



## New Internship Course at Health Centers for Dental Undergraduates of Babol University of Medical Sciences in 2014: Students' Perception

Mohammad Mehdi Naghibi Sistani<sup>1</sup>, Mahdiye Aziznejad<sup>1</sup>, Effat Khodadadi<sup>2\*</sup>

1. Oral Health Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran
2. Dental Materials Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran

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**\* Corresponding author:**  
Dental Materials Research Center, Health Research Institute, Babol University of Medical Sciences, Babol, Iran

Email: Dr\_ekhodadadi@yahoo.com

### ABSTRACT

**Objectives:** This study aimed to evaluate an innovative internship course at health centers for final-year dental undergraduates and to report initial students' perceptions.

**Materials and Methods:** The Department of Community Oral Health, Faculty of Dentistry with the collaboration of the Vice-Chancellor of Health of Babol University of Medical Sciences prepared an educational and clinical training course, named Health Centers Dental Rotation (HCDR), in January 2014. Final year (6<sup>th</sup> year) dental undergraduates were divided into groups of two or three and worked as an operator or assistant at 12 health centers (six rural and six urban). Students had to fulfill the educational and therapeutic requirements for three weeks. Students' perspectives related to the course objectives were recorded using a five-point Likert scale with a voluntary anonymous questionnaire.

**Results:** Forty-four dental students, 26 (60%) females and 18 (40%) males, provided oral health care services at the health centers. Based on the students' perspectives, almost all students (95%) realized the limitations of the health centers. The HCDR improved the awareness of 75% of the students about oral health needs and problems of patients referring to these centers. Although 68% of the students declared that participating in this course was a valuable educational experience, 38.6% described it as displeasing.

**Conclusion:** From the students' perspectives, this course was a worthwhile and positive internship experience and provided an opportunity for students to understand the specific oral health needs of patients attending these health centers and to realize their key role in the oral health system.

**Keywords:** Dental Students; Health Education; Iran; Internship; Oral Health

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### INTRODUCTION

The key element in achieving health for all is human resource development [1]. Traditionally, dental students were trained to treat specific oral diseases of patients at separated specific clinical departments in

dental schools. Appropriate health labor policies, such as different educational curricula, are required for training qualified oral health professionals to manage oral health problems [2], especially in deprived communities and rural areas. Therefore,

dental schools ought to graduate dentists with community-based skills, such as patient management, clinical decision-making, and overall patient care.

Some international universities have provided opportunities to be involved in community-based learning projects for final year dental students. The Centre for Rural and Remote Oral Health, The University of Western Australia, Crawley, Australia, has developed a rural, remote, and indigenous placement (RRIP) program [3]. The community-based dental education (CBDE) was set in the United States to reduce disparities in oral health care access [4]. The Faculty of Dentistry of the University of Alberta have collaborated in an outreach dental care program to provide basic oral health care in three rural communities since 1978 [5].

Studies on these CBDE programs from dental students' perspectives have revealed several positive outcomes for dental students that participated in these projects, such as their exposure to diverse clinical knowledge and experiences, as well as increased speed, skill, self-awareness, and confidence [6]. Dental students that participated in well-structured community-based programs were also reported to gain a more positive attitude towards treating the underserved population [7].

In addition, these programs in community health clinics outside dental schools with professional supervision showed to be beneficial in improving dental students' skills in different domains, such as critical thinking, professionalism, communication and interpersonal skills, health promotion, and patient care, from both supervisor dentists' and dental students' perspectives [8,9].

Despite the increased number of Iranian dentists during the past decades, the distribution of dentists in different provinces is still unequal. The majority of Iranian dentists are working in provinces with better conditions, especially in the private sector [10]. The public sector provides dental services in rural areas and small towns as the first referral center. Nevertheless, these health centers have several limitations, such as too

many patients with various complex dental care needs, a low number of oral health workers, and a lack of modern dental equipment.

Considering that the health system of Iran requires dentists that are responsible for their society with a desire to provide oral healthcare for the deprived population at health centers, changing dental students' attitudes toward working in rural and deprived areas is needed to be addressed in dental education curriculum [10].

To improve the final year dental students' professional skills, attitude, and practice of dental care services at health centers, this study aimed to develop a new internship CBDE course and to evaluate the perspectives of dental students of outside dental school clinics and health centers.

## MATERIALS AND METHODS

Babol University of Medical Sciences gave ethical approval to the present study (Mubabol REC. 1394.236). The health centers dental rotation (HCDR) was an educational and clinical training rotation as a part of a health system internship curriculum-based course. This rotation was prepared at the Department of Community Oral Health, Faculty of Dentistry with the collaboration of the Vice-Chancellor of Health of Babol University of Medical Sciences, Babol, Iran, in January 2014. Forty-four final year dental students, including 26 (60%) females and 18 (40%) males, participated in this project as a part of their practical course of oral health. Every two or three students attended a rural or urban health center as a group for three weeks. Overall, the students attended twelve health centers (six urban and six rural).

The objectives and outline of the HCDR project were introduced to the students on day one of the rotation in a two-hour tutorial by the academic staff of the Department of Community Oral Health. The students provided oral healthcare services concerning patients' demands and the health center's chart of duties. The health center's dentist supervised dental students in all treatment stages and evaluated their skills. Overall,

twelve health center dentists participated in this study as supervisors.

Two checklists were prepared: a checklist for dental supervisors and one for dental students. The items and questions in both checklists were developed based on the Rural Dental Rotation (RDR) questionnaire [11]; however, some revisions were made based on the comments of the expert panel.

Dental supervisors rated the effectiveness of this course and students' skills, such as treatment skills, communication skills with health center staff and patients, oral health education skills, and their willingness to participate in rural programs, by a five-point Likert scale checklist. The responses included "very good", "good", "fair", "poor", and "very poor".

Students' perceptions about problems of patients and limitations of the health centers, the overall HCDR, their educational experiences, and interest in working in rural areas were assessed using a five-point Likert scale checklist.

The responses were "strongly disagree", "disagree", "undecided", "agree", and "strongly agree". For analysis, the responses were reclassified to disagree, undecided, and agree.

The frequency of the responses based on a five-point Likert scale, the median of the responses, and the response rate were calculated using SPSS 19 (SPSS Inc., Chicago, IL, USA).

## RESULTS

The overall students' response rate was 99.2%. All 44 dental students provided oral healthcare services based on patients' demands at the health centers. The frequency of students' responses about the project objectives is presented in Table 1. This rotation increased the awareness of 95% of the students about the problems and limitations at the health centers. Although the HCDR improved the awareness of 75% of the students about oral health needs and problems of patients referring to these centers, 72.7% of the students stated that this project did not increase their interest in working in rural areas.

**Table 1.** Dental students' perspectives on the new internship course objectives at the health centers of Babol University of Medical Sciences (n=44)

	Response rate (%)	Median	Disagree N(%)	Undecided N(%)	Agree N(%)
<b>Increased my awareness about problems and limitations of health centers</b>	100	5	2(4.5)	0	42(95.5)
<b>Increased my interest in working in rural areas</b>	97.7	2	32(72.7)	9(20.5)	2(4.5)
<b>This rotation was an enjoyable experience</b>	100	3.5	17(38.6)	5(11.4)	22(50)
<b>Increased my awareness about oral health problems of target groups</b>	100	4	3(6.8)	3(6.8)	38(86.4)
<b>Increased my awareness about health centers' patients</b>	100	4	6(13.6)	5(11.4)	33(75)
<b>Increased my interest in educating patients at the office</b>	97.7	3	15(34.1)	7(15.9)	21(47.7)
<b>Increased my interest in educating patients at health centers</b>	97.7	4	13(29.5)	6(13.6)	24(54.5)
<b>Communicate with health center staff properly</b>	100	4	6(13.6)	6(13.6)	32(72.7)
<b>This rotation provided a valuable educational experience for me</b>	100	4	11.4	20.5	68.2

**Table 2.** Dental students' skills at health centers by dental supervisors' (health center dentists') evaluation at Babol University of Medical Sciences (n=35)

	Good N(%)	Very good N(%)
<b>Discipline of students</b>	6(13.6)	29(65.9)
<b>Students' communication with health center staff and patients</b>	8(18.2)	27(61.4)
<b>Students' oral presentation to health center staff and patients</b>	14(31.8)	21(47.7)
<b>Students' treatment skills</b>	12(27.3)	23(52.3)
<b>Willingness to participate in rural programs</b>	13(29.5)	22(50.0)
<b>Scientific context of oral presentations</b>	13(29.5)	22(50.0)

While 68% of the students agreed that the HCDR was a valuable educational experience, 38.6% felt that it was displeasure. In addition, the HCDR helped 72.7% of the students to learn how to communicate well with health center staff.

The overall dental supervisors' (health center dentists') response rate was 79.5%; therefore, there were 35 evaluated checklists for analysis. According to the responses of the dental supervisors, 79.5% of the students presented a good oral health promotion lecture for health center staff. The clinical skills of 79.6% of the students were good. In addition, 79.5% of the students desired to participate in rural programs (Table 2). Overall, nine (75%) dental supervisors described this course as effective.

## DISCUSSION

The HCDR is a new attempt to integrate dentistry educational curricula into health centers to improve dental students' awareness, change their attitudes, or encourage them to practice at the health centers of deprived areas.

Almost all students stated that the HCDR increased their knowledge about patients' oral health needs and their demands as well as limitations of health centers in providing oral healthcare services. Based on more than two-thirds of the students' perspectives (68%), this rotation was a valuable educational course; however, this course was unable to encourage them to work in rural areas, except for only less than 5% of students, who were interested in working at rural settings.

This lack of willingness may relate to other major barriers, including several limitations of health centers, such as old dental equipment, few oral health workers, in addition to a large number of deprived patients and lack of attractive dental market in rural areas. Baharvand et al [12] also reported that the majority of dental students consider the two-year period of government service as an inconvenient and difficult period regarding facilities' limitations, heavy workload, and low income. It has been found that the future of the dental profession relates to dental students' attitude [13]; however, Iranian dental students mostly desire to work in the private sector with highly prestigious positions rather than underserved public centers [12].

Similarly, in order to be more familiar with a rural lifestyle and enhance the clinical skills of students, three weeks of RRIP rotation served as an optional pre-graduation course for dental students at the University of Western Australia [3]. Although this program created a positive, valuable, and appealing rural experiences and an optimistic attitude, it failed to maintain the dentists in rural areas.

In addition, final year dental students at the University of Melbourne, who participated in a four-week RDR course stated that this course was a positive experience and increased their awareness of rural and indigenous oral health issues. [11] Contrary to our results, the majority of the students expressed a positive willingness to practice in rural areas. This positive attitude may relate to valuable clinical experience or friendly environment of the community clinics while the more important

cause of RDR success was the positive approach of the personnel at the community clinics towards the RDR project [11].

Based on more than two-thirds of students' responses (72%), the HCDR helped them to learn how to communicate well with health center staff. Supervisor dentists believed that more than two-thirds of students' clinical skills were improved during this rotation (79.6%). Similarly, a CBDE program in the United States was effective in improving the knowledge of students about the larger society and deprived population [4]. This program was participated by final year dental students and general dentistry and pediatric dentistry residents. Students learned how to communicate with other dental staff while increasing their clinical skills to treat different cases [4].

Moreover, another rural program was conducted at the University of Alberta among final year dental and oral hygiene students [5]. Similar to our findings, this project promoted the communication skills of students with other healthcare professionals, their peers, and patients. Contrary to our results, the supportive professional environment at satellite clinics encouraged Canadian students to work in rural areas in the future [5].

Consistent with previous findings [8,9], the HCDR was effective in promoting the students' professional and interpersonal relationships and helped them to be more confident in their clinical practices. In addition to this positive perception, the students faced the professional problems and services of the health centers and shared these problems with the university professors during this course. Receiving these academic feedbacks helped them in the independent tackling of the problems of the health centers in the future.

Nevertheless, we only entered final year dental students into this study because this was the first attempt to provide oral healthcare services by dental students at health centers. Furthermore, self-report questions may cause recall bias due to memory loss or response bias regarding social desirability to provide better answers. Therefore, the present results should be

interpreted cautiously. However, this type of self-assessment measure is a valuable and practical tool to collect data for epidemiological studies [14,15] and educational interventions in the dental curriculum [16]. The items of the Likert scale also limit the student's responses. Interviewing the participants would provide more details; however, this needs more time, human resources, and budget [16].

Although the reliability of the questions was not tested, the items were validated in an expert panel using qualifying methods. Providing consistent data from the students' perspective and dental supervisors' evaluation increased the validity and reliability of the findings.

In addition, presenting new courses outside the dental faculty involves several difficulties, such as students' transportation and coordination with health center staff. However, better management, provision of more attractive courses, and a supportive professional environment would promote the effectiveness of such projects.

## CONCLUSION

The HCDR increased students' awareness about the specific oral health needs of patients and the limitations of oral healthcare services at health centers. Although the HCDR provides valuable social and clinical experiences, it was unable to increase the students' willingness to work in rural areas.

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## CONFLICT OF INTEREST STATEMENT

None declared.

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