# Oral Health of Poor People in Rural Areas of Developing Countries

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© *J Can Dent Assoc* 2005; 71(10):753–5
This article has been peer reviewed.

Dentistry is undergoing tremendous change, with advances being made in both diagnosis and treatment. However, developments such as digital radiography, computer-aided design and manufacture of dental prostheses, and laser therapy are expensive and are not readily available to all patients, especially those living in poverty. Even as the technological aspects of dental practice in developed countries make rapid progress, people in rural areas of developing and underdeveloped countries continue to be deprived of basic oral health care. This article describes the oral health problems of these poor people and some of the efforts that are being made to solve them.

In developing countries like India, 60% to 65% of the population lives in rural areas, where agriculture is the main occupation, illiteracy prevails, and people often neglect their oral health simply through lack of knowledge. In addition, infrastructure and other facilities are inadequate, and overall quality of life is poor.

Consider a peasant who works in the field for a daily wage. He earns just 20 to 30 rupees (less than a dollar) per day. In addition to his own personal needs, he has a family to support. How much money can he afford to spend on oral health care? In all likelihood, not very much, if any.

This scenario also raises the important issues of nutritional requirements and living conditions. Many poor people in underdeveloped countries are malnourished and live in unsanitary conditions. As a result they are vulnerable to oral diseases such as oral myiasis (**Fig. 1**) and noma, diseases that are almost forgotten in the developed nations.

In remote, poverty-stricken areas, people can barely afford to pay for any type of medical treatment. As a result, there are few dental clinics. Although primary health centres have been established in at least some locations, they lack adequate facilities for high-quality oral health care. Furthermore, most doctors are not willing to work in these centres because of the poor infrastructure and low salaries. Poor people are therefore deprived of basic and essential oral health care facilities.

Despite their poverty, however, many of these people are addicted to unprocessed tobacco and alcohol, which are major risk factors for oral cancer.[1,2] Typically, in the initial stages of oral cancer these patients do not report anything to medical professionals, partly because oral health care facilities are lacking and partly because of ignorance and poverty. Only when the cancer reaches an advanced stage (**Fig. 2**) do they seek medical help, at which point appropriate treatment may be impossible. Early detection and diagnosis of cancer is therefore important. A recent study conducted in Kerala (India) concluded that oral visual screening can reduce mortality in high-risk individuals and can potentially prevent at least 37,000 cancer deaths worldwide.[3] The question is how can we reach these people?

In India, this question is being answered in part by temporary dental camps that screen for oral cancer and premalignant lesions.

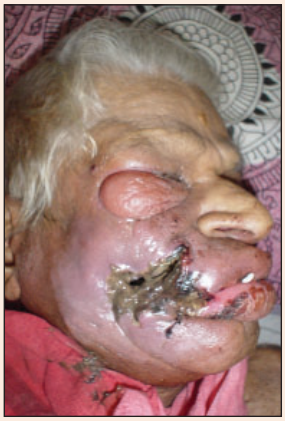

**Figure 1:** Extraoral photograph of a patient suffering from oral myiasis. The soft tissue necrosis of the cheek was caused by maggots.

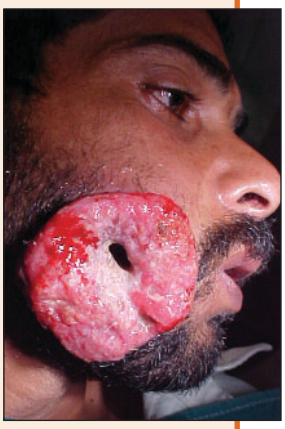

**Figure 2:** Patient with advanced oral cancer.

Simultaneously, basic treatments such as gross scaling, extractions and placement of temporary fillings are performed. The following brief review describes how these camps function.

A team of enthusiastic dentists (specialists from all disciplines) and dedicated assistants, carrying with them all necessary equipment, travels overnight by bus to reach a designated remote rural area. With help from the local municipal and school administrations, a temporary camp may be set up on school premises or in a vacant room in a municipal building. The equipment is arranged, and wooden chairs and tables are set up along the sides of the room. All waste is collected in one area, and instruments are sterilized by boiling them on a gas stove. Volunteers from the local population help out by managing the crowds, ensuring orderly inflow of patients, holding the flashlights that serve as operating lamps, and conveying instructions to the patients. These volunteers are of great assistance in running the camps.

Once the camp is declared open, hundreds, even thousands, of patients line up to register for care. Each patient undergoes an initial screening and receives a dental health card for treatment either at the camp or, if required, at the main hospital (which organizes the camp); upon producing this card from the temporary camp, patients referred to the hospital are treated for free. Standing dentistry is practised at the camps.

The number of patients is often so great that they must be called for treatment in groups of up to 4 people. The dentist starts by administering local anesthetic (using different needles, of course) to the 4 patients, one after the other. As the fourth patient is receiving his or her dose of anesthetic, onset of anesthesia is achieved in the first patient, and the dentist can start removing or treating that patient's teeth. The paramedical staff and nurses ensure that an adequate supply of materials and sterilized instruments is close at hand. Short breaks are taken on a rotating basis for water, tea and snacks. There is just enough time for the dentists to dip their hands into an antiseptic solution before changing gloves and turning to the next patient. There is no time to feel tired or complain of backache. You see the huge crowd, take a deep breath to lift your spirits, and carry on to the next patient: don't think, just perform your duty. This is the spirit in which the work proceeds.

As can be surmised from this description, a team effort involving the organizers (from the rural community itself and from dental schools in urban areas), dentists, nurses, volunteers and patients is necessary to make these dental camps a success.

Dental camps in remote rural areas constitute one way in which social welfare organizations and dental colleges cater to the needs of poor rural people. I recently participated on a team that visited one such camp. Over the course of 2 days, more than 3,200 patients were screened and

## Closer to Home…

### Dental Crisis in Kashechewan: Part of a Larger Picture

The outbreak of *E. coli* in the water supply of the northern Ontario aboriginal community of Kashechewan, and the subsequent evacuation of residents, sparked widespread media and political attention in October. Earlier this year, I witnessed firsthand the decrepit living conditions and abysmal oral health endured by the members of this community.

As a dental resident based in Moose Factory, Ontario, I ventured to Kashechewan for 1 week to offer dental services. When I arrived, it had been over a month since a dentist had last served the community. Nurses were providing dental care and every toothache was routinely treated with penicillin (at an inadequate dose and frequency) and analgesics. Threats against the nurses were not uncommon, and most would not work without the protection of security guards.

When residents realized a dentist was there, a long waiting list of patients emerged, many begging for attention to their dental problems. I was allotted 30 minutes to take a medical history, identify which teeth were causing the most pain, take a radiograph, make a diagnosis and perform the extractions (of which most were surgical), as well as provide postoperative instructions and prescriptions. A Herculean task indeed!

Everyone I encountered at Kashechewan was living with a toothache, many for a very long time. I could only provide emergency

treated. The experience was amazing, and I am happy and proud to have been a part of the camp.

Even as we benefit from technological developments in dentistry, let us not forget that there are poor people in this world who are still waiting for treatment of their basic oral health needs. Some steps have been taken, such as the camps described here, but many others are still waiting.

I acknowledge and thank all the dedicated team members who make India's dental camps a reality.

*This article describes the situation in remote rural areas of India and should not be construed as an indication of dental care facilities elsewhere in India.*

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care, carrying out extractions of countless severely decayed teeth that were the source of pain in most people. Many children had nursing caries and had to be referred to the hospital in Moose Factory for treatment under general anesthesia.

The concept of prevention was very distant and the community had an oral health awareness among the worst documented. Asking about diet was telling, with soft drinks and sugar-containing foods cited as a staple (not to mention being far less expensive than healthier alternatives at the local store).

When I left Kashechewan, I knew despite having worked long hours that I likely made only a small contribution to the incredible mountain of care that was required. This community did not just need a dentist for a brief stint to extract some teeth. It urgently needed better overall living conditions: clean housing, clean water, access to nutritional food and general public health initiatives, including preventive public health dental programs.

It is unfortunate that it took an outbreak of *E. coli* for most Canadians to become aware of the suffering of the people of Kashechewan. The recent crisis is not limited to the water supply, but manifests itself in the lack of available oral health care.

As health care professionals, dentists have a social responsibility to act as advocates, to ensure that the basic oral health needs of all communities are served. If we apply this concept to the residents of Kashechewan, then we have failed.

*— Dr. James Noble*
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