

Original Research



Students' viewpoints on a community-based dental education course in an Iranian faculty of dentistry: A conventional content analysis study

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Abstract

Background: Community-based dental education helps nurture a generation of dentists who pay more attention to community needs. The purpose of this qualitative study was to explore the viewpoints of dental students about a community-based dentistry course conducted at the Dental School of the Kurdistan University of Medical Sciences in Sanandaj.

Methods: In all, 36 senior dentistry students provided children aged 6 to 14 from an underprivileged background with care and preventive services under the indirect supervision of a dental instructor. At the end of the course in May 2018, individual and group interviews were conducted to obtain students' viewpoints on the course. The collected data was categorized and analyzed using MAXQDA 10. Testing of acceptability, dependability, stability, verifiability, fittingness and transferability criteria were applied to evaluate the accuracy and reliability of the qualitative data.

Results: The results were categorized into two main themes: weaknesses and strengths of the clinical experience. Four main categories of the course's strengths were identified: personal development, deeper understanding of oral health in the community, becoming familiar with executive and managerial systems, and payment and financial issues. Three main categories of the course's weaknesses were identified: executive problems, issues around coordination and planning, and limiting coverage of the dental services provided to Levels I and II.

Conclusion: The most important aspects of these courses from the students' viewpoints were providing the opportunity to individual and professional development and gaining a broader perspective on preventive dentistry.

Introduction

A general dentist has primary responsibilities for providing oral and dental healthcare. A general dentist must have the ability to both accomplish clinical tasks individually and cooperate as a member of a team which is evidence-based and aims at promoting community health. In addition to the requirements for acquiring biomedical and broad clinical education, a general dentist must follow moral and ethical behavior and attain effective communication skills.¹

One of the challenges in dental education is applying methods which have the greatest impact on the preparation of students to conduct clinical work. Education must have as its aim not only training qualified professionals,

but training individuals with adequate knowledge about community health issues, ethics, and social responsibility. In order to have graduates with the ability to meet the care needs of general society, student education must not be restricted to theoretical classrooms and university clinics.² Community-based dental education transmits an essential part of dental clinical education from dental school clinics to community settings.³ This form of education directly transfers knowledge about people and communities to dental student. Community-based educational courses provide students with an opportunity to put theoretical lessons into practice. The complexities of a professional life and fine points about patient management will be learned through such educational courses in community-

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based settings, expanding on what can be acquired in classrooms and university clinics. These types of experience also contribute to students' perceptions about social determinants of oral health, improve their communication skills with patients, and may increase their abilities and interest in working in underprivileged areas. A community-based educational setting enhances students' abilities to do professional tasks in a real-world community. Thus, such experiences contribute to strengthening students' clinical skills. It also improves students' cultural competence. By increasing communities' access to care services, this form of education also engages community members in their own health care strategies. The importance of community-based dental education has been increasing in the last few decades.⁴

A number of studies have been done to identify the effects of community-based education on dental students.^{5,6} According to the existing research, we know little to nothing about the effects and consequences of community-based clinical experience courses in dental education in Iran. Quantitative research is less helpful for discovering and identifying students' perspectives and experiences in a socio-cultural context. One of the functions of a qualitative approach is its ability to familiarize us with hidden layers of behavior. Since dental students are in constant social communication with people and their relationship with people is based on social norms and values, any plan to improve the quality of dental education requires a deep understanding of competency-based behaviors within a cultural context. In addition to considering socio-cultural dimensions, exploratory studies are indicated and useful due to the fact that such studies help educators consider many different possibilities in planning and preparing educational interventions.

In order to introduce students to the field of offering treatment services in the society, the educational curriculum of dental students at Kurdistan University of Medical Sciences was revised in 2016. The present qualitative study was aimed at investigating students' viewpoints around a community-based dental education course at the Kurdistan University of Medical Sciences.

Material and Methods

The present qualitative research applied a conventional content analysis to investigate students' viewpoints on around a community-based dental education course at the Kurdistan University of Medical Sciences. With the approval of the Ethics Committee of the Vice-Chancellor of Research and Technology, 36 senior students of dentistry were selected for the study. Students from the university campus participated in a community setting program at a dental health clinic located in Sanandaj. Children between the ages of 6 and 14 who were covered by Iranian's Health Insurance were referred to the clinic through their schools. Levels I and II dental treatments were provided through this program. Teams of two to

four dental students were responsible for providing these children with care and preventive services on a daily basis. In order to give the students a sense of independence, they were offered services under the indirect supervision of an instructor.

All students participated in the research after supplying written informed consent. Students were completely free to accept the participation in this study or to deny it. The procedure of taking written informed consent was done by a third party staff member of another department with no relationship to the researchers. Purposive sampling was used to identify the sample. In order ensure sufficiency of the sample, data saturation was accomplished by using semi-structured interviews in two ways: group discussions and deep individual interviews. Six individual interviews were conducted as well as four sessions of group discussions with eight to eleven students in each group. Based on the conditions and process, group sessions lasted about two hours and individual interviews lasted about an hour and a half. The interviews began with a general question (e.g., what changes have been made in your attitudes toward dentistry after taking clinical experience courses?). Thereafter, deeper questions about the research goals were posed (e.g., were these courses successful in moving you from text to context?).

The interviews began in May 2017 and lasted until saturation in August 2017, where no new data was obtained in the final interview. Following data collection, conventional content analysis was used.⁷ Each day and after each interview, recordings were transcribed and typed in detail. In order to have a profound understanding of the interviews, voice records were re-played several times and the transcribed text was revised. Coding was performed by conversion of meaningful units into more brief phrases that clarified the concepts. The codes were revised in order to determine similarities and differences, merging similar codes and forming substructures. In the next step, substructures were classified based on similarities, differences and congruences; the groupings were extracted in this stage. Finally, the main themes of the study were extracted through revision of classes, subclasses, codes and data.

MAXQDA10 software was used for classification, coding, and sorting texts of the interviews. In order ensure the accuracy and reliability data, testing of acceptability, dependability, stability, verifiability, fittingness and transferability criteria were applied.⁸ Accordingly, researchers' long-term engagement with the research subject, the data, and the observing of the extracted codes and the texts of the interviews by some participants indicated the reliability. Reliability, verifiability, quick prescription, and exact record of all stages of the research and providing similar condition for the participants were considered by the researcher. In order to assess verifiability of the research, some parts of the interviews, extracted codes, subclasses and classes were evaluated by observers

who were familiar with the qualitative research approach but who were not part of the research team themselves. High diversity was considered in sampling to increase transferability.

Results

The results were classified into two themes: weaknesses and strengths of the clinical experience within the community.(Table 1)

1. Strengths of clinical experience within the community

Four main categories of the strengths of the community clinical experience were identified:

1. Individual development
2. Increase in awareness and change in attitude towards oral and dental health of the community
3. Becoming familiar with administrative systems
4. Payments and financial issues

1.1. Individual development

Individual development includes four main parts: (1) learning communication skills, (2) increasing self-confidence, (3) creating a sense of independent decision making, 4) managing a large number of patients/increasing response speed. Furthermore, a sense of responsibility and patient empathy was reported by students following the community clinical experience.

1.1.1. Learning communication skills

Learning communication skills was one of the most recurrent themes. The way in which a dentist communicates with patients has a high impact patient satisfaction, treatment results, medical costs, and clinical efficiency. The participants reported that working at the university dental clinic did not provide sufficient efficacy in developing their own communication skills with patients, but the community clinical experience contributed to an improvement in their communication skills. One of the participants noted, "What was interesting for me was the way we encountered people. As we came out of the university educational clinic, the way in which we used to deal and talk with the patients changed completely. We unconsciously learned how to deal with the patients, colleagues and the authorities appropriately. There was a considerable improvement in the way we dealt with them and persuaded them to cooperate with us." Another participant said, "By the communication we had with the patients and the explanations we had to give them on demand, our speaking ability has been improved."

1.1.2. Increasing self-confidence

Participants clarified that the community clinical experience increased their self-confidence. One of the participants noted:

"Personnel and parents treated us as dentists, not students. Parents asked us questions, with a great respect,

Table 1 . Categories and core category

Core category	Categories
	Individual development
Strengths of Clinical Experience Within the Community	Increase in awareness and change in attitude towards oral and dental health of the community
	Becoming familiar with administrative systems
	Payments and financial issues
	Difficulty in Managing, Coordinating and Planning
Weaknesses of Clinical Experience Within the Community	Providing Services, Especially at Level I and Lack of Upper-Level Treatments
	Lack of facilities

even about their own oral status. Diagnosing the problem and recognizing which kind of tooth filling material should be used, increases our self-confidence; whereas, at university it was the instructor who commanded us each time. We used to transfer instructors' speech to parents. In the clinics, there was nobody observing us directly and we trusted ourselves."

1.1.3. Creating the sense of independent decision making

The community clinical experience had a positive effect in creating the sense of independent decision making and self-reliance. As one student noted, "At university, we have to follow the instructor's order, step by step. Even if we have a different opinion, we must pay attention to his or her commands. However, in the community-based contexts, we are the main decision makers ourselves. The sense of independence was developed, that prepared us for the time we have to work individually."

1.1.4. Managing a large number of patients and increasing response speed

Participants believed that the community clinical experience helped them to improve the management of several patients at the same time and improved their responsiveness and efficiency. One of the participants stated, "We were 2-3 individuals to provide the patients with services in a limited time. It increased our responding speed. We met the required accuracy and speed of responding as well. At university, we had to look for the instruments ourselves; however, in the clinic there was an assistant to hand the instruments to us. Accordingly, we learned how to manage several patients in a limited time."

1.2. Increasing awareness and changing the attitude towards the community's oral and dental health status

Another strength of the community clinical experience was to increase students' awareness and transform their attitude towards the community's oral and dental health status. Community-based dental education has conveyed

an essential part of dental clinical education from dental school clinics to community settings. This form of education directly transmits necessary knowledge about people and communities to students. Participants' ideas about the lack of awareness of preventing oral and dental diseases are exemplified in the following quotation.

“The dental public health status is worse than what we thought to be. The patients visit the dentists when the damage is done. For instance, children’s permanent teeth were at extraction level in some cases. Lack of awareness is really obvious among people. We explained the problem a lot. Even the school teachers, who had academic degree, were uninformed about the eruption time of the first permanent posterior teeth and it was really surprising.”

Another participant noted, “The first effect of this course was a shift of our attitude toward prevention rather than treatment. It gave priority to prevention in our mind; although, the university focused more on the treatment. With appropriate education of preventive methods, tooth decay can be decreased. According to the statistics received from deprived areas, the number of tooth decay is extremely high. Thus those people have to pay a large amount of money for their treatment in the future.”

1.3. Becoming familiar with administrative systems

Becoming familiar with the administrative systems was one of the strengths of the community clinical experience. One of the participants said, “We learned how to record the services and treatments in national insurance logbooks, how they are transferred and how their payment is made by the insurance. We did not learn such issues in the dental school, but we got familiar with them in clinics.”

1.4. Payments and financial issues

Participants suggested that one of the strengths of the community clinical experience was being paid and the financial issues. One of the participants noted, “The most important goal for all of the students was the financial aspect of the course. Financial issues could certainly be motivational. If the financial aspect would be managed well, it could increase motivation.”

2. Weaknesses of clinical experiences within the community

Weaknesses of the community clinical experience included three parts: difficulty in management, coordination and planning, challenges in providing services, especially at Level I, along with a lack of providing upper-level treatments, and lack of facilities.

2.1. Difficulty in managing, coordinating and planning the course

Shortcomings in coordinating and planning clinical education leads to weaknesses in graduates' clinical skills and decreases in efficiency for both the educational system and the quality of the provided services within the

community. One participant noted,

“Lack of coordination put a lot of responsibilities on our shoulders. There was no receptionist. It would cause the patients to become pessimistic. They could not make an appointment with the dentist; therefore, it would lead to their complaint. [The community clinical experience] is basically a beneficial course; however, it should be developed. For instance, there should be more clinical centers all over the city. Most of the patients cannot visit the dentists. Since work pressure is too high in such a center, there should be more centers to offer dental services to people”.

2.2. Providing services, especially at Level I, and lack of upper-level treatments

The participants believed that the community clinical experience did not provide useful circumstances for gaining experience about upper-level treatments. They felt that Level I treatments were not sufficient for all patients. One of the participants said, “Regarding experience, [the community clinical experiences] were not much effective. We did easy tasks. However, if we were allowed to do a wider range of tasks, it would be much better. Since we only offered Level I treatment, we were not facing much challenge.”

2.3. Lack of facilities

One of the concepts that students repeatedly referred to as a weak point of the community clinical experience was the lack of facilities to provide services. One participant stated, “We don't have enough facilities to treat patients who need immediate root canal therapy.” Another participant said, “Lack of facilities put the basics of infection control in doubt. They did not pay attention to this issue. They didn't replace the cover of equipment. There must be a trained person to do such tasks”.

Discussion

In the present study, each senior dental student attended two 2-week courses in a community-based dental education setting in a clinic in the city center of Sanandaj. Senior dental students offered dental services to children from an underprivileged background who ranged in age from 6 to 14. The community had low awareness about preventive dental services and their positive effects. As a result of students' interactions with this community, a positive outlook about the advantages of focusing on community-based dentistry was fostered in the students' mind. One of the characteristics of this treatment center was a large number of patients; previously, the students had not experienced the opportunity to examine a large number of patients in the university's dental clinic. They did not have experience in managing a large number of patients. At the end of the community clinical experience, the students acquired abilities both in managing a large number of patients and in having appropriate and

effective communication with patients and other medical personnel. Such an experience helped students strengthen their technical and management skills and increase their self-confidence at the same time. Most students mentioned the advantages of the community clinical experience as learning communication skills, increasing self-confidence, creating a sense of independent decision making, managing a large number of patients, increasing responding speed, decreasing acquiescence, empathizing with patients, increasing precision, learning teamwork, and increasing patience. Blinkhorn found similar results, including an increase in communication skills and self-confidence and improvement in service quality.⁹ As in the present study, Blinkhorn's study included students who implemented preventive treatments and primary dental care in family clinics within an urban setting and under the supervision of dentists.⁹ Many studies have been done to examine the effects of such community clinical experiences on increasing self-confidence and improvement of clinical skills of the students.¹⁰⁻¹⁶ According to the present study, one of the strengths of the community clinical experience is the way it enhances the students' awareness and transforms their attitude towards a community's oral and dental health status. Clearly, this community clinical experience illuminated one community's need to learn the principles of oral and dental healthcare. During this community clinical experience, students were directly confronted with the care needs of an underprivileged community, and the students' resulting community-based dental attitudes were transformed in a practical and tangible way. In another study of the effects of community-based dental education, Strauss et al. observed similar effects on student attitudes towards an underprivileged population's access to health care.³ Community-based dental health orients student attitudes and dental school curriculum planning towards public health services, engaging people in community health discussions, and ethics. In the current study, the students asserted that the community clinical experience helped them develop their outlook from merely focusing on treatment of damaged teeth towards creating a comprehensive oral and dental health culture within a community. They also stated that the community clinical experience made them more inclined to educate the community and engage people in their own health care. Accordingly, they could play a significant role in improving oral and dental health within a community. Mascarenhas's study on community-based dental education asserted that such experiences enhance students' self-confidence, clinical and patient management skills, and increase the community's access to oral and dental healthcare.¹⁷ In the present study, students mentioned the fact that their communication skills and their ability to managing patients advanced considerably due to the community clinical experience, which helped students have a better understanding of the community's health culture, especially of its underprivileged status.

Such an understanding helps narrow the health gap which exists between students and some communities. This kind of community clinical experience supports the necessity of inspiring students with self-confidence and independence to pursue their offered services by considering existing cultural obstacles, which occasionally impedes the provision of oral and dental services. The students had the opportunity and were able to explain the necessity of health care and its advantages to the patients. A similar study carried out by Joury, in Damascus indicated an increase in self-confidence and improvement in clinical skills of students as well as an increase in social responsibility of students and their inclination towards offering voluntary-based services in a crisis-stricken country.¹¹

Limitations of the study

The general limitation of this research is that inherent in qualitative studies: these findings cannot be generalized beyond the study population. In addition, the researchers are the research tool; therefore their idiosyncrasies and personal experiences and knowledge can influence observations and results. However, there are strategies to overcome these limitations, such as criteria for rigor in qualitative research, and these were employed in this study.

Conclusion

Community-based educational courses can be an appropriate model for dental education around the world and under many circumstances, but may especially benefit developing countries. In the present qualitative study, data was collected using unstructured individual interviews and group discussions among senior dental students participating in a community clinical experience. Results indicated an increase in students' awareness towards the community's care needs and an improvement in their sense of responsibility towards the community. Students showed high interest in community-based dentistry as they observed inappropriate oral and dental health status among a population of underprivileged people and knew they had the capability and capacity to improve the situation. This educational strategy helps nurture a generation of dentists who not only consider therapeutic requirements but also concentrate on the community's needs with respect to self-care and prevention. The present research paves the way for further and detailed discussions as well as quantitative studies indicated for follow up.

Ethical approval

This study was approved by the Research Ethics Committee of Kurdistan University of Medical Sciences (IR.MUK.REC.1395/401).

Competing interests

The authors of this manuscript declare that they have no

conflicts of interest, real or perceived, financial or non-financial in this article.

Authors' contributions

The concept of study was designed by RS. The interviews, data analysis and interpretations were done by NA. The manuscript was prepared by NA and RS. The critical revision of the manuscript for important intellectual content was done by YZ.

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