

A study on evaluation of structure and process of private dental establishments of tricity (Mohali, Chandigarh, Panchkula) in India

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Abstract

Background: A study on evaluation of structure and process of private dental establishments of tricity (Mohali, Chandigarh, and Panchkula) in India. **Materials and Methods:** A study has been conducted after obtaining ethical clearance from the ethical committee of Maharishi Markandeshwar University on 120 numbers of dental clinics established in the Tricity: Chandigarh, Mohali, and Panchkula. The study period was between July 2012 and April 2013. **Results:** A total of 120 private dental establishments were calibrated for evaluation from August 2012 to April 2013 (9 months). Out of 120 dental establishments, 47.5% (57) were from Chandigarh, 27.5% (33) were from Mohali, and 25% (30) were from Panchkula. Data were analyzed using SPSS version 13. **Conclusion:** The overall picture of evaluation says that dental clinics have become individual earning centers as per their own norms. Whole private practice system lacks standardization in infrastructure or process either by State Government or by the Dental Council of India.

Keywords: Dental council, Equipment, Private clinic, Standard.

INTRODUCTION

India is the most densely populated country with one-sixth of the world population living in 2.5% of geographic area.^[1] There is a total workforce of 118,000 dental practitioner's in India, at present which is expected to swell to 225,000 shortly. About 80% of the dentists work in major cities in India, compared to the population where more than 70% of Indians reside in rural areas.^[1] DCI was established in 1948 after independence to regulate dental profession, quality of dental manpower development, and to look into other aspects of dental profession.^[2] However, till today, there are no specific criteria and standards laid by dental council of India regarding quality of infrastructure, process, and services in dental clinics. However, consumer protection Act has come in force in 1987 to protect the interests of the common population.^[3] Dental tourism forms 10% of the total Indian medical tourism which is projected to grow at 30 per cent to Rs. 9500 core by 2015.^[4] Dental practice has been an identifiable source of cross infection. In the late 1970's, it became clear that dentists were at risk 3 times greater than that of general population for hepatitis B infection.^[5-7] The recognition of dentistry's potential to cause cross infections early in the 1980's stimulated Centre for Drug Control, American Dental Association and other professional

agencies to make adoption of universal precautions as their highest professional priority.^[6,8] Hence, a study has been taken up to evaluate the structure and process of private dental clinics. The place of study selected is the tricity: Chandigarh, Mohali and Panchkula which is one of the best preferred places for living in India with its population having a good literacy rate and per capita income.

MATERIALS AND METHODS

A study has been conducted after obtaining ethical clearance from the ethical committee of maharishi Markandeshwar University on 120 numbers of dental clinics established in the tricity: Chandigarh, Mohali, and Panchkula. The study period was between July 2012 and April 2013.

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A list of various dental establishments was obtained from the state dental council and also from the yellow pages. The clinics were randomly selected from the above list for the study. Monday was selected as the day of study for Chandigarh and Mohali and Thursday was selected as the day of study for Panchkula after obtaining due permission on those days.

The clinics were visited and information regarding the study was obtained by inspection and also by interviewing the concerned professional. The structure and the process of dental establishments were obtained on a structured format. Photos of the clinical establishments and the prescription letters were obtained after verbal consent from the professionals. The photos and the prescription letters were attached to each format.

Inclusion Criteria

All the dental clinics were included who come under random sampling.

Exclusion Criteria

The following criteria were excluded from the study:

- Those clinics where professionals have not given consent
- Those clinics where complete data's could not be obtained were excluded from the study.

A convenient sample of 50% of the clinics was taken from the available list. The schedule of the visit and clinics covered was as per the annexure.

The data so obtained were analyzed using SPSS-13.

OBSERVATION AND RESULTS

A study was conducted to evaluate the structure and process of private dental establishments of tricity (Mohali, Chandigarh, and Panchkula) in India.

A total of 120 private dental establishments were calibrated for evaluation from August 2012 to April 2013 (9 months). Out of 120 dental establishments, 47.5% (57) were from Chandigarh, 27.5% (33) were from Mohali, and 25% (30) were from Panchkula. Data were analyzed using SPSS version 13.

Results Showed the Following

Various criteria were evaluated (Ownership and Location of dental clinic establishments, Type of floor material used in the dental clinics, Temperature control system, Type of alternate source of electricity, Number of operatories in the dental clinic establishment, Availability of Reception, dental laboratory, Toilet and recovery room, Enrolment on the panel of any company, Status of insurance coverage for dental clinic establishments, Dental equipment [Graph 1] {Dental chair, Type of X-ray unit, Autoclave, Compressor, Light Cure Unit, Scalars, B.P apparatus, Glucometer, Oxygen Cylinder, Needle cutter and burner, Radiographic badges. Lead sheet Apron, Intra-oral camera, Faceguard, Protective eyewear, Washing Machine, Air Cleanser, Drinking water supply, Music system, Television, Computers, Type of Audio-Visual aids, Number of Dental surgeons [Table 1 and Graph 2] Maintenance of records [Graph 3] (OPD register, Medico-legal register, Fee receipts,

Patient Records, Biomedical waste management, Working posture of the dentist, Forehanded dentistry).

DISCUSSION

The dentistry has seen a revolution in manpower development in India after 90's. The present dental manpower to population proportion has reduced drastically to 1:10,000.^[1] This has led to the mushrooming of dental clinics in towns and cities. Dental clinics though treating lakhs of people in India per day can also act as disease spreading centers if standard aseptic procedures are not followed. Dental settings are high risk environment for biological risk, either for transmission modalities that could be realized or for the wide range of microorganisms that pose a threat. With the above facts in view, it is high time to make it mandatory to follow certain standards of dental practice. Hence, to have a situation analysis, this study has been taken up.

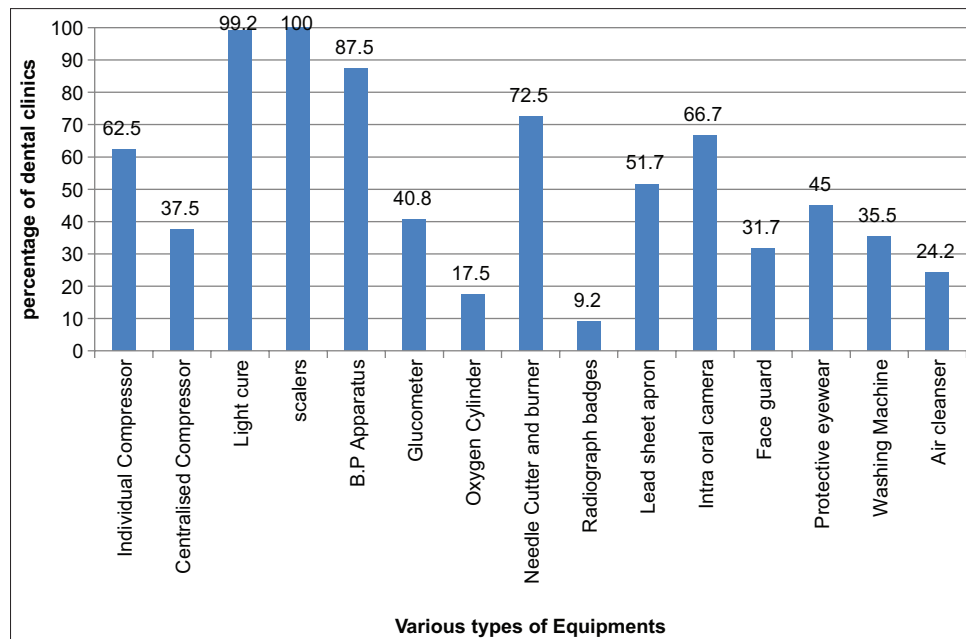
Dental problems are cumulative in nature and hence increase with age. Ground floor would be most convenient for geriatric and handicapped patients. However, in our study, only 31.7% (38) were situated on the ground floor which is in accordance with the findings of the study in Merseyside which revealed that less than one-third of the dentists had their practice on ground floor having no steps.^[9] In the present study, 98.3% (118) dental establishments had a reception which is in accordance with the findings of Veronesi *et al.* (100%).^[10] Studies have shown that people with dental coverage are almost twice as likely to visit a dentist in any given year than those who do not have the coverage.^[11] In our study, we found that still 58.3% (70) dental clinic establishments were having only a top loading autoclave while study conducted by Mythri *et al.*^[7] who showed that 17% of dental practitioners in Davangere, Karnataka, were not using an autoclave.

About 27.5% (33) dental clinic establishments did not have a needle cutter and burner which is slightly less than the findings of a study in Davangere city, Karnataka which showed that 35.2% dentists did not break the needle before disposing it off^[12] and also less than the findings of Narang and Manchanda.^[13]

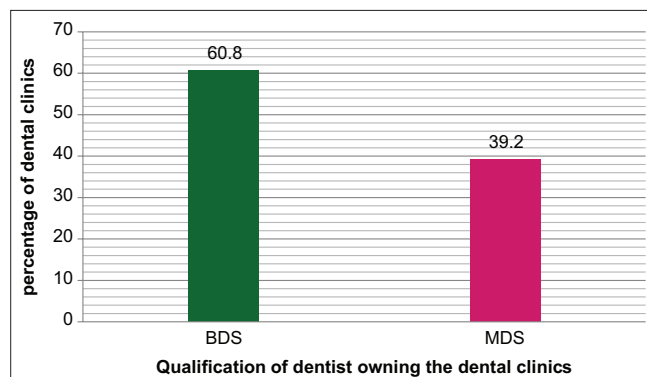
Lead sheet aprons are essential to protect the dentist from exposure to radiations. However, in this study, we found that 90.8% (109) dental clinics did not have their dentists possessing a radiographic badge. Furthermore, 48.3% (58) dental clinic establishments did not possess a lead sheet apron^[10] 31.7% (38) of the total dental establishments were possessing a face guard and 45% (54) were having a protective

Table 1: Distribution of dental clinics according to qualification of dentist who owns the clinic

Type of qualification	n Number of dental clinics	Percentage
Owned by only BDS	73	60.8
Owned by MDS	47	39.2
Total	120	100



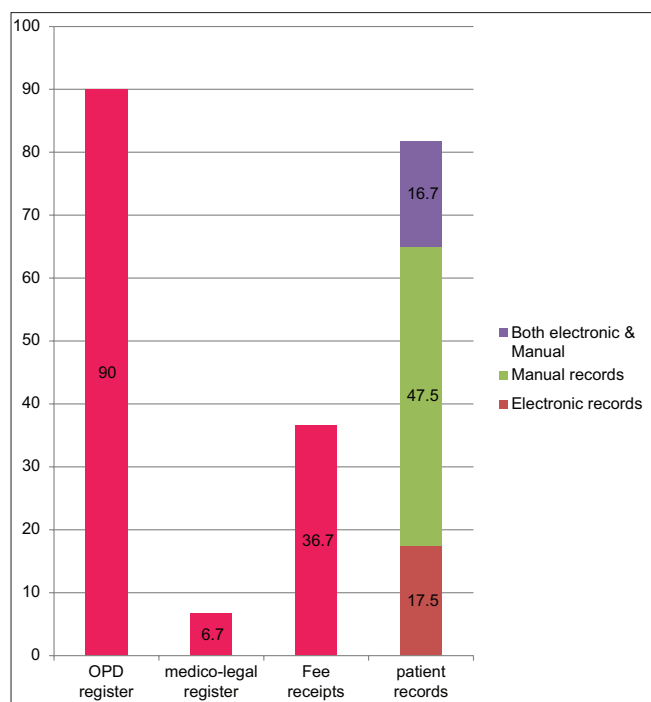
Graph 1: Distribution of clinics possessing various equipment



Graph 2: Distribution of dental clinics according to qualification of dentist who owns the clinic

eyewear which is most similar to the findings of Suresh *et al.* in Davengere city of Karnataka (40.9%).^[6] Computers are now a basic necessity in the functioning of every practice. In the present study, it was found that 87.5% dental practices had a computer. Another study showed that 68% of the dental practices used internet in their office.^[14] In India service of one hygienist was available to seven dentists, and one lab technician renders service to four dentists whereas it should be 1:1 ratio.^[15] A study in Norway showed that dentists spend only half of their total working hours on complex procedures, that is, tasks that only dentists can perform. Nearly 40% of their time was spent on procedures that dental hygienists are qualified to perform.^[16] However, in the present study, 93.3% of the dental clinic establishments did not have a dental hygienist. It has been shown that successful infection control in dental practice primarily depends on dental assistants.^[17] About 55% (66) of the dentists were in the age group 31–40 years

and 17.5% in 20–30 years and 19.2 in 41–50 years which is similar to the findings of a study in Australia which revealed that the maximum number of dentists was also in 30–39 years of age.^[18] More number of dentists in 31–40 years could be attributed to a boom in the number of dental colleges in late 90s and more number of people choosing dentistry as a profession then. In the late 70s, several reports found that dentists were 3 times more likely than the general population to contract hepatitis B.^[12] In the present study, it was shown that 96.7% of dental practitioners were vaccinated against hepatitis B which is similar to the findings of Suresh *et al.* in Davengere city of Karnataka (97%)^[6] and more than the findings of Veronesi *et al.*^[17] and Rabeah and Mohamed^[19] Patients records in hard copy and soft copy registering case histories, diagnosis, treatment plan, prognosis, investigation reports, radiological reports, and payment receipts are of high importance in follow-up of patients, in dealing with medico-legal cases and dealing with insurance and other legal problems. The entire dental practice starting from patient reporting to the clinic to the recalls and follow-up should be evidence based and those evidences have to be recorded on vital records such as OPD register, Medico-legal register, fee registers, and patient diagnosis and treatment register.^[20] However, in the present study, 90% dental clinics maintained an OPD register, 81.7% maintained patient records, and only 36.7% issued fee receipts to the patients for the services provided. There is an urgent need to train the dental surgeons regarding the procedures and maintenance of dental records. Only 6.7% dental clinics maintained medico-legal registers clearly indicating that dental professionals are not much informed about the medico-legal issues which is consistent with findings of a study among 96 medical and 149 dental professionals in Vadodara, Gujarat



Graph 3: Distribution of dental clinics maintaining OPD register, Medico-legal register, fee receipts and patient records

which revealed that 35.110%, 36.2%, and 28.57% participants had poor, fair, and good awareness regarding medico-legal issues, respectively.^[21]

Dental practices generate large amounts of waste paper, plastic, latex, and glass much of which is contaminated with body fluids.^[22-24] Safe and effective management of waste is not only a legal necessity but also a social responsibility.^[25] As per the biomedical waste (management and handling) rules 2000, it shall be the duty of each occupier of an institution generating waste to ensure that such waste is handled without any adverse effect to human health and environment.^[26] So many companies have come forward to do the job and it is mandatory for all the practitioners to dispose of the biomedical waste through these recognized companies. However, in the present study, 15% of the dentists did not dispose of the biomedical waste through these waste management companies which was much less than the findings of Sood and Sood^[23] and Treasure and Treasure.^[22] Lack of concern, awareness, motivation, and cost factor are some of the problems faced in the proper hospital waste management. Out of 120 dentists owning the dental clinic establishment, 85.8% (103) were working in a sitting position. Dental profession is known for postural hazards. Both sitting and standing dentistry have their own drawbacks; however, forehanded dentistry will be less strenuous and less time consuming. In the present study, it was found that 20.8% dentists did not adopt forehanded dentistry. Wearing a disposable mouth mask is generally recommended for all procedures producing aerosols. In the present study, it was revealed that 99.2% of the dental clinics were using mouth masks. Several previous studies report that the percentage

of dental practitioners using face masks ranged from 32% to 90.1%.^[6,13,17] Dental practitioners should wear personal protective equipment, such as gloves, facial masks, and eye protection during daily practice to reduce the exposure to blood borne pathogens.^[15] A National Survey reported in 1989 revealed a significant increase in the utilization of gloves and other barrier techniques.^[24] In the present study, 100% (120) of the dental clinics were possessing gloves which is in agreement with many previous studies that reported between 56% and 100% of dental practitioners wore gloves.^[6,13,15] About 45% of the dentists were using a protective eyewear in this study which is more than the findings of Oosthuysen^[17] and less than that reported by Naidoo *et al*^[17] and Yengopal *et al*^[17] Only 20.8% dentists were using head caps which is not in accordance with another study which revealed that 98.8% dentists use head caps for all procedures.^[13]

With the increased awareness of public regarding COPRA^[3] and increased number of cases for compensation for medical negligence, it is highly mandatory that every practitioner should have a professional indemnity policy so as to meet the expenses caused by these cases. Professional indemnity policy will indemnify any act committed by the insured giving rise to any legal liability of patients;^[3] however, in the present study, it was found that 56.7% dentists did not have any professional indemnity bond. It is now the citizens right to preserve their stem cells for further utility; hence, it is needed that each dental clinic should have facility for stem cell preservation; however, in the present study, it was found that 75.8% of the dental clinics did not provide this service.

SUMMARY

The overall picture of evaluation says that dental clinics have become individual earning centers as per their own norms. Whole private practice system lacks standardization in infrastructure or process either by state government or by the Dental Council of India. Hence, it is high time to think of standardization and definite criteria fixation for structure and process of dental practice so as to achieve quality oral health-care delivery to the public at large.

Conflicts of Interest

The authors declare they have no potential conflict of interests regarding this article.

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