CHAPTER - III

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JUSTIFICATION:

The two common dental diseases, dental caries and periodontal diseases are very common and no nation or no area of the world is free from it.

After conducting number of point prevalence studies in India on dental caries and periodontal diseases, it was found that both the diseases are increasing both in prevalence and in severity in the past four decades. Urgent intervention was stressed by a national workshop on oral health goals for India and strategis by 2000 AD it was planned to achieve. The workshop was organised by the Indian Dental Association. 85 percent of Indian population lives in rural area, whereas 15 percent in the urban area. It was felt that no proper plan was made to extend oral health programmes to rural area. Also proper estimation of these diseases were not made.

Before Independence the oral health did not receive adequate attention since the British rulers were concerned more with the expansion, consolidation, and concentration of their rule and after Independence over the last 50 years there has been a significant improvement in the Health status of the country. The Government of India has committed to provide primary health care for all by the year 2000 AD, but however there is no separate allocation of funds for oral health.
For the development of health services Bose Committee was formed in the year 1946 followed by several committees till 1980. But unfortunately there was no committee was formed exclusively to take care of Dental Health.

The dental diseases differ in many ways from general diseases.

a. Dental diseases affects almost every one.

b. Dental diseases are not self healing and cannot be cured by drugs, or advice. Most dental diseases are irreversible and become more severe without treatment.

c. Even with treatment dental diseases are not self healing and cannot be cured by drugs. The dental diseases, affects the other systems of the body and often reoccur and one defect compounds another.

In India 85 percent of the children and 15 percent of the adult population are suffering by these dental diseases.

Dental caries is an expensive diseases. Restoration of the caries tooth also expensive. It is an economic loss both to the individual and to the Country.

India is a developing country and spends approximately a meagre of 1 to 1.5 percent of the total national budget on health and as such there is no separate allocation for oral health, so we in India cannot afford to spend on the highly expensive dental restorative treatment. Hence there is need for concentrating more on dental health care.
COST EFFECTIVENESS

* On the average DMFT is - 4.5
  (average no. decayed teeth/child)
* Population of India - 700 million
* Child Population - 40 percent of Adult Population (i.e) - 280 million

* The cost of filling one tooth - Rs. 50/-

  Even if every child gets filled at least one caries tooth the total cost would be --- Rs. 50 x 280 million
  = Rs. 14,000 million or 14 billion.

Nutrition, habits and dental care plays a vital role on periodontal diseases. If proper care is not taken one has to go for extraction or sometimes total extraction which is also another economic loss to the patient.

For extraction of a tooth the patient has to visit the dentist at least three times, it involves pre operative and post operative medicament. One has to spend at least Rs. 60 for a single tooth extraction.

Considering all these the present study aims at finding out the incidence of the most common tooth diseases among different sections of the society and to trace the relationship between the socio-economic factors and dental diseases.


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OBJECTIVES OF THE STUDY

The overall objectives of the study are:

1. To find out the relationship between the occurrence of dental diseases, and the selected socio-economic background of the patients viz. age, sex, literacy level, income.

2. To find out the relationship between the occurrence of dental diseases and patient's oral habits (Smoking, Tobacco and Betal Nut chewing and consuming Alcohol).

3. To find out the relationship between the oral hygiene practices and the occurrence of diseases (Method of Brushing, Type of Brush, Gargling, Tongue Cleaning, using Dental Floss, Using Dentifrices, and visiting Dentist for regular dental check up and aptitude in dental care).

4. To find out the relationship between food habits and the occurrence of diseases (Vegetarian - Non-Vegetarian).

5. To Compare the occurrence of dental diseases among the rural and urban patients.

6. To find out the other reasons and factors, for the occurrence of dental diseases namely the Availability of Dental Services and Transport facilities.
HYPOTHESES :

1. There is a significant association between sex of the respondents and prevalence of dental diseases.
2. There is a significant association between the Literacy level of the respondent and the prevalence of the dental diseases.
3. Higher the income level lower the occurrence of dental diseases.
4. There is a significant association between oral hygiene practices namely gargling after food and the prevalence of dental diseases.
5. There is a significant association between the selected oral habits such as Alcohol, Cigarette, Tobacco and the prevalence of dental diseases.
6. There is a significant association between the type of food (Vegetarian or Non-vegetarian) and prevalence of dental diseases.
7. There is a significant association between the geographical location and the prevalence of dental diseases.

RESEARCH DESIGN :

The study is an explanatory research following post facto method which is described as a "systematic inquiry in which the Researcher does not have direct control of the independent variables because of their manifestations have already occurred or became. They are relevantly not manipulable. Inferences about relations among variables are made,
without direct intervention, from concomitant variation of independent and dependent variables" (Kerlinger 1964).

Ex post facto research that is conducted without hypotheses, without predictions, research in which data are just collected and then interpreted, is even more dangerous in its power to mislead. Significant difference or correlations are located if possible and then interpreted.

Despite its weaknesses, much ex post facto research are being done in psychology, sociology, and education simply because many research problems in the social sciences do not lend themselves to experimental inquiry.

**SAMPLING:**

Studies in medical sociology through survey research method requires a lot of manpower for data collection in the field and time consuming. The responses of the people for research purposes do not get the real picture of the problems as they have a tendency to ignore such enquiries as experienced by the researcher. Therefore patients attending clinics with dental problems will be more cooperative than the general public who are generally apathetic to interviews on personal health as they know the researcher has no control over the solution of their problems.

Samples are supposed to represent the population universe of a particular geographical area. The best way to secure representativeness is through probability sampling in which each element of the population has a favour likelihood of being selected. Probability sampling is based on sam-
pling theory and can insure reasonably representative samples only in the long run. It does not guarantee that any single sample will be purely representative.

Every probability involves random selection of elements or persons at some stage in the sampling process thereby eliminating the possibility of bias in the research method.

A combination of cluster sampling (i.e.) selection of the "Dr. Chittrambalam Dental Clinic" and simple random sampling among the patients visiting the clinic for treatment to represent the dependent variables.

**OPERATIONAL DEFINITION:**

**DENTAL CARIES:** Localised decay and disintegration of tooth enamel is said to be called dental caries. Though there is different levels of enamel destruction, all the levels are taken into account as affected tooth. (Exhibit-1)

**PERIODONTAL DISEASES:** Inflammation of the supporting (Jaw) bone and tissues of the tooth is periodontitis. Loose tooth, Tooth lost and inflammation of the gum tartar accumulation are all brought under this heading. (Exhibit-2)

Patients those who came for treatment to the clinic, for the caries tooth, either for extraction or for the restoration of the caries tooth are taken as the respondent of the caries teeth.

Patients with bleeding gums, lose tooth, pyorrheal pockets those who have undergone treatments like scaling or extraction for the above conditions are taken as the respondent of the periodontal diseases.
EXHIBIT-1: CARIES TOOTH

EXHIBIT-2: PERIODONTAL DISEASE
SOCIO ECONOMIC STATUS :

Socio-economic status is a multidimensional phenomenon and it is a value loaded concept. Hence to operationalize the socio-economic status in this study the following variables are taken as indicators to decide about the socio-economic status of the patient.

SOCIO ECONOMIC VARIABLES :

The selected socio-economic background for the disease in this study covers Age, Sex, Income, Literacy level.

Sex : Male and Female respondents were taken up for this study on the basis of age under three categories. Respondents under the age below 25, 26-50 years and 51-75 years were considered for this study.

Literacy Level : The respondents were classified on the basis of their educational qualification as uneducated, primary school, High school, Higher Secondary, Degree, and Professionals.

Income : The respondents were classified on the basis of their income. Respondents who earns less than three thousand, three thousand one to six thousands and above six thousands as their income per month.

TOOLS OF DATA COLLECTION :

INTERVIEW SCHEDULE :

The interview schedule consists of four aspects

1. Socio-economic status of the respondents
2. Oral hygiene practices
3. Oral habits

4. Awareness and Views about the dental health

It was pretested in the Pilot study.

On the basis of the Pilot study and pretesting appropriate modifications were made in the interview schedule to sharpen the objectivity of the variables.

Secondary data on the clinical aspects were collected from the patient records of the clinic.

Pilot study was done in 1995 September. Data collection was carried out during the calendar year 1996. 370 Patients were interviewed. The researcher interviewed the patients during the working hours of the clinic. (Exhibit-3&4) The average time taken for interviewing a patient was 30 minutes.

The researcher has chosen this clinic for various reasons: This dental clinic receives patients from different class, religion, and community people quite frequently. (Exhibit-5) The working hours of the clinic is from 9 a.m. to 7 p.m. Other Clinic working hours are comparatively less. Certain clinics work 3 days or 4 days in a week with limited working hours and many private practitioners were not willing to disclose their records of the clinic.

The Government Head Quarters Hospitals average number of Dental out patients strength is around 70 per day, comprising 25 males, 35 females, and 10 children. Dr.Chitr-trambalam Dental clinic out patient record per day is two times higher than the Govt. Head Quarters Hospital and five
EXHIBIT 3: THE RESEARCHER INTERVIEWING FEMALE PATIENT

EXHIBIT 4: THE RESEARCHER INTERVIEWING MALE PATIENT
EXHIBIT-5: PATIENTS WAITING FOR TREATMENT
times higher than the Taluk head Quarters hospital and 7 times higher than the other private dental clinics.

The Government Hospital staff were not co-operative for the research study. Whereas Dr.Chitrambalam clinic's management, doctors and staff, extended whole hearted cooperation, for the research study, The respondents were also very cooperative, and it was found during the pilot study.

The researcher is observing the diagnosis of the disease by the doctor and enters the details in the interview schedule.(Exhibit-6)

The researcher used to observe the routine activities going on in the prosthetic laboratory which is inside the clinic.(Exhibit-7)

The patients selected for interview were taken from a single clinic for the above obvious reasons.

Random sample method was followed by which daily patients interviewed who represent the cross section of the Tiruchirapalli urban and rural populations.

STUDY AREA :

Tamilnadu is situated on the south eastern side of the Indian peninsula. It is bounded on the east by Bay of Bengal and in the west by the states of Karnataka and Kerala, in the north by Karnataka and Andhra Pradesh. It is the eleventh largest state in India and has 4 percent of the country's total area. (Fig-2)
EXHIBIT - 6: THE RESEARCHER OBSERVING THE DIAGNOSIS BY THE DOCTOR
EXHIBIT - 7: THE RESEARCHER OBSERVING THE PROSTHETIC WORK IN THE LAB WHICH IS INSIDE THE CLINIC
In south India Tamilnadu and Karnataka where Dental Education is encouraged by the State Government by allowing private dental colleges. Karnataka state is the pioneer to start private dental colleges, to teach dental Education. Where as in Kerala and Andhra Pradesh private dental colleges are restricted.

Realising the need for more dental surgeons and para-dental staff to serve the community the Tamilnadu Government, has allowed private dental colleges.

The number of dental surgeons graduated every year, has increased and it has helped to reduce the dentist people ratio, to 1:10000.

Tamil Nadu is the southern most state about 20 districts with a population of 5.5 million (1991) and it is having 8 private dental colleges and one Government dental college while Karnataka is having about 12 dental colleges.

Tamil Nadu is the first state to introduce Tooth powder scheme to the school children in the year 1986. Realising the need for urgent intervention, tooth powder scheme was introduced by the then chief-minister Mr.M.G.Ramachandran during his period. It created awareness among school children about dental care. Latter the scheme was not continued by the successors.

Tamil Nadu is having a Medical University exclusively for Medical and Dental by name M.G.R. Medical University started in the year 1988-89 which is first of its kind in India.

Tiruchirappalli is a centrally located district in
Tamilnadu,(Fig-3) having a total population of 29,09,449 (1995) and areas of 11,096 Sq.Km.(1991) where the study is conducted. In Thiruchirappalli, Industrial and agricultural development is more during the past two decades, when compared to other districts. There are a number of professional educational institutions like the Regional Engineering College, the Government Law College, Government Polytechnic, the Government ITI and private Engineering Colleges and arts colleges which come under Bharathidasan University. But it has neither a dental college nor a Medical college till 1997.

Trichy Population :

Mid Year Population in the year 1995 :-

<table>
<thead>
<tr>
<th></th>
<th>21,60,449</th>
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<tbody>
<tr>
<td>Total Population in Rural Area :</td>
<td></td>
</tr>
<tr>
<td>Total No. of Males is</td>
<td>10,94,911</td>
</tr>
<tr>
<td>Total No. of Females is</td>
<td>10,65,538</td>
</tr>
<tr>
<td>Total Population in Urban Area :</td>
<td>7,49,000</td>
</tr>
<tr>
<td>Total Population in Trichy District is :</td>
<td>29,09,449</td>
</tr>
</tbody>
</table>

In Tiruchirapalli district there are over 40 private dental clinics. There are about 20 private dental clinics in urban limit.(Fig-4) The rest are scattered all over the district. There is a dental wing in the district Head quarters Hospital and 4 in the Taluk Head Quarters Hospital.

FIELD SETTING :

"Dr.Chittrambalam Dental Clinic" (Exhibit-8) is located in the heart of the town, serving the people from all walks of life has been selected for this study.
DENTAL SERVICES IN TIRUCHIRAPALLI URBAN LIMIT

Legends
- Private Dental Clinic
- Government Hospital
- Dr. Chitrambalam Dental Clinic
EXHIBIT - 8: Dr. CHITTRAMBALAM DENTAL CLINIC
Dr. Chittrambalam Dental Clinic was founded by Dr. Chittrambalam, an eminent, dental surgeon of Tiruchirapalli, in the year 1935. This clinic is located opposite to the TOWN HALL. Apart from those in Tiruchi, people from Tanjore, Pudukkottai, Madurai, Coimbatore and Periyar Districts attend this Clinic for their various dental problems. Dental graduates, dental mechanics and hygienists, staffing the clinic render their services as a team to the patients.

It is a 58 year old clinic with a daily turnover of about 150 dental patients per day from in and around Tiruchirapalli. The clinic renders a variety of common dental treatments like Extraction, filling, scaling, correction of malposed teeth and fixing complete and partial dentures. It has conducted about 100 free dental camps, in a span of 4 years. Blinds, Handicapped and Cancer patients are treated freely in this clinic. It is a well known dental clinic in Tamil nadu and neighbouring state.

The clinic contains a team of 3 qualified dental surgeons and three dental mechanics, three dental hygienists and two consultant for Orthodontic treatment and Oral surgery.

This dental clinic is functioning in close liaison with a cancer institute located nearby by name Dr. G.V.N. Cancer Cure Centre.

The Oral Cancer patients are directed from a Cancer Institute to this clinic, for total extraction, prior to Radium Therapy and patients with initial stages of cancer are
referred from this dental clinic to the cancer cure centre. (Exhibit-9)

The founder of the clinic Dr. Chittrambalam was not only a dental surgeon but also a politician. He was one among the only two dental surgeons during that period. He was a member of the Legislative assembly in the year 1952-57 and also organised several co-operative movements holding key posts in such organisations. For about 2 years he was also an honorary surgeon in the central prison at Tiruchirapalli. He extended his services to the people from all walks of life high and low. His ultimate ambition was to serve people mostly the poor and the downtrodden. In his dental practice his charges were minimal and in many cases entirely free. Little wonder then that patients not only from the town but also from out-lying villages attended this clinic for their dental needs.

PROBLEMS IN DATA COLLECTION :-

1. 50 percent of the respondents were not ready to cooperate, in the begining. After convincing and explaining them the reasons about the research then they gave their consent.

2. Many of the respondents came to the clinic with a painful condition, they were not in a position to give the fullest co-operation. Hence they were interviewed after the treatment.

3. Many were hesitant to expose their personal data.

4. To answer 102 questions they found it time consuming.
EXHIBIT-9: CANCER AFFECTED PATIENT
5. The patients were either in a hurry to get the treatment, or to leave the hospital after the treatment. The researcher found it difficult to approach the patient for interview. The researcher however took lot of efforts to persuade them.