

# Situation of Baby Bottle Use: Is It Suitable to Recommend Weaning by the Age of One Year?

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**Background:** Inappropriate baby bottle use is associated with many adversely health affects such as dental caries, refuse to eat etc. International pediatric institutes suggest weaning by the age of 1 year. To establish a practical recommendation for Thai children, needs situation analysis.

**Objective:** To determine the percentage of baby bottle use including late night feeding, behavior contributing to baby bottle addiction and chance of adverse health affects.

**Material and Method:** A cross sectional descriptive study was performed in well child clinic at QSNICH during November 2003-December 2007. One thousand thirty-eight caretakers from 13 groups of children age 1 month-4 years were randomly included. Questionnaires were used and analyzed by SPSS program.

**Results:** A total of 1,038 caretakers were interviewed. Parents comprised 70% of the caretakers. Children aged 1-2 years, 2-3 years, and 3-4 years, are found to remain on the bottle feeding constituted 92%, 70% and 42% respectively and remain on the night feeding comprised 70%, 50%, and 37% respectively. And more specifically, children at the age of six month have night feeding up to 85%.

The weaning ages from the bottle were widely distributed, the earliest was one year (1%), the mean age was 2.5 years (SD = 0.612), the mode was at the age of two years (13%). Forty-six percent of children age 6 month-4 years received a bottle to sleep with 34% of caretakers offering bottle feeding when the child just moved the body. After bedtime mouth care, 48% of children were back to bottle-feeding. Eighteen percent of children age 2-4 year who were bottle fed were getting more milk volume than recommended with the maximum amount of 56 ounces a day. Fifty-six percent of children at 2 years and 70% at 4 years, received bottle-feeding more frequently than recommended with the maximum of 11 times a day. Eighty-eight percent of the caretakers did not know the recommended age of weaning.

**Conclusion:** The children in this study still use baby bottle and have night feeding far beyond the recommended age including the practice of bottle to sleep, returning to bottle after dental care which will lead to addiction and adverse health affect. The age at which the children can quit and the realization of caretakers of when to quit are scattered.

**Suggestion:** Recommendation should be at the age of one year but be flexible to more half a year to the age of 1½ year, with encourage appropriate using and preparation to the weaning process.

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**Keywords:** Prolong baby bottle use, Night feeding, Adverse health effects, Weaning recommendation

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In the past a feeder to baby was simple like a cup and spoon or a utensil with a cylindrical part made from animal skin or linen. A baby bottle was an innovation which came about at the turn of the twentieth

century<sup>(1)</sup> and gradually became very popular as the friendly-feeding utensil for the children, convenient by any position, any fill-in fluid and any age. Amid all the conveniences came the undesirable habits leading to adverse health effects such as dental caries, food refusal, obesity, decrease opportunity in development especially communication and motor skills<sup>(2)</sup>.

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To date, the international academic institutes<sup>(3-5)</sup> as well as the Royal Pediatric Society of Thailand<sup>(6)</sup> recommended quitting baby bottle using by the age of 1 year. Practically we stuck with unachievable practice. Queen Sirikit National Institute of Child Health (QSNICH) convened a meeting of representatives from related offices, associations and academics<sup>(7)</sup> as well as parents and caregivers<sup>(8)</sup> to share idea and views on the subject. The recommended age of weaning comes up as follows:

Pediatricians: No uniformity in the group. Agreed with the age of either 1 year, 1½ year and 2 years.

Dentists: Agreed on the weaning age of 1 year.

Parents and Caregivers: Opinions varied.

The sight of many Thai children beyond the age of one year remaining on the bottle is normal behavior and might be the reason why we cannot get a uniform agreement. Preparations to the weaning are not well established in the society. To adopt the recommended weaning age at one year will create anxiety among parents and caregivers. This study would like to learn the situation and some adverse health outcomes of baby bottle use among young Thai children, age 1-4 year which would help to facilitate the appropriate recommended weaning age in the context of Thai children.

## Objective

To determine:

1. the rate of bottle feeding in children at the age of 1-4 years.
2. the rate of night feeding in children age the age of 1-4 years.
3. the behaviors contributing to the baby bottle-feeding addiction.
4. the risk and adverse health effects.

## Study Duration

November 2002 – July 2007

## Study Site

Well Child Clinic, QSNICH

## Study Method

A Cross Sectional Descriptive Study

## Material and Method

1. Questionnaire development:

Part 1: General demographic and socio-economic data.

Part 2: A situation of baby bottle feeding use day and night.

Part 3: Knowledge, attitude and practice of caregivers in providing baby feeding.

### 2. Study group:

Children ages of 1 month – 4 years were recruited and divided into 13 age groups: 1 month, 2 months, 4 months, 6 months, 9 months, 1 year, 1¼ year, 3 months, 1½ years, 2 years, 2¼ years, 3 years, 3½ years and 4 years old. Each age group contained 80 children and totaled 1,038 children.

3. Recruitment was made by simple random sampling technique with the criteria:

3.1 A child's age falls in an established group.

3.2 A child is healthy and without any chronic illnesses.

3.3 A child attends the service at the well-child clinic during 8.00-12.00 hrs, Monday to Friday.

4. Interviewing parents/caregivers as designated in the questionnaire.

5. Data processing and analysis by SPSS program.

6. Night-feeding means bottle-feeding given nighttime between 24.00-04.00 hrs.

## Results

General information:

- Parents are the majority of caregivers by 69.62% (770/1,106).
- Most of the parents (92.48% - 959/1,037) are married or cohabit.
- Almost half of the mothers (45.15% - 400/886) are housewife/unemployed.
- Less than half of mothers (43.26% - 379/876) completed secondary/vocational level education.
- More than half (56.76% - 575/1,013) of the fathers are found to be employees and less than half of them (42.68% - 420/984) had completed secondary/vocational level education.

• An average household income of approximately one third of the parents (33.33% - 343/1,029) is in the range of baht 10,001-20,000 per month.

1. The rate of bottle-feeding by age and age group in children age 1-4 years.

2. The rate of night bottle feeding in children age 1-4 years.

By the recommendation children should be weaned from the bottle-feeding by one year of age and from night bottle feeding by the age of six months. The study found that:

Children age 1-2 years, 92% remained on bottle-feeding with 70% remained on night feeding.

Children age 2-3 years, 70% remained on bottle-feeding with 50% remained on night feeding.

Children age 3-4 years, 42% remained on bottle-feeding with 37% remaining on night-feeding.

3. Feeding behaviors contributing to children's addiction to bottle feeding.

The children were bottle-fed to sleep were 46% (368/798) and about one third, 34% (275/798) of them were given the bottle-fed when they stirred or seemed likely to wake up at night.

4. Risks and adverse health effects from inappropriate bottle-feeding behaviors.

By collecting the number and percentage of children having resumed bottle-feeding after having had their mouth cleaned at bedtime (6 month-4 years), we found that children age 6-48 months had their mouth cleaned before bedtime 58% (259/447). However, almost half of them, 48% (125/259), were found to resume bottle-feeding again.

Average daily formula intake is 16 ounces. Fifty-one percent (78/153) had intake of less than 16 ounces and 8 percent (28/153) had more than 24 ounces per day.

Children aged less than two years had an average bottle milk meals five times with maximum of 11 times and minimum of once a day. More than half, 56% (123/220), had more than four meal times a day.

Children 2-4 years of age had an average bottle milk meals 3-4 times with maximum of 15 times and minimum of once a day. Almost half, 49% (191/392), had more than three meal times a day.

## Discussion

The children participated in this study are those with good health, with family's socioeconomic status at a medium level of Thai population<sup>(9)</sup> and as we are in the part of government service, providing health care at the low and affordable cost. To a certain extent, the result from this study should somewhat reflect the state of problems of the majority Thai children.

### *The rate of the bottle feeding and night feeding*

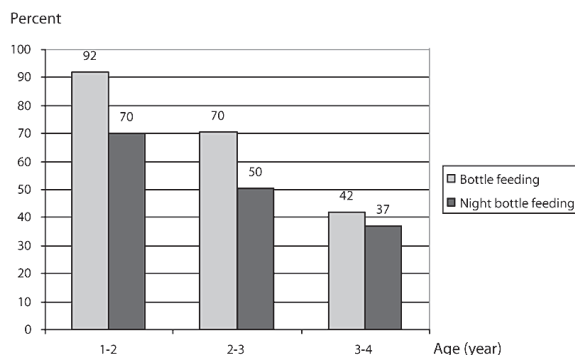
From studying Tables 1-2 and Fig. 1 children aged 1-2 years, 2-3 years, and 3-4 years, are found to remain on the bottle-feeding and constituted 92%, 70% and 42% respectively and those who remained on night-feeding comprised 70%, 50%, and 37% respectively. And more specifically, children at the age of six

**Table 1.** Percentage of bottle feeding by age

Age group interval (year)	Remained on bottle feeding	
	Number	Percent
1-2	296/320	92.50
2-3	169/240	70.42
3-4	101/238	42.44

**Table 2.** Percentage of night bottle group feeding by age

Age interval	Number	Percent
1-6 months	288/320	90.00
6-12 months	204/240	85.00
1-2 years	224/320	70.00
2-3 years	121/240	50.42
3-4 years	88/238	36.97



**Fig. 1** Percentages of bottle feeding compare with night bottle feeding by age group

months were night-fed up to 85%. Compared with the study in Thailand in 1996, children at two years of age were bottle-fed daytime and at night, 61.6% and 92.7%, respectively<sup>(10)</sup>. This confirmed the very high rates of the baby bottle use and night-feeding beyond the recommended age in our Thai children. Results from international studies showed the difference: at two years were of 46%, 36% and 20%<sup>(11)</sup>, at three years reduced to 9% in American children<sup>(12)</sup> and up to 71% of British children<sup>(13)</sup>. And interestingly, the rates of night-feeding at the aged of 6 months and 9 months were as low as 17 percent and 10 per cent respectively<sup>(14)</sup>. The lower rate internationally should be from a well planned preparation.

Should and could a baby be suitable for quitting night-feeding at 6 months? They should because continuing night-feeding when teething and the complementary food start will do harm to dental caries. They could because normally babies' cycle of sleeping and eating habits are expected to be well adjusted. With proper nurturing and care, at six months 84 per cent of children are able to sleep a longer period of 4-5 hours at night and some can get through 8-10 hours without interruption for feeding<sup>(14)</sup>. The clue is that at the age of six months, the alternate between non-repetitive eye movement (Non-REM) and repetitive eye movement (REM) sleep pattern may cause the infants to involuntarily cry or stir periodically<sup>(15)</sup>. If we responded by picking up the babies to comfort them back to sleep or feed them, it would disrupt the sleep cycle and alter it to the point that causes babies to become used to waking up and crying in the middle of the night as well as their stomach producing the digestive fluid. This will lead to an undesirable habit "Trained night-criers and trained night-feeders" which in turn will lead to addiction to night bottle-feeding<sup>(16)</sup> and dental caries<sup>(17)</sup>. Normally, babies on formula-feeding are likely to sleep a stretch of 4-6 hours at night without waking up by the age of four months, while those breast-fed are likely to at the approximate age of five months<sup>(18)</sup>.

#### ***The behaviors contributing to the baby bottle feeding addiction***

Giving bottle to induce sleep and bottle-feeding when the child is about to awaken are the two principal, unwanted behaviors. We found that an

average of 46% of children aged six months to four years old were bottle to sleep, Suvisa et al<sup>(19)</sup>. Dental Health Division<sup>(10)</sup> and a report in the United States<sup>(18)</sup> found 44%, 29 and 25%, respectively. Furthermore from Table 3, 34% of parents and caregivers bottle-fed their young children when they started to wake up and the body was stirring. Suvisa et al<sup>(19)</sup> further investigated parents/caregivers who bottle-fed children when they started to move or started to cry were 38% and 52% respectively. There were even 2.1 per cent of them who went so far as to wake up the babies for feeding. Our Thai children are faced with more difficulties than their peers in other countries. And this situation is likely to create an uphill battle when it comes to adopting the recommended age of weaning at one year of age.

#### ***Risk and adverse health effects from inappropriate bottle feeding behaviors***

Adverse health effects stemming from the prolonged and inappropriate baby bottle use<sup>(20, 21)</sup> and as earlier mentioned in the background. However, bottle-feeding is not actually the sole, principal cause of dental caries, nor is every single bottle-fed child to develop dental caries. There are also other major risk factors involved, namely bottle to induce sleep, late night feeding, adding syrup, sugar or honey to the baby formula as in the study by Chutima Trairatworakul et al<sup>(22)</sup>.

Our study found that the habit of resuming to bottle-feeding after cleaning the mouth and before bedtime was as high as 48 per cent. Therefore this is another issue of which child healthcare providers must be aware and address.

**Table 3.** Number and percentage of children with behaviors contributing to children's addiction to bottle feeding. Study in children aged 6-48 months

Age (Month)	Number	Bottle to sleep		Receive bottle-feeding when stirring or appeared to wake up	
		No.	%	No.	%
6	80	30	37.50	36	45.00
9	80	32	40.00	27	33.75
12	80	40	50.00	24	30.00
15	80	43	53.75	25	31.25
18	80	41	51.25	26	32.50
24	80	45	56.25	26	32.50
30	80	45	56.25	26	32.50
36	80	23	28.75	27	33.75
42	78	33	42.31	24	30.00
48	80	36	45.00	34	42.50
Total	798	368	46.12	275	34.46

Prolong bottle-fed children were also associated with the risk of obesity more than those who were breast-fed<sup>(23)</sup>. Children who weaned from the bottle-feeding after 15 months of age and were found to have an increased risk of obesity at the rate of 3% for each month they continued bottle use<sup>(24)</sup>. Normally, children aged 2-3 years need 16-24 ounces, preferably 16 ounces, of milk per day. Results of this study (Table 4), however, show that 18% of the bottle-fed children aged 2Ω-4 years old received more than 24 ounces of milk per day with some feedings as high as 56 ounces of milk per day. Even 51% of them has the average amount the figure found should be seen as a warning sign of risk for obesity. Also, from Table 5 it was found that 56% of the children in that group received a greater number of feedings per day than recommended; these can lead to the habit of frequent eating and if continued can result in obesity problems as well.

Based on the results found in the study, it is evident that the young Thai children are on the bottle-feeding for a longer period of time than it is recommended. They also were cared for in a way that promoted addictive habits to bottle use, in addition to a number of behaviors contributing to adverse health effects, for instance, a return to bottle-feeding after mouth cleaning, more consumption and feeding times than recommended. All this will make the adopting the recommendation for the appropriate weaning age (age one or before) a worrisome matter and hard for parents/ caregivers to adopt to.

We totally agree with the international recommendation to wean the baby bottle by the age of one year. However, in a situation where a high rate of children are used to bottle-feeding, probably due to a lack of awareness and insufficient information to the preparation. A more flexible/compromised recommendation should be considered. Based on the results from this study (Fig. 2), only 1 per cent (3/301) of the children could wean from the bottle at the age of one year. While the average age of weaning from the bottle was 2.05 years (SD = 0.6120), the majority of children (only 13%) had a reported-age of weaning at 2 years old. It is clear that at one year of age only a handful of children succeeded in being weaned from bottle use. Therefore, the less stringent and more practical recommended age appears to be at 2-3 years of age.

What age should be practical for Thai children? Prolonged weaning to the age of 2-3 years will bring not only adverse health effect but also pose a difficulty in adopting the change since children are

**Table 4.** Daily amount of formula intake by bottle (ounces) in children aged 2Ω-4 years

Age (year) children	No. of children	Amount of daily intake (ounces)			
		Mean $\pm$ SD	Range	< 16 ounces n (%)	> 24 ounces n (%)
2Ω	55	16.58 $\pm$ 12.72	(2-56)	25 (45.45)	14 (25.45)
3	36	13.08 $\pm$ 8.93	(1-40)	23 (63.89)	4 (11.11)
3Ω	30	15.43 $\pm$ 8.084	(7-32)	16 (53.33)	3 (10.00)
4.0	32	18.85 $\pm$ 16.31	(1-56)	14 (43.75)	7 (21.88)
Total	153	16.00 $\pm$ 12.1	(1-56)	78 (50.98)	28 (18.30)

The data was limited

**Table 5.** Number and percentage of bottle milk meals per day

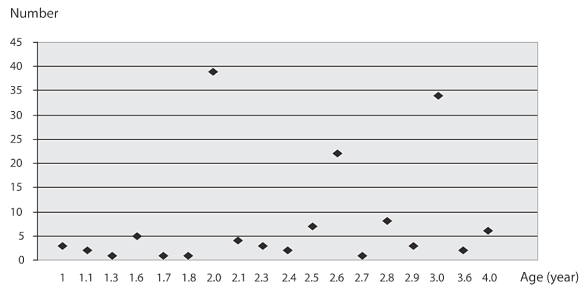
Age (month)	No. of Children	Amount of daily intake (ounces)		> 4 milk meals a day	
		Mean $\pm$ SD	Range	No.	%
12	70	5 $\pm$ 2.28	(1-11)	39	55.71
15	76	5 $\pm$ 1.73	(1-9)	46	60.53
18	74	5 $\pm$ 1.81	(1-10)	38	51.35
> 3 milk meals a day					
24	77	4 $\pm$ 1.79	(1-9)	54	70.13
30	79	4 $\pm$ 2.30	(1-15)	43	54.43
36	79	3 $\pm$ 1.56	(1-8)	39	49.37
42	79	3 $\pm$ 1.44	(1-7)	31	39.24
48	78	3 $\pm$ 1.41	(1-7)	24	30.77

by then approaching the more independence stage start from around the age of 15 months<sup>(25)</sup>; younger than 2-3 years, but older than one year of age, is preferable. A survey of 3,000 children under the NHANES III reported by Einstein College of Medicine in June 2005 found that 55% of the children successfully weaned from bottle-feeding were at age 18 months. Based of conditions and reference studies, we would like to recommend that the most suitable age of baby bottle weaning for Thai children be at the age of 1Ω year.

## Conclusion

A majority of children in this study still use baby bottle far beyond the recommended age,





**Fig. 2** The age that children can completely wean from bottle feeding both day and night time. The completely weaning ages are scatter. The earliest age is at one year with the percentage of 1% (3/301). The average is 2.5 years (SD = 0.6120) while majority is at the age of 2 years, 13% (39/301). Rely on recall memory of caregivers who are at that time take care children aged 2<sup>1/2</sup>-4 years (n = 301)

particularly at nighttime and are still subject to inappropriate practices that will lead to adverse health effects and addiction. Lack of knowledge, awareness and proper preparation might be the root obstacle in being able to wean at the age of one year. Therefore we should adjust the recommendation, appropriate to our situation.

### Suggestions

We suggest Thai children to be weaned from baby bottle use by the age of 1<sup>1/2</sup> year. For smooth and successful weaning, children should be adequately prepared from a younger age by, for example, quitting late night feeding after the age of six months and correct training to ensure that they do not fall asleep while having the bottle.

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### References

1. Duncum BM. Some notes on the history of lactation. *Br Med Bull* 1947; 5: 1141.
2. Sawasdivorn S. Bye bye baby bottle: too late quitting, too many health consequences. In: Jittinand S, Mohsuwan L, editors. *Guidance on child care birth to five years of age*. Bangkok: Royal College of Pediatrics of Thailand; 2005: 120-4.
3. American Academy of Pediatric Dentistry. Policy on the dental home. *Pediatr Dent* 2005; 27(7 Suppl): 18-9.
4. Gartner LM, Morton J, Lawrence RA, Naylor AJ, O'Hare D, Schanler RJ, et al. Breastfeeding and the use of human milk. *Pediatrics* 2005; 115: 496-506.
5. Stang J, Bayerl CT. Position of the American Dietetic Association: child and adolescent food and nutrition programs. *J Am Diet Assoc* 2003; 103: 887-93.
6. Royal College of Pediatrics and Pediatrics Society of Thailand. *CPG Pediatric Practices*. Vol. 1. Bangkok: Royal College of Pediatrics and Pediatrics Society of Thailand; 1999.
7. Minutes of meetings. A meeting with technical experts from agencies outside of the QSNICH; 25 July 2006 and 18 January 2007; Bangkok: Queen Sirikit National Institute of Child Health.
8. Minutes of meetings. A meeting with parents and caregivers, bye bye bottle experiences share; 27 February 2004 and 17 August 2006; Bangkok: Queen Sirikit National Institute of Child Health.
9. National Statistical Office, Ministry of Science and Technology. A survey of household income, expenditures and debts. National Statistical Office, Ministry of Science and Technology; 2007. [www.thaigov.go.th](http://www.thaigov.go.th)
10. International Dental Health Center, Department of Health, Ministry of Public Health. An evaluation of the dental health project for pre school age, a rapid survey. Thailand. In annual report 1996: 50-1.
11. Kahn R, Bonuck K, Trombley M. Randomized controlled trial of bottle weaning intervention: a pilot study. *Clin Pediatr (Phila)* 2007; 46: 163-74.
12. Kaste LM, Gift HC. Inappropriate bottle feeding; status of healthy people 2000 objective. *Archives of Pediatric and Adolescent Medicine* 1995; 149: 786-791.
13. Avery A, Baxter A. 'Change to cup': an audit to determine parental awareness and practices in changing from bottle to cup. *J Hum Nutr Diet* 2001; 14: 217-23.

14. Goodlin-Jones BL, Burnham MM, Gaylor EE, Anders TF. Night waking, sleep-wake organization, and self-soothing in the first year of life. *J Dev Behav Pediatr* 2001; 22: 226-33.
15. Midelt JA, Owens JA. A clinical guide to pediatric sleep: diagnosis and management of sleep problems. Philadelphia: Lippincott Williams & Wilkins; 2003.
16. Boyce WT, Shonkoff JP. Developmental behavioral pediatrics. In: Rudolph CD, Rudolph AM, Hostetter MK, Lister GE, Siegel NJ, editors. *Rudolph's pediatrics*. 21<sup>st</sup> ed. New York: McGraw-Hill; 2002: 401-532.
17. O'Sullivan DM, Tinanoff N. The association of early dental caries patterns with caries incidence in preschool children. *J Public Health Dent* 1996; 56: 81-3.
18. Sawasdivorn S. Breast milk and dental health. In: Jittinand S, Chatranonds V, Sawasdivorn S, editors. *Breastfeeding knowledge to practicing*. 2<sup>nd</sup> ed. Bangkok: Krungthep Vechasarn Printing House; 2003: 178-82.
19. Juansang S. Situation of night sleeping in children under age of 1 year at well child clinic [thesis]. QSNICH. Bangkok: The thesis submitted to fulfillment of the requirements for the Diploma of Thai Board of Pediatrics; 2003.
20. Ungchusak C and Piyada P: Caries in milk teeth. *Thailand Journal of Dental Public Health* 2006; 11, 1-2 Jan-Dec 9-14
21. Kaste LM, Gift HC. Inappropriate infant bottle feeding. Status of the Healthy People 2000 objective. *Arch Pediatr Adolesc Med* 1995; 149: 786-91.
22. Trairatworakul C, Chokesombatchai R. Behaviors of using a bottle in feeding and the associate with the rates of dental caries, extraction and filling in preschool children. *Dental Newsletter* 1998; 5: 259-67.
23. Koplan JP, Liverman CT, Kraak VA. Appendix C: Literature Review. In: Koplan JP, Liverman CT, Kraak VA, editors. *Preventing childhood obesity: health in the balance*. Food and Nutrition Board, Board on Health Promotion and Disease Prevention. Washington, D.C.: The National Academies Press; 2008: 339-42.
24. Trozzi M, Stein MT. 15 to 18 Months: declaring independence and pushing the limits. In: Dixon SD, Stein MT, editors. *Encounters with children: pediatric behavior and development*. 4<sup>th</sup> ed. Third National Health and Nutrition Examination Survey (NHANES III) 2006: 361-62.
25. Boonsithi V. Feeding problems in children. In: Wunpen B., Aumpon S., and Nongpagna L. *Text-book of pediatric psychiatry for pediatricians*. Bangkok: Chuanphim; 1995: 106-9.

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## สภาวะการใช้ขวดนมในเด็ก ถ้าแนะนำให้เลิกดูดนมจากขวดเมื่ออายุ 1 ปี จะเป็นไปได้หรือไม่

ศிரภรณ์ สวัสดิ์วร, พิริยา วรรณะภูติ, สมลักษณ์ เป้อรณ, สุวิสา จวนสง

**ภูมิหลัง:** ปัจจุบันองค์วิชาชีพเกี่ยวกับเด็ก แนะนำให้เด็กเลิกดูดนมจากขวดเมื่ออายุ 1 ปี เนื่องจากการยังคงใช้ จะนำปัญหาสุขภาพต่อเด็ก อาทิ ฟันผุ ไม่ยอมกินข้าว ฯลฯ และหากเลยระยะนี้จะเลิกได้ยากขึ้น สถาบันสุขภาพเด็กฯ จึงทำการศึกษาสภาวะการใช้ขวดนมในเด็ก เพื่อใช้ประกอบในการปรับคำแนะนำอายุที่เด็กควรเลิกใช้ขวดนม

**วัตถุประสงค์:** 1) อัตราเด็กดูดนมจากขวดในแต่ละช่วงอายุ 2) อัตราเด็กที่ยังคงดูดนมมื่อเด็ก 3) พฤติกรรมการเลี้ยงดู ที่ส่งเสริมให้เด็กติดขวดนม 4) โอกาสการเกิดปัญหาสุขภาพจากการติดขวดนม

**วิธีการศึกษา:** เป็นการศึกษาแบบ Cross sectional descriptive study โดยการสุ่มสัมภาษณ์ผู้ปกครองที่มีทารก อายุตั้งแต่ 1 เดือน ถึง 4 ปี แบ่งเป็น 13 กลุ่มอายุ กลุ่มอายุละ 80 คน รวม 1,038 คน ที่มารับบริการในคลินิกสุขภาพเด็กดี ของสถาบันฯ ในระหว่าง พฤศจิกายน พ.ศ. 2546 - ธันวาคม พ.ศ. 2549 สัมภาษณ์ข้อมูลทั่วไป เวลาที่ใช้ขวดนม ในตอนกลางวัน ตอนกลางคืน การปฏิบัติต่อทารกเมื่อพาเข้านอน นำมาวิเคราะห์โดยโปรแกรม SPSS

**ผลการศึกษา:** จำนวนเด็กศึกษา 1,038 คน ส่วนใหญ่มีพ่อหรือแม่เป็นผู้ดูแลหลักร้อยละ 70 เมื่อถึงวัยควรเลิกดูดนม จากขวด และเลิกนมมื่อเด็ก

เด็กอายุ 1-2 ปี ยังมีการดูดนมจากขวด ร้อยละ 92 โดยร้อยละ 70 ยังคงดูดนมกลางดึก

อายุ 2-3 ปี ยังมีการดูดนมจากขวด ร้อยละ 70 โดยร้อยละ 50 ยังคงดูดนมกลางดึก

อายุ 3-4 ปี ยังมีการดูดนมจากขวด ร้อยละ 42 โดยร้อยละ 37 ยังคงดูดนมกลางดึก

เร็วที่สุดที่เลิกได้คืออายุ 1 ปี (ร้อยละ 1) ค่าเฉลี่ยอายุที่เลิกได้ คือ 2 ปี 5 เดือน (SD = 0.612)

อายุที่เลิกใช้ขวดนมได้ เป็นไปอย่างกระจัดกระจาย ส่วนใหญ่เลิกได้อายุ 2 ปี (ร้อยละ 13)

พฤติกรรมการเลี้ยงดูที่ส่งเสริมให้เด็กติดขวดนม พบว่า เด็กอายุ 6 เดือนถึง 4 ปี ดูดนมหลับคาขวด ร้อยละ 46 ให้ดูดนมกลางคืนเมื่อเริ่มบดตัวหรือทำท่าจะตื่น ร้อยละ 34 โอกาสเกิดปัญหาสุขภาพ พบว่าหลังทำความสะอาดฟัน แล้วยังกลับมาดูดนมจากขวด ร้อยละ 48 ปริมาณน้ำนมที่เด็กอายุ 2 - 4 ปี ได้รับเกินปริมาณแนะนำ ร้อยละ 18 สูงสุด 56 ออนซ์ จำนวนมือนมเกินกว่าที่ควรได้ ที่เด็กอายุ 2 ปี ร้อยละ 56 และที่เด็กอายุ 4 ปี ร้อยละ 70 สูงสุดคือ 11 มื้อ ผู้ดูแลเด็กมีความเห็นต่ออายุที่เด็กควรเลิกใช้ขวดนมเป็นไปอย่างกระจัดกระจาย ตั้งแต่อายุ 1 เดือน-3 ปี ร้อยละ 88 และไม่เห็นความเห็นร้อยละ 12

**สรุป:** เด็กในการศึกษานี้ ยังมีการใช้ขวดนมและดูดนมมื่อเด็ก หลังอายุ 1 ปี จำนวนมาก รวมทั้งมีพฤติกรรมที่ส่งเสริม ให้ติดขวดนม เช่น การนอนหลับคาขวด การกลับมาดูดนมหลังทำความสะอาดฟันแล้ว ส่งผลให้มีโอกาสเกิดปัญหา สุขภาพ อายุที่เลิกใช้ขวดนมได้ และความรู้ของพ่อแม่ผู้เลี้ยงดู ว่าเด็กควรเลิกใช้ขวดนมเมื่อไร ยังเป็นไปอย่าง กระจัดกระจาย แสดงถึงการตระหนักและเตรียมการในเรื่องนี้ยังไม่ดีพอ

**ข้อเสนอแนะ:** ควรปรับคำแนะนำ เป็น เด็กควรเลิกดูดนมจากขวดได้ตั้งแต่ อายุ 1 ปี ถ้ายังทำไม่ได้ ก็ไม่ควรเกินอายุ 1½ ปี ไม่ใช่เลิกกินนม แต่ให้เปลี่ยนเป็นกินนมใส่แก้ว ใส่กล่อง และให้กินพอประมาณ โดยมีข้อแม้ว่าเด็กต้องได้รับการเตรียมตัวอย่างเหมาะสมตั้งแต่วัยเล็ก