

REVIEW ARTICLE

Mobile Dental Clinics- A Review

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ABSTRACT

Conventional strategies, such as building of dental clinics or, hospitals, or the provision of outreach services by using disposable materials, are neither practical nor effective in rural settings.⁽⁴⁾ Mobile Dental Clinic have been proposed as an alternative strategy to supplement the traditional oral healthcare in many regions. They have usually been utilized in school-based oral health programs, providing dental care to the homeless or migrants, and screening programs for the population for various oral diseases. Due to their high mobility, mobile dental vehicle are particularly valuable for the underserved populations living in rural areas. The advance of dental devices enables mobile dental vehicle to be operated in a self-sufficient manner. Mobile Dental Vehicle providing a variety of dental treatments, including scaling, restoration, and oral surgery. This article discusses the use of Mobile Dental Vehicle in receiving oral healthcare.⁽²⁾ This review highlights the features of a typical mobile dental clinic.⁽³⁾ and confirms mobile dental system is a viable means providing essential dental service and an effective oral health delivery system, especially in a developing country like India⁽⁴⁾

Key words- Mobile Dental Clinics, Mobile Dental care, Oral Health, Mobile Dental Units

INTRODUCTION

A healthy life is the dream of every individual and healthy individuals are the most precious assets any country can have. Good health is no longer regarded as a privilege of the wealthy people, but is now considered a right irrespective of one's socio-economic condition. Hence the status of dental profession will be evaluated only if the dentists seek ways and means of providing dental care to all those who need it, irrespective of whether they can afford it or not. After all a healthy mouth is essential for maintaining a good general health.⁽²⁾ The rationales behind these disparities have been under discussion. The inequalities of oral health services, accessibility, utilization, oral health knowledge and practices, and health insurance coverage might exist between urban and rural areas . It has been well-accepted that people's dental-related behaviors (toothbrushing, smoking and drinking habits, frequency of dental checkups, etc.) and socioeconomic background (household income, education level, etc.) are related to their oral health . These factors can be considered as the mediators between the

geographic living areas and oral health conditions. People living in rural or remote areas are often impoverished, with a low income, low education level, unfavorable living environment, and limited access to healthcare. Therefore, their knowledge, attitude, and behaviors regarding oral health practice are generally inadequate and insufficient⁽³⁾

Although both governmental and non-governmental organizations have made great efforts to promote oral health worldwide, the oral health situation has not improved in the last few decades. According to the Global Burden of Disease (GBD) study published in 2015, oral diseases remain one of the major global public health challenges. Nearly half of the global population suffered a certain level of disability from undesirable oral conditions. The total disability-adjusted life years due to oral conditions (tooth loss, severe chronic periodontitis, untreated dental caries, etc.) was 16.9 million in 2015, and has increased by 64% since 1996.⁽²⁾

Mobile dental Van& Clinics can be adopted to address the oral healthcare needs of different populations, such as through school-based oral health programs, and the provision of oral care service to the homeless, people who are temporarily displaced, migrants, people living in rural or remote areas, people from low socioeconomic communities, etc.⁽²⁾.

MATERIAL AND METHOD

An Mobile Dental Clinic can be a truck or a bus. This Mobile dental Clinic was renovated from a single-deck bus. It consists of four parts: a generator compartment, a driving compartment, a registration counter and waiting area, and a dental surgery room.⁽²⁾ It consists of Dental Chair-(Hydraulically operated, Air ventury, Aerotor, Micromotor, Scalers, 3 way syringes, Multifunctional foot control, Basin, Stainless steel instrument tray, X-ray viewer, Dental operator's stool), Operating light two intensity, Dental X-ray, Autoclave, Glass Bead Sterilizer, Metal cabinets with wash basins, Portable dental unit-(Mobile suitcase, Compact compressor), Stabilizer, Generator, Water Tank, Oxygen Cylinder, Public address system, TV and DVD player, Health education models.^(5,7)

The driving compartment is in the front of the bus. The driver of the van has to be trained or may be required to pass a specific driving license examination for such special purpose vehicles in some regions. The registration counter is behind the driving compartment. The seats in waiting area are equipped with seat belts which can be used by the dental team during transportation. Computer sets are usually available in the mobile dental clinic for patient registration and treatment records. The use of an electronic health record sharing system can enhance the accuracy and efficiency of obtaining patients' records. It also provides dentists with essential and updated medical and dental histories through an information infrastructure within both the public and private healthcare sectors.⁽²⁾ High-power suction is available in the dental unit and permits treatments requiring large volumes of lavage and improves infection control. There are movable chairs for both operator and assistant. Radiographic equipment for intraoral films is available, with a digital complementary metal oxide semiconductor sensor that allows instant viewing and storage of radiographic records with the reader and computer, forgoing the need for film processing solutions, i.e., developer and fixer solutions. The door of the surgery room is paneled with lead lining for radiation protection. A bench-top sterilizer, typically an autoclave, is also installed for sterilization purposes, allowing a wider range of instruments to be used on the Mobile dental clinic.⁽²⁾ They can function as a convention dental clinic that provides a variety of dental treatments, such as scaling, restoration, and oral surgery for a large number of patients in a controlled environment with a high standard of infection control.⁽⁴⁾

PEDIATRIC MOBILE DENTAL CARE

The St. David's Foundation Dental Program (SDF) has a fleet of nine mobile dental vans that travel to six school districts to provide free dental care to children in the Central Texas region. In order to tackle a large region, the clinical team is divided into four regional teams that spread out across the three-county area. Each regional team has a pair of vans, and the staff is composed of a supervising dentist, a staff dentist, a hygienist, and four dental assistants. The SDF clinical model has been able to achieve school buy-in because the dental staff work around the school and teacher's schedule to minimize disruption to the classroom. Children are provided free preventive and restorative care on the vans. Once a school is identified, a screening determines the level of a child's need. A treatment plan will indicate treatment by the dentist, the hygienist, or both providers. This information helps the data analytics team predict how long the regional team will be at each school and how many schools can complete the Dental Program that school year. The St. David's Foundation Dental Program is a successful model that has been operating for 18 years and demonstrates the effectiveness of Dent. J. 2019, 7, 75 4 of 6 pediatric dental care to overcome barriers such as transportation, parents missing work, and children missing school because of dental pain or treatment needs. ^(1,8)

DISCUSSION

Portable dental equipment has been defined as any non-facility in which dental equipment, utilized in the practice of dentistry, is transported to and utilized on a temporary basis at an out of office location including, but not limited to (a) another dentists' offices, (b) patients homes, (c) schools, (d) nursing homes, or (e) other institutions. The concept of portable dental equipment dates back to 1617 when John Woodall, Surgeon General to East India Company produced details of the contents of surgical chests which included instruments for scaling, gum treatment and extractions . Innovation in Dental field equipment made rapid strides during the two World Wars and subsequently its use spread to the civilian sector. One of the earliest documented uses of portable dental equipment in general population is from Malaysia where 'flying squads' were reported to provide oral healthcare services to rural population during 1952 to 1963 . ⁽¹⁾

Today a mobile dental vehicle includes foldable dental chairs, hand held intra-oral radiographic machines, suitcase or trolley units having attachments for ultrasonic scalers and airtor/micro-motor hand pieces, high and low speed suction, built-in compressor systems, lathes and portable dark rooms.²⁾ Within the limitations of the present study it can be recommended that public health programs should combine elements from portable equipment along with dental vans to create a hybrid system. Clinical service delivery with portable equipment has been shown to be most productive in a facility where set-up and breakdown occurs only once . This can comprise of a trailer full of portable dental equipment which is hauled by a truck and parked at a fixed site to stimulate a dental operator. Training resident dental surgeons and other categories of health workers in use of portable equipment will also pave way for further innovation in future. Provision of healthcare to millions of people is a huge challenge for policy makers and health administrators, especially in developing countries that also are some of the most populous. ⁽¹⁾ Mobile Dental Vehicle is particularly valuable to those for whom transport can be a challenge, like children and the elderly. Children depend on their adult caregiver to understand, value, and finance their oral care. Moreover, children usually require their caregiver to escort them to dental appointments. Research has demonstrated that children with poor oral health are three times more likely to miss school because of dental pain. ^(2,3)

CONCLUSION

Health service in most of the developing countries are deficient, and available care does not meet the needs and demand of many communities.⁽⁴⁾ Due to the lack of oral health services including dental man power there is an enormous backlog of unmet dental treatment and the facilities available are inadequate and insufficient to cope with the increasing levels of oral disease and demand for treatment.⁽⁴⁾ The mobile dental clinics have been successfully used to provide dental treatment to school children, disabled patients, rural communities, industrial workers and the armed forces of various countries. Different combination of oral health personnel have been employed to staff qualified clinics, including dental and dental auxiliary students; qualified dentists, dental therapists and oral hygienist resulting in advocacy of the team approach.⁽²⁾

However, the limitations of the systematic review was that it did not evaluated the efficacy of Mobile dental clinics specifically to determine if there is evidence that the presence of such programs could contribute positively to the overall oral health outcomes. Further, longitudinal clinical studies are required to assess the long term benefits of the use of Mobile dental clinics at community level. However, even with the limited literature available at present regarding the efficacy and role of mobile dental units independently, their future looks promising regarding filling the gap between health care facilities provision and utilization.^(3,5)

REFERENCES

1. S. G. (2019). Reaching Vulnerable Populations through Portable and Mobile Dentistry — Current and Future Opportunities. *Dentistry Journal* , 7, 75; doi:10.3390/dj7030075.
2. Gao, S. S. (2019). Utilization of a Mobile Dental Vehicle for Oral Healthcare in Rural Areas. *Int J Environ Res Public Health* . , 10.3390/ijerph16071234.
3. Goel, P. (2014). Cost-Efficiency of Indigenously Fabricated Mobile-Portable Dental Unit in Delivery of Primary Healthcare in Rural India. *Journal of Clinical and Diagnostic Research*, vol-8, 6-9.
4. K., D. J. (2022). Mobile Dental Clinics - A Review. *JOURNAL OF THE INDIAN ASSOCIATION OF PUBLIC HEALTH DENTISTRY*, Vol: 2002-2003, 18-24.
5. Marya, C. (2011). *A text book of Public Health Dentistry*. New Delhi: JP Medical Ltd.
6. Momin, D. (2020). Mobile Dentistry. *slideshare.net* , 48.
7. Peter, D. (2022). *Essentials of Public Health Dentistry*. New Delhi: Arya Medi Publishing house pvt.Ltd.
8. Vashishtha, V. (2014). Reach the Unreached – A Systematic Review on Mobile Dental Units. *Journal of Clinical and Diagnostic Research*, 8(8): ZE05-ZE08, 5-8.