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Perspective

# Implementation of domiciliary dentistry curriculum in dental education: 5-year experience

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In Taiwan, the number of people older than 65 years is rapidly increasing, which is estimated to be >20% of the population.<sup>1</sup> The number of frail and medically compromised elderly increases with aging. A previous study revealed that 10% of the elderly are functionally dependent and are either housebound or institutionalized, leading to reduced dental service access.<sup>2</sup> Domiciliary dental care (DDC) is characterized by dental care delivered in the patient's residence.<sup>3</sup> DDC seldom draws the dentists' attention. Studies disclosed the barriers for dentists for conducting DDC, including patients' complex medical history, unfavorable working conditions, insufficient training, and lack of its familiarity.<sup>4,5</sup> Hirata et al. revealed a significantly higher proportion of dentists who conduct DDC have training on medical DDC for elderly in need of nursing care than those who are not in their survey for the factors that influence DDC implementation by dental institutions in 4031 members of the Tokyo Dental Association.<sup>6</sup> The results of their study indicate the importance of undergraduate education on DDC and the importance of dental association seminars or training to promote DDC.

In Taiwan, DDC was firstly conducted by Chung Shan Medical University Hospital (CSMUH) in March 2010. The

Taiwan National Health Insurance system has partly covered the DDC fee since July 2011.<sup>7</sup> Since 2014, the continuing education on DDC for dentists and healthcare providers by special needs oral care centers or dental associations was hosted annually. However, DDC education is not incorporated in the undergraduate curriculum before 2017. Herein, we presented our 5-year experience (2017–2021) in developing a domiciliary dentistry curriculum for fourth-year dental students. To the best of our knowledge, the curriculum was the first one-credit and required course for dental students in Taiwan. No similar curriculum was used in other dental schools in Taiwan.

The curriculum was delivered by hybrid teaching with online lectures and traditional physical classes from 2017 to 2020. The lecture notes, videos, and reference videos were available on the online platform of CSMUH.<sup>8</sup> In 2021, we further established the entire online learning. Additionally, we had 8–12 students who joined our home dental visit before the coronavirus disease-2019 pandemic. The lectures were composed of the principles and concepts of DDC, the oral health condition of the bedridden patients, and the process of planning, delivering, and practicing DDC. For hands-on practice, the students were divided into 20 groups with four members of each group. The hands-on practice was conducted by group to ensure the learning quality of every student. The learning outcome was evaluated with direct observation of the procedural skills chart in the final examination. The

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**Table 1** Dental students' satisfaction to the domiciliary dentistry curriculum.

Item	Grade of satisfaction (%)				
	Very satisfied plus satisfied				
Year	2017	2018	2019	2020	2021
<sup>a</sup> Q1 The lectures	100	98	99	94	99
Average	98				
<sup>a</sup> Q2 The online teaching materials	93	97	97	96	99
Average	96				
<sup>a</sup> Q3 The hands-on practice	97	95	100	97	95
Average	97				
<sup>a</sup> Q4 The overall course	100	100	100	99	100
Average	99.8				

<sup>a</sup> Response rate: 86% (70/81) for 2017; 81% (63/78) for 2018; 89% (70/79) for 2019; 100% (79/79) for 2020; 100% (80/80) for 2021.

hands-on practice consisted of the correct patients' posture during oral healthcare, the desensitization massage before oral healthcare, the use of oral sponge brush, Y-type dental floss, and oral moisturizing gel, and the process of making a suction-type toothbrush.

Annually, the dental students' satisfaction with the curriculum was surveyed after completing the course and final examination. A total of 397 students entered the curriculum. Responses were received from 362 students with a response rate of 91%. The 5-year average satisfaction rate was 98%, 96%, 97%, and 99.8% for the lectures, the online teaching materials, the hands-on practice, and the overall course, respectively (Table 1).

Taiwan is a high-aging society. Thus, incorporating geriatric dentistry education for dental students concerning the rapidly aging society is important. Among geriatric dentistry, DDC is seldom discussed at the undergraduate level. Studies revealed that the students may have more competence, confidence, awareness, and positive attitudes if they had increased contact with the disabled older people.<sup>2,9,10</sup> Hence, we developed a new curriculum in DDC for the dental students and received excellent feedback. We hope that DDC implementation in dental education can encourage students to provide DDC to help patients who are housebound or institutionalized with a positive attitude and clinical reward, and in turn creates a positive cycle of care provision.

## Declaration of competing interest

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

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