

Extramural Oral Health Educational Program Involving Individuals With Disabilities: Impact on Dental Students' Professionalism

Mas S. Ahmad, Ilham W. Mokhtar, Norhayati L. A. Khan¹

Centre of Comprehensive Care Studies, ¹Centre of PreClinical Science Studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh, Selangor, Malaysia

ABSTRACT

Context: Oral health inequalities experienced by patients, including people with disabilities (PWD), have been related to dentists' lack of professionalism and inadequate experience in managing patients with special needs. **Aims:** This study investigated the impact of an extramural program involving PWD on dental students' professionalism and students' perception of training in managing patients with special needs. **Materials and Methods:** A group of 165 undergraduate dental students (year 1 to year 5) participated in a voluntary program, involving 124 visually impaired children, at a special education school in Kuala Lumpur, Malaysia. A dedicated module in oral health was developed by specialists in special care dentistry, pedodontics, and medical sciences. Dental students then participated in a semi-structured focus group interview survey to discuss perceptions of their learning experiences. Qualitative data were analyzed via thematic analysis. **Results:** The program had positive impact on various aspects categorized into four major domains: professional knowledge (e.g., understanding of oral-systemic-social-environmental health interaction and understanding of disability), professional skills (e.g., communication and organizational skills), professional behavior (e.g., empathy and teamwork), and value-added learning (e.g., photography and information technology skills). Students showed improved willingness to manage, and comfort in managing PWD, and expressed support for future educational programs involving this patient cohort. **Conclusion:** Improved knowledge, skills, attitudes, and personal values, as well as support for future programs, indicate the positive impact of extramural educational activities involving PWD in developing professionalism in patient care, while providing an opportunity for students to be exposed to managing patients with special needs.

KEYWORDS: Dental education, oral health, sensory disability

Received : 16-02-20.
Revised : 13-03-20.
Accepted : 18-03-20.
Published : 18-05-20.

INTRODUCTION

Oral health inequalities experienced by people with disabilities (PWD) have been associated with a lack of professionalism among dentists. Inadequate knowledge, insufficient training in special care dentistry (SCD), poor clinical and communication skills, and negative attitudes of dentists have resulted in poor management, whereas PWD experience unmet treatment needs, avoidance behavior, and reduced access to professional care.^[1,2]

An effective educational program that integrates professional development and SCD, therefore, needs to be developed. This study was undertaken to investigate the effects of an extramural educational program

Address for correspondence: Assoc. Prof. Dr. Mas Suryalis Ahmad, Centre of Comprehensive Care Studies, Faculty of Dentistry, Universiti Teknologi MARA, Sungai Buloh Campus, Sungai Buloh 47000, Selangor, Malaysia. E-mail: mas_suryalis@yahoo.com

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Ahmad MS, Mokhtar IW, Khan NL. Extramural oral health educational program involving individuals with disabilities: Impact on dental students' professionalism. J Int Soc Prevent Communit Dent 2020;10:323-8.

Access this article online	
Quick Response Code: 	Website: www.jispcd.org
	DOI: 10.4103/jispcd.JISPCD_74_20

involving PWD on students' professionalism and their perception of SCD education.

MATERIALS AND METHODS

Dental students (year 1 to year 5) were invited to participate in a voluntary extramural educational program conducted in a special education school for children with visual impairments located in Kuala Lumpur, Malaysia. A set of 165 undergraduate dental students volunteered to participate in this program, which involved 124 visually impaired children aged 13–18 years. A dedicated module in oral health education for children with visual impairment, consisting of interactive activities with an oral health theme, was developed by two clinical specialists, each in the area of SCD and pediatric dentistry, as well as another academic staff member in the field of medical sciences who also held a position as a student advisor. Meanwhile, student volunteers and community dentistry specialists developed an innovative three-dimensional oral health educational tool kit and exhibition materials to be used during the program.

One week before visiting the school, dental students underwent a 2-hour training session conducted by clinical specialists. Students received a lecture on management of individuals with visual impairments, as well as video and live demonstration on providing oral hygiene instruction for this group of patients.

The extramural educational program was held over 2 days at the special education school, where each dental student was assigned to manage one child with visual impairment as a patient. Various activities were carried out in the school compound, such as dental checkup, dental “explorace,” neurolinguistic programming, and an oral health educational program on oral hygiene care, smoking cessation, and healthy diet.

Following the completion of the program, dental students were invited to participate in a focus group interview to gauge their experience during the learning activities, and their perception of training in managing patients with special needs. A plain language statement, which outlined the information on the objectives of the study, was given to all the students. Those who agreed to participate in the interview were asked to sign a consent form. The interview process involved focus groups, which each consisted of 10–15 dental students of the same academic year. The interview sessions were conducted by the main and coresearchers in a meeting room within the dental school facility, using a semi-structured questionnaire that was developed based on existing literature.^[3] The interview survey

was audio recorded and transcribed following the session. Qualitative data were analyzed via thematic analysis, involving open- and closed-coding, followed by identification of emerging themes.^[4] Validity of the coding process was undertaken by comparing identified codes and themes between coresearchers.^[4]

Ethical approval was granted by the Research Ethics Committee at the Universiti Teknologi MARA Malaysia (Ref. no.: 600-RMI 5/1/6; REC/225/17).

RESULTS

All dental students, who volunteered to participate in the program ($n = 165$) took part in the focus group interview survey (response rate = 100%).

PART 1: STUDENTS' PERCEPTION OF EXTRAMURAL LEARNING ACTIVITIES INVOLVING PATIENTS WITH DISABILITIES

Overall, dental students felt that such educational programming should be conducted regularly to provide them with exposure to populations of patients with special needs, as it is difficult to get this group of individuals to attend themselves at the dental school clinic. Students also opined that outreach programs such as this should be organized on a long-term basis to ensure continuity of care.

Dental students perceived that the educational program was beneficial in multiple aspects, coded into four major themes that include improvements in the following areas: (1) professional knowledge, (2) professional skills, (3) professional attitudes and soft skills, and (4) value-added learning/hidden curriculum.

AREA 1: PROFESSIONAL KNOWLEDGE

Under this theme, students identified improvement of knowledge in various components of patient care, which were coded into the following subthemes.

Understanding of the links among oral-systemic-social-environmental health

Dental students cited better understanding of the impact of disabilities on patients' oral health. Among issues discussed were difficulties in performing efficient toothbrushing, detecting presence of oral diseases, going to the bathroom, and travelling to dental clinic. Students also observed that the degree of visual impairment might affect the severity or characteristics of oral diseases that are present in the oral cavity of a patient with visual impairment.

I observed that their impairment has an impact on their oral health. For example, a patient who had visual function on the right side had more plaque and cavities on that side. The patient mentioned

that he would usually look at the food using his functional eye (the right side) and then insert the food into his mouth on that same side.

Dental student 1

Knowledge on disability

Dental students reported that they were taught about the varying degrees of visual impairment. During this learning activity, they also experienced observing the social culture and daily norms exercised by people with visual impairments. Such experience was perceived by these students to be very valuable, as they were able to relate patients' culture and norms with their ability to undertake self-care and undergo professional dental treatment. Besides, students also learned about the "do(s) and do not(s)" in managing patients with visual impairment, including aspects that may influence patients' behavior in the dental chair.

I noticed that they have increased sensitivity towards touch. So, I learn to be more careful so not to startle them. For example, I told them to touch the dental mirror first, before inserting it into their mouth.

Dental student 2

These people have been accustomed to their environment. So, do not move things around and do not disturb their routine, or otherwise they will be "lost." I now understand their "way of doing things" and I learn to respect this.

Dental student 3

Identifying the need for smart partnership

Dental students cited the importance of engaging other individuals involved with caring for PWD to ensure improved compliance and effective maintenance of oral health. Some expressed that they now have a clearer perspective of multidisciplinary intervention involving individuals outside of the health care team, such as parents/guardian and school teachers. A few of them also raised the need to include caregivers' education in formulation of dental treatment in an effort to promote comprehensive patient care.

Understanding the importance of developing good dentist-patient relationship

Dental students felt more motivated about establishing good dentist-patient relationship, after realizing the impact that this may have on patients' oral health outcome and general well-being.

My experience taught me that trust between patient and dentist is very important. My patient is still in touch with me and consults me in matters relating to health and personal issues.

Dental student 4

AREA 2: PROFESSIONAL SKILLS

Dental students also developed skills that helped to improve their competencies in multiple aspects of patient care, namely the following:

Communication with a person with visual impairments

Dental students reported learning various methods in communicating with patients with visual impairments according to their degree of disability.

Dental students also learned various techniques in delivering oral hygiene instruction to a person with visual impairment. They cited applying a combination of multiple senses, such as tactile, olfactory, verbal, and visual stimulations, and written (using Braille) instruction to improve patients' understanding.

Organizational skills

Students who were responsible for event planning and scheduling noted that they learned about the protocol and procedures for gaining approval from the higher authorities for organizing activities involving PWD.

AREA 3: PROFESSIONAL ATTITUDES AND SOFT SKILLS

In general, all dental students showed positive attitudes toward treating patients with special needs. They reported willingness as well as increased confidence and comfort in treating PWD following this program. Students also cited that they have an improved perception of PWD. They expressed to have developed a better appreciation toward this group of patients, as they now learn to focus on the individuals' abilities, rather than disabilities.

Going out of the dental school exposed us to the "real world." We now have a better understanding of what the patients go through in their daily lives, and how we can utilize this information to personally cater for their daily oral health needs.

Dental student 5

Going out to patients' place (of living) is an eye opener. Different children had different challenges, but it was interesting to see how they adapt themselves in spite of their disabilities.

Dental student 6

Apart from aspects pertaining to patient care, dental students also reported that this learning activity had an impact on their personal outlook toward life and their perspective as a human being. Many expressed empathy toward patients' conditions. A number of them felt grateful, whereas some noted an improved sense of social responsibility toward assisting PWD. A few students were also touched by the spirit of friendship and teamwork showed by the patients with visual impairment.

AREA 4: VALUE-ADDED LEARNING/HIDDEN CURRICULUM

Dental students cited their acquisition of additional knowledge and competencies developed during the planning and implementation of this program. These competencies include Braille reading, photography, information technology or computing, time management, teamwork, and leadership skills.

PART 2: STUDENTS' PERCEPTION OF SCD EDUCATION

Students expressed interest in learning SCD at the undergraduate level. However, they requested not to have clinical requirements imposed in treating these patients.

We want to learn more. But please don't impose clinical requirements. Otherwise, we will feel "insincere." As if ... we treat them as an object to fulfil our clinical requirements, rather than treating them as a human being.

Dental student 7

Students also cited that they should be allowed to practice patient-centered care, and be assessed in terms of quality of management, rather than quantity of treatment.

If the university wants us to treat patients with special needs, maybe they should allow us to manage the "patient," rather than focusing on the number of fillings or procedures that we do on that patient.

Dental student 8

It was interesting to note different opinions from students of different years of studies regarding when the teaching of SCD should be conducted. Preclinical students cited that such teaching should start early to prepare them for clinical years, especially in areas relating to communication. In contrast, clinical year students preferred the teaching to be delivered in the fourth or fifth year, as they deemed themselves to have established adequate clinical competency in patient care at this stage of studies.

Most students suggested that SCD should be taught via clinical attachment with specialists, conducted in small groups throughout the clinical years. Students also expressed interest to have more hands-on activities, such as performing oral hygiene procedures, conducting dental examinations, and undertaking treatments on patients with special needs. More teaching aids should be made available such as large models, interactive games with oral health themes, and video presentations on behavioral guidance and communication methods. They supported organization of more outreach programs, such as this, involving

different groups of individuals with special needs, such as children with autism, elderly people, and those with severe intellectual disabilities, as well as individuals with hearing and speech impairments.

DISCUSSION

Professionalism is generally defined as "the high standard that you expect from a person who is well trained in a particular job."^[5] In dentistry, professionalism encompasses multiple aspects that constitute the quality and efficiency of a practitioner, defined by various values used to depict the standard of dentistry practiced by that individual.^[6] These values include competence (which relates to acquiring a high standard of knowledge, skills, attitudes, and behavior in patient care), fairness (which relates to being consistent in human interactions), integrity (which relates to adhering to honesty and good morality), responsibility (which relates to being accountable for one's obligation and duty), respect (which relates to honoring others' worthiness), and service-mindedness (which relates to taking actions that aim to protect the benefit of patients and the public).^[6] It has been evident that dental practitioners who showed improved levels of professionalism experienced a rise in patients' satisfaction with quality of oral health care provision, along with an increase in patients' intention to return for further treatment at the same practice.^[7]

Although professionalism is highlighted as a key agenda item in dental education,^[8] it has been reported that a lack of professionalism in certain aspects of patient care is still evident among dental practitioners,^[9,10] resulting in compromised management of patients.^[11] Individuals with special needs and their caregivers, in particular, reported encountering dental practitioners who demonstrated lack of professionalism during consultation and delivery of treatment.^[12,13] They perceived that dentists were incompetent and reluctant to perform a satisfactory level of oral health care, while most practitioners showed inadequate knowledge, poor communication skills, and lack of empathy when dealing with this group of patients.^[12-14] On the other hand, dentists associated their unwillingness and discomfort in providing care to this patient cohort with their lack of training, especially in communication skills and managing individuals who are medically compromised.^[15,16] Perhaps, dental practitioners were reluctant to manage these individuals due to risk of legal implications, should their lack of competence lead to malpractice, negligence, or recklessness.^[17]

To produce graduates who possess desirable degrees of professionalism, it is incumbent on dental schools

to provide adequate learning experience that is aimed at developing competencies in the various areas that contribute toward professional endeavor. An extramural educational program, where teaching and learning activities are conducted outside of the institutional compound,^[5] may be an effective approach for dental training providers to achieve such objectives. As reported in this study, students who participated in such an educational program showed improvements in professional knowledge, clinical competence, attitudes, and behavior, and acquisition of living skills through value-added learning experience that may be useful for practice success. Furthermore, involvement of PWD in this educational activity also provided an opportunity for students to be exposed to managing patients with special needs, which training is still lacking in dental schools locally and worldwide.^[18,19] Improvement of dental students' comfort and attitudes toward managing individuals with special needs following an extramural educational program found in other studies further justifies the effectiveness of such learning approach in preparing future dental graduates for providing care to this expanding group of patients.^[20,21]

Besides providing a learning platform for students to develop professionalism in patient care and be exposed to SCD, such an educational program may also be beneficial to the group of patients with special needs, who faced restrictions in acquiring professional oral health care, to attain such services in a more accessible manner.^[22] Therefore, organization of extramural educational programs involving people with special needs is seen as a feasible approach to reducing oral health inequalities experienced by this patient cohort, and promoting the ability of these individuals to attain satisfactory oral health.

Suggestions given by students regarding the ideal time for training in managing patients with special needs as well as teaching resources to be developed served as useful information for educational providers to plan for future curriculum improvement, workforce advancement, and financial strengthening. A competency-based educational approach may be applied in the teaching of SCD in an attempt to instill the practice of holistic patient care, rather than merely focusing on dental procedures to be performed. Besides, having clinical requirements to fulfill during undergraduate studies has been related to declining level of dental students' empathy and professionalism toward patients,^[23] thus diverting students from the focus of patient-centered care in clinical practice.

This study may be limited by the bias response provided by students who participated in the survey.

This is because, dental students who participated in this learning activity may have volunteered because of positive attitudes that they possessed, even before the event, toward PWD.^[24] Hence, responses that reflected positive learning experience and support for future programs as such may tend to be indicated by these students.^[24] Although the perceptions of those who did not volunteer in this program were not investigated, their nonparticipation may not necessarily represent negative attitudes toward the subject matter. Further investigation to explore factors that are associated with dental students' interest with volunteerism and their attitudes toward PWD is, therefore, recommended. Nevertheless, the study does provide useful early findings and positive indication for dental schools to emulate effort in providing a field-based learning experience involving PWD for their students.

Students' support toward extramural learning activities involving PWD and training in SCD suggests positive implications toward development of further programs that are designed to prepare dental students for future challenges, needs, and demands for oral health care among populations of individuals with special needs, while simultaneously providing students with learning experience that stimulates development of professionalism in dental practice.

CONCLUSION

Improved knowledge, skills, attitudes, and personal values, as well as support for future programs, indicate the positive impact of extramural educational activities involving PWD in developing professionalism in patient care, while providing an opportunity for students to be exposed to managing patients with special needs. The findings of this study provide useful information for educators in planning for a training program that promotes educational development, professionalism, and personal endeavor, which are essential elements to ensure the achievement and maintenance of a high standard of dental practice and good-quality patient care.

ACKNOWLEDGEMENTS

We thank the Dental Student Association (DENSEA) of the Faculty of Dentistry, Universiti Teknologi MARA Malaysia, for organizing the event through fund-raising activities. We also thank all dental students who volunteered in the program and participated in the focus group survey.

FINANCIAL SUPPORT AND SPONSORSHIP

We thank the Faculty of Dentistry, Universiti Teknologi MARA Malaysia, for allocating funds from

the Students' Academic Development Trust to support the extramural educational program.

CONFLICTS OF INTEREST

There are no conflicts of interest.

AUTHORS CONTRIBUTIONS

Mas S. Ahmad: Study conception and design, literature search, clinical studies, data acquisition and analysis, manuscript preparation and editing. Ilham W. Mokhtar and Norhayati L.A. Khan: Study conception and design, clinical studies, data acquisition and analysis, manuscript review. All the authors approved the final version of the manuscript for publication.

ETHICAL POLICY

Ethical approval was granted by the Research Ethics Committee at the Universiti Teknologi MARA Malaysia (Ref. No: 600-RMI 5/1/6;REC/225/17).

PATIENT DECLARATION OF CONSENT

Each subject has signed a consent form, which includes statements that indicate their voluntary participation in the study and permission for publication of the data for research and educational purposes.

DATA AVAILABILITY STATEMENT

The data used in the current study will be available up to 5 years after the date of publication.

REFERENCES

- Williams JJ, Spangler CC, Yusaf NK. Barriers to dental care access for patients with special needs in an affluent metropolitan community. *Spec Care Dentist* 2015;35:190-6.
- Adyanthaya A, Sreelakshmi N, Ismail S, Raheema M. Barriers to dental care for children with special needs: General dentists' perception in Kerala, India. *J Indian Soc Pedod Prev Dent* 2017;35:216-22.
- Ahmad MS, Razak IA, Borromeo GL. Special needs dentistry: Perception, attitudes and educational experience of Malaysian dental students. *Eur J Dent Educ* 2015;19:44-52.
- Sutton J, Austin Z. Qualitative research: Data collection, analysis, and management. *Can J Hosp Pharm* 2015;68:226-31.
- Oxford Advanced Learner's Dictionary. 9th ed. Oxford, UK: Oxford University Press; 2015.
- ADEA: The Voice of Dental Education. ADEA Statement on Professionalism in Dental Education. Washington, DC: American Dental Education Association; 2009.
- Saleh F, Dyer PV. A questionnaire-based survey of patient satisfaction with dental care at two general dental practice locations. *Prim Dent Care* 2011;18:53-8.
- General Dental Council. Student Professionalism and Fitness to Practice. London, UK: General Dental Council; 2016.
- Macdonald ME, Beaudin A, Pineda C. What do patients think about dental services in Quebec? Analysis of a dentist rating website. *J Can Dent Assoc* 2015;81:f3.
- Yusof ZY, Jaafar N, Jallaludin RL, Abu-Hassan MI, Razak IA. Malaysian dental graduates' competence in holistic care: What do graduates and employers think? *J Dent Educ* 2010;74:1380-7.
- Hopcraft MS, Morgan MV, Satur JG, Wright FA. Dental service provision in Victorian residential aged care facilities. *Aust Dent J* 2008;53:239-45.
- Reichard A, Turnbull HR, Turnbull AP. Perspectives of dentists, families, and case managers on dental care for individuals with developmental disabilities in Kansas. *Ment Retard* 2001;39:268-85.
- Paley GA, Slack-Smith L, O'Grady M. Oral health care issues in aged care facilities in Western Australia: Resident and family caregiver views. *Gerodontology* 2009;26:97-104.
- Ajwa N, Alomran A, Alsuwaie H, Alzamil K, Alfaifi R, Almasry N, *et al.* Dental practitioners' perception toward management of physically challenged patient among Saudi Arabia. *J Int Soc Prev Community Dent* 2018;8:546-52.
- Mohebbi SZ, Sargeran K, Hejrati TS, Kharrazifard MJ. Dentists' attitude and perceived educational barriers to oral health promotion among patients with disabilities. *J Oral Health Oral Epidemiol* 2018;7:69-75.
- Othman AA, Yusof Z, Saub R. Malaysian government dentists' experience, willingness and barriers in providing domiciliary care for elderly people. *Gerodontology* 2014;31:136-44.
- Rovida TAS, Dias IA, Garbin CAS, Garbin AJI. Evaluation of injury cases for dental intervention described in legal dentistry reports/Evaluación de Casos con Lesiones de Intervención Dental Descrita en los Informes Legales Odontológicos. *Int J Odontostomat*;2015;9:533-9.
- Ahmad MS, Razak IA, Borromeo GL. Undergraduate education in special needs dentistry in Malaysian and Australian dental schools. *J Dent Educ* 2014;78:1154-61.
- Vainio L, Krause M, Inglehart MR. Patients with special needs: Dental students' educational experiences, attitudes, and behavior. *J Dent Educ* 2011;75:13-22.
- Kuthy RA, McQuistan MR, Heller KE, Riniker-Pins KJ, Qian F. Dental students' perceived comfort and future willingness to treat underserved populations: Surveys prior to and immediately after extramural experiences. *Spec Care Dentist* 2010;30:242-9.
- Hamershock RA, Rajabian S, Fox JE, Mofidi M, Abel SN, York JA, *et al.* Dental students' HIV/AIDS-related knowledge, attitudes, and intentions: impact of the U.S. Health Resources and Services Administration's Community-Based Dental Partnership Program. *J Dent Educ* 2014;78:1106-17.
- Chávez EM, LaBarre E, Fredekind R, Isakson P. Comprehensive dental services for an underserved and medically compromised population provided through a community partnership and service learning. *Spec Care Dentist* 2010;30:95-8.
- Cardall WR, Rowan RC, Bay C. Dental education from the students' perspective: Curriculum and climate. *J Dent Educ* 2008;72:600-9.
- Ford DW, Elliot GH, Lee M. Undergraduate student attitudes toward disabled persons and influence on disability sport volunteerism. *J Physic Educ Sport Manag* 2017;4:22-32.