalence of caries in this survey group contrasts with the observations of the National Dental Health Survey in 2000[16], in which only 65.7% of the children in 3 years old age group had caries, average dmft score = 3.6 tooth/child and 65% were untreated. In 2005 the National Dental Health Survey reported even less prevalence of dental caries of the children in 3 years old age group, their caries experience, average dmft score = 3.6 tooth/child and a proportion of 38.6% without dental caries[18].

In the 6-12 years old age-group, with the mixed dentition, there were about all had caries. The fact was that the average dmft score in this age group decreased due to exfoliation of primary teeth. Meanwhile, the average DMFT accumulated when the children got older. Comparing to the 5th and 6th National Survey showed that the national prevalence of dental caries was about 57% among 12 year old children with the average DMFT score of 1.1and 1.6 teeth/person respectively. This survey found average DMFT = 3.7 tooth/child[16,18]. The difference of the prevalence found in our study and the National Health Survey may be due to the differences in the age of the study populations and the sampling methods. Furthermore, the report that children who were with the higher number of S. mutans for primary teeth tended to experience a higher attack rate for the later permanent teeth could be the reason for high frequency of caries on permanent teeth[19].

This study also showed high prevalence of gingivitis and plaque deposit average sextant of 4 which similar to the previous study in Thailand by Shinnabutra S, et al 1997 that most of children of elementary school in northeastern of Thailand had gingivitis with the average sextant of 3.9[20]. Oral hygiene habits and behavioral factors have an impact on dental health: many variables were associated with high caries including infrequent tooth brushing, irregular toothbrushing at night, frequent snacking and consumption of sweets[6,12,21-23]. The high prevalence of gingivitis and plaque deposit implied the poor oral hygiene among the study population. Besides socioeconomic status (SES) and income level as important determinants of ECC, a parental low socioeconomic status can reduce interest in oral hygiene and healthy diet. Knowledge about oral hygiene and difficulty accessing preventive dental care are believed to contribute to frequency of caries but underprivileged children are usually dentally neglected and more likely to have untreated dental caries. It is well known that beliefs and attitudes towards dental health impact on how parents care for the dental health of their children[24]. It is noteworthy that reported parental attitudes to dental health were more closely correlated with caries experience than the dental behaviors they performed, such as supervised brushing[24,25]. The parental knowledge and attitude score from the survey was 72%, while the practical dental care score was 43%, reflecting the high caries prevalence in the survey. In addition, previous studies observed that parents themselves often do not know what to do and thus do not provide good models for their children[3,26]. It was reported that the mothers of children with dental caries were found to have fewer years of education[27]. However, this survey showed there were no differences between group of parental educations and caries status.

The negligence of dental caries in preschool aged population can be explained as a belief that young children do not need to visit the dentist because the primary dentition are not permanent, and dental caries on primary teeth was a natural part of development in children and it would be resolves as the eruption of permanent teeth. Any intervention in the oral health of a child usually begins with seeking help to relief pain[27,28]. In addition, the limited public dental health service available in Thailand especially in suburban and rural areas may be another major explanation for this problem which was also found in other low income countries[1,21,29].

Using multivariate analysis, the independent risk factors were no brushing after breakfast and brushing under guidance of teachers. This study showed that those students who reported that the major facilitator for tooth brushing was a teacher had 12.1 times greater risk of getting caries compared with parents and other family members. This finding can be explained that the children should be encouraged to become well accustomed to oral care since their early

childhood. Thus, by the school-aged it would be too late for caries prevention. There was supported by a study showing that brushing at early age and with adult involvement in brushing twice a day doubled the odds of being caries-free in children[25]. Besides, the teachers had to take care of too many children under supervision. Those who reported that their family members were their major facilitator for tooth brushing might have the earlier oral health care. In addition, the lack of incentive for teachers to regularly supervise brushing to their students might explain the lower effectiveness of their supervision[20]. Thai people usually brush their teeth immediately after waking up in the morning, not after breakfast. However, we found that those who did not brush after breakfast had 3.7 times greater risk of getting caries compared to those who did. In addition, brushing after breakfast would be more effective in children since it might have been guided by their parents or caretakers.

The high prevalence of ECC in our study demonstrated the urgent needs for an early prevention program in Thai children, since the primary prevention before the onset of dental caries seems to be the best possibility in these circumstances. The prevention of ECC should not only involve dentists, parents, and pediatricians, but also the other primary health care providers who are more likely to see infants and toddlers during the regular well-child care services before ECC manifests clinically. The oral hygiene screening, dietary habit and oral cleaning counseling with parents should be included in their services[11]. Since the non-dental health care providers have an important role in the promotion of oral health, the requirement of training to conduct the standardized counseling for preventive oral health care in their program is necessary. The public health interventions among this population are urgently needed. In addition, it would be of great benefit to develop a primary oral health care as a part of the national primary health care strategy, in which self responsibility of good oral care and self awareness of good hygiene, nutrition and dietary habits is emphasized.

Conclusion

The high prevalence and severity of ECC were found in the preschool school aged children, mostly from the low SES family in suburban area of Thailand. We also found the limitation of the dental caries treatment in this population. The government health policy is of essential importance to integrate oral health care into general health care. The strengthening of oral health promotion and diseases prevention and care is necessary and of great benefit.

Acknowledgments

The authors would like to thank Dr. Mathirut Mungthin and Professor Alain Kupferman for their invaluable suggestions, and the community health personnel, school authorities, parents and children, who supported and participated in the survey.

References

1. Petersen PE. Sociobehavioural risk factors in dental caries-international perspectives. Community Dent Oral Epidemiol 2005; 33: 274-9.
2. Harris R, Nicoll AD, Adair PM, Pine CM. Risk factors for dental caries in young children: a systematic review of the literature. Community Dent Health 2004; 21: 71-85.
3. Tinanoff N, Douglass JM. Clinical decision-making for caries management in primary teeth. J Dent Educ 2001; 65: 1133-42.
4. Bolin AK, Bolin A, Jansson L, Calltorp J. Children's dental health in Europe. Swed Dent J 1997; 21: 25-40.
5. Alaluusua S, Malmivirta R. Early plaque accumulation-a sign for caries risk in young children. Community Dent Oral Epidemiol 1994; 22: 273-6.
6. Vanobbergen J, Martens L, Lesaffre E, Bogaerts K, Declerck D. Assessing risk indicators for dental caries in the primary dentition. Community Dent Oral Epidemiol 2001; 29: 424-34.
7. Kalsbeek H, Verrips GH. Consumption of sweet snacks and caries experience of primary school children. Caries Res 1994; 28: 477-83.
8. Zurriaga O, Martiinez-Beneito MA, Abellan JJ, Carda C. Assessing the social class of children from parental information to study possible social inequalities in health outcomes. Ann Epidemiol 2004; 14: 378-84.
9. van Palenstein Helderman WH, Soe W, van 't Hof MA. Risk factors of early childhood caries in a Southeast Asian population. J Dent Res 2006; 85: 85-8.
10. Farias DG, Leal SC, de Toledo OA, Faber J, Bezerro AC. Effect of oral anticipatory guidance on oral health and oral hygiene practices in preschool children. J Clin Pediatr Dent 2005; 30: 23-7.
11. Gussy MG, Waters EG, Walsh O, Kilpatrick NM. Early childhood caries: current evidence for aetiology and prevention. J Paediatr Child Health

2006; 42: 37-43.
12. Berkowitz RJ. Causes, treatment and prevention of early childhood caries: a microbiologic perspective. J Can Dent Assoc 2003; 69: 304-7.
13. Freeman L, Martin S, Rutenberg G, Shirejian P, Skarie M. Relationships between DEF, demographic and behavioral variables among multiracial preschool children. ASDC J Dent Child 1989; 56: 205-10.
14. Ersin NK, Eronat N, Cogulu D, Uzel A, Aksit S. Association of maternal-child characteristics as a factor in early childhood caries and salivary bacterial counts. J Dent Child (Chic) 2006; 73: 105-11.
15. Ersin NK, Kocabas EH, Alpoz AR, Uzel A. Transmission of Streptococcus mutans in a group of Turkish families. Oral Microbiol Immunol 2004; 19: 408-10.
16. Department of Dental Health. Report at the 5th National Oral Health Survey 2000-2001 in Thailand. Bangkok: Ministry of Public Health, Thailand; 2002.
17. Alaluusua S, Renkonen OV. Streptococcus mutans establishment and dental caries experience in children from 2 to 4 years old. Scand J Dent Res 1983; 91: 453-7.
18. Department of Dental Health. Report at the 6th National Oral Health Survey 2005-2007 in Thailand. Bangkok: Ministry of Public Health, Thailand; 2008.
19. Harris NO, Garcia-Godoy F. Primary preventive dentistry. 6th ed, New Jersey: Pearson Education; 2004: 43.
20. Shinabutra S, Sudajantara S, Yhongkam-an K. Evaluation of after lunch brushing program in elementary school Udonthani Province, Thailand. Department of Dental Public Health, Ministry of Public Health. Research abstract report 1993-2001: PT2540-03.
21. Julihn A, Barr AM, Grindefjord M, Modeer T. Risk factors and risk indicators associated with high caries experience in Swedish 19-year-olds. Acta Odontol Scand 2006; 64: 267-73.
22. Mattila ML, Rautava P, Aromaa M, Ojanlatva A, Paunio P, Hyssala L, et al. Behavioural and demographic factors during early childhood and poor dental health at 10 years of age. Caries Res 2005; 39: 85-91.
23. Marshall TA, Broffitt B, Eichenberger-Gilmore J, Warren JJ, Cunningham MA, Levy SM. The roles of meal, snack, and daily total food and beverage exposures on caries experience in young children. J Public Health Dent 2005; 65: 166-73.
24. Skeie MS, Riordan PJ, Klock KS, Espelid I. Parental risk attitudes and caries-related behaviours among immigrant and western native children in Oslo. Community Dent Oral Epidemiol 2006; 34: 103-13.
25. Pine CM, Adair PM, Nicoll AD, Burnside G, Petersen PE, Beighton D, et al. International comparisons of health inequalities in childhood dental caries. Community Dent Health 2004; 21(1 Suppl): 121-30.
26. Craig TT, Montague JL. Family oral health survey. J Am Dent Assoc 1976; 92: 326-32.
27. Vargas CM, Crall JJ, Schneider DA. Sociodemographic distribution of pediatric dental caries: NHANES III, 1988-1994. J Am Dent Assoc 1998; 129: 1229-38.
28. Rakpichitjaroen N, Tuongratanaphan S, Asvanit P. Social meaning of the primary teeth by health care provider in Nakornping Hospital, Chiang Mai Province. Abstract in The International Seminar NRCT-JSPS Core University program in dentistry. Current challenge to improve oral health from children to the elderly; Bangkok, Thailand; February 9, 2006: 38.
29. Carino KM, Shinada K, Kawaguchi Y. Early childhood caries in northern Philippines. Community Dent Oral Epidemiol 2003; 31: 81-9.

สภาวะช่องปากและปัจจัยเสี่ยงของฟันผุในนักเรียนอนุบาล และชั้นประถมจังหวัด พระนครศรีอยุธยา

สิริกาญจน์ สุทธวงษ์, ศุทธิษา แต่บรรพกุล, ชิดชัย คุรุจิตโกศล, ธนานันต์ อิศรางกูร ณ อยุธยา, ธีรพล ฉันทวีระวงศ์, ศรายุทธ เฟื่องรุ้ง, สุภัค แซ่โง้ว, ราม รังสินธุ์

ภูมิหลัง: *ฟันผุยังเป็นปัญหาสาธารณสุขในหลายประเทศทั้งที่เป็นโรคที่ป้องกันได้ เกิดขึ้นได้ทันทีที่ฟันขึ้น มีสาเหตุจากหลายปัจจัยที่เกี่ยวข้อง โดยเฉพาะอย่างยิ่งในเด็กที่อาศัยในชนบทหรือชานเมืองการตรวจฟันครั้งแรกมักจะเป็นที่โรงเรียน โดยครูประจำชั้นหรือเจ้าหน้าที่อนามัยที่รับผิดชอบสุขภาพช่องปากของเด็กเหล่านี้ขึ้นกับการใส่ใจของพ่อแม่*

วัตถุประสงค์: *เพื่อสำรวจความชุก, ความรุนแรงของฟันผุ และปัจจัยเสี่ยงในเด็กโรงเรียนรัฐบาล ก่อนวัยเรียนและเด็กชั้นประถม*

วัสดุและวิธีการ: *เป็นการศึกษาแบบตัดขวางในเด็ก ที่เข้าเรียนที่ศูนย์เด็กเล็ก โรงเรียนอนุบาล 2 แห่ง และโรงเรียนประถมศึกษา 2 แห่ง ในตำบลเกาะเรียน อำเภอพระนครศรีอยุธยา จังหวัดพระนครศรีอยุธยา ปีการศึกษา 2547 นักเรียนทั้งหมดได้รับเชิญให้เข้าร่วมการวิจัยสำรวจปัญหาในช่องปาก ซึ่งประกอบด้วย การตรวจในช่องปาก การสัมภาษณ์โดยใช้แบบสอบถามมาตรฐาน สัมภาษณ์พ่อหรือแม่ และเด็กชั้นประถม 1-6 เกี่ยวกับพฤติกรรมการดูแลสุขภาพช่องปาก*

ผลการศึกษา: *มีนักเรียนร้อยละ 99.4 (157 คน) จาก 158 คน อายุ 2-12 ปี เข้าร่วมการสำรวจโดยพบว่าร้อยละ 96.8 (152 คน) มีฟันผุพบในเด็กก่อนวัยเรียนร้อยละ 95.4 ค่าเฉลี่ย dmft = 9.1 (± 5.2) ซี่/คน และในเด็กวัยเรียนร้อยละ 95.4 ค่าเฉลี่ย DMFT = 3.7 (± 1.8) ซี่/คน พบเหงือกอักเสบร้อยละ 95.5 การศึกษานี้ยังพบปัจจัยเสี่ยงที่ทำให้เกิดฟันผุในฟันน้ำนม ได้แก่ เด็กที่ให้ครูเป็นผู้ดูแลในการแปรงฟันมีความเสี่ยงที่มีฟันผุมากกว่าเด็กที่ให้พ่อแม่หรือคนเลี้ยง 12.1 เท่า (Odds ratio = 12.1, 95% CI, 2.6-55.4)), และเด็กที่ไม่แปรงฟันหลังอาหารเช้ามีความเสี่ยงเกิดฟันผุเป็น 3.7 เท่าของเด็กที่แปรง (Odds ratio = 3.7, 95% CI, 1.1–12.1) แต่ไม่พบปัจจัยเสี่ยงที่ทำให้เกิดฟันผุในฟันแท้ในประชากรกลุ่มนี้*

สรุป: *เด็กในชนบทของประเทศไทยมีอัตราฟันผุสูง โดยเฉพาะในเด็กเล็กแต่เด็กที่มีพ่อแม่ช่วยดูแลให้แปรงฟัน และแปรงหลังรับประทานอาหารเช้าช่วยป้องกันฟันผุในฟันน้ำนมได้ และประชากรในกลุ่มนี้ต้องการการแก้ปัญหาทางสาธารณสุขเป็นอย่างแบบแผนเร่งด่วน*