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# Analysis of oral health care content in children health handbook in Taiwan

**KEYWORDS**

Children health  
handbook;  
Oral health care;  
Teeth fluoridation;  
Dentists

In Taiwan, the children health handbook (CHH) is a very important record of health check-ups, preventive vaccination, and teeth fluoridation for the children. The government requires parents to make sure to preserve their children's CHH permanently. In addition, it should be sure to bring the CHH and the insurance card when the children receive the services of health check-ups, preventive vaccination, and teeth fluoridation.<sup>1</sup> In order to strengthen children's health care, the Taiwan government began to provide the children's preventive health care services in 1995. It also compiled and distributed the first generation of CHH. In this year, Taiwan also began to implement Nation Health Insurance (NHI). Since 2004, the CHH was compiled and printed by Health Promotion Administration, Ministry of Health and Welfare of Taiwan. In addition to providing health knowledge, the CHH also contains important records of vaccinations and health check-ups for babies. Therefore, all young generations in Taiwan have owned this CHH for at most 29 years until 2023. With the expansion of children's whole body health care services to oral health care services, such as the subsidy of teeth fluoridation for children since 2007 and the subsidy of dental sealants for permanent first molars for school-age children since 2014, the oral health care records including teeth fluoridation record and children's oral hygiene knowledge have gradually added to the CHH contents. In this article, we summarized and organized all the oral health care-related contents that appeared in each part of the CHH, and analyzed the significance of these contents.

The records and contents of the CHH cover all information of children's health care services and children's health education for the parents based on the health policies of Taiwan's government, and it also included the part of children's oral health care records. For this reason, we used the CHH as the research materials to filter the records and contents related to children's oral health care included in the CHH. This helps us to understand the current connotation of children's oral health care services and the important basic concepts of children's oral care in Taiwan.

In this analysis study, four major compositions related to children's oral health care were extracted. The descriptions of these compositions and their significance are shown in Table 1. These compositions were (1) child's teeth fluoridation subsidy schedule and documents recorded by the dentists; (2) oral hygiene documents in health education recorded by the parents; (3) documents of oral health and baby teeth care checked and recorded by the dentists; and (4) oral health education information for the parents. Among them, three were record forms or sheets about oral health care, which needed to be filled in by the dentists (items 1 and 3) or the parents (item 2), respectively, while the other one provided oral health education information for the parents as a reference (item 4). In addition, three were independent items in the handbook (items 1, 3 and 4), while another item was part of the general health education records (item 2). We summarized the significance represented by these compositions related to children's oral health care in the CHH. For item 1, fluoridation is recognized as an effective public health measure to reduce

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**Table 1** The descriptions of four major compositions related to children's oral health care in Taiwan children health handbook (CHH) and their significance<sup>a</sup>.

| Item         | Composition related to children's oral health care in Taiwan children health handbook (CHH)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1            | <b>Child's teeth fluoridation subsidy schedule and documents recorded by the dentists</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description  | Ministry of Health and Welfare, Department of Oral Health subsidizes teeth fluoridation, including three service items of fluoride application, teeth cleaning health education, and oral check-up by the dentists once every half a year for children below 6 years of age. The oral health education also instructs the parents how to use toothpaste with a fluoride concentration of 1000 ppm or above to clean teeth. For children from low-income families, physically and mentally handicapped children, and children from aboriginal, remote and outlying island areas, this subsidy is provided every 3 months for these children below 12 years of age. The government urges the parents to utilize their children's right of this health services. After the eruption of the first permanent molars at 6 years of age, the application of dental sealants by the dentists are also subsidized. In addition, depending on each child's risk of dental caries, it is recommended to visit a dental clinic for an oral check-up every three months.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Significance | Fluoridation is recognized as an effective public health measure to reduce dental caries. The CHH includes it in the child's teeth fluoridation record form, which is recorded by the dentists after each treatment. This helps the parents to know how long their children will receive teeth fluoridation service. If they can grasp this right, a normal child may have up to 11 opportunities for free teeth fluoridation services before entering the elementary school.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 2            | <b>Oral hygiene documents in health education recorded by the parents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Description  | Before child health check-up by his or her doctor, theme of health education includes that oral hygiene should be evaluated by the parents themselves and whether they have achieved this goal under the medical guidance of the medical staff. The self-assessment by the parents can be used as references for the doctors. There are a total of 7 health education records that parents need to fill in. Among them, the key points about oral hygiene are as follows.<br>The first health education record within 2 months after birth: Use gauze to clean the mouth (including the tongue) for your baby.<br>The second health education record 2 to 4 months after birth: The same as above.<br>The third health education record 4 to 10 months after birth: 1. When the baby teeth begin to erupt, use gauze with the fluoride-containing toothpaste (about the size of a rice grain) to help your baby brush their teeth after meals and before bedtime. 2. After eruption of the baby teeth, visit the dentist routinely once every half a year and get teeth fluoridation service.<br>The fourth health education record 10 to 18 months after birth: 1. Use dental floss (stick) and the fluoride-containing toothpaste to help your child brush his/her teeth after meals and before bedtime. 2. Visit a dentist routinely once every half a year and get teeth fluoridation service.<br>The fifth health education record 18 to 24 months after birth: The same as above.<br>The sixth health education record 2 to 3 years of age: 1. Use the fluoride-containing toothpaste to help your child brush his/her teeth after meals and before bedtime, and use the dental floss to clean the contact surfaces between two adjacent teeth. 2. Visit a dentist routinely once every half a year and get teeth fluoridation service.<br>The seventh health education record 3 to 7 years of age: The same as above. |
| Significance | Under the medical guidance of the medical staff, the parents complete a self-assessment of oral hygiene for the children. Through this activity, the medical staff provide oral hygiene education to the parents and establish their correct oral hygiene concepts, such as the correct teeth cleaning methods and the regular oral check-up habits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 3            | <b>Documents of oral health and baby teeth care checked and recorded by the dentists</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description  | This record sheet contains a map of the deciduous dentition with the numbers from 1 to 10 which indicates the order of tooth eruption. The dentists assist in checking the eruption of the deciduous teeth and filling in the age (year and month) when the deciduous teeth erupted into the oral cavity in the record sheet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Significance | A complete record of the eruption time of children's deciduous teeth can help to examine the eruption sequence of the deciduous teeth, and can further serve as a reference for the assessment of children's oral and physical development.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 4            | <b>Oral health education information for the parents</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Description  | There is a slogan "2 dos and 2 don'ts make teeth healthy and sound" to establish the core concept of oral health habits.<br>1st do: Brush your teeth before bedtime and brush them at least twice a day.<br>2nd do: Include "fluoride" in the oral care, such as using the fluoride-containing toothpaste, visiting a dentist every 6 months for teeth fluoridation service and oral check-ups.<br>1st don't: Don't hurt teeth. Eat less desserts and gargle more often. Never sleep with a milk bottle in the mouth or during breastfeeding.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Table 1 (continued)

| Item         | Composition related to children's oral health care in Taiwan children health handbook (CHH)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|              | <p>2nd don't: Don't feed your baby with your mouth. The parents should not feed babies with food which has been chewed by them.</p> <p>There are the reminders of oral health for the children of different age groups.</p> <p>Children from 6 months to 1 year of age:</p> <ol style="list-style-type: none"> <li>1 After breastfeeding, the cotton swab or gauze can be used to clean teeth, gums, oral cavity, and tongue of your baby (your baby has sucking reaction and will not resist a cotton swab or a gauze).</li> <li>2 Do not let your baby sleep with a milk bottle (or during breastfeeding).</li> <li>3 Sugared beverages, additives, and juice should be kept away from your baby.</li> <li>4 Do not blow hot food to cool it down or chew food beforehand. Do not use the same tableware.</li> <li>5 After the eruption of the first tooth, the feeding frequency at night should be decreased. After feeding, you should also clean the teeth of your baby with a thin layer of the fluoride-containing toothpaste on a gauze to lower the incidence of dental caries.</li> <li>6 From the eruption of the first tooth to 1 year of age, your baby can visit a dentist and receive oral check-ups, health education, and teeth fluoridation service once every half a year.</li> </ol> <p>Children from 1 year to 3 years of age:</p> <ol style="list-style-type: none"> <li>1 When the children are about 12 months old, a habit of using glasses to drink water and juice can be formed. Feeding with milk bottles should be stopped to avoid dental caries.</li> <li>2 Limit the intake of food with a high sugar content. Avoid giving carbonated drinks and sugary drinks.</li> <li>3 When two adjacent baby teeth are discovered, you can start to use dental floss (toothpick) to clean your child's teeth, and toothbrush should be used for cleaning the teeth after posterior teeth have erupted.</li> <li>4 Use the toothpaste containing fluoride in the concentration of 1000 ppm or more to reduce the risk of tooth decay. Use a thin layer of toothpaste about the size of a rice grain.</li> <li>5 Carers should use a small toothbrush to clean the baby's teeth after eating, and brush teeth with the fluoride-containing toothpaste. Be sure to clean the inner, outer, and occlusal surfaces of teeth.</li> <li>6 Quit bad habits like sucking pacifiers and fingers.</li> <li>7 Remember to receive teeth fluoridation service, health education, and oral checkups by the dentist once every half a year, If the baby has tooth decay, you need to consult a dentist to discuss the treatment plan for a tooth with decay.</li> </ol> <p>Children from 3 years to 6 years of age:</p> <ol style="list-style-type: none"> <li>1 Carers should guide and watch children when they brush their teeth. Before bedtime, help your baby to clean their teeth.</li> <li>2 Use toothpaste with 1000 ppm of fluoride. Squeeze out toothpaste the size similar to a pea and help your 3 to 6-year-old child to brush their teeth.</li> <li>3 Remember to receive teeth fluoridation service, health education, and oral checkups by the dentist once every half a year. If your baby has tooth decay, it must be treated. Other examination items include the arrangement and occlusion of teeth, gingivitis, development of upper and lower jaws, etc.</li> <li>4 After the eruption of the first permanent molar, you should take your baby to the dentist to receive a dental sealant treatment.</li> </ol> |
| Significance | The health education materials of oral and deciduous tooth health in the CHH have gathered the opinions of many relevant experts and scholars, providing a lot of important and correct oral health knowledge. It is the most convenient reference book for the parents.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

<sup>a</sup> The descriptions of compositions related to children's oral health care in the CHH in this table were compiled according to the Chinese version of CHH in 2023 and the English version of CHH in 2020.

dental caries. The CHH includes it in the child's teeth fluoridation record form, which is recorded by the dentists after each treatment. This helps parents to know how long their children will receive teeth fluoridation. If they can grasp this right, a normal child may have up to 11 opportunities for free teeth fluoridation services before entering the elementary school. For item 2, under the medical guidance of the medical staff, the parents complete a self-

assessment of oral hygiene for the children. Through this activity, the medical staff provide oral hygiene education to the parents and establish their correct oral hygiene concepts, such as correct teeth cleaning methods and regular oral check-up habits. For item 3, a complete record of the eruption time of children's deciduous teeth can help to examine the eruption sequence of the deciduous teeth, and can further serve as a reference for the assessment of

children's oral and physical development. Furthermore, for item 4, the health education materials of oral and deciduous tooth health in the CHH gather the opinions of many relevant experts and scholars, providing a lot of important and correct oral health knowledge. It actually is the most convenient reference book for the parents.

Dental caries is one of the most common chronic diseases in children worldwide.<sup>2</sup> The oral health of children is related to their learning, quality of life, and physical and mental development. The advanced countries in the world often pay a great attention to the prevention of dental caries for the children.<sup>3</sup> Reducing the incidence of dental caries can further reduce future dental care expenditures (regardless of payment by the individuals or by the insurance).<sup>4</sup> Therefore, it is necessary for the CHH to include all oral health resources and information to promote the prevention of dental caries for the children. In Taiwan, every baby is given an exclusive CHH when he or she is born to help the parents to understand their baby's health status (also including oral health) during the parenting process.<sup>1</sup> We have summarized several oral health resources, including (1) dental treatment and oral check-up from the NHI, (2) teeth fluoridation and dental sealants subsidies from the government, (3) oral hygiene instruction services from the medical or dental institutions, and (4) oral health education information from the social system. Our previous research also found the effectiveness of fluoridation policy for prevention of dental caries in Taiwan.<sup>3,5</sup> Therefore, it is a necessary and effective measure to completely integrate relevant information of all oral health resources into the CHH. Furthermore, it also requires the cooperation of the parents and the medical staff to utilize the CHH to maximize its effectiveness.

## Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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