

PROJECT REPORT

Dental education in the rural community: a Nigerian experience

O Ibiyemi, JO Taiwo, GA Oke

Department of Periodontology and Community Dentistry, Faculty of Dentistry, University of Ibadan, Ibadan, Nigeria

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ABSTRACT

At the University of Ibadan, Ibadan, Nigeria, dental students are prepared not only to provide skilled care to individual patients, but also to assume responsibility for the community as a whole. In establishing the rural posting program for dental students, it was planned that all fifth year dental students would undertake a rural posting at Igboora, approximately 80 km from Ibadan, the capital of Oyo State. During this 6 week immersion experience students learn about living in a rural area where they provide community oral health services. This report provides recommendations for initiating, sustaining and expanding rural dental education programs.

Key words: dental education, Nigeria, rural posting, underserved and underprivileged areas.

Context

Despite worldwide adoption of the UN Alma-Ata declaration as a strategy for achieving 'Health For All', some medical education systems are still 'ivory towers', remote from their health service system¹. In African countries, basic medical education has been largely hospital-based, technologically oriented and focused on curative therapies at the expense of

preventive and promotive care². This has produced medical doctors and dentists who are able only to work in secondary and tertiary health centers, leaving primary healthcare (PHC) centers underserved or neglected. Further, this traditional medical education does not prepare doctors in developing countries for a leadership role in meeting the healthcare needs of an entire population, particularly those who live in rural areas¹.



Fortunately some governmental and non-governmental agencies support the establishment of community-oriented medical schools where doctors are trained to offer broad-based community care and preventive medicine³. To this end, many medical schools have established rural- or remote-area postings for medical students with the aim of addressing community health needs³. Similarly, some dental schools, such as the Dental School, University of Ibadan Ibadan, Nigeria, have addressed the need to establish rural dental education postings for dental students, with the aim of providing preventive and curative oral health services to rural underserved and disadvantaged communities. In addition, this rural undergraduate dental curriculum exposes dental students to rural practice and lifestyle, and so encourages a desire to work as graduates in areas of unmet oral health need.

The clinical dental training program of the Dental School University of Ibadan, Nigeria is based at the Dental Center University College Hospital Ibadan, the capital of Oyo State. Although community dentistry is part of the undergraduate curriculum, there has been no rural or remote area exposure for dental students to apply didactic knowledge and skills. This report provides information about the establishment of a rural dental posting program from the Dental School University of Ibadan, Nigeria in 2007. This will assist the establishment of such a program in other dental schools, especially those in developing countries. It will also provide information relevant to the community engagement and rural oral health programs of local and international governmental and non-governmental organizations that have an interest in providing oral health services, especially for people in underserved locations.

Program

In 2007, the Department of Periodontology and Community Dentistry, Faculty of Dentistry at the University of Ibadan established the Ibarapa Community Oral Health Programme at Igboora (Fig1), a rural community and headquarters of Ibarapa Central Local Government Area of Oyo State,

Southwestern Nigeria. Igboora is situated approximately 80 km west of Ibadan and has a population of approximately 60 000 whose main occupations are farming and trading⁴.

This rural dental posting program was established to provide oral health care for the population in and around Ibarapa, while also providing community based dental education where students can observe the determinants of ill-health for those in disadvantaged communities. The program was funded by the US MacArthur Foundation and is strongly supported by the Vice Chancellor of the University of Ibadan, the Provost College of Medicine, and the Director of the Ibarapa Community Health Programme. A committee consisting of consultants in community dentistry, resident doctors in community dentistry, dental officers, a public health nurse and an administrative officer was assembled to manage the activities of the Programme. In early meetings the committee mapped strategies to achieve Programme aims and objectives. The committee also met with the management of the Ibarapa Community Health Programme, a collaborative program between Ibarapa communities, administrators of the three Ibarapa Local Government Areas (LGAs), the Oyo State Government, University College Hospital Ibadan and the University of Ibadan to ensure effective integration of the oral health program into existing health facilities at the General Hospital Igboora. Additional discussions, strongly supported by the Dean Faculty of Dentistry University of Ibadan, centered on ensuring that dental and medical students' rural postings coincided, in order to promote the sharing of ideas and knowledge about the healthcare needs of this population.

A familiarization visit to the General Hospital Igboora was made by both the Ibarapa Community Oral Health and Community Health teams. During this visit the teams inspected facilities such as consulting clinics, laboratories, pharmacy, wards, theatres, lecture rooms, staff accommodation and recreation areas, and water collection points.

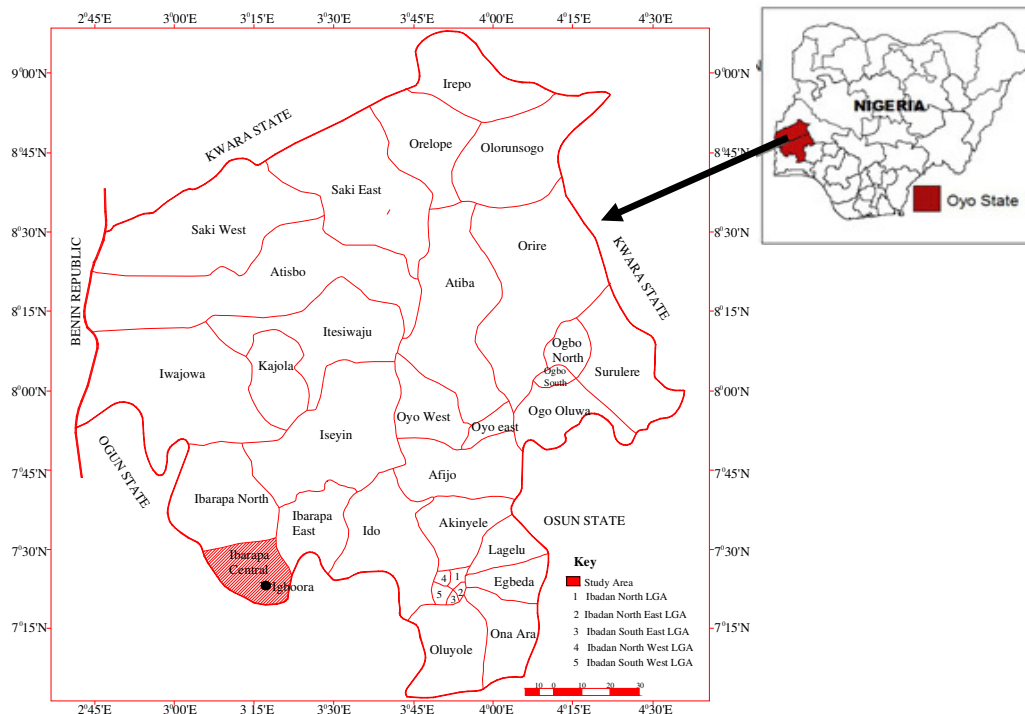


Figure 1: Map of Ibarapa Central Local Government Area, Oyo State, Nigeria.

Following this visit, two rooms were allocated to the dental clinic, appropriate accommodation was provided for the dental surgeons, and female and male dormitories were allocated to the dental students participating in the Ibarapa Community Oral Health Programme. It had been noted that a report on rural practice preferences among medical students in Ghana showed that the students valued rural job attributes that enabled them to perform well clinically and live comfortably⁵. Therefore, the allocated accommodation facilities were renovated to assist in motivating students. At the same time dental materials, instruments and equipment were purchased for the dental clinic, and an Indigenous in-house trained clinic assistant from the local community was employed.

The dental clinic was commissioned by the traditional ruler and chiefs of Igbo-ora in the presence of the administrative heads of the Ibarapa Central LGA and the Dental School,

University of Ibadan. This was followed by oral healthcare training for school teachers and community health workers in Ibarapa Central LGA in order to create awareness of oral health care, and to develop their capacity to identify and refer people with oral disease from the community.

Issues

Each year, towards the end of the academic session, 35 to 40 fifth-year dental students who have acquired adequate clinical training in dentistry and medicine are scheduled for a six-week rural dental posting. The posting usually coincides with medical students' rural medical posting to encourage interaction between the two groups of students. Prior to travelling to Igboora, dental students spend the first week of the posting at the Dental Center, University College Hospital Ibadan, receiving lectures on research methodology and



developing a group research project relevant to the needs of the community. At this time they are also briefed on the rural dental education program and collect their posting booklets.

On arrival at Igboora at the beginning of the second week, students are received by a senior registrar in community dentistry, and the administrative officer of the Ibarapa Community Health Programme orients them to their dormitory accommodation, the taps and tanks for fetching water for drinking and bathing, and the canteen where they will purchase food.

On the second day after arrival, a program work schedule is provided by the senior registrar who then takes the students on 'advocacy visits' to administrative and traditional leaders in the community, with the aim of establishing trust and good will. At this time, rural dental education program objectives are explained to the leaders to encourage community participation and involvement in matters that fundamentally affect the delivery of local health services. This is an important program ethical component⁶, and it is hoped that support from the community will influence these undergraduate students' future willingness to work in rural communities⁷.

Guided by the work schedule, the dental students then visit diverse populations at immunization and antenatal clinics, market places, schools, LGA secretariats and the meeting place of artisans. There they perform community diagnosis by screening individuals for oral disease. Those with oral disease are referred for routine dental treatments at the Dental Clinic, General Hospital Igboora; and patients requiring specialist dental care are referred to the Dental Centre, University College Hospital Ibadan. The students also provide education about the prevention and treatment of common oral diseases, especially those prevalent among disadvantaged socioeconomic groups. To this end, one group of dental students composed a folk song about oral hygiene maintenance which is now sung in primary and secondary schools in and around Ibarapa.

The dental students commence their group research project, guided by the senior registrar who assists with organizing surveys and interpreting findings. However, the main initiative remains with the students. All posting activities are performed under the supervision of lecturers and consultants in community dentistry, assisted by dental officers on rotation in community dentistry. These mentors guide and motivate the students for the duration of their posting, for the positive impact of supportive supervision has been found to improve health workers' motivation and quality of care^{8,9}. The students' activities are problem-based, self-directed and student-focused, which Schmidt et al reported to be more beneficial than rote learning when students are dealing with community health problems, because students are highly motivated to acquire the necessary skills for problem solving¹⁰.

However, during scheduled visits to Igboora, dental student lectures on oral disease epidemiology and biostatistics, provided by lecturers in community dentistry, complement the structured community observation and investigation. In addition, students make group presentations on oral health issues in rural communities as graded assignments. Both lectures and presentations are interactive and guide students in their activities, for it has been reported that medical students perceive the absence of guidance as negative factor in community based training⁷. The formal education component also includes clinical laboratory demonstrations and hands-on practical experience in basic investigatory procedures, such as estimating packed cell volume (PCV) and performing full blood counts. Students also participate in environmental health and community development programs presented by health and development officers.

Two days before the end of the posting, students participate in a 'research-to-policy program', where feedback on the outcome of their research is provided to the representatives of various population groups, community leaders and administrative LGA heads, with suggestions for corrective or preventive healthcare actions. Finally, a cultural night provided by the Chairman of the Ibarapa Central LGA shows



the community's appreciation for the services of both medical and dental students.

On the dental students' return to Ibadan they give oral presentations of their group research outcomes at the University of Ibadan and are scored by the heads of the various departments in the Faculty of Dentistry. The group research project is also submitted as a thesis and scores are awarded as part of continuous assessment for the final Bachelor of Dental Surgery Examination in Community Dentistry.

Lessons learned

The power of knowledge lies in its application. Rural postings enable students to translate theoretical knowledge into practical skill-acquiring experiences and to make a real difference to the local community. Due to their proximity to patients, students are able to understand their illnesses; they come to understand how the community works and are able to observe the various determinants of oral health. Anecdotal reports have shown that the majority of dental students who attended the rural posting found that the rural dental education experience met their expectations. The program sensitized them to, and so helped them to identify, community needs. They reported being able to work as a team while also developing problem-solving and self-directed learning skills. They applied their problem-solving skills to the provision of health care, based on available resources, the local ecology, and the culture and traditions of the local population.

This posting also enhances the image and practice of the dental profession, making dental students highly acceptable to the people, and dental education relevant to community needs. This rural, community-oriented and problem-based educational strategy is an immersion experience that will better prepare dental students for graduate practice, and assist in addressing shortages of dentists in cross-cultural and disadvantaged communities. Importantly, in the long term it will assist in recruiting and retaining dentists in rural and remote areas, for exposure to rural health care during

training is one of the predictors of health professionals' choice for graduate jobs in rural areas¹¹⁻¹⁴. The rural exposure of dental students will result in dentists with a strong orientation towards priority oral health problems and community programs. It will also help students adopt an holistic approach in their future clinical work. Furthermore, it will strengthen the performance of newly graduated dentists posted to PHC facilities in rural communities for their one year National Youth Service Corps in oral health services. Urban students who have experienced rural-based training placements will not have the cultural shock encountered by those who have had no experience of life in rural areas¹⁵.

Kaye et al mentioned inadequate support facilities such as internet and library access as challenges to rural medical programs⁷. This was observed to be an issue in this program and correction has been recommended, for adequate support facilities will better position rural medical and dental student on rural postings to meeting their goals. The majority of final-year medical students at the University of Lagos, Nigeria, whose rural exposure was in the PHC program of their school reported that the program should not only be retained, but also better funded to achieve desired objectives¹⁶. Financial support from government will motivate students to participate, and will ultimately contribute to the development of a viable rural and remote workforce.

Finally, while some students found it difficult to understand the local language and culture, this was managed by dividing students into mixed groups of those who could speak and understand local languages and culture and those who could not. Students able to translate the local language into English were encouraged to assist their colleagues.

Conclusion

Undergraduate exposure to rural health care has been found to assist in the recruitment of dentists for rural service, and their subsequent retention. Dental schools, especially those in developing countries, should contribute to providing oral



health for all by developing a rural dental education program. The rural dental training program of the Dental School, University of Ibadan, Nigeria has been a success since its establishment in 2007, providing a model for those wishing to establish such a program. However, it is important that local and international governmental and non-governmental organizations promote oral health and support the provision of oral healthcare services in partnership with regional and national ministries of health, especially for disadvantaged rural populations.

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