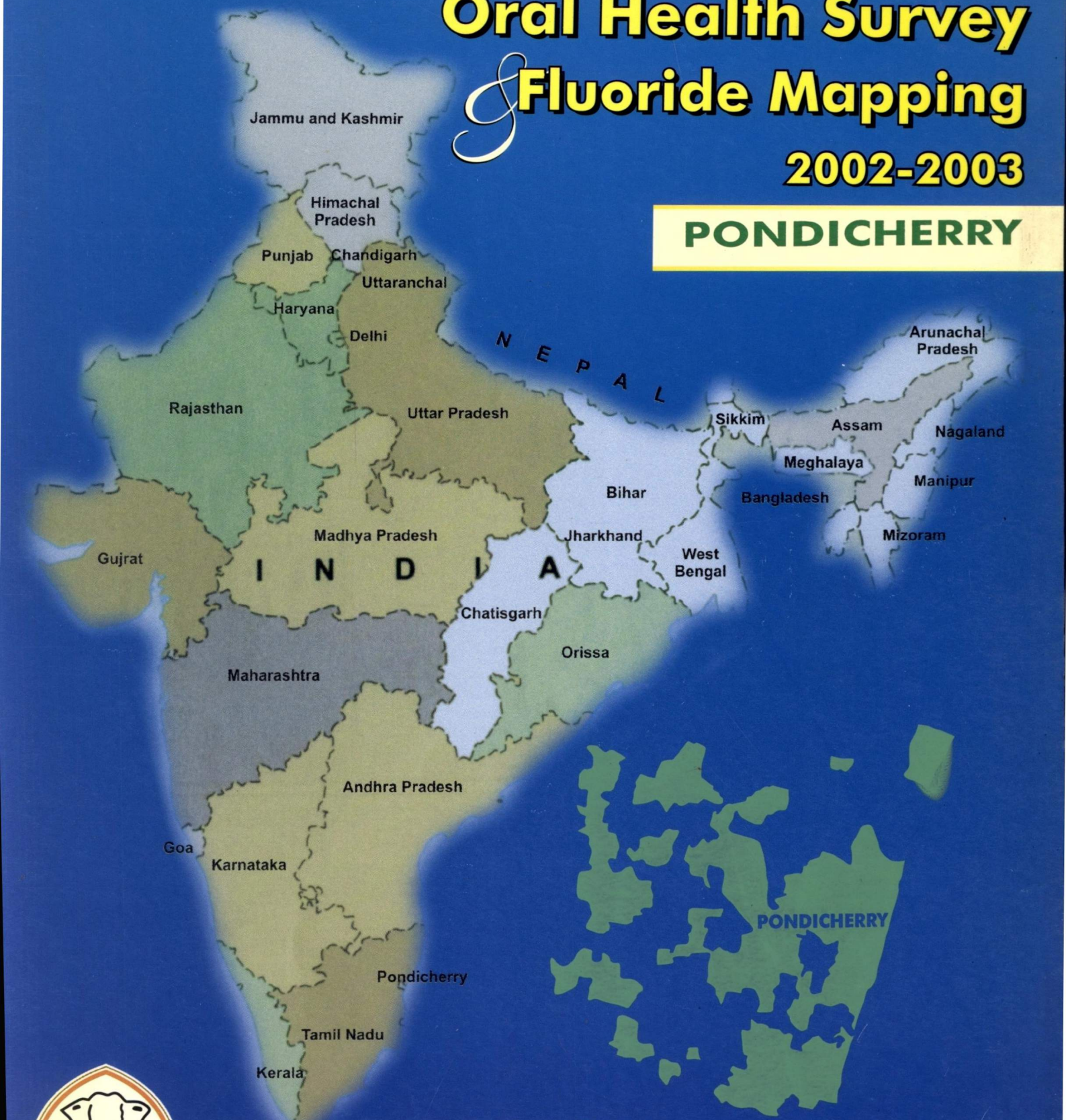
National Oral Health Survey & Fluoride Mapping 2002-2003

PONDICHERRY



Dental Council of India
New Delhi
2004

NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING

2002-2003

PONDICHERRY

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DENTAL COUNCIL OF INDIA
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ABBREVIATIONS & ACRONYMS

NOHS & FM	National Oral Health Survey & Fluoride Mapping
DCI	Dental Council of India
NFHS	National Family Health Survey
NDP	Net Domestic Product
WHO	World Health Organisation
CEB	Census Enumeration Block
BDS	Bachelor of Dental Surgery
MDS	Master in Dental Surgery
M.P.H.	Master in Public Health
M.Sc	Master in Science
D.P.H.	Dental Public Health
deft	Decayed, indicated for extraction and filled primary (deciduous) teeth
Dmft	Decayed, missing and filled primary (deciduous) teeth
DMFT	Decayed, missing and filled permanent teeth
dt/DT	Decayed teeth (primary/ permanent)
mt/MT	Missing teeth (primary/ permanent)
ft/FT	Filled teeth (primary/ permanent)
SIC Index	Significant Caries Index
CPI	Community periodontal index
DAI	Dental Aesthetics Index
TMJ	Temporomandibular Joint
mnt/ MNT	Mean number of teeth (primary/ permanent)
ppm	Part per million (of fluoride)

FOREWORD

It gives me great pleasure to write a foreword to this report on the National Epidemiological Oral Health Survey & Fluoride Mapping of the Dental Council of India. This is a historic document as it is for the first time that a scientific survey on oral health problems at state and national levels has been undertaken in India. With this report in place, we are amongst those few countries in the world where data on oral health problems has been collected through a scientifically conducted sample survey. The report, I am sure, will prove to be an invaluable tool for effective planning and implementation of oral health programmes in the country.

This gigantic national survey, with the states as component units, would not have been possible without the commitment and the efforts of a large number of organizations and individuals. At the outset, I must acknowledge the role of the members of the Executive Committee of the Dental Council of India and its General Body, who supported me in this endeavour and gave all help as and when necessary. The survey work in the states was entrusted to Regional Coordinators who were selected from senior faculty members in Community Dentistry or allied fields from reputed dental colleges. I am pleased that a large number of dental colleges, through their managements and the Principals/ Deans responded to my request to collaborate in this national endeavour. A list of the participating dental colleges and individuals has been given elsewhere in this report.

I would particularly like to acknowledge the contribution of the members of the core technical team for all pre-survey planning and designing activities, who include Drs V.B. Mathur, P.P. Talwar, Shankar Aradhya, S.S. Hiremath, K.V.V. Prasad, M.B. Aswathnarayan, (Ms) Amrit Tiwari, and S.G. Damle.

A central team was established early in the course of the survey at the office of the Dental Council of India to help develop project protocols, coordinate and liase with regional coordinators, manage logistics, compile, computerise and analyse data and develop tabulation plans and reports. This report, for which there was no precedence or example, is evidence of the hard work and professional competence of the team. As the leader of the team, it is with a sense of pride and satisfaction that I acknowledge the painstaking and dedicated work of the members, namely Dr. V.B. Mathur, Prof. P.P. Talwar and Mr. H.B. Chanana.

I gratefully acknowledge the cooperation and support of the Municipal Corporation of Delhi, particularly its Health Officer and Director, Health Services, Dr. K N Tiwari, who spared the services of Dr. V B Mathur for this national cause.

It would be impossible to conduct a large scale national survey of the present magnitude without sufficient resources. We are indebted to our esteemed partners, Colgate-Palmolive Co., U.S.A., and Colgate-Palmolive (India) Ltd., for supporting the project.

I am sure that results of this survey will pave the way for improving the oral health of the people of India. We recognise that this is only the first step in this direction, where oral health problems and related practices have been identified. The next crucial step will be to use the findings of this survey to plan and implement an appropriate and need-based oral health programme. Here, I hope the national and state governments will use the findings of the survey for planning and implementation of oral health programmes.

As President of the Dental Council of India, I would emphasise and recommend to all those concerned with dental education in the country to review the oral health needs of the people in the context of dental education and use the results of the survey to help strengthen the teaching/ training curriculum of the dental colleges. The students should be taught to look at survey results critically and make decisions about dental care strategies based on age, geographical areas and disease levels in the communities they serve. The dental colleges should use its findings and lay the correct emphasis so that the oral health needs of the people are met with quality services.

This survey must not remain a solitary event. We must ensure that a MIS (Management Information System) is established so that future trends of oral disease and action taken to combat it are monitored regularly through continuing periodic surveys.

The challenge for all of us lies in ensuring a more equitable and need based distribution of resources for oral health, making sure that the benefits of the survey reach the communities in improving their oral health.

Dr R. K. Bali

President, Dental Council of India.

July 2004.

PREFACE

The National Oral Health Survey & Fluoride Mapping of the Dental Council of India is the first-ever national-level epidemiological survey in the country, the need for which was felt for a long time. This massive initiative could not have been carried out without the partnership, participation, cooperation, support and help from a number of institutions, organizations and individuals, all of whom have directly and indirectly assisted the Dental Council of India in this magnanimous task.

We are indebted to the Ministry of Health & Family Welfare for providing the necessary permissions and management support since inception. We gratefully acknowledge the valuable contribution made by the Chief Director, Dr. K.V.Rao, National Family Health Survey, at the stage of sampling design, sample selection and training. We also gratefully acknowledge the contribution of Professor Fauj Ram, of the International Institute for Population Sciences, Mumbai, who was instrumental in setting the sampling frame for the selection of rural and urban primary units from where households were selected for data collection.

In the planning phase, the proposed survey was discussed with international experts in the field of oral epidemiology, health promotion and community dentistry. Prominent among these were Professor Aubrey Sheiham, Head, Department of Community Dentistry, University College, London; Professor Robert Bagramian, Chairman, Department of Community Dentistry, University of Michigan, Ann Arbor, USA; Professor Martin Hobdell, Ireland; and Dr Michael Craft, UK. We remain most indebted for their valued inputs and time.

Dr. P E Petersen, Responsible Officer, Oral Health Program, World Health Organization (WHO), Geneva, found time and visited us at the Dental Council of India, New Delhi, in November 2002. He volunteered the full cooperation and support of the WHO for the project, including assistance in data analysis and reports. We gratefully acknowledge his valuable inputs and feel sure that the information collected will find its appropriate place in the oral global databank maintained by the WHO and in their other publications.

The active participation of dental colleges, their managements, Principals Deans and faculty was envisioned since the inception of the project planning. It was, however, most gratifying to note the extent of enthusiasm and support that was received from the managements and faculty members of some of the colleges. They took upon themselves to meet Herculean challenges that were in front of them in the face of limited resources. The role of some of the colleges strengthens our belief that our colleagues are alive to their professional responsibilities and are dedicated to selfless service in the interest of research and community benefits.

The chairperson, Dr. Ram Das Pai, and the management, faculty and staff of the Manipal Academy of Higher Education (MAHE), Manipal (Karnataka), deserve a special thanks for co-hosting the large-scale training and calibration meeting for all Regional Coordinators and Supervisors at the Manipal Dental College in March 2002. We would specially like to record our sincere appreciation of the Dean, Dr. Shobha Tandon, and her able team, including Dr. V Surendra Shetty, Dr. Soben Peter and others for the professional management of this meeting and the excellent hospitality extended by them.

We also extend a very special thanks to Dr. S.G. Damle, Dean, Nair Dental College & Hospital, Mumbai, who co-hosted the report-writing workshop in January 2004 in Mumbai, where issues relating to state reports were discussed.

The central survey team, from time to time, has received valuable suggestions and active feedback from some senior members of the profession, including Drs. Ganesh Shenoy, Shankar Aradhya, A Jaykumar, S S Hiremath, S G Damle, N C Rao, and Mahesh Verma, and we wish to place on record our appreciation and grateful thanks for their inputs. Drs Arundeep Kaur, Pankaj Goel and C L Dileep assisted the central team in Delhi from time to time and deserve our sincere thanks for their inputs.

We are indebted to the members of the Executive Committee and the General Body of the Dental Council of India, New Delhi for their wholehearted support to this initiative of the Council President. We gratefully acknowledge the able leadership of Mr A L Miglani, Secretary (Retd.), the Secretary Incharge of the Dental Council of India, Mr S S Arora, and Mr C L Bhatia, Coordinator, who though working in the background put in every effort for the success of the survey. While every member of staff has made a valuable and selfless contribution to the survey, we wish to place on record the special contribution of Mr K V Abraham, Mr P K De, Mr. Shiv Kumar, Mr. Praveen Dewan, Mr. Puneet Bansal, and Mr. Anil Verma.

We acknowledge the valuable support, both technical and financial, provided by Colgate-Palmolive. While technical support was provided by Dr. Tony Volpe, Dr. Kedar Rustogi, Dr. Raj Kohli and Dr. Surendra Manek, valuable project management input was given by Mr. Mahendra Jauhari and Mr. Mahender Ashtekar.

Fluoride mapping of drinking water sources in the country to determine areas with optimal or high levels of fluoride was an integral part of the project. Dr. P M Dixit, his team and the management of M/s Medlar Labs, Mumbai, deserve our special thanks, as they were instrumental in completing the task of analysing more than 4,000 water samples that they received directly from the Regional Coordinators as per schedule despite various constraints.

We acknowledge the support of TNS MODE, New Delhi, a prominent marketing, advertising and research organization, who took responsibility of computerization and tabulation of the massive data sets and provided tables according to our tabulation plan. Later on, they also helped in the collection of water samples from the states which could not be covered so far under the survey.

We appreciate the efforts and patience of Mr Rajiv Mathur, an independent Consultant in Information Technology and data management, who has painstakingly worked in programming and reprogramming till we were satisfied with the final set of tables.

We wish to record our gratitude and thanks to all other organisations and individuals, whose names do not appear here but who have supported our work and contributed towards its success in one way or the other.

Dr. R. K. Bali

Dr. V. B. Mathur

Prof. P. P. Talwar

H.B. Chanana

July 2004.

ACKNOWLEDGEMENTS

It gives me immense pleasure as the state coordinator to acknowledge the contribution of the following in the successful completion of such a mammoth task:

To the Government of Pondicherry for all the support extended to conduct the National Oral Health Survey and Fluoride Mapping, 2002, successfully.

Special thanks to Dr. R. Padmanabhan I.A.S, Chief Secretary to Government and Chairman, Board of Governors, Mahatma Gandhi Dental College & Hospital (MGDCH), for the keen and personal interest he has taken in conducting this programme.

To Dr. Shyam Singh M.D.S Principal, MGDCH for the constant support and encouragement that he has extended to the entire survey team, without which this would not have been possible.

To all the survey team members and to the subjects who participated in the survey.

To the regional supervisor Dr. C.G. Ajith Krishnan M.D.S Prof. and Head, Department of Community Dentistry MGDCH for conducting the programme successfully and to Dr. Joe Joseph, Lecturer, Dept. of Community Dentistry, MGDCH for all the help and support extended to the survey team.

DR. M.B.ASWATH NARAYANAN

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CHAPTER 0
EXECUTIVE SUMMARY

1. GENESIS

Oral health is a very important component of general health. However, it is one component about which there is very little awareness and little clear understanding of the implications of the consequences of ill-health. The high prevalence of dental diseases, like dental caries, periodontal diseases, various stages of malocclusion, besides lack of access to the required services leads to significant absenteeism and economic loss, apart from the ill-effects on the health of the person afflicted. In view of the adverse effects of poor oral health, it is important to take preventive measures and create the required services. For this purpose, it is necessary to know the prevalence of oral health problems and understand the dental health practices that people follow. Such information is basic for formulation of oral health policies and implementation of appropriate programmes to improve the awareness and knowledge of general public about the preventive aspects of oral health, to create the required services and to train the necessary dental manpower to meet these needs.

The Dental Council of India has been greatly concerned about this gap in knowledge and the resultant lack of appropriate policies and programmes. There has been a long-felt need for an epidemiological study on oral health problems, which would also include a study of the related oral health practices besides mapping fluoride levels in drinking water from various sources in the country. Such a study may help bring about a balance between the oral health needs of the people and the services provided, and help plan and organise need-based services to improve the level of oral health of the people.

Keeping this in view, the Dental Council of India undertook a national-level epidemiological study, "National Oral Health Survey and Fluoride Mapping," to assess the oral health problems of the people and practices they adopt in this regard. The present study is a community-based survey with the objectives of assessment of (1) awareness and knowledge of people about oral health problems; (2) current status of oral health problems in the community; (3) practices people adopt for both prevention and treatment of their oral and dental problems; and (4) levels of fluoride in the drinking water of the people across the country. The survey, initiated in 2002, aimed at knowing the ground situation to help decision-makers formulate policies and programmes to improve the oral health of the people. Mapping of fluoride levels in drinking water was made a part of the survey since the fluoride level is directly associated with oral health problems, such as dental and skeletal fluorosis.

2. SCOPE OF THE SURVEY

The scope of the survey was to collect information covering the following dimensions of oral health:

1. Prevalence of oral health problems,
2. Fluoride levels in drinking water,
3. Eating habits affecting oral health,

4. Dental cleaning practices,

5. Awareness and knowledge of people on factors affecting oral health, and

6. Treatment-seeking behaviour of people for their oral health problems.

It must be noted that this survey delved into areas much beyond the usual ambits of oral health surveys, which generally focus on the levels and problems of oral health in the community. This survey, on the other hand, collected data on many more dimensions so as to enable an understanding of the practices that cause oral health problems and the steps people take to seek treatment.

3. DESIGN OF THE SURVEY

Recognising the fact that India is a vast country with great diversity in eating habits and behavioural practices, the survey was designed and conducted so that state-wise oral health problems and related practices could be determined. This is to help the formulation and implementation of state-wise policies and programmes.

3.1 Sample size

Three considerati ons were kept in mind while deciding upon the sample size: (1) The estimates should be valid at the state level; (2) Intra-state regional variations may be captured in oral health problems and practices; and (3) It should be possible to complete the survey of the proposed sample within the limited budget available. In view of these, the WHO recommendation, that the sample comprise 300-600 dental examinations of people aged 5, 12, 15, 35-44 and 65-74 years from a homogeneous region, was adopted. Accordingly, it was decided that 315 households, both in rural and urban areas, would be taken from each homogeneous region in a state, and oral examinations done on 315 subjects in each identified age group. Also, the sample size would increase in case all the 315 subjects in each of the five identified age groups (5, 12, 15, 35-44 and 65-74 years) were not available in the selected 315 households. Besides, it was also decided that the examinations in each age group would be equally distributed between males and females. Further, of the selected sample size of 315 households, 210 households were to be from rural areas and 105 from urban areas. Thus, 105 males and 105 females were examined in each of the five age groups from the rural areas, and 53 males and 53 females in each age group from the urban areas.

3.2 Sample selection

Each state was divided into a few homogeneous regions, comprising of a number of districts, on the basis of agro-climatic factors used by the Planning Commission and the physio-geographic factors used by the Office of the Census Commissioner and the Registrar General of India. The total sample of households from a state thus depended upon the number of such homogeneous regions.

A three-stage sampling design was adopted to select 210 rural households from each homogeneous region. The first stage was the random selection of a district from a region. The second was selection of 15 villages with probability proportional to size (pps) of the village, and, finally, selection of 14 households randomly from each selected village.

In the case of the urban sample of 105 households from a homogeneous region, eight blocks/wards were randomly selected from the selected district. From these eight blocks, 15 wards or census enumeration blocks (CEBs) were randomly selected (each CEB has almost equal population). In the next stage, 7 households were selected from each CEB. Again, 105 subjects from each age group (5, 12, 15, 35-44 and 65-74) were to be examined, with males making up half the number, and females the other half.

4. STUDY TOOLS

In order to encompass all the objectives of the study, two types of questionnaires/schedules were used in the survey. One was the WHO schedule on Oral Health Assessment and the second was an individual questionnaire (specially developed by the Dental Council of India) for collecting information on etiologic factors related to oral health awareness, knowledge and practices of individuals on factors affecting oral health, and their treatment-seeking behaviour.

5. DATA COLLECTION

A small nucleus, Central Survey Unit, was set up in the office of the Dental Council of India in New Delhi. For the fieldwork, one dental state coordinator and his/her dental college were selected for each state. This coordinator was to oversee the fieldwork in the state in coordination with the Central Survey Unit. Each coordinator was to form field teams consisting of two dentists and one social worker. While the dentists were to examine the oral health of the subjects and record information on the Oral Health Assessment questionnaire, the social worker was to record information on the questionnaire related to etiological factors.

Great care was taken to ensure that the quality of the data collection met stringent standards. Besides a state coordinator, supervisors were appointed to move with the teams when they went for data collection. The coordinators, supervisors, of the dental colleges, were given total responsibility for the scrutiny and checking of the data. The data was scrutinised at three levels, in the field, in the state coordinator's office and at the central level, before processing.

Besides, water samples were taken from the selected households for testing fluoride levels, and all such tests on these samples were conducted in a laboratory in Mumbai.

6. CALIBRATION AND TRAINING WORKSHOPS

A three-day calibration and training workshop was organised where all the coordinators and supervisors were given training in field logistics, data collection, and standardisation of the assessment of oral health problems. The last is very important, and very thorough training was imparted for it, so that all field teams adopted uniform assessment methods in recording dental problems. A workshop on report writing was also organised in Mumbai to standardise the format & writing of each state report. This was necessary because some coordinators undertook responsibility of writing reports for their respective state. Of course some state reports were prepared by the Central Survey Unit.

7. AREA COVERAGE IN SURVEY

National Oral Health Survey, was designed to cover all Agro-Climatic regions of the state. Since this union territories is comprised of only one Agro Climatic region. This was covered in the survey.

8. FINDINGS (ORAL HEALTH KNOWLEDGE AND PRACTICES)

8.1 Characteristics of households surveyed

1. About half of the households, more in urban had pucca houses to live.
2. About 61 percent, more in rural reported monthly expenditure of Rs 2500 & below.
3. 89 percent of the households belonged to Hindus.
4. 78 percent of households belonged to other Backward classes.
5. About all were getting drinking water from taps.
6. Rice is the staple food of almost all & 94 percent reported non-vegetarian.

8.2 Profile of population across age groups

1. The percent of illiterate increased with the increase in the age of respondents. On an average about 18 percent of the respondents across age groups were illiterate.
2. With regard to exposure to media, TV was found to be the most utilised media. Analysis of daily habits across age groups revealed that 76 per cent had watched TV while 19 per cent had read newspapers and 9 per cent had listened to the radio daily. Exposure to cinema was very low, with only 3 per cent respondents across age groups had watched cinema once in 3 months.

8.3 Abnormal habits across age groups

Except the habit of "sucking or biting fingers/thumbs" which contributed a major habit in 5 year age group & continued in children up to 15 year age, the occurrence of each of habit across all age was very low.

8.4 Sweet/sugar-taking habits across age groups

1. The percent of not takers of sugar increased with the increase in their age.
2. The percent of taking sweet/sugar more than two times in last 24 hours decreased significantly with increase in the age of respondents.

8.5 Oral hygiene practices across age groups

1. The practice of cleaning teeth was universal.
2. About 81 per cent across all age groups, across both sexes and more in urban areas reported the use toothbrush to clean their teeth.

3. About 96 per cent, across both sexes and more in rural areas reported cleaning of teeth once a day. In urban areas, more reported cleaning teeth twice a day.
4. About 73 per cent, across ages, more males and more in the urban areas reported the use of toothpaste.
5. About 82 per cent, across all ages, and more males and more in urban areas reported the use of non-fluoridated toothpaste/powder.
6. About 52 per cent, across all ages, both sexes and more in rural areas had changed their toothbrushes once in 1-3 months.
7. About 46 per cent of the respondents, across all ages and both sexes, and more in urban areas reported rinsing their mouth after every meal. The practice was more prevalent with increase in age.

8.6 Dental problems and treatment practices across age groups

1. Around 27 per cent of the respondents, across all age/age groups and across sexes, had dental problems in the last one year. Reporting was more in urban areas.
2. Over 70 percent, across all age/age groups reported dental decay. The problem of gum disease was reported by less than 8 per cent in the 15 and below age group and 25 per cent in the higher age groups.
3. More than one-third subjects (42 per cent), across all ages/age groups, consulted trained dentist. Also, 55 per cent subjects, across all ages and both sexes, but more in urban areas reported the availability of Governmental dental facility.
4. Most respondents reported less than half-an-hour to reach the dental care facilities. This was especially so in urban areas.

8.7 Awareness of dental health problems across age groups

1. About 62 per cent of subjects across all ages and both sexes, but more in urban areas, were aware of oral health problems in the state.
2. About 53 per cent of respondents across all ages, more females & more in rural were not aware of the factors that cause oral health problems.

   Of those who were aware, most of them reported "not brushing regularly" (32 per cent) followed by "eating sweets/ice cream" (14 per cent) as two important factors.
3. About preventive measures in regard to oral health problems, again 52 per cent subjects across all ages and both sexes reported no knowledge.

8.8 Tobacco smoking and chewing habits across age groups

1. About 15 per cent, across age groups 35-44 and 65-74 had the habit of smoking tobacco in the state. The habit was more prevalent among males and in rural areas. About half of them,

more males and more from rural areas, smoked cigarettes. Around 88 per cent of smokers, across both sexes and place of residence, said they smoked less than 10 times in a day.

2. About 15 per cent, across all ages and place of residence, but more females said they chewed pan or pan masala with tobacco. A majority of those who chewed tobacco or pan masala with tobacco said they have been doing so for less than 5 years.

3. About 8 per cent, across all ages, but more males and more in rural areas, reported consuming alcohol.

9. FINDINGS (ORAL HEALTH ASSESSMENT)

The oral health status of subjects was clinically assessed in the field conditions by teams of dental surgeons who were previously trained and calibrated. The WHO Clinical Assessment Form (1997) was used to record the clinical conditions. The clinical findings are presented in this report in Chapter VI under the following broad heads:

1. Dental Caries status & Treatment Need
2. Periodontal Disease status
3. Malocclusion status
4. Oral Cancers and other oral mucosal lesions
5. Dental Fluorosis status
6. Other conditions:

   Extra Oral Lesions; TMJ Assessment; Enamel Opacities and Hypoplasia; Prosthetic Status & Need; and Community need for immediate Care and Referrals.

9.1 Dental caries

- The mean no of teeth present in the mouth decreased as age advanced. It was close to 20 in 5 year olds and nearly 28, as expected, in 12 and 15 year olds. However, it decreased to about 19.3 in 65-74 years.
- The caries experience was moderately high in the state. The prevalence percentage by age was 53.5 (5 years); 38.6 (12 years); 46.1 (15 years); 83.4 (35-44 years); and 87.1 (65-74 years).
- As much as 50% of individuals had decay with average DMFT values between 1-8. But children below 5 years have at times scores of 15 (alarming), SIC index is constantly high and about 2 to 3 times the mean dmf/DMFT..
- The percentage of root caries was 17.4 and 13.7 percent respectively in the age groups 35-44 years and 65-74 years. There were no root fillings.

9.2 Treatment need

- 55% of individual below 35 years and 80% individuals above 35 years needed treatment. Filling was the most important need (65%). Other needs included crowns, pulp care, and tooth extractions.

9.3 Periodontal disease

- Bleeding and Calculus was found in all age groups and its prevalence ranged from 41% - 100%.
- Pocketing was found only in the (35 – 44) and (65 — 74) age groups and affected nearly 40% of population. Nearly 4 sextants were involved. Loss of attachment was present only in (65 – 74) age group and affected close to 60%. The mean loss was (4 – 5) mm.
- Loss of attachment was present in 18.9 per cent subjects aged 35-44 years and 61.6 per cent subjects aged 65-74 years. The average loss of attachment was less than 5 mm

9.3 Malocclusion Status

- The 5 years old had no malocclusion. 28.6 per cent of 12 year olds, 22.2 per cent of 15 year olds, 39 per cent of 35-44 year olds and 75 per cent of 65-74 year olds had malocclusion.

9.4 Oral Mucosal lesions / Oral cancer

- Mucosal lesions were rare and seen in only 35-44 year olds & 65-74 year olds.

9.5 Dental fluorosis status

Mild fluorosis affected less than 1% of the population.

9.6 Other lesions

9.6.1 Extra Oral Lesion

On an average less than 1% were affected.

9.6.2 TMJ symptoms and signs

- Affected only the upper two age groups. Only 1.3% had symptoms and less than 6% had signs.
- Clinking was the commonest sign.

9.6.3 Enamel Defects

- Less than 3% affected and predominantly in the 12 years and 15 years group.

9.7 Prosthetic status and need

- Prosthesis was present in only 3 - 5% of patients in upper and lower arch.
- There was an unmet need of 70% for prosthesis and complete dentures were required for 40% of such patients.

9.8 Community need for immediate care

There was no life threatening conditions. Referrals were made for almost all the conditions recorded.

Summary of findings of important oral health conditions and practices by age in Pondicherry

	Findings	Age in years				
		5	12	15	35-44	65-74
1.	**Oral disease conditions**					
1.1	Dental Caries					
	% Prevalence	53.5	38.6	46.1	83.4	87.1
	Mean DMFT	2.5	1.2	1.7	4.7	13.7
	SiC Index	7.0	3.9	41	97	29.7
1.2	Periodontal disease					
	Bleeding, calculus or pockets					
	% Prevalence	40.1	96.4	99.6	99.2	76.7
	Mean no of Sextants affected	0.2	4.8	4.9	5.4	3.7
1.3	Loss of attachment					
	% Prevalence	NA	NA	0.3	18.9	61.6
	Mean no of Sextants affected	NA	NA	0.0	0.6	2.3
1.4	Malocclusion (% prevalence)	1.3	28.6	22.2	39.4	NA
1.5	Dental Fluorosis (% prevalence)	0.0	1.0	1.7	0.5	0.4
1.6	Oral mucosal conditions (Nos.)	1	1	1	13	42
1.7	Oral Cancer (Nos.)	0	0	0	0	0
1.8	Edentulousness (%)	NA	NA	0.0	0.1	38.0
2	**Oral Health Practices**					
2.1	Sugar Intake in last 24 hours					
	Once	18.4	14.4	11.6	7.2	6.1
	Two & more times	41.8	23.9	12.4	4.8	1.9
2.2	Clean teeth with					
	Tooth Brush	91.9	92.5	95.7	89.2	37.9
	Fingers	6.7	5.8	3.3	7.0	49.6
2.3	Rinsing mouth					
	Always	18.7	42.0	53.4	59.5	57.0
	Sometimes	47.7	25.2	19.3	11.9	14.3
2.4	Tobacco smoking	NA	NA	NA	9.3	20.9
2.5	Frequency of tobacco smoking					
	Less than 10 times	NA	NA	NA	85.6	91.8
	10 or more times	NA	NA	NA	14.4	8.3

CHAPTER I
INTRODUCTION

1.1 BACKGROUND OF THE STATE

1.1.1 Population and demographic profile

Kerala acquired the status of a state within the Indian Union, with Thiruvananthapuram as its capital, on November 1, 1966. It has a total land area of 38,863 sq.km, or 1.18 per cent of the country's land area.

On the basis of physical features, Kerala can be divided into three natural regions – Highlands, Midlands and Lowlands. The state accounted for 3.1 per cent of India's population in 2001. At the time of the 1991 census, the state was divided into 14 districts and 61 taluks. Since then the number of taluks has risen to 63.

1.1.2 Composition of population

The 2001 census put Kerala's population at 31.8, up from 29 million in 1991, a decadal growth rate of only 9.4 per cent. This was much lower than the 21.3 per cent recorded for the country as a whole. Population density in Kerala increased from 549 in 1971 to 655 in 1981 and 749 in 1991. This was almost three times the density of the country as a whole (273). The increase in population density indicates increasing pressure on land and other resources. The only other states with a population density greater than Kerala are Bihar and West Bengal.

Kerala has been undergoing slow but steady urbanisation. The percentage of the total population living in urban areas increased from 16 per cent in 1971 and further to 19 per cent in 1981 to 27 per cent in 1991. According to the 1991 census, 10 per cent of the state's population comprises Scheduled caste and 1 per cent Scheduled Tribes.

1.1.3 Socio-economic characteristics

According to the 2001 census, Kerala is the most literate state in India, with a literacy rate of 91 per cent for the population of age 7-year and above. By contrast, the corresponding literacy rate for the country as a whole is only 65 per cent. Literacy rates are 94 per cent for males and 88 per cent for females in the state, compared with 76 per cent for males and 54 per cent for females in the country as a whole.

Kerala is predominantly an agricultural state, with 73 per cent of its population living in rural areas. In fact, the agricultural sector had a 31 per cent share of the state domestic product in 1996-97 down from 34 per cent in 1980-81 (EPW Research Foundation, 1998). At the time of the 1991 census, the agricultural sector provided livelihood for 48 per cent of the state's labour force (Office of the Registrar General and Census Commissioner).

Rice is the only major serial crop grown in Kerala. Nearly 76 per cent of the agricultural land is under non-food crops. Coconut palms and other cash crops such as tea, coffee and rubber are among the most important products of the state.

Kerala is an industrially backward state, with only a few industries manufacturing cement, fertilisers, aluminium and automobiles. The average annual per capita net domestic product of the state increased from Rs 1,508 in 1980-81 to Rs 2,363 in 1996-97 at constant 1980-81 prices or Rs 9,066 at current prices (EPW Research Foundation, 1998).

As per estimates given by the Planning Commission for 1993-94, 25 per cent of the state's population was below the poverty line (Central Statistical Organisation 1999).

1.2 NEED FOR ORAL HEALTH SURVEY

1.2.1 Oral health problems

Oral Health is a very important component of the general health of the people. The high prevalence and severity of oral diseases such as dental caries, periodontal disease, oral cancers and various stages of malocclusions and crippling nature of these diseases lead to significant absenteeism and economic loss. Dental illness, thus contributes to considerable reduction in national productivity and overall national development.

It is reported that almost 85 percent of children and 95-100 percent adult population suffer from periodontal disease at a point in time. About 35 percent of children suffer from misaligned teeth and jaws affecting their proper functioning. These children lose their school time, and suffer from pain of dental origin. This not only affects their routine life activities but also causes a good deal of discomfort to their parents in several ways. These dental problems are initially painless but become chronic and self-destructive later, thus leading to gradual tooth loss. The dental caries has a crippling effect on the functional components of oral cavity that leads to malnutrition because of incapacity to chew any coarse food available to them. Unfortunately, this is still not considered a public health problem and thus no action is taken to correct it. In other words, there is need to make people aware of preventive and curative aspects of oral health so that quality of life of people could be improved.

The oral diseases also have an adverse effect on the vital organs of the body. The pus oozing pockets in advanced periodontal disease in adults act as a focus of infection for other vital organs of body like kidney, heart, lungs, brain etc. Limited information available from the micro level studies suggests that 35-40 percent of body cancers are oral cancers. That is, incidence of simple oral morbidity becomes chronic and ultimately life-threatening. One needs not only to take preventive measures, but early curative steps as well. It is unfortunate that oral health has received much less attention perhaps because of its lower life threatening risk. Its role in quality of life, now, has been recognized and thus all efforts should be afoot to improve oral health of the people.

Several adverse effects of poor oral health necessitate preventive, curative and educational services/ activities. It requires an understanding of people's knowledge and awareness, attitudes towards oral health and their oral health practices besides the magnitude of the problems and corrective and treatment-seeking measures people adopt. This information is basic for the formulation of policy, developing strategic measures and meeting appropriate manpower needs, and creating programmes for improvement of oral health of people.

1.2.2 Lack of data for policies and manpower development

No authentic, reliable or consolidated data on the magnitude of oral health problems, behavioural practices of people for preventive and curative care, dental manpower, infrastructure and on the appropriateness and efficiency of the existing oral health care services including educational and awareness-raising activities are available in the country. However, a wide spectrum of oral health services exists in many urban/rural areas in India. These services range from rudimentary & sporadic in rural areas to sophisticated and state-of-the-art in urban areas. It is unfortunate that there has neither been any systematic assessment of the need and form of educational activities and curative services, nor of the impact of the existing services on the oral health of the people. The vacuum of an effective monitoring and evaluation system is being felt; the dental professionals are very keen to fill this gap between the emerging needs and the existing services. A strong need exists to understand the oral health care practices and treatment-seeking behaviours of people and to assess the existing oral health care services. An appropriate and relevant oral health policy for the country should address the local problems in the broad context of the overall World Health Organization's (WHO) primary health care approach framework. Ultimately, data needs to be generated to help address and improve the overall oral health of the people in the country.

Since the quantity of intake of fluorides has an effect on dental caries prevention and control, it is also necessary to know the intake of fluoride through water, tooth paste or any other source. This will help to bring out area specific policies to meet fluoride needs of the people.

In summary, two types of studies are needed. One, on the incidence/ prevalence of oral health problems, and the knowledge and behavioural practices of people for prevention as well as treatment of oral health problems. Second, the existing facilities and infrastructure need to be assessed for their cost effectiveness and utilization patterns. Such studies and their analysis will ultimately help in bringing about a balance between the needs and the services to meet these needs.

1.3 INITIATIVE OF THE DENTAL COUNCIL OF INDIA

The Dental Council of India, as per its objective, has always been concerned with the oral health of people in the country. It has, on the one hand, been attempting to strengthen the quality of oral health activities by arranging workshops/seminars to inform and involve dentists in the oral health issues of the country, and, on the other, been raising its concern for the poor oral health situation in the country with the Government. The idea is to work at both the stakeholders for improving oral health in the country. It has been making recommendations and suggesting ways and means to bring about improvement in the overall oral health situation in the country.

1.4 NATIONAL ORAL HEALTH SURVEY

As indicated above, there is need to conduct two types of studies on oral health to bring about a balance between the oral health needs of the people and services to meet those needs. The first is a community survey to assess (i) knowledge of the people on appropriate dental health promoting behaviors including treatment seeking behaviors, and (ii) the oral health status of the population concerned. The second is the survey and assessment of available dental care services. The Dental Council of India undertook a community survey, National Oral Health Survey, to assess the dental problems and practices related to oral health in 2002. This report presents the result of this survey where a representative sample of community members in all the states have

been contacted to assess their dental service needs and understand their knowledge and behavior in regard to practices affecting oral health. Priority and need for such a survey was recommended as early as 1991 in the National Workshop on "Exploring New Frontiers in Dental Public Health: Planning for the Future" organized by the Dental Council of India under the Presidentship of Dr R K Bali. This Workshop had highlighted the lack of data and a framework for planning the oral health manpower and services in our country and recommended a nation-wide oral health survey to assess current status of oral health. As a follow up of this recommendation, the Dental Council of India, again under the Presidentship of Dr R K Bali, developed a proposal to conduct a National Oral Health Survey to assess oral health problems in the country and the behavioural practices affecting them. Mapping of the fluoride levels in the country was also made a part of this survey. It approached several individuals and agencies for technical and financial support for undertaking this national survey.

1.4.1 Support of Government of India

This proposal was submitted to Ministry of Health & Family Welfare, Govt. of India for (i) seeking their formal approval, and (ii) grant of financial assistance and necessary logistic support. After several meetings between the President of the Dental Council of India and officials of the Ministry of Health & Family Welfare, Govt. of India, the importance and need of the national survey was recognized but the Government, in view of its other, move pressing commitments, could not provide financial assistance. However, the Ministry of Heath & Family Welfare agreed to support the Council's efforts to seek financial and technical support from other agencies.

1.4.2 Support from Colgate India/ International

The President of the Dental Council of India, Dr R K Bali, approached the Colgate India/ International for funding this Survey and after a series of meetings in Delhi, Mumbai and the USA, the management of the Company, recognizing the need for such a survey, agreed to grant a major financial assistance for this national survey.

1.4.3 Support of individuals and dental colleges in India

The Dental Council of India did not have the manpower to manage this large survey itself and thus decided to carry it out by collaborating with the dental colleges in India and the Indian Association of Public Health Dentistry (IAPHD). A bare minimum technical unit was set up for this purpose. It consisted of Dr. R.K. Bali as Chairman and Project Coordinator, Dr.V.B.Mathur as Project Officer and Mr. H.B. Chanana as Statistician. Professor P.P.Talwar, an eminent expert in statistics and demography, was appointed as the consultant in survey methodology. **(Annexure-1)** They formed the Central Survey Team for the National Oral Health Survey & Fluoride Mapping located in the office of the Dental Council of India in New Delhi. It was decided that the Central Survey Team will involve Principals/ Deans/ Heads of Dental Colleges at Regional/ State levels and a few members of the IAPHD for technical development of the survey, data collection in their states and then, later on, for its report writing. This model was thought to be the best for involvement of the dental colleges to ensure their sense of ownership of the survey and their commitment. The colleges participated enthusiastically and generated, shared and pooled local level resources to supplement the grant for the survey. The President of the Dental Council of India sent a copy of the proposal/ protocol of the National Oral Health Survey to these colleges; they were requested for their support and participation. As expected, almost all resource persons and Deans/ Principals

of Dental Colleges readily agreed with his request and expressed willingness to participate in this national endeavor.

The Dental Council of India appointed a core technical committee consisting of experts in oral health and survey methodology (Statistics) to work out technical and field details for the National Oral Health Survey. Joint expertise was felt necessary so that this oral health survey could provide scientific estimates of the prevalence of various oral health problems and knowledge and behavioural practices of people. The members of the committee are listed in the appropriate section in the annexure in this report. **(Annexure-2)**

1.5 SCOPE OF THE SURVEY

This survey recognized the fact that India is a vast country with great diversity in eating habits and behavioural practices which could affect the oral health of people. It was, therefore, decided to conduct the survey in such a way that state-wise oral health problems and practices can be determined. This would help in formulation and implementation of the state-wise policies and programmes on oral health activities and services to improve oral health of the people of each state.

As indicated earlier, it was also decided to collect water samples from representative areas to assess level of fluoride in water because of its implications on the oral health. Such data was ultimately to help in fluoride mapping at state level.

The scope of data collection was enlarged in the sense that it would collect data not only on incidence/ prevalence of oral health problems (WHO clinical form), but also on dental hygiene practices, food habits, knowledge of dental problems and behavioural practices related to dental health.

In this way, the scope of this survey was to have state-wise and national data and reports containing information on the following components of the oral health:

- Prevalence of important oral health problems
- Fluoride mapping
- Dental cleaning practices
- Awareness and knowledge of people on the factors affecting oral health, and their related dietary and dental cleaning practices
- Treatment seeking behaviour of people for their oral health problems.

It also explores association between oral health and its related practices.

1.6 OBJECTIVES

The long-term goal of the survey was to provide state-wise data for improvement of the overall oral health of people in India. It was done by collecting enough information for formulation of national oral health policy and for implementation of oral health programs in each state. All its dimensions of preventive, promotive and curative oral health care were to be addressed in the survey.

More specifically, the objectives of the National Oral Health Survey were:

1.6.1 To collect data on oral health status, particularly on,

- Dental Caries
- Periodontal disease
- Malocclusion
- Oral cancers
- Fluorosis
- Mucosal and Bony lesions

1.6.2 To understand eating and dental cleaning practices that affect oral health and determine the degree of association/ correlation between some of the known etiologic factors which affect oral health status; particularly included were

- Food habits (affecting oral health)
- Eating habits (affecting oral health)
- Dental cleaning practices, and
- Intake of fluoride

1.6.3 To assess awareness and knowledge of people on the factors affecting oral health, and

1.6.4 To determine treatment seeking behaviour of people for their oral health problems.

It was presumed that the data collected would lead to development of programs on preventive, promotive and curative dimensions of the oral health problems in each state. It was also to serve as a baseline data against which progress of the dental programs could be assessed in the future years.

1.7 CHAPTERIZATION PLAN

The report is comprised of the following main chapters:

0 Executive Summary

1. Introduction
2. Methodology & Data Collection
3. Background Characteristics of the Surveyed Population
4. Mapping of the Fluoride Levels
5. Oral Health Knowledge and Practices
6. Status of Oral Health

CHAPTER II

METHODOLOGY AND DATA COLLECTION

2.1 BASIC CONSIDERATIONS IN DESIGNING THE SURVEY

The following considerations were taken into account to design the survey:

1. The estimates of oral health problems and related practices need to be made at state level.
2. The study should be able to capture intra-state regional variations in oral health problems. That is, regional differentials (within a state) in oral health problems should be assessed to suggest region-specific programmes.
3. The scope of information should be so decided that the states should be able to formulate state-wise oral health policies and programmes. It means that information should be collected on

- Levels of oral health problems
- Etiological factors which affect oral health
- Behavioural practices in regard to dental cleaning practices
- Awareness of dental problems and practices followed to seek treatment, and
- Fluoride mapping and issues related to fluoride in tooth paste/ powder

4. Available financial resources (limited) should be able to carry the survey in all the states of the country unless some other prohibitive factors operate in a state.

2.2 SAMPLE DESIGN

2.2.1 Sample size

The following considerations were made in working out the sample size:

- The estimates should be valid at state level, and
- Intra-state regional variations in the oral health problems and related practices may be captured.

The World Health Organisation (WHO) has recommended a sample of 300-600 dental examinations of people of ages 5, 12, 15, 35-44 and 65-74 from a homogeneous region of a state. Hence, this sample size was kept in mind while deciding on number of households to be selected from different homogeneous regions (within a state). It was decided that 315 households covering both rural and urban areas would be selected from each homogeneous region in the state. It was expected that this sample of households would give 315 respondents/examinees of each of the five ages 5, 12, 15, 35-44 and 65-74. In case this number of respondents (315 in each of the five ages) was not available from 315 households selected, then more households were covered to get these numbers of examinees/ respondents. It may be pointed out that though this is a lower limit of the sample size recommended by WHO, this study had to settle for this sample size because of the financial constraints under which this study was undertaken.

It may be restated that the sample size of 315 households or more was taken from each homogeneous region within a state. Therefore, there was much larger sample size at the state level; it depended on the number of homogeneous regions in which the state has been divided. For instance, if the state has five homogeneous regions, then the total sample size of the households for the state would be 5x315= 1575 or more households to cover 1575 respondents/ examinees of each of the five ages. In all, 7875 oral examinations were to be done in the above example.

In order to give representation to urban population, which formed a small proportion of the total population in most of the regions in India/state, urban sample was over-sampled so as to get estimates with a reasonable margin of sampling error of the parameters under study. It was decided that two-thirds of the sample would come from rural areas and one-third from urban. Thus 210 households were selected from rural areas and 105 from the urban. Weights (for rural and urban proportions) were applied to these estimates to get parameter estimates at the stratum (region) level and then at the state level.

As indicated above, though it was expected that 315 households from each region would give a sample of 315 individuals from the ages 5, 12, 15, 35-44 and 65-74, yet instructions were given to the field teams that 315 respondents/ examinees from each age were to be covered from each region even if larger number of households needed to be visited and interviewed/ examined.

It was also decided to have equal number of males and females in the sample. Therefore, when the field teams were to visit the households they had to make sure that 315 respondents/ examinees were equally divided between males and females. In other words, the field teams had to start with a larger sample of households in order to cover 315 respondents/ examinees of each of the five ages with equal number of males and females.

2.2.2 Selection of sample

The Planning Commission of India, in an exercise to group districts in homogeneous regions within a state, had divided each of the major states and Union Territories into a few homogeneous agro-climatic regions on the basis of socio-economic indicators and agricultural parameters. In the case of remaining States/Union Territories, the homogeneous physio-geographic regions determined by the office of Registrar General of India, were used as strata/ homogeneous regions within a state. Each homogeneous region thus formed a stratum for collection of data from 315 respondents/ examinees of each age. This number of 315 was equally divided between males and females. The selected states, by homogenous regions and district selected from each region is enclosed in (**Annexure-3**).

2.2.2.1 Rural sample

In order to get a sample of rural households in a stratum (region), three-stage sampling method was adopted. At the first stage, one district was selected from the group of districts in that particular region; the second stage was selection of 15 villages from the selected district and the third stage was selection of 14 households from the villages selected in the second stage. The selection of the district was done randomly. For the selection of villages, all the villages in the selected district were arranged in an array by size of the village to get cumulative total of village population. This cumulative total array was divided into three sections, each having equal population size. Five villages with probability proportional to the population size (pps) of the

village were selected from each of three sections. Thus 15 villages were selected in the second stage. The list of villages were taken from the sampling frame developed for the Rapid Household Survey, a district-wise survey conducted by the Government of India, and coordinated by the International Institute for Population Sciences, Mumbai; the list was based on the 1991 census. In the third stage, 14 or more households were selected randomly from a village (by dividing it into two equal parts with seven or more household from each part) to get a sample of 14 respondents/ examinees from each of the five ages – 5, 12, 15, 35-44 and 65-74, half of them were to be males. Thus a sample of 210 or more households from rural areas of the district/ region was selected to interview 14 members from each of the five ages 5,12,15,35-44 & 65-74. Half of them were to be males/females in each age.

2.2.2.2 Urban sample

As regards the urban sample, again, three stage sampling design was adopted to select urban households from the selected districts. In the first stage, eight blocks/ wards were selected randomly from the list of urban blocks/wards in the selected district. The second stage was selection of 15 Census Enumeration Blocks (CEBs) from the list of CEBs in the selected eight blocks/ wards (the population size in each CEB is approximately equal). The list of CEBs was obtained from the District Census Office and was for the year 1991. The third stage was a systematic sample of 7 or more households to get seven members of each of the five ages 5, 12, 15, 35-44 and 65-74. Half of them were to be males in each age. Thus a total of 105 or more households were randomly selected from the selected 15 CEBs.

On the basis of this sampling design, the number of households to be covered were 28, 665 or more to cover 28,665 respondents/ examinees in each of the five ages 5, 12, 15, 35-44 and 65-74. Half of them were to be males. The total number of examinations to be done were 1, 43, 325. The actual coverage comes to a minimum of 19845 households. That is, 92,225 examinations were done. Their state-wise, rural/urban distribution is shown in Table- 2.1

Table 2.1. States, number of regions and sample of rural/urban households.

Sl. No.	State	Coverage as per design				Actual coverage			
		No. of regions	No. of households		Total	No. of regions	No. of households		Total
			Rural	Urban			Rural	Urban	
1.	Andhra Pradesh	6	1260	630	1890	6	1260	630	1890
2.	Assam	3	630	315	945	2	420	210	630
3	Bihar	3	630	315	945	Not covered			
4.	Jharkhand	2	420	210	630	Not covered			
5.	Gujarat	7	1470	735	2205	7	1470	735	2205
6.	Haryana	3	630	315	945	3	630	315	945
7.	Himachal Pradesh	2	420	210	630	2	420	210	630
8.	Karnataka	4	840	420	1260	4	840	420	1260
9.	Kerala	3	630	315	945	3	630	315	945
10.	Madhya Pradesh	8	1680	840	2520	4	840	420	1260
11.	Chattisgarh	3	630	315	945	Not covered			
12.	Maharashtra	6	1260	630	1890	5	1050	525	1575
13.	Orissa	5	1050	525	1575	5	1050	525	1575
14.	Punjab	3	630	315	945	3	630	315	945
15.	Rajasthan	5	1050	525	1575	3	630	315	945
16.	Tamil Nadu	7	1470	735	2205	7	1470	735	2205
17.	Uttar Pradesh,	6	1260	630	1890	2	420	210	630
18.	Uttranchal	2	420	210	630	Not covered			
19.	W. Bengal	6	1260	630	1890	Not covered			
20.	Jammu & Kashmir	3	630	315	945	3	630	315	945
21.	Chandigarh	1	105	210	315	1	105	210	315
22.	Delhi	1	105	210	315	1	105	210	315
23.	Goa	1	105	210	315	1	105	210	315
24.	Pondicherry	1	105	210	315	1	105	210	315
	Total	**91**	**18690**	**9975**	**28665**	**63**	**12810**	**7035**	**19845**

Note: Names of the regions and selected districts are shown in Annexure-3.

Table 2.1(a) : Presents regions/districts within region and sampled district in the state of Pondicherry

Table 2.1(a) Statement showing regions/districts within regions and sampled district in the state of PONDICHERRY

Code	Region	Districts	Sampled District	*Coverage as per design No. of Households*			*Actual Coverage No. of Households*		
				Rural	Urban	Total	Rural	Urban	Total
		Pondicherry	Pondicherry	210	105	315	210	105	315

It may be noted that sample size shown, both on the basis of design and actual coverage, is for minimum number of households. They were to give this number of respondents from each of the five age groups – 5, 12, 15, 35-44 and 65-74 years, equally divided between males and females.

2.3 STUDY TOOLS

In order to cover the total scope of the study, two types of questionnaire/ schedules were used for data collection: Oral Health Assessment Questionnaire (WHO, 1997)) for recording the result of the examination of oral health of the individuals and Individual Questionnaire (Especially developed by DCI for this survey) for collecting information on etiologic factors related to oral health awareness, knowledge and practice of individuals on factors affecting oral health and their treatment seeking behaviour. These questionnaires were pre-tested and finalized by the Central Survey Unit in Delhi with the help of consultant. A copy each of the tools used is annexed in this report **Annexure-7**.

2.3.1 Oral health assessment form

This survey used the Oral Health Assessment form recommended by World Health Organization, Geneva. It followed all the instructions given in the WHO publication, "Oral Health Surveys: Basic Methods". By keeping the WHO form as it is, it was considered possible to collect data comparable to other sets of data in the Data Bank of WHO.

2.3.2 Questionnaire on oral health knowledge and practices

As indicated above, this survey did not limit itself to mere oral health assessment because the goal of this survey was to help formulate dental policies and programmes. Therefore, it was essential to collect information on all parameters like food habits, dental cleaning practices and treatment seeking practices that ultimately affect the oral health of people.

The core technical group working on this national survey developed a questionnaire wherein all the information related to factors that affect oral health was collected from respondents/ examinees that were examined for oral health problems. The idea was (1) to understand factors that affected their oral health status, and (2) determine relationship of different etiological factors with oral health status. The questionnaire had the following sections:

1. Socio-economic and demographic characteristics of population
2. Abnormal oral habits
3. Eating habits
4. Oral hygiene practices
5. Pattern of practices for dental treatment
6. Awareness and knowledge of dental problems, and
7. Tobacco smoking and chewing habits

2.4 DATA COLLECTION

Since the individuals of different ages and sex were to be examined/ interviewed (for oral health problems), it was necessary that dentists should be involved in the data collection teams. Therefore, it was decided that dental colleges, particularly Departments of Community Dentistry of the dental colleges should be involved in the data collection work. It was also hoped that their involvement will help reduce cost of the survey as not only their manpower but also their

infrastructure and equipments could be deployed in the survey work. This was based on the assumption that they were willing to cooperate with the task of national survey, the Dental Council of India had taken up, as well as their own professional interest in this long over-due activity for the dental profession. Keeping this in mind, the technical group formed for this survey identified dental colleges and individuals with such an interest in each state whose involvement could be helpful in quality data collection work. The President, Dental Council of India, wrote to these identified individuals and dental colleges to seek their interest in this national effort. The response was very positive and almost all the invitees were very enthusiastic about their involvement. A list of the participating dental colleges is annexed **(Annexure-4).**

The first stage in this data collection work was to set up a Central Survey Unit at the Dental Council Office in Delhi to coordinate all the activities related to this survey in each state. Because of the limited resources, a small nucleus was set up in the office of DCI. This nucleus consisted of an experienced and senior public health dental surgeon whose services were requisitioned on deputation from the Municipal Corporation of Delhi, a full-time statistician and a part-time Consultant in survey techniques.

This Central Survey Unit worked out the fieldwork logistics to get maximum output at the minimum cost. It was decided to send two field teams together in one vehicle to cover one village in a day. Based on the pre-test and the experience of WHO Assessment Form, it was found that two field teams, each of two dentists and one worker of social science background could complete the field work in one village where 14 or more households were to be covered to interview/ examine 14 individuals of each of the five ages in one day. A team of two dentists were to examine mouth of the respondent and complete the WHO Assessment Form – one was to examine the mouth and the other was to record the observations. They were to interchange their roles in order to reduce the fatigue factor. The social science—background worker, the third member of the field team, was to complete the questionnaire related to awareness and practices of the respondents related to dental health.

The quality of data was given utmost consideration. It was decided that supervisors would continuously move with the field teams to guide the data collection work. They were to help the team not only to select the households (as per the study design) whose members were to be interviewed/ examined but will scrutinize the filled in forms before sending them to the state headquarter. Therefore, keeping in view the constraints of funds, it was decided that number of supervisors would be in the ratio of one supervisor for four field teams so that they can accompany the teams alternately (As stated earlier, two teams were to travel together to collect data).

After working out logistics of the fieldwork, it was necessary to identify a team involved in the survey in each state. Three types of persons were needed from each state, a Coordinator, a Supervisor and dentists to form field teams. The former was to coordinate all survey activities at state level and was to liaise with the Central Survey Unit. The latter was to supervise and guide the fieldwork activities of the state field teams (each consisting of two dentists and one with social science background), working under the overall direction of the state Coordinator. The Coordinators were all very senior, experienced persons with research bent of mind – the principals, deans or professors of the departments of Community Dentistry of the dental colleges. **(Annexure -5)**. The Technical Committee of the survey identified them. These Coordinators were asked to identify senior dental surgeons from the dental colleges as their field team supervisors in the ratio of one supervisor for four teams.

These Coordinators and Supervisors were to identify field teams for the fieldwork. The number of field teams was to be equal to the number of homogeneous zones/ regions in the state so that field work in a district could be completed in two-month period by one team. Again, two dentists/ dental surgeon/ interns for each team were to be taken from the dental colleges in the state. This was not only to reduce cost of salaries of these dentists but was meant to give them field experience in examination of the mouth under the guidance of supervisors.

2.5 CALIBRATION AND TRAINING

Before start of the work at state level, it was necessary that standardization should be done in the examination and recording of the dental problems. The examiners should have common standards for identifying the dental problems. The Dental Council of India collaborated with the Manipal Academy of Higher Education (MAHE) to organize a three-day training cum calibration Workshop at Manipal, Karnataka during March 2002. All the State Coordinators and their identified Supervisors were invited to this workshop. They were explained the sampling design, various study tools and the field logistics of data collection. They were taken to the field to practice selection of the sample households and fill the questionnaire related to the practices that affect the oral health. They were also taken to the dental chairs of the dental college of Manipal to examine mouths of the patients to decide the dental problems patients had. A good deal of discussion was held along with the Coordinators and the Supervisors to ensure that every body had a common and uniform understanding of the dental problems to record in the form. This exercise was continued till it was felt that every body (Coordinators and Supervisors) had a uniform understanding on how to measure dental problems. This calibration workshop helped in standardization of measurement of the dental problems, which was necessary to ensure comparability of data from state to state. This training of the Coordinators and Supervisors was the first stage; they had to train their field teams who were, actually, to collect data in the field.

2.6 CLINICAL ASSESSMENT AND CONSIDERATIONS

The information on the questions on behavioural practices was asked directly to the respondents and their answers recorded on the prescribed proforma. In the case of clinical assessment of oral health status, there was need for common and uniform understanding of recording criteria amongst field teams. Therefore, special efforts were made to standardize methods of assessment and the field teams were trained and calibrated accordingly. The details on how the clinical assessment was made and some considerations in clinical assessment are described below.

The recording criteria used for various oral health conditions were as prescribed and as described for pathfinder survey methodology in "Oral Health Surveys: Basic Methods", 4th Edition, 1997, WHO Geneva. The WHO Oral Health Assessment Form 1997 was used in the National Oral Health survey. All columns for the clinical data (column no. 32 to column no.180) were filled up by the teams in the field while conducting the survey for each individual.

The main instruments and utilities which formed a part of the field kit bag carried by each of the teams during the course of clinical examinations were:

1. Mouth Mirrors, Tweezers, Curved double ended probes and WHO CPI ball ended probes.
2. Supplies of cotton rolls, masks and gloves, cold sterilizing solution, alcohol or spirit, instrument trays and chittle forceps. The cold sterilizing solution was used in field conditions for the instruments although the sets of instruments were previously boiled for 20-30 minutes.

3. Lightweight folding chair for clinical dental examination of subjects.

4. Torches and batteries.

A portable, lightweight field chair was used to seat the subjects in such a manner that the head was placed aligned with the back of chair and the lower jaw was horizontal (parallel to the floor). Examinations were carried out in natural light (daylight) and a simple two-cell torch was used to illuminate the oral and dental tissues in the mouth. The examiner stood behind and on side of the subject while examining the subject. The combination of natural and torchlight was used to provide consistency of lighting during examinations of different subjects and provide sufficient light for clear visibility in the mouth. The torch was held in place by an assistant from within the team or from the community where the examinations were being carried out. (As stated earlier, all trainers were trained in Manipal training workshop to adopt this method. The teams in all states were trained to use this method to ensure that the approach and results were uniform and widely comparable.)

Clinical oral examinations were carried out by previously trained and calibrated dental surgeons who worked in pairs in the field while surveying subjects. The dental surgeons working in the field were normally interns, junior residents or other dental surgeons drawn from regional dental colleges carefully chosen for the task by senior faculty members responsible for the survey in their area. Two dental surgeons formed one clinical examination team. One member was the examiner, who examined the selected subject and called out the scores for each item of examination clearly. The other member was the Recorder, who again called out or repeated the scores loudly and clearly for the examiner to hear and either confirm or correct, as necessary, and then enter it in the appropriate place in the paper proforma for each subject examined. In order to avoid monotony and fatigue, the roles of the examiner and recorder were interchanged from time to time; they did not exchange their role during the course of any one examination.

The teams used instruments and utilities as mentioned above for the detection of caries, periodontal disease and most other conditions. Sufficient numbers of instruments were carried everyday by field teams after proper sterilization so that work was not interrupted due to the need to re-sterilize instruments.

The data was collected by the field teams led by their supervisors and scrutinized by the State Coordinators who forwarded the filled up forms to the Central Project Cell in the office of the Dental Council of India in New Delhi. In Delhi, the clinical data forms were scrutinized again by the central project team before sending them for analysis and preparation of tables.

The clinical findings are presented in Chapter VI of this report under the following broad heads:

1. Summary of Findings
2. Dental Caries Status and Treatment Need
3. Periodontal Disease Status
4. Malocclusion Status
5. Oral Cancers and other Oral Mucosal Lesions
6. Status of Dental Fluorosis

7. Other conditions:

   Extra Oral Lesions; TMJ Signs and Symptoms; Enamel Opacities and Hypoplasia; Prosthetic Status and Need; and Community Need for immediate Care and Referrals.

While the criteria used for recording caries is as described in the WHO manual, the data on caries status is presented in tables which also provide information on the distribution of subjects with mean values of dmft and DMFT. The following range is used :

Primary teeth (5 yr)	Permanent teeth (12 & 15 yr)	Permanent teeth (35-44 yr & 65-74 yr)
dmft = 0	DMFT = 0	DMFT = 0
dmft = 1 to 3	DMFT = 1 to 3	DMFT = 1 to 3
dmft = 4 to 5	DMFT = 4 to 7	DMFT = 4 to 8
dmft = 6 to 10	DMFT = 8 to 14	DMFT = 9 to 16
dmft = 11 to 15	DMFT = 15 to 21	DMFT = 17 to 24
dmft = 16 to 20.	DMFT = 22 to 28.	DMFT = 25 to 28.
		DMFT = 29 to 32.

A new approach to grouping of dmft/ DMFT by range according to the percentage of affected teeth in the mouth is introduced in this survey report. The first range is the dmft/ DMFT value of 1 to 3. This provides an estimate of subjects who had less than 4 teeth decayed, missing or filled. Further, the dentition has been divided into 4 equal parts (quarters) on the basis of the number of teeth (maximum being 20 for primary teeth and 28 or 32 for permanent teeth). Each quarter represents 25% of the teeth normally present. The ranges therefore reflect these four quarters in each case as explained above. The rationale for this distribution is to facilitate reporting in terms of the four quarters or percentage teeth that are decayed, missing or filled, out of the number of teeth normally present for the age group concerned.

The status of malocclusion has been presented based on the Dental Aesthetic Index (DAI) scores for the age groups 12 yr, 15 yr and 35-44 yr which were computed as per the WHO's instructions and are presented in the report.

The severity of malocclusion within a population is classified based on their Dental Aesthetic Index (DAI) Index scores. The regression equation (WHO 1997) used for calculating standard DAI scores is as follows:

(missing visible teeth x 6) + (crowding) + (spacing) + (diastema x 3) + (largest anterior maxillary irregularity) + (largest anterior mandibular irregularity) + (anterior maxillary overjet x 2) + (anterior mandibular overjet x 4) + (vertical anterior openbite x 4) + (antero-posterior molar relation x 3) + 13

2.7 FLUORIDE ESTIMATION IN DRINKING WATER SAMPLES

As stated earlier, the analysis of the drinking water samples from various states were directly sent by the various Regional Coordinators and received by M/s Medlar Laboratories Pvt Ltd., (a Unit of M/s CIPLA), Mumbai. Dr. P M Dixit, Chief Chemist, has provided the following information on the analysis procedure.

Medlar Labs used sophisticated equipment and intricate chromatographic separation methodology to analyse the water samples with accuracy and precision.

The analysis procedure was based on the Ion Chromatographic separation in Anion Exchange mode and Suppressed Conductivity detection. The basic separation is performed by anion exchange mechanism of water samples on high efficiency Ionpac AG 11RC and IonPac AS 11RC connected in series and elution (process of extracting one material from another by washing with a solvent to remove adsorbed material from an adsorbent) with sodium hydroxide mobile phase.

Under this technique, a standard stock solution of Fluoride (100 ppm F anion) is prepared (0 – 5.0 ppm) in order to build a calibration graph prior to the start of the analysis.

The actual water samples were thoroughly mixed by vigorously shaking and filtered through a 0.45 u Nylon membrane. The effluent was collected into a clean dry conical glass tube. This was used for the fluoride estimation. The actual water sample was loaded into the mobile phase container in the equipment where the container is connected to a pump and made to run on the system. After about 20 minutes of stabilization period, the actual concentration of Fluoride ion in the water is analysed.

The following modules were used to assemble the fluoride analyser:

1. Isocratic pump-M/s Dionex Corp., USA, IP 20 Pump (I. No. -1)
2. AS300 Auto sampler- M/s Thermo Separation Products
3. Conductivity Detector-M/s Dionex Corp., USA, Model CD 20, (I. No. 4)
4. Anion Self Regenerating Suppressor- M/s Dionex Corp., USA, Model ASRS Ultra.
5. IonPac AG 11RC, as guard column, 4 x 50 mm- M/s Dionex Corp., USA
6. IonPac AS 11RC, as analytical column, 4 x 250 mm- M/s Dionex Corp., USA.
7. WinchromEx, data acquisition software in personal computer, PC 2.

In order to confirm the system stability and performance, one standard stock solution of fluoride (strength 1.0 ppm) was injected after every 10 samples.

2.8 FIELD WORK EXPERIENCES

2.8.1 Pre-fieldwork activity

In order to get help and support in the fieldwork, it was felt necessary to get Government clearances from the right authorities. All concerned authorities were approached and permissions taken. The Census office was also approached for getting maps for the Census Enumeration Blocks (CEBs) or taking sample of households.

2.8.2 Identification and training of field teams

Three teams were formed, each consisting of two dentists and one social scientist. The dentists were taken from the dental faculty of the Regional Dental College while the social scientists were taken from the Faculty of Social Sciences of the university.

In the month of July, extensive training was given to the field teams. They were explained the questionnaire and logistics of the fieldwork. In order to make sure that these dentists followed the standardised methods of assessing and recording problems as decided in the Manipal training, the dentists were taken to the OPD of the Regional Dental College where they were given a thorough training on clinical examinations and on assessment of dental problems. **Annexure -6**

2.8.3 Fieldwork

After the classroom and dental college training, the teams were taken to the field to make sure that they had understood the method of selection of the households, interview the individuals, fill the questionnaires and undertake clinical examination of the dental problems. Once it was found that the teams had understood all the issues and were in a position to work independently, they were sent to the field.

Despite the extensive training, both in the class and in the field, the teams faced several initial problems. The Supervisors, who were accompanying the teams, helped them overcome these problems, acquire confidence and ensure smooth field operations.

The Supervisors were very alert to make sure that data was complete and consistent. They also ensured that all forms were scrutinised and corrected before they were submitted to the Coordinator.

In order to get cooperation from the respondents, the teams carried free samples of medicines and vitamins. These were distributed to the respondents to build the necessary equation with them. It was found that people in rural areas were more cooperative than those in the urban areas.

2.9 SCRUTINY OF DATA

As stated earlier, all efforts were made to ensure that quality of data was good. A senior-level person was moving with the teams to guide them in case of any doubts. He/ she was also responsible for scrutiny of the completed forms before the team returned from the field. It was his/ her responsibility to scrutinise the forms, if they could not be checked in the field. This scrutiny was necessary before they were submitted to the state Coordinator and then to the Central Survey Unit. The Coordinator was also responsible of scrutinising the forms, fully in the initial stages and then on sample basis before sending them to the Central Survey Unit in New Delhi.

The Central Survey Unit was particularly careful in scrutinising forms from each state. First two batches of forms from each survey team from each state were scrutinised to determine gaps in the form of blanks, wrong recording and inconsistencies. The Coordinators were immediately contacted in case such problems were spotted, both telephonically and by facsimile transmission. In such cases, the next batch again scrutinised carefully to ensure that deficiencies were not repeated. Subsequent to this initial scrutiny, the form was scrutinised on a sample basis to ensure that there had been no slackness – the fatigue factor should not affect the quality of data.

2.10 DATA ANALYSIS

In the absence of any resources for data analysis at the Dental Council of India, all the work relating to data entry, validity checks and production of desired tables (as per analysis plan) was contracted out to TNS MODE, an organisation with research experience in studies related to health. All efforts were also made to monitor work quality at this stage. The Central Survey Unit

had worked out the type of tables needed, and the level (Zone or Region/ State/ Country) for which such the analysis was needed. The necessary weights were also worked out to ensure that the estimates were valid for the level to which they related. These blank tables were given to the agency (TNS MODE) to complete. In order to ensure that the values given in each cell were right, the software package developed by TNS MODE was tested in a limited number of schedules by manually checking the results.

2.11 REPORT WRITING

The Central Survey Unit, Delhi prepared two reports, for Delhi and Maharashtra, as model reports after detailed discussions on the report and tabular format. Once these reports were ready, an effort was made to identify Coordinators who could find time and resources to write reports for their own states. The idea was to conduct a report writing workshop to orient them with the chapterisation plan, data tables of their own states and share with them the style of writing adopted in the model reports (Delhi and Maharashtra). This was felt necessary to make sure that all state reports were written in a uniform style/pattern. For other states, it was decided that the Central Survey Unit, Delhi would write the reports and send it to them for their modifications, if any. The Central Survey Unit also prepared all the sections and sub-sections of Chapters 1 (Introduction) and 2 (Methodology and Data Collection), which were to be common to all reports. These chapters were also given to the Coordinators involved in the report writing workshop.

Dr. S. G. Damle, Dean, Nair Dental Hospital, Mumbai & Director, Medical Education & Public Health, Municipal Corporation of Maharashtra, co-hosted the report writing workshop in Mumbai on January 10-11, 2004 where the staff of the Central Survey Unit discussed all the issues involved in writing the reports with Coordinators from the States of Andhra Pradesh, Goa, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Pondicherry, Punjab and Tamil Nadu. They were given two reports (models), a set of tables for their own state and even a CD containing raw data. They were told that their state report should adopt the format shown in the model reports; they could do more analysis, if needed, by using their own raw data. It was also decided and agreed that report should be ready in one month's time.

CHAPTER III

BACKGROUND CHARACTERISTICS OF SURVEYED POPULATION

3.1 CHARACTERISTICS OF HOUSEHOLDS

The characteristics of household are shown in Table 3.1. It may be noted that about 50 per cent households live in Pucca houses while another 28 per cent live in Semi-Pucca houses. Pucca houses were 29 per cent in rural areas and 60 per cent in urban areas.

Most of the households (about 61 per cent) had a monthly expenditure (proxy for household income) less than or equal to Rs. 2,500. This income level was found more among rural respondents. In the case of urban areas, 37 per cent respondents reported their monthly expenditure of Rs. 2,501-5,500.

About 89 per cent households in the state was of Hindu, followed by 4 per cent Muslims and 8 per cent Christians.

Other Backward Castes (OBCs) comprised of 78 per cent of the households followed by Scheduled Castes (10 per cent) and Scheduled Tribes (3 per cent).

98 per cent of the households cited taps as their main source of drinking water, and only 2 per cent were using tubewells or handpumps. Piped water supply was slightly higher in urban areas.

Rice was the staple food of the people. Almost 94 per cent of the households reported that they were non-vegetarians.

CHARACTERISTICES OF HOUSEHOLDS SURVEYED (SUMMING UP)

1. About half of the households, more in urban had pucca houses to live.
2. About 61 percent, more in rural reported monthly expenditure of Rs 2500 & below.
3. 89 percent of the households belonged to Hindus.
4. 78 percent of households belonged to Other Backward classes.
5. Almost all reported getting drinking water from taps.
6. Rice reported the staple food of almost all & 94 percent reported non-vegetarian.

Table 3.1 Percent distribution of the households by characteristics

STATE : Pondicherry

	Household Characterstics		STATE		
			R	U	T
1	**Type of household**	**n=1225**	**822**	**403**	**1225**
	Kuccha	22.0	45.1	11.7	22.0
	Semi Pucca	28.0	26.4	28.8	28.0
	Pucca	49.9	28.5	59.6	49.9
2	**Monthly expenditure (in Rs.)**				
	<= 2500	60.9	79.5	52.6	60.9
	2,501 - 5,500	31.5	19.1	37.0	31.5
	5,501 - 10,000	6.3	1.3	8.4	6.3
	10,000 +	1.4	0.1	2.0	1.4
3	**Religon**				
	Hindus	88.6	94.8	85.9	88.6
	Muslims	3.6	4.4	3.2	3.6
	Sikhs	0.2	0.2	0.2	0.2
	Christians	7.6	0.6	10.7	7.6
4	**Caste**				
	Scheduled Caste	9.6	23.7	3.2	9.6
	Scheduled Tribe	2.6	2.3	2.7	2.6
	Other Backward Classes	78.2	66.2	83.6	78.2
	Others	9.6	7.8	10.4	9.6
5	**Sources of drinking water**				
	Pipe/tap	97.7	95.9	98.5	97.7
	Tubewell/handpump	2.0	3.8	1.2	2.0
	Others	0.3	0.4	0.2	0.3
6	**Staple food**				
	Wheat	2.3	4.0	1.5	2.3
	Rice	97.6	95.6	98.5	97.6
7	**Nature of food**				
	Vegetarian	6.4	5.8	6.7	6.4
	Non-vegetarian	93.6	94.2	93.3	93.6

3.2 PROFILE OF POPULATION

3.2.2 12 year olds

3.2.2.1 Educational levels

The literacy level in this age group was nearly 100 per cent. About 98 per cent of the respondents had education up to the middle level and the rest reported education up to high school and above (Table 3.2.2).

Table 3.2.2Percent distribution of 12 years old by educational level and media exposure, sex & geographical area.

AGE: 12 yrs STATE : Pondicherry

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**102**	**54**	**156**	**108**	**54**	**162**	**318**
	Illiterate		0.0	0.0	0.0	0.9	1.9	1.6	**0.8**
	Upto middle		99.0	100.0	99.7	96.3	96.3	96.3	**98.0**
	High school & above		1.0	0.0	0.3	2.8	1.9	2.1	**1.2**
2	**Newspaper reading habits**								
3	**Radio listening habits**								
4	**TV watching habits**								
	Daily								
	Sometimes								
	Not at all								
5	**Cinema watching habits**								
	Once in 3 months								
	Less often								
	Not at all								

3.2.3 15 year olds

3.2.3.1 Educational levels

Almost all reported literate. About 40 percent of respondents, more males & more in urban had education up to middle. While other about 60 percent, more females & more in rural were high school & above in the state. (Table 3.2.3)

3.2.3.2 Exposure to media

About 16 per cent of respondents in this age group reported reading newspapers daily but this percentage in the urban areas was higher, and was more for males than females.

Exposure to radio was limited in the state – more than 51 per cent reported no exposure to radio. In contrast, only 8 per cent of the respondents reported no exposure to TV. The exposure to cinema, at least once in three months or less often, was only 5 per cent.

Table 3.2.3 Percent distribution of 15 years old by educational level and media exposure, sex & geographical area.

AGE: 15 yrs STATE : Pondicherry

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**104**	**51**	**155**	**105**	**54**	**159**	**314**
	Illiterate		1.0	0.0	0.3	0.0	0.0	0.0	**0.2**
	Upto middle		37.5	47.1	44.1	38.1	35.2	36.1	**40.1**
	High school & above		61.5	52.9	55.6	61.9	64.8	63.9	**59.8**
2	**Newspaper reading habits**								
	Daily		12.5	19.6	17.4	7.6	16.7	14.0	**15.7**
	Sometimes		31.7	19.6	23.4	21.9	33.3	29.9	**26.7**
	Not at all		55.8	60.8	59.2	70.5	50.0	56.1	**57.7**
3	**Radio listening habits**								
	Daily		16.3	5.9	9.1	13.3	3.7	6.6	**7.9**
	Sometimes		35.6	41.2	39.4	38.1	44.4	42.5	**41.0**
	Not at all		48.1	52.9	51.4	48.6	51.9	50.9	**51.2**
4	**TV watching habits**								
	Daily		77.9	88.2	85.0	81.9	90.7	88.1	**86.6**
	Sometimes		14.4	7.8	9.9	4.8	0.0	1.4	**5.7**
	Not at all		7.7	3.9	5.1	13.3	9.3	10.5	**7.8**
5	**Cinema watching habits**								
	Once in 3 months		4.8	5.9	5.6	4.8	3.7	4.0	**4.8**
	Less often		54.8	58.8	57.6	35.2	42.6	40.4	**49.0**
	Not at all		40.4	35.3	36.9	60.0	53.7	55.6	**46.3**

3.2.4 35-44 year olds

3.2.4.1 Educational level

About 16 per cent of respondent in this age group was illiterate; more females, and more in the rural areas (Table 3.2.4). While about 39 percent, more females & 45 percent, more males had education up to Middle and High School & above respectively in the state.

3.2.4.2 Exposure to media

About 28 per cent of respondents in this age group reported reading newspapers daily (19 per cent females and 36 per cent males). Urban areas had much greater exposure than rural areas. Daily exposure to radio was only 13 per cent.

TV viewership in this age group of respondents was high at 82 per cent, more in urban areas. Not much exposure was found to cinema, with about 3 per cent viewing cinema once in three months.

Table 3.2.4 Percent distribution of 35-44 years old by educational level and media exposure, sex & geographical area.

AGE: 35-44 yrs STATE : Pondicherry

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	Illiterate		16.2	12.7	13.8	28.6	13.2	17.9	**15.9**
	Upto middle		40.0	25.5	29.8	49.5	47.2	47.9	**38.9**
	High school & above		43.8	61.8	56.5	21.9	39.6	34.3	**45.4**
2	**Newspaper reading habits**								
	Daily		30.5	38.2	35.9	11.4	22.6	19.2	**27.6**
	Sometimes		21.0	27.3	25.4	18.1	17.0	17.3	**21.4**
	Not at all		48.6	34.5	38.7	70.5	60.4	63.4	**51.1**
3	**Radio listening habits**								
	Daily		21.9	12.7	15.4	9.5	11.3	10.8	**13.1**
	Sometimes		36.2	34.5	35.0	25.7	34.0	31.5	**33.3**
	Not at all		41.9	52.7	49.5	64.8	54.7	57.8	**53.7**
4	**TV watching habits**								
	Daily		66.7	89.1	82.5	74.3	83.0	80.4	**81.5**
	Sometimes		6.7	7.3	7.1	5.7	7.5	7.0	**7.1**
	Not at all		26.7	3.6	10.4	20.0	9.4	12.6	**11.5**
5	**Cinema watching habits**								
	Once in 3 months		7.6	3.6	4.8	2.9	0.0	0.9	**2.9**
	Less often		34.3	67.3	57.5	18.1	37.7	31.8	**44.7**
	Not at all		58.1	29.1	37.7	79.0	62.3	67.4	**52.6**

3.2.5 65-74 year olds

3.2.5.1 Educational levels

In this age group, about 56 per cent of the respondents were illiterate (79 per cent females and 32 per cent males) (Table 3.2.5). As expected, literacy level was higher in the urban areas and among males.

3.2.5.2 Exposure to media

Educational levels clearly affect the reading habits of a population. Only 14 per cent of the respondents in this age group were reading newspaper daily with more males (24 per cent) than females (4 per cent). Again, readership was higher in the urban areas than in the rural areas. 79 percent more females & more in rural did not read newspaper at all.

Exposure to radio was much lower especially in the rural areas where only 6 per cent females as against 14 per cent males reported listening to radio daily.

Table 3.2.5 Percent distribution of 65-74 years old by educational level and media exposure, sex & geographical area.

AGE: 65-74 yrs STATE : Pondicherry

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	Illiterate		45.4	26.0	32.2	88.6	74.5	78.7	**55.5**
	Upto middle		44.4	44.0	44.1	9.5	23.6	19.5	**31.8**
	High school & above		10.2	30.0	23.6	1.9	1.8	1.8	**12.7**
2	**Newspaper reading habits**								
	Daily		13.9	28.0	23.5	0.0	5.5	3.8	**13.7**
	Sometimes		16.7	12.0	13.5	1.9	0.0	0.6	**7.1**
	Not at all		69.4	60.0	63.0	98.1	94.5	95.6	**79.3**
3	**Radio listening habits**								
	Daily		13.9	6.0	8.5	5.7	5.5	5.5	**7.0**
	Sometimes		24.1	34.0	30.8	7.6	18.2	15.1	**23.0**
	Not at all		62.0	60.0	60.7	86.7	76.4	79.4	**70.1**
4	**TV watching habits**								
	Daily		46.3	68.0	61.0	32.4	72.7	60.8	**60.9**
	Sometimes		7.4	14.0	11.9	10.5	7.3	8.2	**10.1**
	Not at all		46.3	18.0	27.1	57.1	20.0	31.0	**29.1**
5	**Cinema watching habits**								
	Once in 3 months		2.8	0.0	0.9	0.0	1.8	1.3	**1.1**
	Less often		10.2	16.0	14.1	5.7	5.5	5.5	**9.8**
	Not at all		87.0	84.0	85.0	94.3	92.7	93.2	**89.1**

Exposure to TV was comparatively much higher among the media. About 61 percent across both sexes & more in urban had watched TV daily.

Exposure to cinema was very low, with only 1 per cent respondents reported watched cinema once in 3 months.

PROFILE OF POPULATION ACROSS AGE GROUPS (SUMMING UP)

1. The percent of illiterate increased with the increase in the age of respondents. On an average about 18 percent of the respondents across age groups were illiterate.
2. With regard to exposure to media, TV was found to be the most utilised media. Analysis of daily habits across age groups revealed that 76 per cent had watched TV while 19 per cent had read newspapers and 9 per cent had listened to the radio daily. Exposure to cinema was very low, with only 3 per cent respondents across age groups had watched cinema once in 3 months.

CHAPTER IV

MAPPING OF FLUORIDE LEVELS

4.1 INTRODUCTION

As stated in Chapter 2 (Objectives), one of the objectives of the National Oral Health Survey was to map the fluoride levels in different parts of the country. For this purpose, the field teams were expected to collect drinking water samples from the households they visited for collection of information related to oral health practices and the current situation of oral health. This chapter presents results of the analysis of fluoride levels from such water samples.

4.2 COLLECTION OF WATER SAMPLES

The field teams were given the following instructions about collection of water samples from the households they visited:

1. Each team would carry along with it a set of sterilised plastic bottles. These bottles had been specially ordered for the purpose of the survey from a Hyderabad-based manufacturer and had the following characteristics:

(1) A capacity of 500 ml as had been recommended by M/s Medlar Labs, Mumbai, where the water samples were to be analysed for fluoride levels. (M/s Medlar Labs have since accepted that a sample of even 200 ml would have been enough). This quantity of water was decided to take account of any possible spillage during transportation.

(2) The plastic was of a quality able to withstand transportation pressures, first from Hyderabad to each state where the survey was being conducted, then with the field teams and then to Mumbai where the samples were sent for analysis.

(3) The bottles were sterilised to ensure that samples did not get contaminated, and

(4) Two corks were provided for each bottle so as to minimise any spillage and ensure the M/s Medlar Labs got sufficient quantity of water to analyse the fluoride levels.

2. Each field team was instructed to collect water samples from the first household they visited every day. Subsequent samples were to be collected only if the sources of supply were different from that in the first house. In other words, water samples were collected from all sampled households that had different sources of drinking water in the area of coverage. It means that water samples were collected from a representative sample of households of the villages/urban blocks. Since the villages and urban areas were themselves representative of the other areas of zones/states, the water samples collected were representative of all the area units of the zones/states.

3. All water sample bottles had to carry identification particulars of the household, including the state, zone and serial number given to the household for the purpose of the survey Thus, every household covered had a unique serial number within a zone. The water sample bottles were labelled with this number, thereby uniquely matching each sample with the information on oral health collected from that household.

4. This linkage of the water sample with other information from the household was done for two purposes. The first was that the collected household drinking water samples would represent the situation of water supply in rural and urban households in the zone and ultimately that of the state (after proper weights had been assigned to the rural and urban areas). This analysis would help map the fluoride levels in different areas of the state and the country. The other purpose was to try to link the fluoride levels in drinking water, with the oral health related dental practices and the actual status of oral health of the households and individuals.

4.3 ANALYSIS OF WATER SAMPLES

Since analysis of water samples for their fluoride levels requires special equipment, Dr. R. K. Bali, the President, Dental Council of India, contacted Colgate-India for help. Colgate-India, which has been very supportive of effort of the Dental Council of India in conducting the National Oral Health Survey having also provided financial assistance for it, agreed to his request and nominated M/s Medlar Labs, Mumbai for such analysis.

The methodology M/s Medlar Labs adopted for analysing the fluoride levels has been described in section 2.3.3 of the chapter on Methodology and Data Collection.

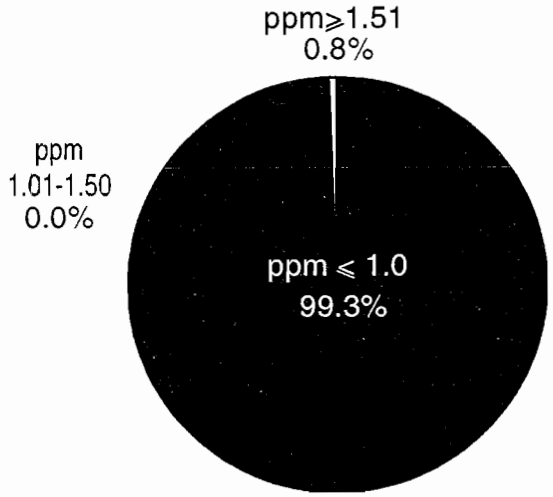
4.4 FINDINGS

The fluoride levels in different regions, rural, urban areas and total Pondicherry are shown in Table 4.1. A graphical representation of prevailing fluoride levels is given in Fig. 4.1

Table 4.1 Percent distribution of water samples by levels of fluoride in rural, urban and total Pondicherry.

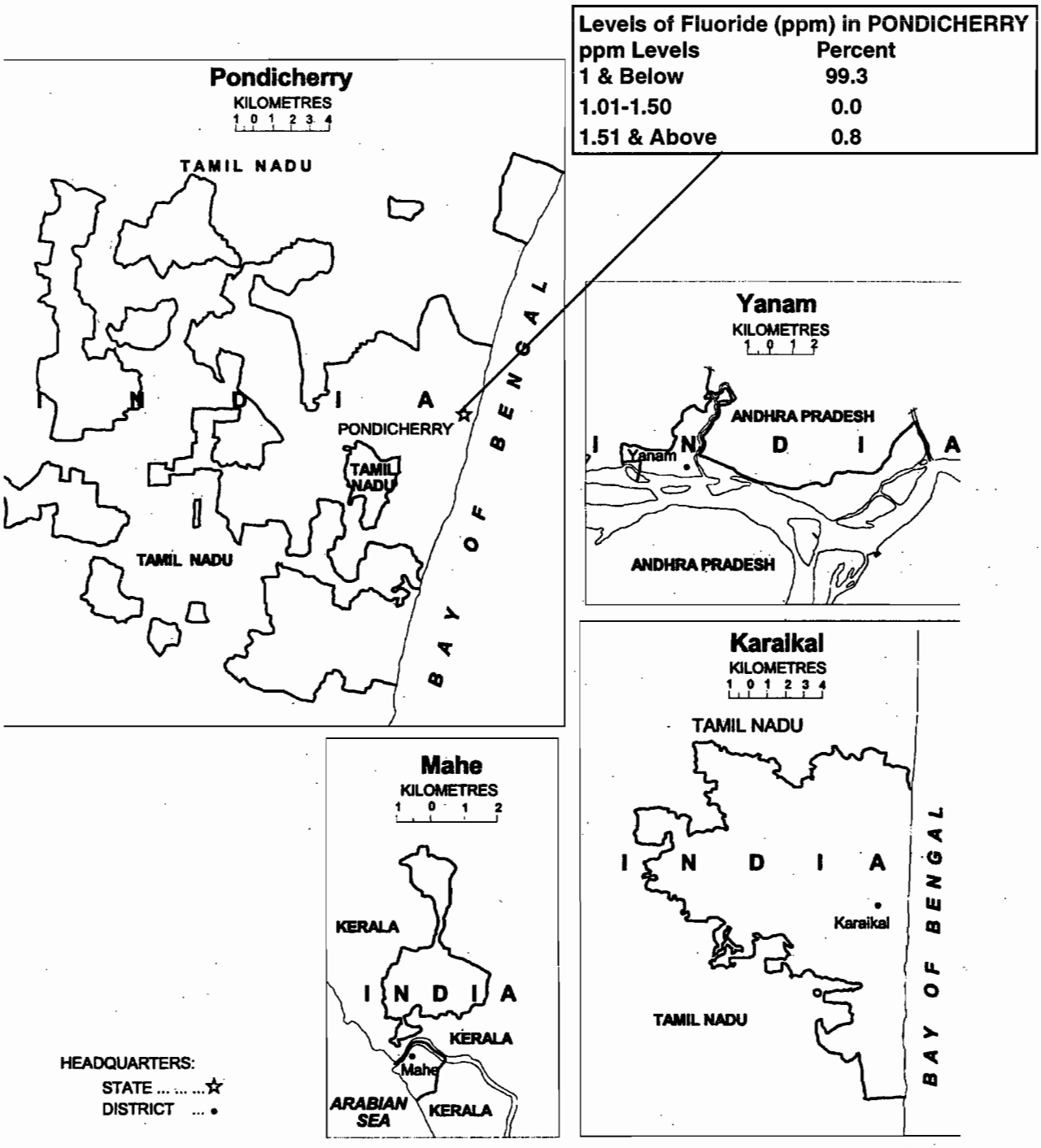
Levels of fluoride (ppm)	% distribution of water samples		
	Rural	Urban	Total
0.0 – 0.5	95.5	100.0	97.4
0.51 – 1.00	3.2	0.0	1.9
1.01 – 1.50	0.0	0.0	0.0
1.51 – 2.00	1.3	0.0	0.8
2.01 – 4.00	0.0	0.0	0.0
4.01 – 8.00	0.0	0.0	0.0
8.01+	0.0	0.0	0.0

Fig. 4.1 Drinking water levels of fluoride in PONDICHERRY



The fluoride levels in the water of Pondicherry are quite low –all the households (100 per cent) have fluoride levels of 0.0-0.5 ppm. The situation is similar in rural and urban areas except that about 1.3 per cent households in rural areas have reported fluoride levels between 1.5 –2.0 ppm.

Fig. 4.2 Drinking water levels of Fluoride (ppm) in PONDICHERRY, INDIA



CHAPTER V

ORAL HEALTH KNOWLEDGE AND PRACTICES

A series of questions were asked on food habits and other habits/practices that could affect oral health duringthesurvey. Prevalence of each of those practices for different ages/age groups, males and females, rural and urban areas and for each Region is discussed in this chapter. These figures should help suggest appropriate educational activities to improve practices related to oral health and thus improve oral health of the population.

5.1 ABNORMAL ORAL HABITS

Five questions on abnormal habits, "breathing from mouth", "habit of sucking or biting fingers or thumb", "thrusting tongue on teeth", "biting nails, lips or objects like pencil", and "habit of grinding/gritting teeth" were enquired from each adult respondent (from his/her caretaker for a child). Responses are reported in Table 5.1.

Except the habit of "sucking or biting fingers/thumbs in 8 percent of respondents of age 5, 12, & 15 years respectively, Overall prevalence of these practices were generally very low across age groups.

ABNORMAL ORAL HABITS ACROSS AGE GROUPS (SUMMING UP)

Except the habit of "sucking or biting fingers/thumbs" which contributed a major habit in 5 year age group & continued in children up to 15 year age, the occurrence of each of habit across all age was very low.

5.2 SWEETS/SUGAR-TAKING HABITS

Since sweets/sugar eating habits affect oral health, the respondents were asked how many times they had taken sugar during the last 24 hours. (Table 5.2 and Fig. 5.1)

(1) There was increase in the percent not taken sugar in last 24 hours with the increase in their age. On an average about 72 per cent respondents across age groups and across sexes did not take sugar/sweets at all in the last 24 hours. However, it was seen that intake decreased with age in both rural and urban areas.

The percentage of subjects who had taken sweets more than two times across ages was 8 per cent, slightly more in rural areas.

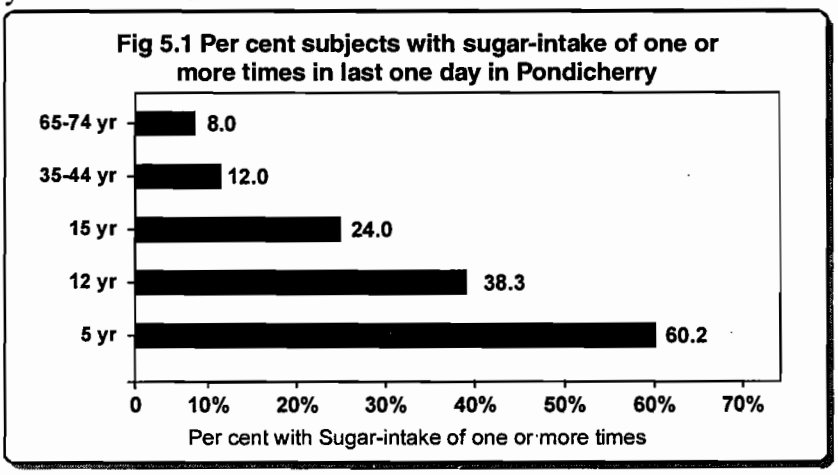


Fig 5.1 Per cent subjects with sugar-intake of one or more times in last one day in Pondicherry

Table 5.1 Percent respondents by habits affecting oral health age, sex & geographical area.

AGE: 5 yrs **STATE : Pondicherry**

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	106	52	158	103	53	156	314
1	Breathing from mouth		0.0	1.9	1.3	1.9	0.0	0.6	1.0
2	Sucking or biting fingers/thumb		7.5	5.8	6.3	5.8	11.3	9.7	8.0
3	Thrusting tongue on teeth		1.9	1.9	1.9	1.9	5.7	4.5	3.2
4	Biting nails/lips/objects like pencil		8.5	5.8	6.6	5.8	3.8	4.4	5.5
5	Grinding / gritting teeth		2.8	3.8	3.5	2.9	0.0	0.9	2.2

AGE: 12 yrs **STATE : Pondicherry**

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	102	54	156	108	54	162	318
1	Breathing from mouth		4.9	0.0	1.4	1.9	0.0	0.6	1.0
2	Sucking or biting fingers/thumb		6.9	13.0	11.2	8.3	3.7	5.1	8.2
3	Thrusting tongue on teeth		1.0	0.0	0.3	1.9	0.0	0.6	0.5
4	Biting nails/lips/objects like pencil		5.9	0.0	1.7	4.6	1.9	2.7	2.2
5	Grinding / gritting teeth		4.9	3.7	4.1	3.7	0.0	1.1	2.6

AGE: 15 yrs **STATE : Pondicherry**

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	104	51	155	105	54	159	314
1	Breathing from mouth		1.9	0.0	0.6	3.8	0.0	1.1	0.9
2	Sucking or biting fingers/thumb		6.7	7.8	7.5	7.6	9.3	8.8	8.2
3	Thrusting tongue on teeth		1.0	0.0	0.3	3.8	1.9	2.4	1.4
4	Biting nails/lips/objects like pencil		3.8	0.0	1.2	6.7	1.9	3.3	2.3
5	Grinding / gritting teeth		4.8	0.0	1.5	1.0	0.0	0.3	0.9

AGE: 35-44 yrs **STATE : Pondicherry**

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	105	55	160	105	53	158	318
1	Breathing from mouth		0.0	1.8	1.3	1.9	1.9	1.9	1.6
2	Sucking or biting fingers/thumb		1.9	0.0	0.6	1.0	1.9	1.6	1.1
3	Thrusting tongue on teeth		0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Biting nails/lips/objects like pencil		1.0	0.0	0.3	0.0	0.0	0.0	0.2
5	Grinding / gritting teeth		4.8	0.0	1.4	3.8	0.0	1.2	1.3

AGE: 65-74 yrs **STATE : Pondicherry**

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	108	50	158	105	55	160	318
1	Breathing from mouth		1.9	0.0	0.6	1.9	0.0	0.6	0.6
2	Sucking or biting fingers/thumb		0.9	0.0	0.3	0.0	0.0	0.0	0.2
3	Thrusting tongue on teeth		0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	Biting nails/lips/objects like pencil		0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Grinding / gritting teeth		4.6	0.0	1.5	2.9	0.0	0.8	1.2

Table 5.2 Percent respondents by pattern of sugar in take, age, sex & geographical area.

AGE: 5 yrs — STATE : Pondicherry

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	106	52	158	103	53	156	314
1	Not taken		36.8	40.4	39.3	37.9	41.5	40.4	39.9
2	Taken one time		21.7	17.3	18.7	20.4	17.0	18.0	18.4
3	Taken two times		16.0	23.1	20.9	16.5	9.4	11.5	16.2
4	Taken 2+ times		25.5	19.2	21.2	25.2	32.1	30.0	25.6

AGE: 12 yrs — STATE : Pondicherry

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	102	54	156	108	54	162	318
1	Not taken		64.7	61.1	62.2	62.0	61.1	61.4	61.8
2	Taken one time		13.7	11.1	11.9	17.6	16.7	16.9	14.4
3	Taken two times		7.8	14.8	12.8	9.3	14.8	13.1	13.0
4	Taken 2+ times		13.7	13.0	13.2	11.1	7.4	8.5	10.9

AGE: 15 yrs — STATE : Pondicherry

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	104	51	155	105	54	159	314
1	Not taken		76.9	80.4	79.3	74.3		72.8	76.1
2	Taken one time		13.5	5.9	8.2	15.2	14.8	14.9	11.6
3	Taken two times		4.8	7.8	6.9	8.6	9.3	9.1	8.0
4	Taken 2+ times		4.8	5.9	5.6	1.9	3.7	3.2	4.4

AGE: 35-44 yrs — STATE : Pondicherry

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	105	55	160	105	53	158	318
1	Not taken		92.4	85.5	87.5	88.6	88.7	88.6	88.1
2	Taken one time		4.8	7.3	6.5	8.6	7.5	7.9	7.2
3	Taken two times		1.0	7.3	5.4	1.9	3.8	3.2	4.3
4	Taken 2+ times		1.9	0.0	0.6	1.0	0.0	0.3	0.5

AGE: 65-74 yrs — STATE : Pondicherry

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	108	50	158	105	55	160	318
1	Not taken		89.8	94.0	92.7	89.5	92.7	91.8	92.3
2	Taken one time		9.3	4.0	5.7	8.6	5.5	6.4	6.1
3	Taken two times		0.9	0.0	0.3	1.0	1.8	1.6	1.0
4	Taken 2+ times		0.0	2.0	1.4	1.0	0.0	0.3	0.9

(2) There was no significant differences in sugar intake among males and females.

SWEET/SUGAR-TAKING HABITS ACROSS AGE GROUPS (SUMMING UP)

1. The percent of not takers of sugar increased with the increase in their age.
2. The percent of taking sweet/sugar more than two times in last 24 hours decreased significantly with increase in the age of respondents.

5.3 ORAL HYGIENE PRACTICES

A series of questions were asked about oral hygiene practices, like how teeth are cleaned, what material is used to clean them, whether this is fluoridated or not, how often teeth are cleaned and whether and how often mouth is rinsed after meals. The responses to these questions are shown in Tables 5.3.1 to 5.3.5 and Fig. 5.2 are discussed in the sections below by age group of the respondents.

5.3.1 5 year olds

About 92 per cent, more males & more in urban areas reported use of tooth brush to clean teeth. Almost all reported cleaning teeth once a day.

About 54 percent, more females & more in rural had changed tooth brushes once in 1-3 months. While other more males & more in urban had changed tooth brushes once in 4-6 months. **Table 5.3.1**

About 83 per cent children were using toothpaste. More subjects in urban areas used toothpaste (88 per cent) than in the rural areas (71 per cent). The situation was the same across both sexes. However, fluoridated toothpaste/powder was used by 17 per cent.

On rinsing practices, about 19 per cent reported doing so after every meal, more in rural areas. Another 48 per cent had rinsed their mouth "sometimes".

5.3.2 12 year olds

About 93 per cent children in this age group reported the use of toothbrush in the state – about 86per cent in rural areas and 95per cent in urban areas (Tables 5.3.2) About 59 per cent of respondents changed their toothbrushes once in 1-3 months, slightly more in rural areas.

Toothpaste was used by about 77 per cent. Toothpaste was more popular in urban areas where 84 per cent reported using the same. However, use of fluoridated toothpaste/tooth powder was lower at 13 per cent.

About 98 per cent reported cleaning their teeth once a day – this was higher in the rural areas as compared to urban areas.

About 42 per cent of the respondents reported rinsing their mouth after every meal, and more in the urban areas. Another 25 per cent had rinsed their mouth "sometimes".

Table 5.3.1 Percent 5 year olds by oral hygiene practices, sex & geographical area.

AGE: 5 yrs STATE : Pondicherry

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**106**	**52**	**158**	**103**	**53**	**156**	**314**
	finger		7.5	1.9	3.7	14.6	7.5	9.6	**6.7**
	brush		92.5	96.2	95.0	84.5	90.6	88.7	**91.9**
	datun		0.0	1.9	1.3	1.0	1.9	1.6	**1.5**
	others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Frequency of cleaning teeth**	n=	**106**	**51**	**157**	**102**	**52**	**154**	**311**
	Once a day		99.1	100.0	99.7	100.0	100.0	100.0	**99.9**
	Twice a day		0.9	0.0	0.3	0.0	0.0	0.0	**0.2**
	After every meal		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Material used for cleaning teeth**								
	Tooth paste		73.6	92.2	86.3	67.6	84.6	79.5	**82.9**
	Tooth powder		25.5	5.9	12.0	30.4	7.7	14.5	**13.3**
4	**Type of toothpaste/ powder**	n=	**105**	**50**	**155**	**100**	**48**	**148**	**303**
	Flouridated		18.1	18.0	18.0	15.0	16.7	16.1	**17.1**
	Non flouridated		78.1	82.0	80.8	81.0	81.3	81.2	**81.0**
5	**Change of toothbrush once in**	n=	**98**	**50**	**148**	**87**	**48**	**135**	**283**
	1-3 months		58.2	48.0	51.1	59.8	54.2	55.8	**53.5**
	4-6 months		35.7	40.0	38.7	31.0	29.2	29.7	**34.2**
	6 + months		6.1	12.0	10.2	9.2	16.7	14.5	**12.4**
6	**Rinse mouth after eating**	n=	**106**	**52**	**158**	**103**	**53**	**156**	**314**
	Sometimes		36.8	50.0	45.9	41.7	52.8	49.5	**47.7**
	Always		32.1	15.4	20.5	25.2	13.2	16.8	**18.7**

Table 5.3.2 Percent 12 year olds by oral hygiene practices, sex & geographical area.

AGE: 12 yrs STATE : Pondicherry

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**102**	**54**	**156**	**108**	**54**	**162**	**318**
	finger		12.7	3.7	6.4	8.3	3.7	5.1	**5.8**
	brush		82.4	96.3	92.2	88.9	94.4	92.7	**92.5**
	datun		2.9	0.0	0.9	0.0	0.0	0.0	**0.5**
	others		2.0	0.0	0.6	2.8	1.9	2.1	**1.4**
2	**Frequency of cleaning teeth**	n=	**97**	**54**	**151**	**105**	**53**	**158**	**309**
	Once a day		100.0	98.1	98.7	100.0	98.1	98.7	**98.7**
	Twice a day		0.0	1.9	1.3	0.0	1.9	1.3	**1.3**
	After every meal		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Material used for cleaning teeth**								
	Tooth paste		55.7	85.2	76.8	63.8	83.0	77.2	**77.0**
	Tooth powder		42.3	14.8	22.6	35.2	15.1	21.2	**21.9**
4	**Type of toothpaste/ powder**	n=	**95**	**54**	**149**	**104**	**52**	**156**	**305**
	Flouridated		9.5	11.1	10.7	16.3	13.5	14.3	**12.5**
	Non flouridated		81.1	88.9	86.7	80.8	84.6	83.4	**85.1**
5	**Change of toothbrush once in**	n=	**84**	**52**	**136**	**96**	**51**	**147**	**283**
	1-3 months		65.5	57.7	59.7	59.4	58.8	59.0	**59.4**
	4-6 months		22.6	28.8	27.2	32.3	33.3	33.0	**30.1**
	6 + months		10.7	13.5	12.7	8.3	7.8	8.0	**10.4**
6	**Rinse mouth after eating**	n=	**102**	**54**	**156**	**108**	**54**	**162**	**318**
	Sometimes		33.3	22.2	25.5	35.2	20.4	24.9	**25.2**
	Always		35.3	42.6	40.5	37.0	46.3	43.5	**42.0**

5.3.3 15 year olds

About 96 percent across both sexes & more in urban reported the use of tooth brush to clean teeth in the state. About 60 percent, more females & more in rural reported the change of tooth brushes once in 1-3 months. While 27 percent more males and more in urban had changed tooth brushes once in4-6 months. The rest more females & more in urban area were changing tooth brushes after six months of use.

About 80 percent, more males & more urban was using tooth paste. But only 16 percent, more males & across places of residence had used fluoridated tooth paste/powder. 53 percent more males & more in urban were rinsing mouth always.

5.3.4 35-44 year olds

About 89 per cent of the respondents in this age group reported the use of toothbrush to clean their teeth. – about 77 per cent in rural areas and 94 per cent in urban areas (Table 5.3.4). About 51 per cent of the respondents had changed their toothbrushes once in three months. Another one third of the users had replaced their toothbrushes once in four to six months.

A high 96 per cent of the respondents said they cleaned their teeth once a day. Not much difference was noticed between males and females in this regard, but were little more in rural areas.

The use of toothpaste was reported by about 81 per cent (69 per cent in the rural areas against 85 per cent in the urban areas. More males used toothpaste. The use of fluoridated toothpaste was reported by only 12 per cent respondents, and more in rural areas.

About 60 per cent of the population reported rinsing their mouth after every meal (nearly 53 per cent in rural areas and 62 per cent in urban areas).

Table 5.3.3 Percent 15 year olds by oral hygiene practices, sex & geographical area.

AGE: 15 yrs STATE : Pondicherry

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**104**	**51**	**155**	**105**	**54**	**159**	**314**
	finger		4.8	0.0	1.5	12.4	1.9	5.0	**3.3**
	brush		92.3	98.0	96.3	87.6	98.1	95.0	**95.7**
	datun		2.9	2.0	2.2	0.0	0.0	0.0	**1.1**
	others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Frequency of cleaning teeth**	n=	**101**	**50**	**151**	**105**	**54**	**159**	**310**
	Once a day		99.0	96.0	96.9	98.1	100.0	99.4	**98.2**
	Twice a day		1.0	4.0	3.1	1.9	0.0	0.6	**1.9**
	After every meal		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Material used for cleaning teeth**								
	Tooth paste		65.3	90.0	82.4	67.6	81.5	77.3	**79.9**
	Tooth powder		33.7	10.0	17.3	29.5	18.5	21.8	**19.6**
4	**Type of toothpaste/ powder**	n=	**100**	**50**	**150**	**102**	**54**	**156**	**306**
	Flouridated		18.0	20.0	19.4	12.7	13.0	12.9	**16.2**
	Non flouridated		81.0	80.0	80.3	82.4	85.2	84.4	**82.4**
5	**Change of toothbrush once in**	n=	**96**	**50**	**146**	**92**	**53**	**145**	**291**
	1-3 months		67.7	52.0	56.7	63.0	62.3	62.5	**59.6**
	4-6 months		21.9	38.0	33.2	28.3	18.9	21.5	**27.4**
	6 + months		10.4	10.0	10.1	8.7	18.9	16.1	**13.1**
6	**Rinse mouth after eating**	n=	**104**	**51**	**155**	**105**	**54**	**159**	**314**
	Sometimes		27.9	13.7	18.1	29.5	16.7	20.5	**19.3**
	Always		48.1	58.8	55.5	45.7	53.7	51.3	**53.4**

Table 5.3.4 Percent 35-44 year olds by oral hygiene practices, sex & geographical area.

AGE: 35-44 yrs **STATE : Pondicherry**

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	finger		8.6	1.8	3.8	16.2	7.5	10.2	**7.0**
	brush		72.4	96.4	89.3	81.0	92.5	89.0	**89.2**
	datun		19.0	0.0	5.6	1.9	0.0	0.6	**3.1**
	others		0.0	1.8	1.3	1.0	0.0	0.3	**0.8**
2	**Frequency of cleaning teeth**	n=	**85**	**54**	**139**	**102**	**53**	**155**	**294**
	Once a day		97.6	94.4	95.3	96.1	96.2	96.2	**95.8**
	Twice a day		2.4	5.6	4.7	3.9	1.9	2.5	**3.6**
	After every meal		0.0	0.0	0.0	0.0	1.9	1.3	**0.7**
3	**Material used for cleaning teeth**								
	Tooth paste		75.3	90.7	86.8	61.8	79.2	74.1	**80.5**
	Tooth powder		21.2	9.3	12.3	30.4	18.9	22.3	**17.3**
4	**Type of toothpaste/ powder**	n=	**82**	**54**	**136**	**94**	**52**	**146**	**282**
	Flouridated		15.9	9.3	10.9	14.9	11.5	12.5	**11.7**
	Non flouridated		73.2	90.7	86.3	78.7	86.5	84.3	**85.3**
5	**Change of toothbrush once in**	n=	**76**	**53**	**129**	**85**	**49**	**134**	**263**
	1-3 months		53.9	49.1	50.2	54.1	51.0	51.9	**51.1**
	4-6 months		26.3	34.0	32.1	34.1	32.7	33.1	**32.6**
	6 + months		17.1	17.0	17.0	11.8	16.3	15.1	**16.1**
6	**Rinse mouth after eating**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	Sometimes		15.2	12.7	13.5	29.5	1.9	10.3	**11.9**
	Always		59.0	56.4	57.2	47.6	67.9	61.8	**59.5**

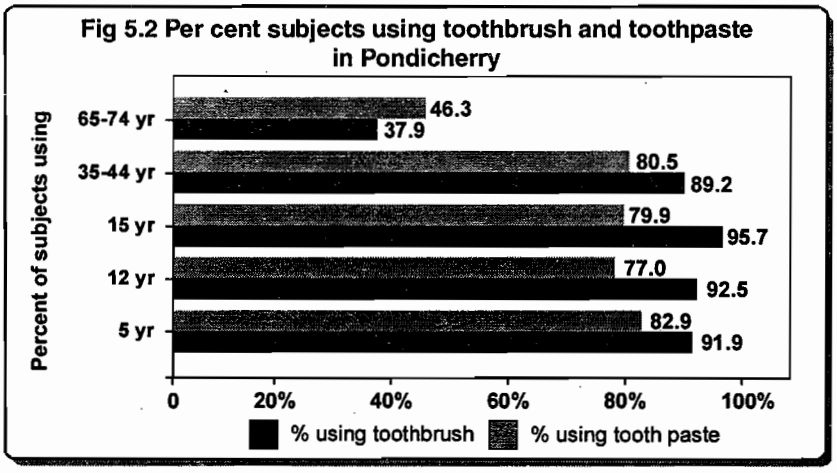
5.3.5 65-74 year olds

The use of toothbrush, in this age group was relatively low at 38 per cent — about 24 per cent in rural areas and 44 per cent in urban areas (Table 5.3.5). More males used a toothbrush. Around one-third of the respondents said they had changed their toothbrushes once in 1-3 months.

Nearly all respondents, across both sexes and places of residence reported cleaning their teeth once a day.

About 46 per cent of the respondents in this age group reported the use of toothpaste. In the rural areas, 21 per cent people reported using toothpaste for cleaning their teeth while 57 per cent did so in the urban areas. The use of fluoridated toothpaste/tooth powder was reported by only 11 per cent of respondents.

57 per cent respondents reported habit of rinsing their mouth always after the meals while 14 per cent reported rinsing "sometimes".



ORAL HYGIENE PRACTICES ACROSS AGE GROUPS (SUMMING UP)

1. The practice of cleaning teeth was universal.
2. About 81 per cent across all age groups, across both sexes and more in urban areas reported the use toothbrush to clean their teeth.
3. About 96 per cent, across both sexes and more in rural areas reported cleaning of teeth once a day. In urban areas, more reported cleaning teeth twice a day.
4. About 73 per cent, across ages, more males and more in the urban areas reported the use of toothpaste.
5. About 82 per cent, across all ages, and more males and more in urban areas reported the use of non-fluoridated toothpaste/powder.
6. About 52 per cent, across all ages, both sexes and more in rural areas had changed their toothbrushes once in 1-3 months.
7. About 46 per cent of the respondents, across all ages and both sexes, and more in urban areas reported rinsing their mouth after every meal. The practice was more prevalent with increase in age.

Table 5.3.5 Percent 65-74 year olds by oral hygiene practices, sex & geographical area.

AGE: 65-74 yrs STATE : Pondicherry

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	finger		43.5	32.0	35.7	76.2	58.2	63.5	**49.6**
	brush		25.9	56.0	46.3	21.9	32.7	29.5	**37.9**
	datun		27.8	10.0	15.7	1.0	1.8	1.6	**8.7**
	others		2.8	2.0	2.3	1.0	7.3	5.4	**3.9**
2	**Frequency of cleaning teeth**	n=	**75**	**44**	**119**	**103**	**50**	**153**	**272**
	Once a day		98.7	100.0	99.6	99.0	100.0	99.7	**99.7**
	Twice a day		1.3	0.0	0.4	1.0	0.0	0.3	**0.4**
	After every meal		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Material used for cleaning teeth**								
	Tooth paste		25.3	59.1	49.9	17.5	54.0	42.6	**46.3**
	Tooth powder		29.3	22.7	24.5	41.7	26.0	30.9	**27.7**
4	**Type of toothpaste/ powder**	n=	**41**	**36**	**77**	**61**	**40**	**101**	**178**
	Flouridated		12.2	13.9	13.6	9.8	7.5	8.1	**10.9**
	Non flouridated		78.0	83.3	82.3	70.5	75.0	73.9	**78.1**
5	**Change of toothbrush once in**	n=	**28**	**28**	**56**	**23**	**18**	**41**	**97**
	1-3 months		39.3	39.3	39.3	34.8	27.8	29.3	**34.3**
	4-6 months		50.0	50.0	50.0	34.8	55.6	51.0	**50.5**
	6 + months		10.7	10.7	10.7	30.4	11.1	15.3	**13.0**
6	**Rinse mouth after eating**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	Sometimes		17.6	2.0	7.0	21.0	21.8	21.6	**14.3**
	Always		61.1	66.0	64.4	55.2	47.3	49.6	**57.0**

5.4 DENTAL PROBLEMS AND TREATMENT PRACTICES

The respondents were asked whether they had any dental problem in the last one year and whom they consulted for this. Furthermore, they were asked about the access they had to dental facilities. They were also asked if they had problems like hypertension, diabetes, epilepsy, jaundice and asthma. Responses on all these aspects are shown in Tables 5.4.1 to 5.4.5.

5.4.1 5 year olds

About 13 per cent of the respondents in this age group had oral health problems in the last one year – 15 per cent in rural areas as against 12 per cent in urban areas. Males reported more dental problems. The problems mostly reported were dental decay (88 per cent).

The practice of consultation was not followed by about two-thirds of the respondents. They were more in rural areas. Of the one-third who consulted a trained dentist, were more in urban about 52 percent, across both sexes & more in rural were aware of Govt. dental care facility. About 68 percent more in urban reported less than half hour to reach the facility. Table 5.4.1

5.4.2 12 year olds

About 26 per cent of the respondents in this age group, more males & more in urban reported oral health problems in the last one year – 29 per cent in urban areas as against 19 per cent in rural areas.

Most of those who had reported problems reported dental decay (73 per cent) followed by gum disease (7 per cent). Also, about 31 per cent of respondents who had faced problems did not consult anybody. While 61 percent, more males & more in urban had consulted trained dentist. About 57 percent more males, across places of residence were aware of Govt. dental care facility

About 19 per cent of the respondents in rural areas reported no dental facility compared to only 9 per cent in the urban areas. Access to government facilities was reported more. Majority of the respondents reported less than half-an-hour as the time to reach these facilities. Table 5.4.2

Table 5.4.1 Percent 5 year olds by reported nature of dental problems and treatment related aspects, sex & geographical area.

AGE: 5 yrs **STATE : Pondicherry**

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**106**	**52**	**158**	**103**	**53**	**156**	**314**
	problems in last one year		17.0	13.5	14.5	13.6	11.3	12.0	**13.3**
2	**Type of oral health problems**	n=	**18**	**7**	**25**	**14**	**6**	**20**	**45**
	Dental decay		100.0	85.7	90.9	85.7	83.3	84.1	**87.5**
	Gum disease		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Foul breath		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Bleeding gums		0.0	14.3	9.1	0.0	0.0	0.0	**4.6**
	Others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Consulted (out of those suffered)**								
	None		61.1	57.1	58.6	78.6	66.7	70.7	**64.7**
	Trained dentist		33.3	42.9	39.4	21.4	33.3	29.3	**34.4**
4	**Availaibility of dental facility**	n=	**106**	**52**	**158**	**103**	**53**	**156**	**314**
	None		23.6	15.4	17.9	21.4	18.9	19.6	**18.8**
	Govt. facility		53.8	50.0	51.2	55.3	50.9	52.3	**51.8**
	Pvt. facility		11.3	21.2	18.1	11.7	22.6	19.4	**18.8**
	Do not know		11.3	17.3	15.5	11.7	9.4	10.1	**12.8**
5	**Time taken to reach the facility**	n=	**69**	**35**	**104**	**69**	**38**	**107**	**211**
	Less than 1/2 hr.		36.2	80.0	66.8	50.7	76.3	69.0	**67.9**
	1/2 - 1 hr.		42.0	20.0	26.7	37.7	23.7	27.7	**27.2**
	> 1 hr.		21.7	0.0	6.6	11.6	0.0	3.3	**5.0**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**106**	**52**	**158**	**103**	**53**	**156**	**314**
	Hypertension		3.8	0.0	1.2	1.0	1.9	1.6	**1.4**
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Epilepsy		2.8	0.0	0.9	0.0	0.0	0.0	**0.5**
	Jaundice		0.9	0.0	0.3	1.0	0.0	0.3	**0.3**
	Asthma		0.0	0.0	0.0	1.0	0.0	0.3	**0.2**

Table 5.4.2 Percent 12 year olds by reported nature of dental problems and treatment related aspects, sex & geographical area.

AGE: 12 yrs STATE : Pondicherry

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**102**	**54**	**156**	**108**	**54**	**162**	**318**
	problems in last one year		19.6	31.5	28.0	17.6	25.9	23.4	**25.7**
2	**Type of oral health problems**	n=	**20**	**17**	**37**	**19**	**14**	**33**	**70**
	Dental decay		65.0	76.5	74.1	73.7	71.4	71.9	**73.0**
	Gum disease		10.0	5.9	6.7	5.3	7.1	6.7	**6.7**
	Foul breath		5.0	0.0	1.0	5.3	0.0	1.2	**1.1**
	Bleeding gums		5.0	0.0	1.0	5.3	0.0	1.2	**1.1**
	Others		5.0	0.0	1.0	0.0	0.0	0.0	**0.5**
3	**Consulted (out of those suffered)**								
	None		50.0	29.4	33.6	52.6	21.4	28.6	**31.1**
	Trained dentist		45.0	70.6	65.3	26.3	64.3	55.6	**60.5**
4	**Availaibility of dental facility**	n=	**102**	**54**	**156**	**108**	**54**	**162**	**318**
	None		20.6	13.0	15.2	16.7	5.6	8.9	**12.1**
	Govt. facility		57.8	63.0	61.5	63.9	48.1	53.0	**57.3**
	Pvt. facility		9.8	18.5	16.0	7.4	24.1	19.0	**17.5**
	Do not know		11.8	5.6	7.4	12.0	25.9	21.7	**14.6**
5	**Time taken to reach the facility**	n=	**69**	**44**	**113**	**77**	**37**	**114**	**227**
	Less than 1/2 hr.		46.4	79.5	71.1	45.5	78.4	68.1	**69.6**
	1/2 - 1 hr.		36.2	18.2	22.8	32.5	18.9	23.2	**23.0**
	> 1 hr.		17.4	0.0	4.5	22.1	2.7	8.8	**6.7**
	Cannot say		0.0	2.3	1.7	0.0	0.0	0.0	**0.9**
6	**Ever suffered from**	n=	**102**	**54**	**156**	**108**	**54**	**162**	**318**
	Hypertension		1.0	0.0	0.3	0.0	0.0	0.0	**0.2**
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Epilepsy		1.0	0.0	0.3	0.0	0.0	0.0	**0.2**
	Jaundice		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Asthma		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

5.4.3 15 year olds

In this age group, 25 per cent of the respondents, more males and more in urban areas, reported that they had dental problems in last one year (Table 5.4.3). Most of them reported dental decay (73 per cent), followed by gum disease (10 per cent). The prevalence of the problems was reported more by females than males. About 56 per cent respondents in rural areas and 55 per cent in urban areas did not consult any dentist for their problems. Another 37 per cent of respondents, however, had consulted a trained dentist.

About 25 per cent of the respondents in rural areas reported no dental facility compared to only 13 per cent in the urban areas. About 56 percent more males & more in urban were aware of Govt. dental care facility. Majority of the respondents reported less than half-an-hour to reach these facilities.

5.4.4 35-44 year olds

About one-third of the respondents in this age groups (37 per cent), more females & more in urban, reported dental problems in the last one year.

79 percent of the respondents reported problems of dental decay, followed by other 11 percent gum disease. 2 per cent reported problems of foul breath. More males reported problem of dental decay. While more females reported gum disease & foul breath.

About 48 percent of those had problems consulted trained dentist. These were more females & more in urban. Only 18 percent across both sexes & more in rural was aware of Govt. dental care facility. Two third, more in urban reported less than half hour to reach the facility.

The problem of hypertension and diabetes reported by respondents of this age group. About 6 percent reported hypertension while 4 percent had diabetes. Table 5.4.4

Table 5.4.3 Percent 15 year olds by reported nature of dental problems and treatment related aspects, sex & geographical area.

AGE: 15 yrs **STATE : Pondicherry**

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**104**	**51**	**155**	**105**	**54**	**159**	**314**
	problems in last one year		18.3	29.4	26.0	16.2	25.9	23.0	**24.5**
2	**Type of oral health problems**	n=	**19**	**15**	**34**	**17**	**14**	**31**	**65**
	Dental decay		68.4	66.7	67.0	82.4	78.6	79.4	**73.2**
	Gum disease		10.5	6.7	7.5	5.9	14.3	12.5	**10.0**
	Foul breath		0.0	0.0	0.0	5.9	0.0	1.2	**0.6**
	Bleeding gums		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Others		5.3	0.0	1.1	0.0	0.0	0.0	**0.6**
3	**Consulted (out of those suffered)**								
	None		47.4	60.0	57.3	64.7	50.0	53.1	**55.2**
	Trained dentist		31.6	40.0	38.2	35.3	35.7	35.6	**36.9**
4	**Availaibility of dental facility**	n=	**104**	**51**	**155**	**105**	**54**	**159**	**314**
	None		22.1	13.7	16.3	28.6	13.0	17.6	**17.0**
	Govt. facility		55.8	58.8	57.9	53.3	53.7	53.6	**55.8**
	Pvt. facility		13.5	21.6	19.1	9.5	24.1	19.7	**19.4**
	Do not know		8.7	11.8	10.8	9.5	11.1	10.6	**10.7**
5	**Time taken to reach the facility**	n=	**72**	**38**	**110**	**65**	**41**	**106**	**216**
	Less than 1/2 hr.		54.2	84.2	75.4	49.2	85.4	76.0	**75.7**
	1/2 - 1 hr.		31.9	13.2	18.7	35.4	14.6	20.0	**19.4**
	> 1 hr.		13.9	0.0	4.1	15.4	0.0	4.0	**4.1**
	Cannot say		0.0	2.6	1.9	0.0	0.0	0.0	**1.0**
6	**Ever suffered from**	n=	**104**	**51**	**155**	**105**	**54**	**159**	**314**
	Hypertension		0.0	0.0	0.0	0.0	1.9	1.3	**0.7**
	Diabetes		0.0	0.0	0.0	1.0	0.0	0.3	**0.2**
	Epilepsy		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Jaundice		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Asthma		1.0	0.0	0.3	0.0	0.0	0.0	**0.2**

Table 5.4.4 Percent 35-44 year olds by reported nature of dental problems and treatment related aspects, sex & geographical area.

AGE: 35-44 yrs STATE : Pondicherry

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	problems in last one year		24.8	34.5	31.7	41.9	41.5	41.6	**36.7**
2	**Type of oral health problems**	n=	**26**	**19**	**45**	**44**	**22**	**66**	**111**
	Dental decay		80.8	84.2	83.4	68.2	77.3	74.5	**79.0**
	Gum disease		7.7	5.3	5.8	13.6	18.2	16.8	**11.3**
	Foul breath		3.8	0.0	0.9	0.0	4.5	3.2	**2.1**
	Bleeding gums		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Others		3.8	10.5	9.0	15.9	0.0	4.9	**7.0**
3	**Consulted (out of those suffered)**								
	None		42.3	47.4	46.2	52.3	36.4	41.2	**43.7**
	Trained dentist		46.2	42.1	43.0	38.6	59.1	52.9	**48.0**
4	**Availaibility of dental facility**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	None		27.6	12.7	17.1	25.7	17.0	19.6	**18.4**
	Govt. facility		57.1	58.2	57.9	58.1	54.7	55.7	**56.8**
	Pvt. facility		13.3	30.9	25.7	12.4	32.1	26.1	**25.9**
	Do not know		1.9	5.5	4.4	3.8	5.7	5.1	**4.8**
5	**Time taken to reach the facility**	n=	**74**	**45**	**119**	**74**	**41**	**115**	**234**
	Less than 1/2 hr.		45.9	71.1	64.4	44.6	78.0	68.6	**66.5**
	1/2 - 1 hr.		39.2	28.9	31.6	39.2	22.0	26.8	**29.2**
	> 1 hr.		14.9	0.0	3.9	16.2	0.0	4.6	**4.3**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	Hypertension		4.8	9.1	7.8	6.7	3.8	4.7	**6.3**
	Diabetes		2.9	9.1	7.3	1.9	0.0	0.6	**4.0**
	Epilepsy		1.9	3.6	3.1	1.0	0.0	0.3	**1.7**
	Jaundice		1.0	0.0	0.3	0.0	0.0	0.0	**0.2**
	Asthma		0.0	0.0	0.0	1.9	1.9	1.9	**1.0**

5.4.5 65-74 year olds

About 32 percent, more males & more in urban had dental problems in last one year. About 36 percent of then reported dental decay. While another 40 percent has gum disease. Table 5.4.5

About 32 percent of those had dental problems, more females & more in urban consulted trained dentist. The rest consulted none. Nearly 55 percent, across both sexes & more in urban was aware of Govt. dental facility in their areas. As regard time to reach such facility, 66 percent more females & more in urban reported less than half hour. When asked if they ever suffered from non communicable diseases about 23 percent more males & more in urban had hypertension & other 14 percent had diabetes.

DENTAL PROBLEMS AND TREATMENT ASPECTS ACROSS AGE GROUPS (SUMMING UP)

1. Around 27 per cent of the respondents, across all age/age groups and across sexes, had dental problems in the last one year. Reporting was more in urban areas.
2. Over 70 percent, across all age/age groups reported dental decay. The problem of gum disease was reported by less than 8 per cent in the 15 and below age group and 25 per cent in the higher age groups.
3. More than one-third subjects (42 per cent), across all ages/age groups, consulted trained dentist. Also, 55 per cent subjects, across all ages and both sexes, but more in urban areas reported the availability of Governmental dental facility.
4. Most respondents reported less than half-an-hour to reach the dental care facilities. This was especially so in urban areas.

Table 5.4.5 Percent 65-74 year olds by reported nature of dental problems and treatment related aspects, sex & geographical area.

AGE: 65-74 yrs STATE : Pondicherry

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	problems in last one year		27.8	32.0	30.6	24.8	38.2	34.2	**32.4**
2	**Type of oral health problems**	n=	**30**	**16**	**46**	**26**	**21**	**47**	**93**
	Dental decay		50.0	25.0	32.3	50.0	38.1	40.6	**36.5**
	Gum disease		26.7	43.8	38.8	30.8	42.9	40.3	**39.6**
	Foul breath		3.3	0.0	1.0	0.0	0.0	0.0	**0.5**
	Bleeding gums		0.0	0.0	0.0	0.0	4.8	3.7	**1.9**
	Others		20.0	31.3	28.0	15.4	14.3	14.5	**21.3**
3	**Consulted (out of those suffered)**								
	None		63.3	68.8	67.2	61.5	61.9	61.8	**64.5**
	Trained dentist		26.7	31.3	29.9	34.6	33.3	33.6	**31.8**
4	**Availaibility of dental facility**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	None		29.6	14.0	19.0	20.0	16.4	17.4	**18.2**
	Govt. facility		50.0	56.0	54.1	47.6	60.0	56.3	**55.2**
	Pvt. facility		13.0	20.0	17.7	13.3	21.8	19.3	**18.5**
	Do not know		7.4	12.0	10.5	19.0	9.1	12.0	**11.3**
5	**Time taken to reach the facility**	n=	**68**	**37**	**105**	**64**	**41**	**105**	**210**
	Less than 1/2 hr.		47.1	70.3	63.6	48.4	75.6	68.7	**66.2**
	1/2 - 1 hr.		39.7	27.0	30.7	40.6	24.4	28.5	**29.6**
	> 1 hr.		13.2	0.0	3.8	10.9	0.0	2.8	**3.3**
	Cannot say		0.0	2.7	1.9	0.0	0.0	0.0	**1.0**
6	**Ever suffered from**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	Hypertension		10.2	16.0	14.1	12.4	27.3	22.9	**18.5**
	Diabetes		6.5	18.0	14.3	5.7	16.4	13.2	**13.8**
	Epilepsy		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Jaundice		0.9	0.0	0.3	0.0	0.0	0.0	**0.2**
	Asthma		7.4	6.0	6.5	3.8	5.5	5.0	**5.8**

5.5 AWARENESS OF DENTAL HEALTH PROBLEMS

The respondents were asked three questions about their awareness of dental health problems. The first was about the common dental problems, the second about the major factors responsible for such problems and the third about how these problems could be prevented. Their responses are shown in Tables 5.5.2 to 5.5.5 and are analysed below:

5.5.2 12 year olds

More than half the respondents (52 per cent) in this age group, more females & more in rural reported knowledge of dental health problems (Table 5.5.2). Most of them described dental decay (38 per cent), followed by gum disease (13 per cent). Awareness was higher in urban areas as compared to rural areas. Females were slightly more aware than males.

About 59 per cent of the respondents, across both sexes & places of residence reported lack of knowledge about the factors that can cause oral health problems. The most-often cited factors causing dental problems were "not brushing regularly" (27 per cent) and "eating sweets/ice cream/ chocolates" (13 per cent).

When asked about the preventive measures, about 55 per cent of the respondents across both sexes reported no knowledge. There were no significant differentials in this regard among rural and urban respondents. Around 34 per cent cited brushing teeth regularly as a preventive measure. Another 8 per cent cited the "use of fluoridated toothpaste/toothpowder".

5.5.3 15 year olds

About 69 per cent of the respondents of this age group, more males and more in urban areas, reported knowledge of oral health problems (Table 5.5.3). Most of them knew about dental decay (52 per cent) followed by gum disease (18 per cent).

About half the respondents in this age (47 per cent) did not know about the factors causing oral health problems. This was more in rural areas (almost 51 per cent) than in urban areas (45 per cent). The most-often reported factor causing oral health problems was "not brushing regularly" (31 per cent) and "eating sweets/ ice cream/chocolates" (22 per cent).

Less than half of the respondents of this age group (47 per cent) reported lack of knowledge of preventive measures. Such subjects were more in rural areas and less in urban. The two main preventive measures reported were cleaning teeth regularly (40 per cent), and "use of fluoridated toothpaste/toothpowder" (14 per cent).

Table 5.5.2 Percent 12 year olds by reported awareness of oral health problems, their causes & preventive measures, sex & geographical area.

AGE: 12 yrs **STATE : Pondicherry**

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	**102**	**54**	**156**	**108**	**54**	**162**	**318**
	No knowledge		44.1	44.4	44.3	54.6	50.0	51.4	**47.9**
	Tooth decay		46.1	37.0	39.7	38.9	37.0	37.6	**38.7**
	Gum disease		6.9	18.5	15.1	7.4	13.0	11.3	**13.2**
	Bad smell		2.0	0.0	0.6	0.0	0.0	0.0	**0.3**
	Stained teeth		2.0	0.0	0.6	0.0	0.0	0.0	**0.3**
	Others		2.9	0.0	0.9	0.9	0.0	0.3	**0.6**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		12.7	9.3	10.3	14.8	16.7	16.1	**13.2**
	Not brushing regularly		19.6	35.2	30.6	21.3	24.1	23.2	**26.9**
	Not rinsing		1.0	0.0	0.3	1.9	0.0	0.6	**0.5**
	Consuming tobacco		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Do not know		64.7	55.6	58.2	68.5	57.4	60.8	**59.5**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		3.9	0.0	1.1	1.9	1.9	1.9	**1.50**
	Cleaning teeth regularly		27.5	38.9	35.5	25.9	35.2	32.4	**34.0**
	Visiting dentist regularly		4.9	0.0	1.4	3.7	0.0	1.1	**1.3**
	Using flouride paste / powder		5.9	7.4	7.0	8.3	9.3	9.0	**8.0**
	Avoid sweet items		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Do not know		54.9	53.7	54.1	61.1	53.7	56.0	**55.1**

Table 5.5.3 Percent 15 year olds by reported awareness of oral health problems, their causes & preventive measures, sex & geographical area.

AGE: 15 yrs STATE : Pondicherry

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	104	51	155	105	54	159	314
	No knowledge		28.8	35.3	33.3	29.5	29.6	29.6	31.5
	Tooth decay		59.6	45.1	49.6	60.0	51.9	54.3	52.0
	Gum disease		10.6	23.5	19.5	4.8	22.2	17.0	18.3
	Bad smell		1.9	2.0	1.9	5.7	1.9	3.0	2.5
	Stained teeth		1.0	0.0	0.3	1.0	0.0	0.3	0.3
	Others		1.0	0.0	0.3	0.0	0.0	0.0	0.2
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		21.2	23.5	22.8	26.7	20.4	22.3	22.6
	Not brushing regularly		30.8	33.3	32.5	23.8	33.3	30.5	31.5
	Not rinsing		1.0	0.0	0.3	1.9	3.7	3.2	1.8
	Consuming tobacco		0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Do not know		50.0	45.1	46.6	51.4	46.3	47.8	47.2
3	**Reported Preventive Measures**								
	Not consuming Tobacco		0.0	0.0	0.0	0.0	0.0	0.0	0.00
	Cleaning teeth regularly		37.5	43.1	41.4	30.5	42.6	39.0	40.2
	Visiting dentist regularly		1.9	2.0	1.9	0.0	3.7	2.6	2.3
	Using flouride paste / powder		16.3	11.8	13.2	21.0	13.0	15.4	14.3
	Avoid sweet items		0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Do not know		49.0	47.1	47.7	53.3	44.4	47.1	47.4

5.5.4 35-44 year olds

About 76 per cent respondents of this age group reported awareness of oral health problems. This percentage was more in urban areas than in the rural areas. Most of the respondents cited problems such as tooth decay (about 62 per cent), followed by gum disease (19 per cent).

About 44 per cent respondents in this age group reported lack of knowledge on the factors that cause oral health problems. This was more in rural areas than in the urban and more among females. The factors most reported as causing problems were "not brushing regularly" (39 per cent), "eating sweets/ice cream/chocolates" (16 per cent) and "not rinsing" (nearly 7 per cent).

About the knowledge of preventive measures in regard to oral health problems, 43 per cent reported no knowledge. Their percentage was more in rural areas (53 per cent) as compared to urban areas (38 per cent). Of those with knowledge of preventive measures, about 44 per cent said cleaning teeth regularly was one such measure. Other measures cited were "use of fluoridated toothpaste/toothpowder" (8 per cent) and "visiting dentist regularly" (6 per cent). Table 5.5.4

Table 5.5.4 Percent 35-44 year olds by reported awareness of oral health problems, their causes & preventive measures, sex & geographical area.

AGE: 35-44 yrs STATE : Pondicherry

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	105	55	160	105	53	158	318
	No knowledge		25.7	16.4	19.1	35.2	24.5	27.8	**23.5**
	Tooth decay		61.9	69.1	67.0	56.2	56.6	56.5	**61.8**
	Gum disease		13.3	16.4	15.5	11.4	26.4	21.9	**18.7**
	Bad smell		2.9	1.8	2.1	1.9	1.9	1.9	**2.0**
	Stained teeth		0.0	3.6	2.6	1.9	1.9	1.9	**2.3**
	Others		4.8	3.6	4.0	0.0	0.0	0.0	**2.0**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		14.3	14.5	14.5	6.7	20.8	16.5	**15.5**
	Not brushing regularly		28.6	49.1	43.0	29.5	37.7	35.2	**39.1**
	Not rinsing		4.8	12.7	10.4	4.8	3.8	4.1	**7.3**
	Consuming tobacco		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Do not know		55.2	34.5	40.7	58.1	41.5	46.5	**43.6**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		2.9	0.0	0.8	1.9	0.0	0.6	**0.70**
	Cleaning teeth regularly		31.4	54.5	47.7	31.4	45.3	41.1	**44.4**
	Visiting dentist regularly		7.6	9.1	8.7	5.7	1.9	3.0	**5.9**
	Using flouride paste / powder		3.8	12.7	10.1	5.7	5.7	5.7	**7.9**
	Avoid sweet items		1.0	0.0	0.3	0.0	0.0	0.0	**0.2**
	Do not know		53.3	30.9	37.5	52.4	45.3	47.4	**42.5**

5.5.5 65-74 year olds

About 56 percent across both sexes & more in rural were aware of oral health problems. About 35 percent reported tooth decay followed by other 22 percent, across both sexes & more in urban cited gum disease oral health problems.

As regard knowledge of factors responsible for oral health problems about 63 percent across both sexes & more in rural reported no knowledge. About 32 & other 5 percent who had knowledge, told not brushing regularly & eating sweets/ice cream factors responsible for oral health problems. They were more in urban than in rural.

As regard knowledge of measures to prevent oral health problems only 37 percent more females & more in rural reported knowledge of preventive measures. About 33 percent of these told cleaning teeth regularly. They were more in urban areas. Table 5.5.5

Table 5.5.5 Percent 65-74 year olds by reported awareness of oral health problems, their causes & preventive measures, sex & geographical area.

AGE: 65-74 yrs **STATE : Pondicherry**

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	108	50	158	105	55	160	318
	No knowledge		50.0	40.0	43.2	54.3	40.0	44.2	**43.7**
	Tooth decay		36.1	32.0	33.3	34.3	38.2	37.0	**35.2**
	Gum disease		12.0	28.0	22.9	9.5	25.5	20.8	**21.9**
	Bad smell		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Stained teeth		0.0	0.0	0.0	1.9	0.0	0.6	**0.3**
	Others		5.6	2.0	3.1	1.9	1.8	1.8	**2.5**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		3.7	4.0	3.9	4.8	5.5	5.3	**4.6**
	Not brushing regularly		24.1	36.0	32.2	17.1	36.4	30.7	**31.5**
	Not rinsing		0.0	0.0	0.0	1.0	1.8	1.6	**0.8**
	Consuming tobacco		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Do not know		73.1	58.0	62.9	76.2	58.2	63.5	**63.2**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		0.9	0.0	0.3	0.0	0.0	0.0	**0.15**
	Cleaning teeth regularly		24.1	40.0	34.9	20.0	36.4	31.5	**33.2**
	Visiting dentist regularly		3.7	0.0	1.2	1.9	1.8	1.8	**1.5**
	Using flouride paste / powder		1.9	2.0	2.0	1.0	0.0	0.3	**1.2**
	Avoid sweet items		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Do not know		70.4	54.0	59.3	76.2	61.8	66.1	**62.7**

AWARENESS OF DENTAL HEALTH PROBLEMS ACROSS AGE GROUPS (SUMMING UP)

1. About 62 per cent of subjects across all ages and both sexes, but more in urban areas, were aware of oral health problems in the state.

2. About 53 per cent of respondents across all ages, more females & more in rural were not aware of the factors that cause oral health problems.

   Of those who were aware, most of them reported "not brushing regularly" (32 per cent) followed by "eating sweets/ice cream" (14 per cent) as two important factors.

3. About preventive measures in regard to oral health problems, again 52 per cent subjects across all ages and both sexes reported no knowledge.

5.6 TOBACCO SMOKING AND CHEWING HABITS

As smoking habits and chewing tobacco have special affects on oral health, a set of questions on these aspects were asked. These questions related to smoking habits, chewing pan/pan masala with tobacco and drinking alcohol. This section summarises findings on those questions for the age groups 35-44 years and 65-74 years since these age groups were considered more relevant for these questions. The findings are shown in Tables 5.6.4 and 5.6.5

5.6.4 35-44 year olds

About 9 per cent of respondents had the habit of smoking tobacco in the state (Table 5.6.4), more in rural areas. About 18 per cent males and less than 1 per cent females reported the habit of smoking.

About 95 per cent & 4 percent mostly all males smoked cigarettes & Bidi respectively. When asked about frequency of smoking, about 86 percent, more in rural, reported smoking less than 10 times a day & rest 14 percent, more in urban were smoking 10-20 times in a day.

The practice of chewing pan masala or tobacco was lower; only about 5 per cent reported this habit, across sexes, but more in rural areas (16 per cent). A majority of those who chewed tobacco or pan masala with tobacco said they been doing so for less than 5 years and chewing less than five times a day.

About, 6 per cent all males & more in rural reported taking alcohol. Of them, 27 per cent said they were taking it occasionally and another 26 per cent said consuming it daily.

Table 5.6.4 Percent (35-44) year olds by reported smoking, chewing pan & pan masala with tobacco and alcohol taking habits, sex & geographical area.

AGE: 35-44 yrs STATE : Pondicherry

	Tobacco Smoking or Chewing with Pan Masala and Alcohol taking habits		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Smoking Habits**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	Subjects smoking tobacco		31.4	12.7	18.3	1.0	0.0	0.3	**9.3**
2	**Nature of Smoking**	n=	**33**	**7**	**40**	**1**	**0**	**1**	**41**
	Chillum		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Hookah		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cigars		3.0	0.0	1.5	0.0	0.0	0.0	**0.8**
	Cigarettes		81.8	100.0	90.8	100.0	0.0	100.0	**95.4**
	Bidis		15.2	0.0	7.7	0.0	0.0	0.0	**3.9**
3	**Number of times Smoking in a day**								
	< 10 times		84.8	57.1	71.2	100.0	0.0	100.0	**85.6**
	10-20 times		12.1	42.9	27.2	0.0	0.0	0.0	**13.6**
	20 + times		3.0	0.0	1.5	0.0	0.0	0.0	**0.8**
4	**Chewing pan/pan masala habits**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	Chew pan or pan masala with tobacco		14.3	0.0	4.2	17.1	1.9	6.5	**5.4**
5	**Number of years of chewing pan or**								
	pan masala with Tobacco	n=	**15**	**0**	**15**	**18**	**1**	**19**	**34**
	Less than 5 years		86.7	0.0	86.7	66.7	0.0	53.2	**70.0**
	5 - 10 years		6.7	0.0	6.7	33.3	100.0	46.8	**26.8**
	> 10 years		6.7	0.0	6.7	0.0	0.0	0.0	**3.4**
6	**Number of times of chewing tobacco**								
	in a day								
	Less than 5 times		60.0	0.0	60.0	94.4	100.0	95.6	**77.8**
	5 - 10 times		40.0	0.0	40.0	5.6	0.0	4.4	**22.2**
	> 10 times		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
7	**Alcohol consumption habits**	n=	**105**	**55**	**160**	**105**	**53**	**158**	**318**
	Consuming alcohol		16.2	10.9	12.5	0.0	0.0	0.0	**6.3**
8	**Frequency of alcohol consumption**	n=	**17**	**6**	**23**	**0**	**0**	**0**	**23**
	Daily		52.9	50.0	51.1	0.0	0.0	0.0	**25.6**
	3 times a week		17.6	0.0	6.8	0.0	0.0	0.0	**3.4**
	Occasionally		35.3	66.7	54.6	0.0	0.0	0.0	**27.3**

5.6.5 65-74 year olds

About 21 per cent in this age group (40 per cent males and 2 per cent females), with no significant rural-urban differentials had the habit of smoking (Table 5.6.5). Chillums were smoked by 43 per cent, followed by cigarettes (40 per cent), cigars (13 per cent) and Bidis (4 per cent) mostly males. The frequency of smoking was mostly less than 10 times in a day.

About 24 per cent (12 per cent males and 37 per cent females) of this age group reported chewing pan or pan masala with tobacco. Their percentage was more in the rural areas (39 per cent) as opposed to urban areas (18 per cent). About 90 per cent of them said they were chewing it less than 10 times a in day. About 86 per cent said they had this habit for less than 10 years.

Around 11 per cent (all males) reported taking alcohol. Most of them were taking this occasionally.

TOBACCO SMOKING AND CHEWING HABITS ACROSS AGE GROUPS (SUMMING UP)

1. About 15 per cent, across age groups 35-44 and 65-74 had the habit of smoking tobacco in the state. The habit was more prevalent among males and in rural areas. About half of them, more males and more from rural areas, smoked cigarettes. Around 88 per cent of smokers, across both sexes and place of residence, said they smoked less than 10 times in a day.
2. About 15 per cent, across all ages and place of residence, but more females said they chewed pan or pan masala with tobacco. A majority of those who chewed tobacco or pan masala with tobacco said they have been doing so for less than 5 years.
3. About 8 per cent, across all ages, but more males and more in rural areas, reported consuming alcohol.

Table 5.6.5 Percent (65-74) year olds by reported smoking, chewing pan & pan masala with tobacco and alcohol taking habits, sex & geographical area.

AGE: 65-74 yrs **STATE : Pondicherry**

	Tobacco Smoking or Chewing with Pan Masala and Alcohol taking habits		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Smoking Habits**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	Subjects smoking tobacco		40.7	40.0	40.2	1.0	1.8	1.6	**20.9**
2	**Nature of Smoking**	n=	**44**	**20**	**64**	**1**	**1**	**2**	**66**
	Chillum		0.0	5.0	3.4	0.0	100.0	82.0	**42.7**
	Hookah		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cigars		27.3	25.0	25.7	0.0	0.0	0.0	**12.9**
	Cigarettes		56.8	65.0	62.3	100.0	0.0	18.0	**40.2**
	Bidis		15.9	5.0	8.6	0.0	0.0	0.0	**4.3**
3	**Number of times Smoking in a day**								
	< 10 times		90.9	80.0	83.6	100.0	100.0	100.0	**91.8**
	10-20 times		0.0	10.0	6.7	0.0	0.0	0.0	**3.4**
	20 + times		9.1	10.0	9.7	0.0	0.0	0.0	**4.9**
4	**Chewing pan/pan masala habits**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	Chew pan or pan masala with tobacco		27.8	4.0	11.6	51.4	30.9	37.0	**24.3**
5	**Number of years of chewing pan or**								
	pan masala with Tobacco	n=	**30**	**2**	**32**	**54**	**17**	**71**	**103**
	Less than 5 years		26.7	50.0	32.1	16.7	5.9	10.3	**21.2**
	5 - 10 years		56.7	50.0	55.1	57.4	88.2	75.6	**65.4**
	> 10 years		16.7	0.0	12.8	25.9	5.9	14.1	**13.5**
6	**Number of times of chewing tobacco**								
	in a day								
	Less than 5 times		53.3	100.0	64.2	37.0	47.1	42.9	**53.6**
	5 - 10 times		36.7	0.0	28.1	35.2	52.9	45.6	**36.9**
	> 10 times		10.0	0.0	7.7	27.8	0.0	11.4	**9.6**
7	**Alcohol consumption habits**	n=	**108**	**50**	**158**	**105**	**55**	**160**	**318**
	Consuming alcohol		30.6	18.0	22.0	0.0	0.0	0.0	**11.0**
8	**Frequency of alcohol consumption**	n=	**33**	**9**	**42**	**0**	**0**	**0**	**42**
	Daily		36.4	33.3	34.7	0.0	0.0	0.0	**17.4**
	3 times a week		24.2	22.2	23.1	0.0	0.0	0.0	**11.6**
	Occasionally		45.5	44.4	44.9	0.0	0.0	0.0	**22.5**

CHAPTER VI
ORAL HEALTH STATUS

6.0 CLINICAL FINDINGS

The clinical findings are presented under the following broad heads:

1. Dental Caries status & Treatment Need
2. Periodontal Disease status
3. Malocclusion Status
4. Oral Cancers and other oral mucosal conditions
5. Dental Fluorosis status
6. Other conditions:

   Extra Oral Lesions; TMJ Assessment; Enamel Opacities and Hypoplasia; Prosthetic Status & Need; and Community need for immediate Care and Referrals.

6.1 DENTAL CARIES STATUS

This section presents a review of data for both coronal (crown) caries and root caries. The coronal caries is of interest in all index age groups and reported using a) the conventional dmft/ DMFT Index for primary and permanent teeth and b) the Significant Caries Index (SIC). The Significant Caries Index (SIC) helps identify the one third of the population with the highest caries (mean DMFT value) and the mean DMFT for this group. The root caries develops in the higher age groups and is therefore assessed for the age groups of 35-44 and 65-74 years subjects; its greatest significance lies in the aging population in the 50-60 years or higher age groups.

6.1.1 Coronal caries

Tables 6.01 and Fig. 6.01 present the prevalence proportion of subjects by age and sex who were caries-free and those with caries experience using a range of dmft (deft)/ DMFT values. The range of values has been grouped in such a way as to provide some indication of the proportion of dentition affected with caries out of the normally present (28 or 32) in an average mouth.

Table 6.02 and Fig. 6.02 present the mean number of teeth decayed, missing and filled (mean dmft and

Fig 6.01. Percent subjects with caries experience in Pondicherry

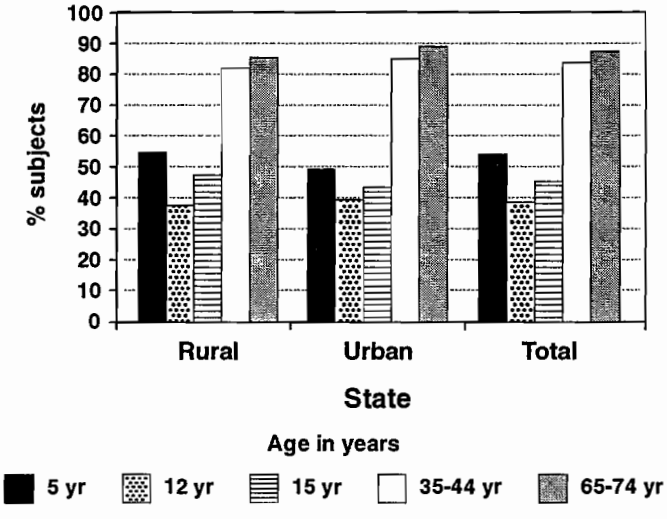


Table 6.01. Percent subjects with caries experience and with dmft/ DMFT values by age, sex and geographical area. State : Pondicherry

Decayed, Missing,		5 years			Decayed, Missing,		12 years			15 years			35-44 years			65-74 years		
Filled Teeth		M	F	T	Filled Teeth		M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	106	103	209	State Rural	n=	102	108	210	104	105	209	105	105	210	108	105	213
With caries		56.6	54.4	55.5	With caries experience		34.3	41.7	38.0	44.2	50.5	47.4	79.0	85.7	82.4	87.0	85.7	86.4
dmft value 1-3		19.8	21.4	20.6	DMFT value 1-3		27.5	30.6	29.1	31.7	34.3	33.0	31.4	21.0	26.2	17.6	15.2	16.4
dmft value 4-5		15.1	13.6	14.4	DMFT value 4-7; 4-8		6.9	9.3	8.1	11.5	12.4	12.0	33.3	47.6	40.5	16.7	16.2	16.5
dmft value 6-10		17.0	14.6	15.8	DMFT value 8-14; 9-16		0.0	1.9	1.0	1.0	3.8	2.4	13.3	13.3	13.3	8.3	11.4	9.9
dmft value 11-15		4.7	4.9	4.8	DMFT value 15-21; 17-24		0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.9	1.5	12.0	10.5	11.3
dmft value 16 or more		0.0	0.0	0.0	DMFT value 22-28; 25-28		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.3	7.6	8.5
					DMFT value 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.0	23.1	24.8	24.0
State Urban	n=	52	53	105	State Urban	n=	54	54	108	51	54	105	55	53	108	50	55	105
With caries		55.8	43.4	49.6	With caries experience		31.5	48.1	39.8	33.3	53.7	43.5	83.6	86.8	85.2	92.0	85.5	88.8
dmft value 1-3		26.9	17.0	22.0	DMFT value 1-3		24.1	35.2	29.7	15.7	20.4	18.1	40.0	24.5	32.3	16.0	18.2	17.1
dmft value 4-5		7.7	18.9	13.3	DMFT value 4-7; 4-8		3.7	11.1	7.4	15.7	27.8	21.8	40.0	41.5	40.8	18.0	20.0	19.0
dmft value 6-10		17.3	5.7	11.5	DMFT value 8-14; 9-16		3.7	1.9	2.8	2.0	3.7	2.9	3.6	17.0	10.3	18.0	10.9	14.5
dmft value 11-15		3.8	1.9	2.9	DMFT value 15-21; 17-24		0.0	0.0	0.0	0.0	1.9	1.0	0.0	1.9	1.0	20.0	9.1	14.6
dmft value 16 or more		0.0	0.0	0.0	DMFT value 22-28; 25-28		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.0	4.0	5.5	4.8
					DMFT value 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.0	21.8	18.9
State Total	n=	158	156	314	State Total	n=	156	162	318	155	159	314	160	158	318	158	160	318
With caries		56.3	50.6	53.5	With caries experience		33.3	43.8	38.6	40.6	51.6	46.1	80.6	86.1	83.4	88.6	85.6	87.1
dmft value 1-3		22.2	19.9	21.1	DMFT value 1-3		26.3	32.1	29.2	26.5	29.6	28.1	34.4	22.2	28.3	17.1	16.3	16.7
dmft value 4-5		12.7	15.4	14.1	DMFT value 4-7; 4-8		5.8	9.9	7.9	12.9	17.6	15.3	35.6	45.6	40.6	17.1	17.5	17.3
dmft value 6-10		17.1	11.5	14.3	DMFT value 8-14; 9-16		1.3	1.9	1.6	1.3	3.8	2.6	10.0	14.6	12.3	11.4	11.3	11.4
dmft value 11-15		4.4	3.8	4.1	DMFT value 15-21; 17-24		0.0	0.0	0.0	0.0	0.6	0.3	0.6	1.9	1.3	14.6	10.0	12.3
dmft value 16 or more		0.0	0.0	0.0	DMFT value 22-28; 25-28		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	7.6	6.9	7.3
					DMFT value 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.7	20.9	23.8	22.4

Note: The categories of DMFT values of 4-7, 8-14, 15-21 and 22-28 have been computed and apply to subjects aged 12 and 15 years only. In age groups 35-44 yr and 65-74 yr, the 'M' (Missing) component includes both missing due to caries and missing due to other reasons. Associated Tables :**6.02 and 6.03.**

mean DMFT) in the surveyed population and includes the Significant Caries (SIC) Index. The table also gives the mean number of teeth present in the mouth and the percent subjects who were edentulous.

Table 6.03 presents the breakup of the per cent subjects with missing teeth, due to caries and due to other reasons. This is presented for age groups 35-44 and 65-74 years.

The caries experience was moderately high in the state. The prevalence percentage by age was 53.5 (5 years); 38.6 (12 years); 46.1 (15 years); 83.4 (35-44 years); and 87.1 (65-74 years). The dmft/DMFT value of 1-3 teeth was most prevalent in children aged 5, 12 and 15 years while DMFT value of 4-8 was most prevalent in adults (35-44 years) and the DMFT value of 29-32 was most prevalent in adults aged 65-74 years.

The mean dmft/DMFT in the state was 2.5 (5 years); 1.2 912 years); 1.7 (15 years); 4.7 (35-44 years); and 13.7 (65-74 years). The SiC Index was 2 to 3 times higher than the mean dmft/DMFT values by age.

The mean number of teeth present in the average mouth decreased as age advanced and at 65-74 years, the mean number of teeth present was 19.3, indicating a loss of more than 12 teeth.

Table 6.02 Mean number of teeth decayed, missng, filled by age, sex and geographical area. **State : Pondicherry**

Decayed, Missing, Filled Teeth		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	106	103	*209*	102	108	*210*	104	105	*209*	104	105	*209*	107	105	*212*
Mean no. of teeth present (mnt/MNT)		20.0	20.0	*20.0*	25.7	25.8	*25.8*	27.9	27.9	*27.9*	29.7	28.8	*29.3*	17.8	17.9	*17.9*
Mean dmft and Mean DMFT		3.1	2.8	*3.0*	0.8	1.1	*1.0*	1.2	1.6	*1.4*	4.4	5.4	*4.9*	14.9	14.6	*14.8*
Mean no. of Decayed teeth (dt/DT)		3.0	2.8	*2.9*	0.7	1.1	*0.9*	1.1	1.6	*1.4*	2.1	2.3	*2.2*	0.7	0.5	*0.6*
Mean no. of Missing teeth (mt/MT)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.0	*0.1*	2.3	3.2	*2.8*	14.2	14.1	*14.2*
Mean no. of Filled teeth (ft/FT)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
SIC Index		7.9	7.2	*7.6*	2.3	3.2	*2.8*	3.2	4.2	*3.7*	9.5	10.6	*10.1*	30.4	30.2	*30.3*
No. of subjects edentulous		0	0	*0*	0	0	*0*	0	0	*0*	0	1	*1*	22	19	*41*
State Urban	n=	52	53	*105*	54	53	*107*	51	54	*105*	55	53	*108*	50	55	*105*
Mean no. of teeth present (mnt/MNT)		20.0	19.8	*19.9*	25.0	26.1	*25.6*	27.9	27.9	*27.9*	30.3	28.6	*29.5*	19.6	20.2	*19.9*
Mean dmft and Mean DMFT		2.8	1.8	*2.3*	0.9	1.4	*1.2*	1.2	2.4	*1.8*	3.3	5.8	*4.6*	13.5	12.8	*13.2*
Mean no. of Decayed teeth (dt/DT)		2.8	1.6	*2.2*	0.9	1.4	*1.2*	1.1	2.3	*1.7*	1.6	2.5	*2.1*	1.1	1.1	*1.1*
Mean no. of Missing teeth (mt/MT)		0.0	0.2	*0.1*	0.0	0.0	*0.0*	0.1	0.1	*0.1*	1.7	3.4	*2.6*	12.4	11.8	*12.1*
Mean no. of Filled teeth (ft/FT)		0.1	0.0	*0.1*	0.1	0.1	*0.1*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
SIC Index		7.2	4.8	*6.0*	2.8	3.8	*3.3*	3.6	5.9	*4.8*	6.6	11.1	*8.9*	26.3	28.7	*27.5*
No. of subjects edentulous		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	6	9	*15*
State Total	n=	158	156	*314*	156	161	*317*	155	159	*314*	159	158	*317*	157	160	*317*
Mean no. of teeth present (mnt/MNT)		20.0	19.9	*20.0*	25.2	26.0	*25.6*	27.9	27.9	*27.9*	30.1	28.7	*29.4*	19.0	19.5	*19.3*
Mean dmft and Mean DMFT		2.9	2.1	*2.5*	0.9	1.4	*1.2*	1.2	2.2	*1.7*	3.6	5.7	*4.7*	14.0	13.3	*13.7*
Mean no. of Decayed teeth (dt/DT)		2.8	2.0	*2.4*	0.8	1.3	*1.1*	1.1	2.1	*1.6*	1.7	2.4	*2.1*	1.0	0.9	*1.0*
Mean no. of Missing teeth (mt/MT)		0.0	0.1	*0.1*	0.0	0.0	*0.0*	0.1	0.1	*0.1*	1.9	3.3	*2.6*	13.0	12.5	*12.8*
Mean no. of Filled teeth (ft/FT)		0.1	0.0	*0.1*	0.1	0.0	*0.1*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
SIC Index		7.6	6.4	*7.0*	2.5	3.4	*3.0*	3.3	4.8	*4.1*	8.5	10.8	*9.7*	29.5	29.9	*29.7*
No. of subjects edentulous		0	0	*0*	0	0	*0*	0	0	*0*	0	1	*1*	28	28	*56*

Note: In age groups 35-44 yr and 65-74 yr, the 'MT' (Missing Teeth) component includes both missing due to caries and missing due to other reasons. For detailed breakup, please refer to and co-relate with Table No. 6.03. Associated Tables : **6.01 and 6.03.**

The decayed teeth component contributed most to dmft/DMFT in children aged 5, 12 and 15 years while the missing teeth component contributed most to DMFT in adults aged 35-44 years and 65-74 years. Except in 65-74 year age group, missing teeth were due to caries.

On an average 50 % of individuals had dental caries with maximum incidence in the (35-44) age groups. The DMFT values for those affected was reasonably high with nearly 30% having score 3 & 15% having scores of 8.The high scores in the older age group may be because of missing teeth. Males & females were equally affected and there was no difference between rural and urban areas

Fig 6.02. Mean dmft/DMFT in Pondicherry

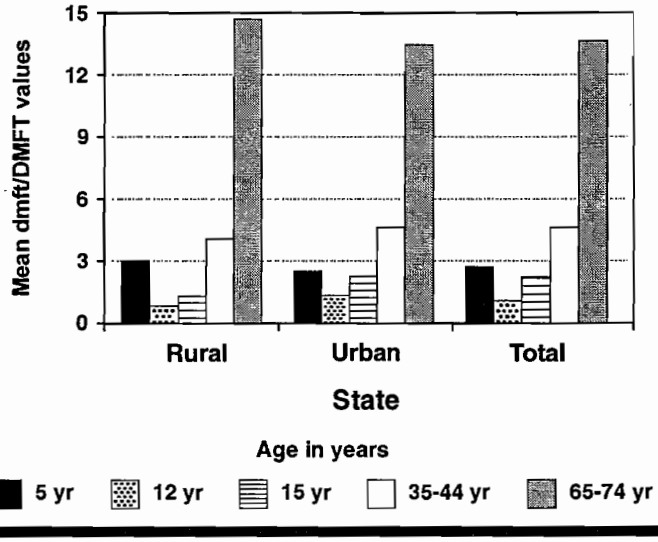


Table 6.03 Mean number of teeth missng due to caries or other reasons by age, sex and geographical area. State : Pondicherry

Missing Teeth		12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	102	108	*210*	104	105	*209*	104	105	*209*	107	105	*212*
Mean no. of teeth missing due to caries		0.0	0.0	*0.0*	0.1	0.0	*0.1*	1.5	2.2	*1.9*	2.8	3.4	*3.1*
Mean no. of teeth missing due to other reasons		0.1	0.0	*0.1*	0.0	0.0	*0.0*	0.8	1.0	*0.9*	11.4	10.7	*11.1*
State Urban	n=	54	53	*107*	51	54	*105*	55	53	*108*	50	55	*105*
Mean no. of teeth missing due to caries		0.0	0.0	*0.0*	0.1	0.1	*0.1*	1.6	2.6	*2.1*	3.4	3.7	*3.6*
Mean no. of teeth missing due to other reasons		0.1	0.0	*0.1*	0.0	0.1	*0.1*	0.1	0.8	*0.5*	9.0	8.1	*8.6*
State Total	n=	156	161	*317*	155	159	*314*	159	158	*317*	157	160	*317*
Mean no. of teeth missing due to caries		0.0	0.0	*0.0*	0.1	0.1	*0.1*	1.6	2.5	*2.1*	3.2	3.6	*3.4*
Mean no. of teeth missing due to other reasons		0.1	0.0	*0.1*	0.0	0.0	*0.0*	0.3	0.8	*0.6*	9.8	8.9	*9.4*

Note: In age groups 35-44 yr and 65-74 yr, the 'M' (Missing) component in DMF includes both missing due to caries and missing due to other reasons.

6.1.2. Root caries

Table 6.04 presents the percent subjects with root caries and fillings, if any, and the mean number of teeth with root caries and fillings, if any.

The Root Caries, does not appear in children and young adults. Therefore the data on root caries is presented only for the two age groups of 35-44 years and 65-74 years.

The percentage of root caries was 17.4 and 13.7 percent respectively in the age groups 35-44 years and 65-74 years. There were no root fillings.

Table 6.04 Percent subjects and mean no. of teeth with root caries and fillings by age, sex and geographical area. State : Pondicherry

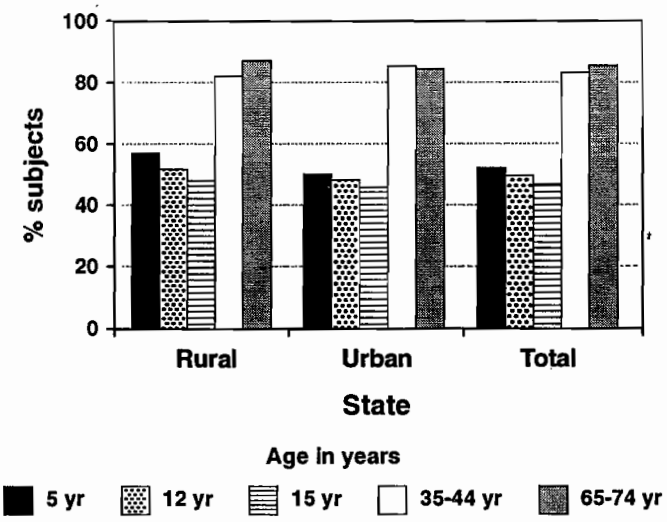
Root Caries		35-44 years			65-74 years		
		M	F	T	M	F	T
State Rural	**n=**	**105**	**105**	***210***	**106**	**104**	***210***
% Subjects with Root caries		14.3	19.0	***16.7***	17.0	11.5	***14.3***
Mean nos of teeth with Root Caries		0.5	0.5	***0.5***	1.0	0.9	***1.0***
% Subjects with Root fillings		0.0	0.0	***0.0***	0.0	0.0	***0.0***
Mean nos of teeth with Root fillings		0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Urban	**n=**	**55**	**53**	***108***	**50**	**55**	***105***
% Subjects with Root caries		14.5	20.8	***17.7***	14.0	12.7	***13.4***
Mean nos of teeth with Root Caries		0.5	0.7	***0.6***	0.9	0.6	***0.8***
% Subjects with Root fillings		0.0	0.0	***0.0***	0.0	0.0	***0.0***
Mean nos of teeth with Root fillings		0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Total	**n=**	**160**	**158**	***318***	**156**	**159**	***315***
% Subjects with Root caries		14.5	20.2	***17.4***	14.9	12.4	***13.7***
Mean nos of teeth with Root Caries		0.5	0.5	***0.5***	0.9	0.8	***0.9***
% Subjects with Root fillings		0.0	0.0	***0.0***	0.0	0.0	***0.0***
Mean nos of teeth with Root fillings		0.0	0.0	***0.0***	0.0	0.0	***0.0***

6.1.3 Treatment ned

Table 6.05 and Figure 6.05 present the percent subjects requiring preventive and treatment care by type of treatment needed, and Table 6.06 and Figure 6.06 present the mean number of teeth requiring treatment, by type of treatment.

The subjects were clinically assessed for their need for both preventive and treatment care, based on their caries experience and dentition status. Preventive care need included caries arresting care and fissure sealing. Treatment need included the need for one, two or more surface fillings, extractions of teeth, pulp care, crowns and veneers.

Fig 6.05. Percent subjects with treatment need in Pondicherry



On an average treatment needs were uniformly around 50% in the 5,12.15 year olds. 80% of the (35-44) & (65-74) year olds needed treatment. Whereas preventive care & fillings were commonly needed in younger age groups, extraction and need for complete dentures were needed for oldest group.

Table 6.05 Percent subjects with treatment need by age, sex and geographical area. State : Pondicherry

Treatment Need		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	106	103	209	102	108	210	104	105	209	105	105	210	108	105	213
Treatment needed		59.4	55.3	57.4	50.0	58.3	54.2	44.2	50.5	47.4	79.0	84.8	81.9	89.8	84.8	87.3
Preventive care & fissure sealant		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filling one or more surfaces		57.5	55.3	56.4	46.1	50.0	48.1	40.4	47.6	44.0	58.1	66.7	62.4	24.1	21.9	23.0
Crown & Veneer		0.0	0.0	0.0	0.0	2.8	1.4	0.0	0.0	0.0	0.0	1.9	1.0	0.0	0.0	0.0
Pulp care		3.8	3.9	3.9	5.9	5.6	5.8	3.8	7.6	5.7	12.4	5.7	9.1	2.8	4.8	3.8
Extraction		7.5	3.9	5.7	2.9	4.6	3.8	2.9	2.9	2.9	25.7	33.3	29.5	38.0	35.2	36.6
Need for other care		0.9	1.9	1.4	1.0	3.7	2.4	4.8	3.8	4.3	41.0	53.3	47.2	74.1	72.4	73.3
State Urban	n=	52	53	105	54	54	108	51	54	105	55	53	108	50	55	105
Treatment needed		55.8	47.2	51.5	53.7	48.1	50.9	35.3	57.4	46.4	81.8	88.7	85.3	88.0	81.8	84.9
Preventive care & fissure sealant		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filling one or more surfaces		53.8	41.5	47.7	51.9	48.1	50.0	31.4	53.7	42.6	54.5	62.3	58.4	26.0	20.0	23.0
Crown & Veneer		0.0	0.0	0.0	1.9	0.0	1.0	2.0	0.0	1.0	0.0	0.0	0.0	4.0	0.0	2.0
Pulp care		11.5	3.8	7.7	0.0	0.0	0.0	3.9	1.9	2.9	7.3	9.4	8.4	8.0	1.8	4.9
Extraction		3.8	5.7	4.8	7.4	1.9	4.7	5.9	7.4	6.7	27.3	37.7	32.5	30.0	34.5	32.3
Need for other care		0.0	1.9	1.0	3.7	3.7	3.7	7.8	7.4	7.6	45.5	45.3	45.4	82.0	63.6	72.8
State Total	n=	158	156	314	156	162	318	155	159	314	160	158	318	158	160	318
Treatment needed		56.9	49.6	53.3	52.6	51.3	52.0	38.1	55.3	46.7	81.0	87.5	84.3	88.6	82.7	85.7
Preventive care & fissure sealant		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filling one or more surfaces		55.0	45.6	50.3	50.2	48.7	49.5	34.2	51.9	43.1	55.6	63.6	59.6	25.4	20.6	23.0
Crown & Veneer		0.0	0.0	0.0	1.3	0.8	1.1	1.4	0.0	0.7	0.0	0.6	0.3	2.7	0.0	1.4
Pulp care		9.1	3.8	6.5	1.7	1.7	1.7	3.9	3.6	3.8	8.8	8.3	8.6	6.3	2.7	4.5
Extraction		5.0	5.1	5.1	6.1	2.7	4.4	5.0	6.0	5.5	26.8	36.4	31.6	32.6	34.8	33.7
Need for other care		0.3	1.9	1.1	2.9	3.7	3.3	6.9	6.3	6.6	44.1	47.7	45.9	79.5	66.2	72.9

Fig. 6.06. Mean number of teeth with treatment need in Pondicherry

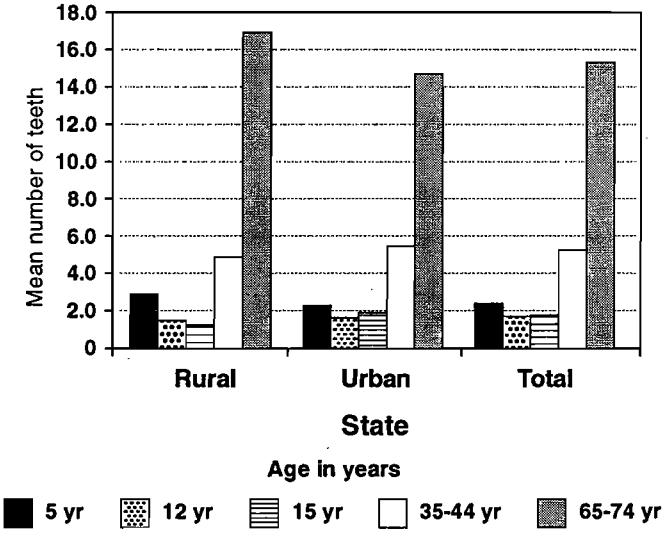


Table 6.06 Mean number of teeth with treatment need by age, sex and geographical area. **State : Pondicherry**

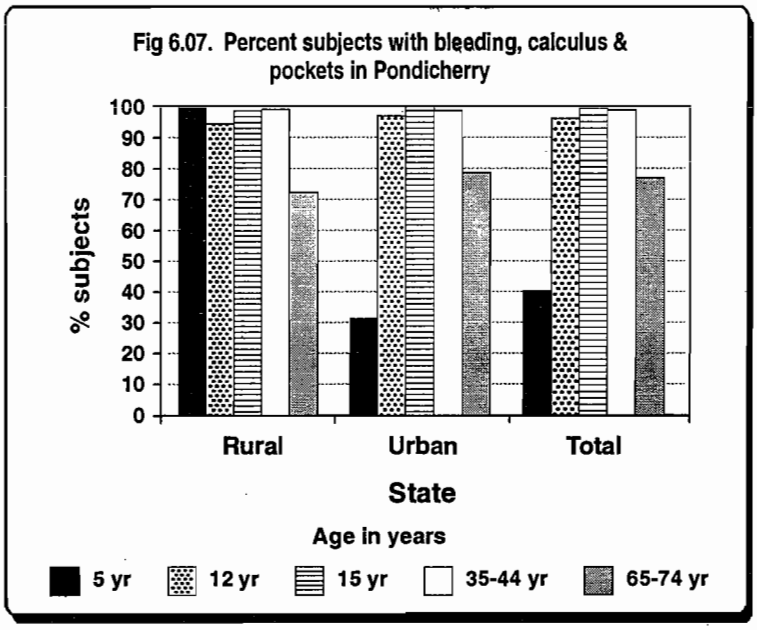
Treatment Need		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	106	103	*209*	102	108	*210*	104	105	*209*	104	105	*209*	107	105	*212*
Treatment needed		3.0	2.8	*2.9*	1.4	1.8	*1.6*	1.3	1.6	*1.5*	4.3	5.7	*5.0*	17.3	16.5	*16.9*
Preventive care/ fissure sealant		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Filling one or more surfaces		2.7	2.7	*2.7*	1.2	1.4	*1.3*	1.2	1.4	*1.3*	1.9	2.6	*2.3*	1.5	1.1	*1.3*
Crown/ Veneer		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Pulp care		0.1	0.1	*0.1*	0.1	0.1	*0.1*	0.0	0.1	*0.1*	0.2	0.1	*0.2*	0.0	0.1	*0.1*
Extraction		0.2	0.1	*0.2*	0.1	0.1	*0.1*	0.0	0.1	*0.1*	0.8	1.0	*0.9*	3.1	3.2	*3.2*
Need for other care		0.0	0.0	*0.0*	0.0	0.2	*0.1*	0.1	0.0	*0.1*	1.4	2.0	*1.7*	12.7	12.1	*12.4*
State Urban	n=	52	53	*105*	54	53	*107*	51	53	*104*	55	53	*108*	50	55	*105*
Treatment needed		2.7	1.6	*2.2*	1.6	1.8	*1.7*	1.3	2.4	*1.9*	3.8	6.9	*5.4*	15.9	13.7	*14.8*
Preventive care/ fissure sealant		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Filling one or more surfaces		2.3	1.4	*1.9*	1.5	1.7	*1.6*	1.0	2.1	*1.6*	1.8	3.2	*2.5*	2.1	1.4	*1.8*
Crown/ Veneer		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Pulp care		0.4	0.1	*0.3*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.2	*0.2*	0.1	0.3	*0.2*
Extraction		0.1	0.2	*0.2*	0.1	0.0	*0.1*	0.1	0.2	*0.2*	0.7	1.2	*1.0*	3.5	2.6	*3.1*
Need for other care		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.1	*0.1*	1.2	2.2	*1.7*	10.1	9.4	*9.8*
State Total	n=	158	156	*314*	156	161	*317*	155	158	*313*	159	158	*317*	157	160	*317*
Treatment needed		2.8	2.0	*2.4*	1.6	1.8	*1.7*	1.3	2.2	*1.8*	3.9	6.5	*5.2*	16.3	14.5	*15.4*
Preventive care/ fissure sealant		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Filling one or more surfaces		2.4	1.8	*2.1*	1.4	1.6	*1.5*	1.1	1.9	*1.5*	1.8	3.1	*2.5*	1.9	1.3	*1.6*
Crown/ Veneer		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Pulp care		0.3	0.1	*0.2*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.2	*0.2*	0.1	0.2	*0.2*
Extraction		0.1	0.1	*0.1*	0.1	0.1	*0.1*	0.1	0.1	*0.1*	0.7	1.2	*1.0*	3.4	2.7	*3.1*
Need for other care		0.0	0.0	*0.0*	0.0	0.1	*0.1*	0.1	0.1	*0.1*	1.2	2.1	*1.7*	10.9	10.2	*10.6*

6.2. PERIODONTAL STATUS

6.2.1 Bleeding, calculus and pockets

The periodontal status was assessed using the Community Periodontal Index (CPI) with its three indicators of gingival bleeding, calculus and periodontal pockets.

Table 6.07 and Fig. 6.07 present the percent subjects with their periodontal status (bleeding, calculus and pockets) by level of severity and Table 6.08 and Figure 6.08 present the mean number of teeth with bleeding, calculus and pockets.



A very high incidence of bleeding, calculus & pockets seen in individuals both in the rural & urban areas across both sexes. Pockets are seen above the age of 35 years & bleeding the most common finding across all age groups. Much needs to be done to eliminate the causes for this disease.

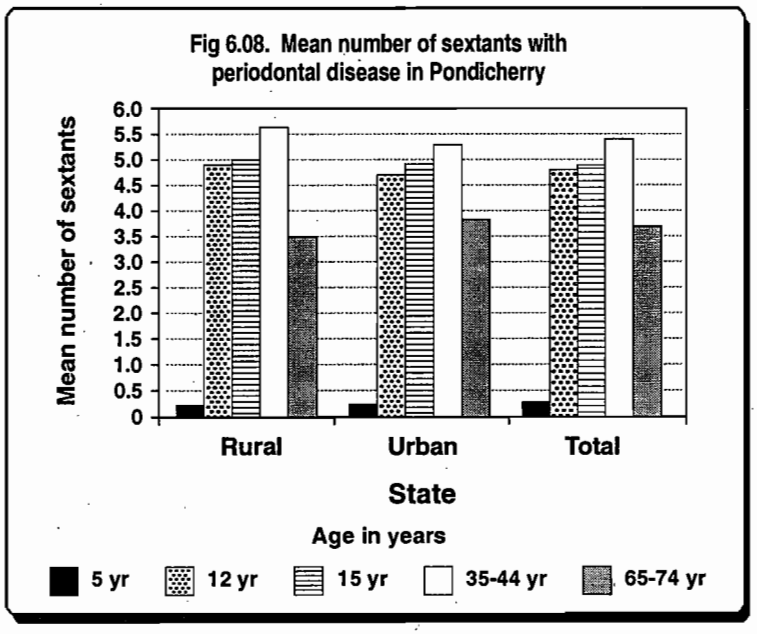


Table: 6.07 Percent subjects with bleeding, calculus and/ or pockets by age, sex, and geographical area. State : Pondicherry

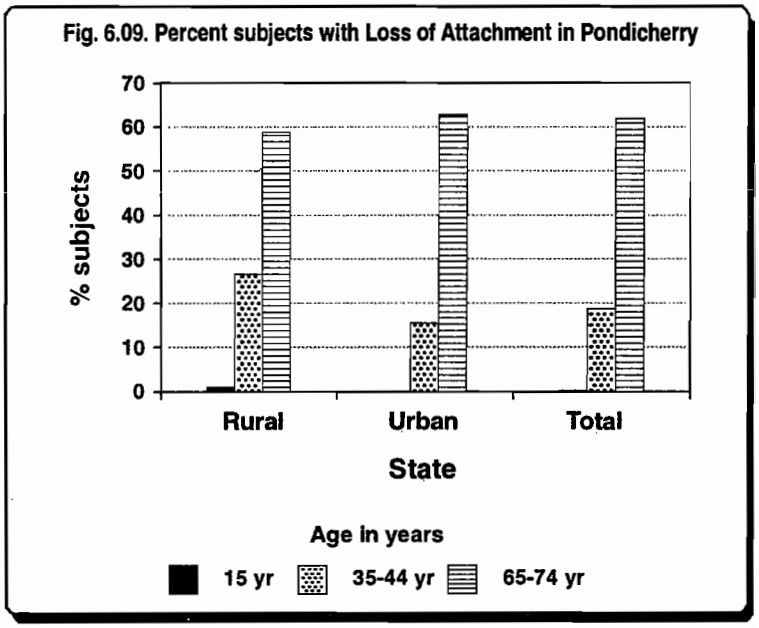
Periodontal Disease		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	2	5	7	102	108	210	104	105	209	104	105	209	105	104	209
With bleeding,calculus, or pockets		100.0	100.0	**100.0**	94.1	95.4	**94.8**	98.1	99.0	**98.6**	100.0	99.0	**99.5**	72.4	73.1	**72.8**
with bleeding		100.0	100.0	**100.0**	58.8	57.4	**58.1**	60.6	60.0	**60.3**	28.8	27.6	**28.2**	10.5	6.7	**8.6**
with calculus		0.0	0.0	**0.0**	70.6	72.2	**71.4**	82.7	84.8	**83.8**	83.7	82.9	**83.3**	28.6	18.3	**23.5**
with pockets 4-5 mm		0.0	0.0	**0.0**	0.0	0.0	**0.0**	2.9	0.0	**1.5**	68.3	58.1	**63.2**	52.4	57.7	**55.1**
with pockets 6 mm		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	3.8	5.7	**4.8**	30.5	32.7	**31.6**
with bleeding or higher		100.0	100.0	**100.0**	58.8	57.4	**58.1**	60.6	60.0	**60.3**	28.8	27.6	**28.2**	10.5	6.7	**8.6**
with calculus or higher		0.0	0.0	**0.0**	35.3	38.0	**36.7**	37.5	39.0	**38.3**	57.7	60.0	**58.9**	21.0	13.5	**17.3**
with pockets 4-5 mm or higher		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	12.5	10.5	**11.5**	31.4	44.2	**37.8**
with pockets 6mm		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	1.0	1.0	**1.0**	9.5	8.7	**9.1**
State Urban	n=	3	7	10	53	52	105	51	54	105	55	53	108	50	52	102
With bleeding,calculus, or pockets		33.3	28.6	**31.0**	98.1	96.2	**97.2**	100.0	100.0	**100.0**	100.0	98.1	**99.1**	82.0	75.0	**78.5**
with bleeding		33.3	28.6	**31.0**	75.5	61.5	**68.5**	47.1	46.3	**46.7**	32.7	41.5	**37.1**	2.0	5.8	**3.9**
with calculus		0.0	0.0	**0.0**	56.6	71.2	**63.9**	88.2	81.5	**84.9**	85.5	73.6	**79.6**	38.0	25.0	**31.5**
with pockets 4-5 mm		0.0	0.0	**0.0**	0.0	1.9	**1.0**	2.0	1.9	**2.0**	41.8	45.3	**43.6**	52.0	59.6	**55.8**
with pockets 6 mm		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	5.5	7.5	**6.5**	34.0	30.8	**32.4**
with bleeding or higher		33.3	28.6	**31.0**	75.5	61.5	**68.5**	47.1	46.3	**46.7**	32.7	41.5	**37.1**	2.0	5.8	**3.9**
with calculus or higher		0.0	0.0	**0.0**	22.6	34.6	**28.6**	52.9	53.7	**53.3**	60.0	43.4	**51.7**	38.0	21.2	**29.6**
with pockets 4-5 mm or higher		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	7.3	13.2	**10.3**	32.0	46.2	**39.1**
with pockets 6mm		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	10.0	1.9	**6.0**
State Total	n=	5	12	17	155	160	315	155	159	314	159	158	317	155	156	311
With bleeding,calculus, or pockets		41.8	38.3	**40.1**	96.9	95.9	**96.4**	99.4	99.7	**99.6**	100.0	98.4	**99.2**	79.0	74.4	**76.7**
with bleeding		41.8	38.3	**40.1**	70.5	60.2	**65.4**	51.2	50.4	**50.8**	31.6	37.3	**34.5**	4.7	6.1	**5.4**
with calculus		0.0	0.0	**0.0**	60.8	71.5	**66.2**	86.5	82.5	**84.5**	84.9	76.4	**80.7**	35.0	22.9	**29.0**
with pockets 4-5 mm		0.0	0.0	**0.0**	0.0	1.3	**0.7**	2.2	1.3	**1.8**	49.6	49.2	**49.4**	52.1	59.0	**55.6**
with pockets 6 mm		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	5.0	7.0	**6.0**	32.9	31.4	**32.2**
with bleeding or higher		41.8	38.3	**40.1**	70.5	60.2	**65.4**	51.2	50.4	**50.8**	31.6	37.3	**34.5**	4.7	6.1	**5.4**
with calculus or higher		0.0	0.0	**0.0**	26.4	35.7	**31.1**	48.2	49.3	**48.8**	59.3	48.4	**53.9**	32.6	18.8	**25.7**
with pockets 4-5 mm or higher		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	8.8	12.4	**10.6**	31.8	45.6	**38.7**
with pockets 6mm		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.3	0.3	**0.3**	9.8	4.0	**6.9**

Table: 6.08 Mean no. of sextants with bleeding, calculus and pockets by age, sex and geographical area. **State : Pondicherry**

Periodontal Disease		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	106	103	*209*	102	108	*210*	104	105	*209*	105	105	*210*	108	105	*213*
Mean no. of healthy sextants		0.0	0.0	***0.0***	1.2	1.1	***1.2***	1.1	0.9	***1.0***	0.3	0.2	***0.3***	0.1	0.1	***0.1***
With bleeding, calculus, pockets		0.1	0.3	***0.2***	4.8	4.9	***4.9***	4.9	5.1	***5.0***	5.6	5.6	***5.6***	3.4	3.5	***3.5***
with bleeding		0.1	0.3	***0.2***	2.1	2.1	***2.1***	1.7	1.8	***1.8***	0.6	0.7	***0.7***	0.1	0.1	***0.1***
with calculus		0.0	0.0	***0.0***	2.7	2.8	***2.8***	3.1	3.3	***3.2***	2.7	2.8	***2.8***	0.7	0.4	***0.6***
with pockets(4-5 mm)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	2.1	2.0	***2.1***	1.5	2.0	***1.8***
with pockets (6mm or more)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.2	0.2	***0.2***	1.0	1.1	***1.1***
excluded sextants		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.2	***0.1***	2.3	2.4	***2.4***
not recorded		5.9	5.7	***5.8***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.3	0.1	***0.2***
State Urban	n=	52	53	*105*	54	54	*108*	51	54	*105*	55	53	*108*	50	55	*105*
Mean no. of healthy sextants		0.2	0.6	***0.4***	1.0	1.2	***1.1***	1.1	1.2	***1.2***	0.6	0.5	***0.6***	0.1	0.1	***0.1***
With bleeding, calculus, pockets		0.1	0.2	***0.2***	4.9	4.5	***4.7***	4.9	4.8	***4.9***	5.3	5.2	***5.3***	3.9	3.7	***3.8***
with bleeding		0.1	0.2	***0.2***	2.7	2.2	***2.5***	1.2	1.6	***1.4***	0.6	1.0	***0.8***	0.0	0.1	***0.1***
with calculus		0.0	0.0	***0.0***	2.2	2.3	***2.3***	3.7	3.1	***3.4***	3.2	2.7	***3.0***	1.0	0.7	***0.9***
with pockets(4-5 mm)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.3	1.5	***1.4***	1.8	2.0	***1.9***
with pockets (6mm or more)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.2	0.1	***0.2***	1.0	0.9	***1.0***
excluded sextants		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.1	0.2	***0.2***	2.0	1.8	***1.9***
not recorded		5.7	5.2	***5.5***	0.1	0.2	***0.2***	0.0	0.0	***0.0***	0.0	0.1	***0.1***	0.0	0.3	***0.2***
State Total	n=	158	156	*314*	156	162	*318*	155	159	*314*	160	158	*318*	158	160	*318*
Mean no. of healthy sextants		0.2	0.4	***0.3***	1.0	1.2	***1.1***	1.1	1.2	***1.2***	0.5	0.4	***0.5***	0.1	0.1	***0.1***
With bleeding, calculus, pockets		0.1	0.2	***0.2***	4.9	4.6	***4.8***	4.9	4.8	***4.9***	5.4	5.4	***5.4***	3.7	3.7	***3.7***
with bleeding1		0.1	0.2	***0.2***	2.5	2.1	***2.3***	1.4	1.6	***1.5***	0.6	0.9	***0.8***	0.1	0.1	***0.1***
with calculus		0.0	0.0	***0.0***	2.3	2.5	***2.4***	3.5	3.2	***3.4***	3.1	2.7	***2.9***	0.9	0.6	***0.8***
with pockets(4-5 mm)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.5	1.6	***1.6***	1.7	2.0	***1.9***
with pockets (6mm or more)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.2	0.1	***0.2***	1.0	1.0	***1.0***
excluded sextants		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.1	0.2	***0.2***	2.1	2.0	***2.1***
not recorded		5.7	5.4	***5.6***	0.1	0.2	***0.2***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.1	0.3	***0.2***

6.2.2. Loss of attachment

Tables 6.09 and Fig. 6.09 present the percent subjects with loss of epithelial attachment by severity, and Table 6.10 and Figure 6.10 present the mean number of teeth with loss of attachment, by severity, respectively.



The destructive and degenerative nature of the periodontal disease was assessed, in addition to the CPI scores, with the measurement of Loss of Attachment for 15 yr, 35-44 yr and 65-74 yr age groups only. The CPI Probe was used to measure pocket depth.

Loss of attachment was present in 18.9 per cent subjects aged 35-44 years and 61.6 per cent subjects aged 65-74 years. The average loss of attachment was less than 5 mm & rarely 8 mm. (Thus validating the probe length norm-11.5 mm). At least two sextants were involved.

Concluding, if the 35-44 years age group is looked after well in terms of nutrition and oral hygiene, incidence of periodontal disease may be controlled.

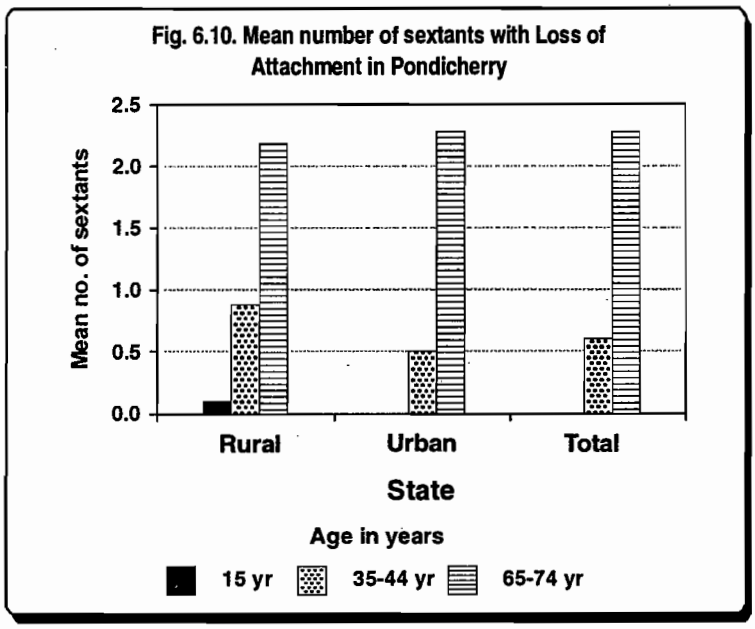


Table 6.09 Percent distribution of subjects with highest scores of loss of attachment by age, sex, and geographical area. **State : Pondicherry**

Loss of Attachment (LOA)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	**n=**	**104**	**104**	***208***	**104**	**104**	***208***	**102**	**102**	***204***
With loss of attachment		0.0	1.9	***1.0***	28.8	23.1	***26.0***	56.9	61.8	***59.4***
with LOA 4-5 mm		0.0	1.0	***0.5***	24.0	20.2	***22.1***	45.1	56.9	***51.0***
with LOA 6-8 mm		0.0	1.0	***0.5***	1.9	1.0	***1.5***	10.8	4.9	***7.9***
with LOA 9-11 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with LOA 12 mm or more		0.0	0.0	***0.0***	1.0	0.0	***0.5***	0.0	0.0	***0.0***
State Urban	**n=**	**51**	**54**	***105***	**55**	**53**	***108***	**49**	**50**	***99***
With loss of attachment		0.0	0.0	***0.0***	9.1	22.6	***15.9***	63.3	62.0	***62.7***
with LOA 4-5 mm		0.0	0.0	***0.0***	9.1	20.8	***15.0***	51.0	58.0	***54.5***
with LOA 6-8 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	10.2	4.0	***7.1***
with LOA 9-11 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	2.0	0.0	***1.0***
with LOA 12 mm or more		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Total	**n=**	**155**	**158**	***313***	**159**	**157**	***316***	**151**	**152**	***303***
With loss of attachment		0.0	0.6	***0.3***	14.9	22.8	***18.9***	61.3	61.9	***61.6***
with LOA 4-5 mm		0.0	0.3	***0.2***	13.5	20.6	***17.1***	49.2	57.6	***53.4***
with LOA 6-8 mm		0.0	0.3	***0.2***	0.6	0.3	***0.5***	10.4	4.3	***7.4***
with LOA 9-11 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.4	0.0	***0.7***
with LOA 12 mm or more		0.0	0.0	***0.0***	0.3	0.0	***0.2***	0.0	0.0	***0.0***

Table 6.10 Mean no. of sextants with loss of attachment by age, sex, and geographical area. **State : Pondicherry**

Loss of Attachment (LOA)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	**n=**	**104**	**105**	***209***	**105**	**105**	***210***	**108**	**105**	***213***
With no loss of attachment (0-3 mm)		6.0	5.9	***6.0***	4.9	5.0	***5.0***	1.4	1.0	***1.2***
With loss of attachment		0.0	0.1	***0.1***	1.0	0.7	***0.9***	1.9	2.4	***2.2***
with loss of attachment 4-5 mm		0.0	0.1	***0.1***	0.9	0.7	***0.8***	1.7	2.3	***2.0***
with loss of attachment 6-8 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.2	0.1	***0.2***
with loss of attachment 9-11 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with loss of attachment 12 mm or more		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
excluded sextants		0.0	0.0	***0.0***	0.0	0.2	***0.1***	2.3	2.4	***2.4***
not recorded		0.0	0.1	***0.1***	0.1	0.1	***0.1***	0.4	0.2	***0.3***
State Urban	**n=**	**51**	**54**	***105***	**55**	**53**	***108***	**50**	**55**	***105***
With no loss of attachment (0-3 mm)		6.0	6.0	***6.0***	5.7	5.0	***5.4***	1.7	1.2	***1.5***
With loss of attachment		0.0	0.0	***0.0***	0.2	0.8	***0.5***	2.2	2.4	***2.3***
with loss of attachment 4-5 mm		0.0	0.0	***0.0***	0.2	0.7	***0.5***	2.0	2.4	***2.2***
with loss of attachment 6-8 mm		0.0	0.0	***0.0***	0.0	0.1	***0.1***	0.2	0.1	***0.2***
with loss of attachment 9-11 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with loss of attachment 12 mm or more		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
excluded sextants		0.0	0.0	***0.0***	0.1	0.2	***0.2***	1.9	1.9	***1.9***
not recorded		0.0	0.0	***0.0***	0.0	0.1	***0.1***	0.2	0.5	***0.4***
State Total	**n=**	**155**	**159**	***314***	**160**	**158**	***318***	**158**	**160**	***318***
With no loss of attachment (0-3 mm)		6.0	6.0	***6.0***	5.5	5.0	***5.3***	1.6	1.1	***1.4***
With loss of attachment		0.0	0.0	***0.0***	0.4	0.7	***0.6***	2.1	2.4	***2.3***
with loss of attachment 4-5 mm		0.0	0.0	***0.0***	0.4	0.7	***0.6***	1.9	2.3	***2.1***
with loss of attachment 6-8 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.2	0.1	***0.2***
with loss of attachment 9-11 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with loss of attachment 12 mm or more		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
excluded sextants		0.0	0.0	***0.0***	0.1	0.2	***0.2***	2.0	2.0	***2.0***
not recorded		0.0	0.0	***0.0***	0.0	0.1	***0.1***	0.3	0.4	***0.4***

6.3. MALOCCLUSION STATUS

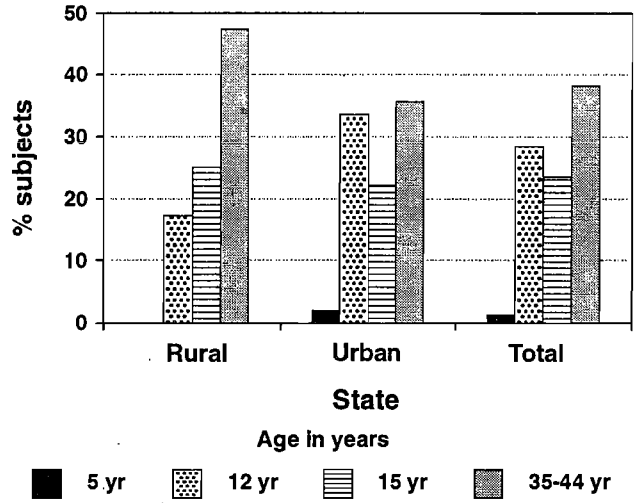
Table 6.11 and Fig. 6.11 present the malocclusion status of subjects measured by DAI scores.

The Dental Aesthetic Index (DAI), recommended by the WHO, was used to analyze the severity of malocclusion in the surveyed population.

In calculating percent subjects with malocclusion, only those subjects with a DAI score of 26 or higher were included.

No significant malocclusion was reported in the age group of 5 yrs where only primary teeth are present.

Fig. 6.11. Percent subjects with malocclusion in Pondicherry



The 5 years old had no malocclusion. 28.6 per cent of 12 year olds, 22.2 per cent of 15 year olds, 39 per cent of 35-44 year olds and 75 per cent of 65-74 year olds had malocclusion. The high score in the last age group may be because of tooth loss. The first two groups have more then normally expected values. This needs further study. The relationship between high incidences of periodontal diseases and malocclusion cannot be underestimated.

Table 6.11 Percent subjects with malocclusion by age, sex and geographical areas. **State : Pondicherry**

Malocclusion (DAI Score)		5 years			12 years			15 years			35-44 years		
		M	F	T	M	F	T	M	F	T	M	F	T
State Rural	**n=**	**106**	**103**	***209***	**102**	**108**	***210***	**104**	**105**	***209***	**105**	**105**	***210***
None or minor malocclusion (<25)		100.0	100.0	***100.0***	81.4	84.3	***82.9***	75.0	75.2	***75.1***	56.2	48.6	***52.4***
Malocclusion present		0.0	0.0	***0.0***	18.6	15.7	***17.2***	25.0	24.8	***24.9***	43.8	51.4	***47.6***
Definite malocclusion (26 -30)		0.0	0.0	***0.0***	12.7	9.3	***11.0***	16.3	16.2	***16.3***	18.1	26.7	***22.4***
Severe malocclusion (31 - 15)		0.0	0.0	***0.0***	3.9	4.6	***4.3***	3.8	4.8	***4.3***	11.4	10.5	***11.0***
V Severe malocclusion (36 or more)		0.0	0.0	***0.0***	2.0	1.9	***2.0***	4.8	3.8	***4.3***	14.3	14.3	***14.3***
State Urban	**n=**	**52**	**53**	***105***	**54**	**54**	***108***	**51**	**54**	***105***	**55**	**53**	***108***
None or minor malocclusion (<25)		100.0	96.2	***98.1***	61.1	72.2	***66.7***	76.5	81.5	***79.0***	69.1	60.4	***64.8***
Malocclusion present		0.0	3.8	***1.9***	38.9	27.8	***33.4***	23.5	18.5	***21.0***	30.9	39.6	***35.3***
Definite malocclusion (26 -30)		0.0	0.0	***0.0***	31.5	14.8	***23.2***	17.6	5.6	***11.6***	20	11.3	***15.7***
Severe malocclusion (31 - 15)		0.0	0.0	***0.0***	5.6	11.1	***8.4***	3.9	7.4	***5.7***	5.5	11.3	***8.4***
V Severe malocclusion (36 or more)		0.0	3.8	***1.9***	1.9	1.9	***1.9***	2.0	5.6	***3.8***	5.5	17.0	***11.3***
State Total	**n=**	**158**	**156**	***314***	**156**	**162**	***318***	**155**	**159**	***314***	**160**	**158**	***318***
None or minor malocclusion (<25)		100.0	97.4	***98.7***	67.0	75.9	***71.5***	76.0	79.6	***77.8***	65.3	56.8	***61.1***
Malocclusion present		0.0	2.6	***1.3***	33.0	24.1	***28.6***	24.0	20.4	***22.2***	34.7	43.2	***39.0***
Definite malocclusion (26 -30)		0.0	0.0	***0.0***	26.0	13.1	***19.6***	17.2	8.7	***13.0***	19.4	16.0	***17.7***
Severe malocclusion (31 - 15)		0.0	0.0	***0.0***	5.1	9.1	***7.1***	3.9	6.6	***5.3***	7.2	11.1	***9.2***
V Severe malocclusion (36 or more)		0.0	2.6	***1.3***	1.9	1.9	***1.9***	2.8	5.0	***3.9***	8.1	16.2	***12.2***

Note: 'No malocclusion (<25)' includes minor malocclusion.

6.4. ORAL CANCER & ORAL MUCOSAL LESIONS

Table 6.12 and Fig. 6.12 present the proportion of subjects with oral cancer and other oral mucosal lesions and Table 6.13 present the number of lesions by their location in the mouth of affected subjects.

No cases of oral cancer were seen in this study. This is an unusual finding .A specific study is needed. Mucosal lesions were rare and seen in only 35-44 year olds & 65-74 year olds.

The most common site is the buccal mucosa and the palate. Appropriate ban of the use of tobacco products will go a long way in reducing the incidence.

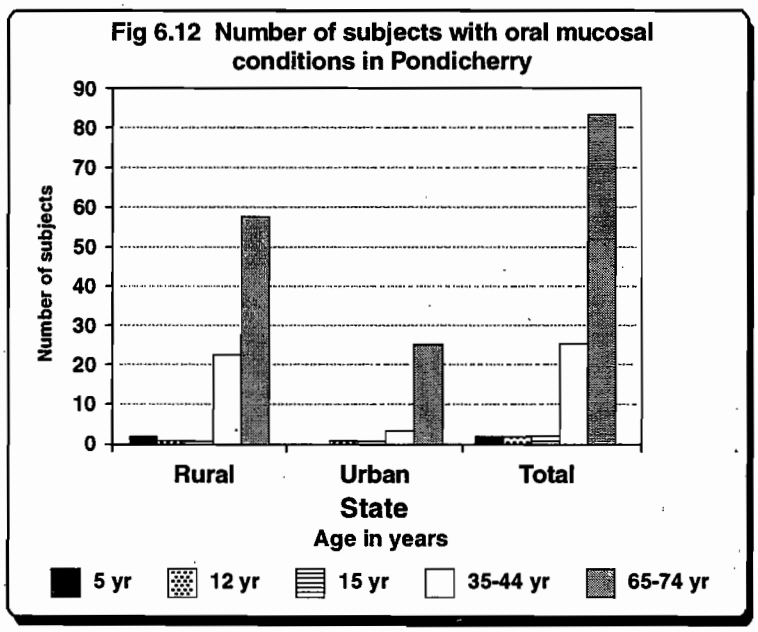


Table 6.12 Numbers of subjects with oral mucosal lesions and type of lesions by age, sex and geographical area. **State : Pondicherry**

Oral Mucosal Lesions		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	**n=**	**106**	**103**	***209***	**102**	**108**	***210***	**104**	**105**	***209***	**105**	**105**	***210***	**106**	**105**	***211***
Oral mucosal lesions present		1	1	***2***	0	1	***1***	0	1	***1***	19	3	***22***	38	20	***58***
Oral Cancer		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Leukoplakia		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	6	4	***10***
Lichen planus		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Ulceration		0	0	***0***	0	0	***0***	0	0	***0***	2	0	***2***	2	3	***5***
ANUG		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Candidiasis		1	0	***1***	0	0	***0***	0	0	***0***	0	0	***0***	2	1	***3***
Abscess		0	0	***0***	0	0	***0***	0	0	***0***	1	0	***1***	1	1	***2***
Any other condition		1	1	***2***	0	1	***1***	0	1	***1***	17	3	***20***	36	17	***53***
State Urban	**n=**	**52**	**53**	***105***	**54**	**53**	***107***	**51**	**54**	***105***	**55**	**53**	***108***	**50**	**54**	***104***
Oral mucosal lesions present		0	0	***0***	1	0	***1***	0	1	***1***	2	1	***3***	18	7	***25***
Oral Cancer		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Leukoplakia		0	0	***0***	0	0	***0***	0	0	***0***	1	0	***1***	4	2	***6***
Lichen planus		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Ulceration		0	0	***0***	0	0	***0***	0	0	***0***	0	1	***1***	2	2	***4***
ANUG		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Candidiasis		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	1	***1***
Abscess		0	0	***0***	1	0	***1***	0	0	***0***	0	0	***0***	1	0	***1***
Any other condition		0	0	***0***	0	0	***0***	0	1	***1***	2	0	***2***	17	3	***20***
State Total	**n=**	**158**	**156**	***314***	**156**	**161**	***317***	**155**	**159**	***314***	**160**	**158**	***318***	**156**	**159**	***315***
Oral mucosal lesions present		1	1	***2***	1	1	***2***	0	2	***2***	21	4	***25***	56	27	***83***
Oral Cancer		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Leukoplakia		0	0	***0***	0	0	***0***	0	0	***0***	1	0	***1***	10	6	***16***
Lichen planus		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Ulceration		0	0	***0***	0	0	***0***	0	0	***0***	2	1	***3***	4	5	***9***
ANUG		0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***	0	0	***0***
Candidiasis		1	0	***1***	0	0	***0***	0	0	***0***	0	0	***0***	2	2	***4***
Abscess		0	0	***0***	1	0	***1***	0	0	***0***	1	0	***1***	2	1	***3***
Any other condition		1	1	***2***	0	1	***1***	0	2	***2***	19	3	***22***	53	20	***73***

Table 6.13 Distibution of subjects with oral mucosal conditions by location of conditions in the mouth. State : Pondicherry

Location	Oral Mucosal Condition																	
	Oral Cancer		Leuko-plakia		Lichen Planus		Ulceration		ANUG		Candi-diasis		Abscess		Others		Total over Locations	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
State Rural																		
Vermilion Border	0	0	0	0	0	0	1	3	0	0	3	1	1	0	0	0	**5**	**4**
Commissures	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	**0**	**2**
Lips	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	3	**6**	**3**
Sulci	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Buccal mucosa	0	0	5	3	0	0	0	0	0	0	0	0	0	0	26	13	**31**	**16**
Floor of mouth	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Tongue	0	0	0	1	0	0	1	0	0	0	0	0	0	0	15	17	**16**	**18**
Hard/Soft palate	0	0	1	0	0	0	0	0	0	0	0	0	0	0	29	0	**30**	**0**
Alv ridges/ Gingiva	0	0	1	0	0	0	2	0	0	0	0	0	1	1	2	0	**6**	**1**
Rural Total	**0**	**0**	**7**	**5**	**0**	**0**	**5**	**3**	**0**	**0**	**3**	**1**	**2**	**1**	**77**	**34**	**94**	**44**
State Urban																		
Vermilion Border	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	**1**	**1**
Commissures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Lips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Sulci	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Buccal mucosa	0	0	4	2	0	0	0	2	0	0	0	0	0	0	11	2	**15**	**6**
Floor of mouth	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
Tongue	0	0	0	1	0	0	1	1	0	0	0	0	0	0	4	2	**5**	**4**
Hard/Soft palate	0	0	1	0	0	0	0	0	0	0	0	0	0	0	10	0	**11**	**0**
Alv ridges/ Gingiva	0	0	0	0	0	0	0	2	0	0	0	0	2	0	1	0	**3**	**2**
Urban Total	**0**	**0**	**6**	**4**	**0**	**0**	**2**	**5**	**0**	**0**	**0**	**1**	**2**	**0**	**26**	**4**	**36**	**14**
State Total																		
Vermilion Border	0	0	0	0	0	0	2	3	0	0	3	2	1	0	0	0	**6**	**5**
Commissures	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	**0**	**2**
Lips	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5	3	**6**	**3**
Sulci	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Buccal mucosa	0	0	9	5	0	0	0	2	0	0	0	0	0	0	37	15	**46**	**22**
Floor of mouth	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
Tongue	0	0	0	2	0	0	2	1	0	0	0	0	0	0	19	19	**21**	**22**
Hard/Soft palate	0	0	2	0	0	0	0	0	0	0	0	0	0	0	39	0	**41**	**0**
Alv ridges/ Gingiva	0	0	1	0	0	0	2	2	0	0	0	0	3	1	3	0	**9**	**3**
State Total	**0**	**0**	**13**	**9**	**0**	**0**	**7**	**8**	**0**	**0**	**3**	**2**	**4**	**1**	**103**	**38**	**130**	**58**

6.5. DENTAL FLUOROSIS STATUS

Table 6.14 and Fig. 6.14 presents the percent subjects with dental fluorosis by level of severity Affects less than 3% of the population. Not a public health problem.

Fig. 6.14. Percent subjects with fluorosis in Pondicherry

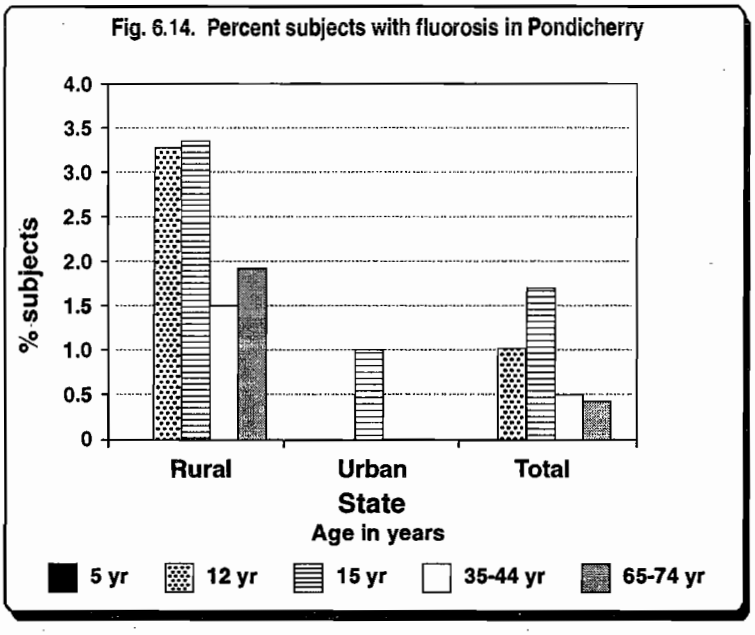


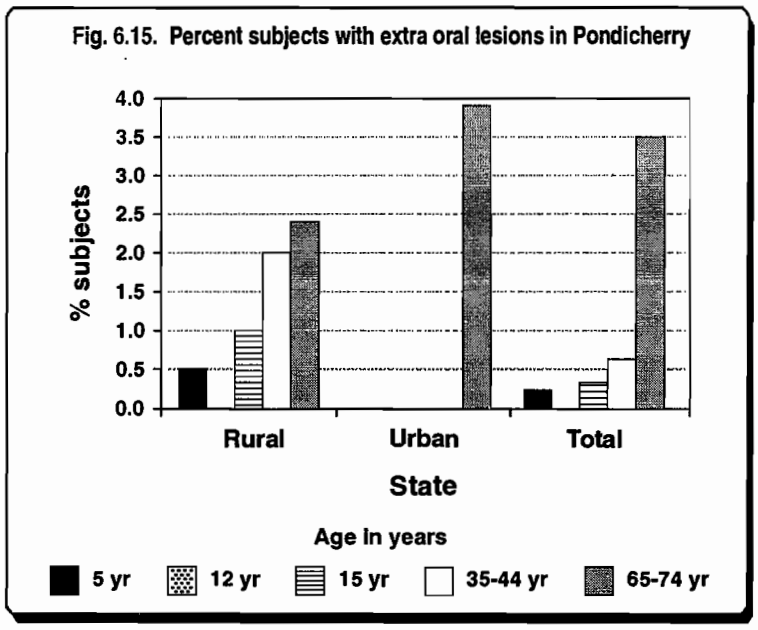
Table 6.14 Percent distribution of subjects with severity of dental fluorosis by age, sex and geographical area. **State : Pondicherry**

Dental Fluorosis		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	1	1	*2*	102	108	*210*	104	105	*209*	100	99	*199*	43	27	*70*
With Fluorosis		0.0	0.0	***0.0***	1.0	5.6	***3.3***	4.8	1.9	***3.4***	3.0	0.0	***1.5***	0.0	3.7	***1.9***
Questionable		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	3.7	***1.9***
V Mild & Mild		0.0	0.0	***0.0***	1.0	2.8	***1.9***	2.9	1.0	***2.0***	3.0	0.0	***1.5***	0.0	0.0	***0.0***
Moderate		0.0	0.0	***0.0***	0.0	2.8	***1.4***	1.9	1.0	***1.5***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Severe		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Urban	n=	0	0	*0*	54	53	*107*	51	54	*105*	54	51	*105*	29	20	*49*
With Fluorosis		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	1.9	***1.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Questionable		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
V Mild & Mild		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	1.9	***1.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Moderate		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Severe		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Total	n=	1	1	*2*	156	161	*317*	155	159	*314*	154	150	*304*	72	47	*119*
With Fluorosis		0.0	0.0	***0.0***	0.3	1.7	***1.0***	1.5	1.9	***1.7***	0.9	0.0	***0.5***	0.0	0.8	***0.4***
Questionable		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.8	***0.4***
V Mild & Mild		0.0	0.0	***0.0***	0.3	0.9	***0.6***	0.9	1.6	***1.3***	0.9	0.0	***0.5***	0.0	0.0	***0.0***
Moderate		0.0	0.0	***0.0***	0.0	0.9	***0.5***	0.6	0.3	***0.5***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Severe		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***

6.6. OTHER LESIONS

6.6.1 Extra oral lesions

Table 6.15 and Fig. 6.15 present the percent subjects with extra oral lesions by type of lesions. Seen in less than 5%, mostly as ulcerations & lymph nodes. Not of public health importance.



6.6.2 T M joint symptoms and signs

Table 6.16 and Fig. 6.16 present the percent subjects with temporomandibular joint (TM Joint) symptoms and signs.

Elicited in only the (35-44) year olds & (6 5-74) year olds. Clicking was the commonest finding. Less than 1% of those affected had reduced jaw mobility. Thus TMJ problems are not of public health importance in the state.

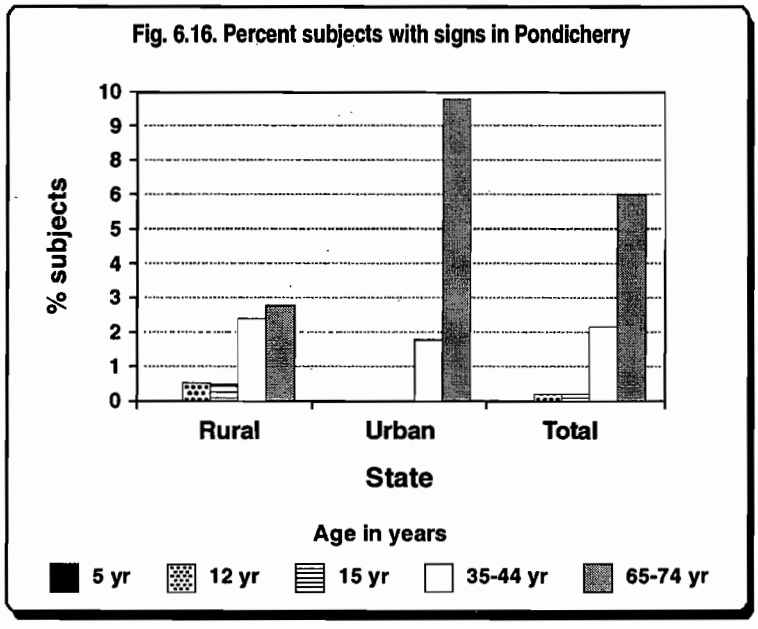


Table 6.15 Percent distribution of subjects with extra oral lesions by age, sex and geographical area. **State : Pondicherry**

Extra Oral Lesions		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	105	103	*208*	102	108	*210*	104	105	*209*	105	105	*210*	104	105	*209*
With extra oral lesions		1.0	0.0	*0.5*	0.0	0.0	*0.0*	1.0	1.0	*1.0*	1.0	2.9	*2.0*	3.8	1.0	*2.4*
Ulceration,sores,erosions,fissures		1.0	0.0	*0.5*	0.0	0.0	*0.0*	1.0	0.0	*0.5*	0.0	1.0	*0.5*	0.0	0.0	*0.0*
head, neck, limbs		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
nose, cheeks, chin		1.0	0.0	*0.5*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
commissures		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.0	*0.5*	0.0	0.0	*0.0*
vermilion border		0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.0	0.0	*0.5*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Cancrum oris		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Abnormalities of upper & lower lips		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.0	*0.5*	1.0	1.0	*1.0*	2.9	0.0	*1.5*
Enlarged lymph nodes(head & neck)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.0	1.0	*1.0*
State Urban	n=	52	53	*105*	54	54	*108*	51	54	*105*	55	53	*108*	50	54	*104*
With extra oral lesions		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	4.0	3.7	*3.9*
Ulceration,sores,erosions,fissures		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.9	*1.0*
head, neck, limbs		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
nose, cheeks, chin		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
commissures		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.9	*1.0*
vermilion border		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Cancrum oris		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Abnormalities of upper & lower lips		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	2.0	0.0	*1.0*
Enlarged lymph nodes(head & neck)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.9	*1.0*
State Total	n=	157	156	*313*	156	162	*318*	155	159	*314*	160	158	*318*	154	159	*313*
With extra oral lesions		0.3	0.0	*0.2*	0.0	0.0	*0.0*	0.3	0.3	*0.3*	0.3	0.9	*0.6*	4.0	2.9	*3.5*
Ulceration,sores,erosions,fissures		0.3	0.0	*0.2*	0.0	0.0	*0.0*	0.3	0.0	*0.2*	0.0	0.3	*0.2*	0.0	1.3	*0.7*
head, neck, limbs		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
nose, cheeks, chin		0.3	0.0	*0.2*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
commissures		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.3	*0.2*	0.0	1.3	*0.7*
vermilion border		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.3	0.0	*0.2*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Cancrum oris		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Abnormalities of upper & lower lips		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.3	*0.2*	0.3	0.3	*0.3*	2.3	0.0	*1.2*
Enlarged lymph nodes(head & neck)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.3	1.6	*1.0*

Table 6.16 Percent subjects with symptoms and signs in the tempromandibular joints by age, sex and geographical area State : Pondicherry

T M Joints Assessment		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	106	103	209	102	108	210	104	105	209	105	105	210	104	105	209
Symptoms present		0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	1.0	0.0	0.5	0.0	0.0	0.0
Signs present		0.0	0.0	0.0	0.0	0.9	0.5	1.0	0.0	0.5	1.9	2.9	2.4	3.8	1.9	2.9
Clicking		0.0	0.0	0.0	0.0	0.9	0.5	0.0	0.0	0.0	1.0	2.9	2.0	3.8	1.9	2.9
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5	1.0	0.0	0.5	0.0	0.0	0.0
Reduced jaw mobility		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Urban	n=	52	53	105	54	54	108	51	53	104	55	53	108	50	54	104
Symptoms present		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.0
Signs present		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	1.9	10.0	9.3	9.7
Clicking		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	1.9	8.0	7.4	7.7
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.0
Reduced jaw mobility		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.0
State Total	n=	158	156	314	156	162	318	155	158	313	160	158	318	154	159	313
Symptoms present		0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.3	0.0	0.2	0.0	1.3	0.7
Signs present		0.0	0.0	0.0	0.0	0.3	0.2	0.3	0.0	0.2	0.6	3.5	2.1	8.1	7.1	7.6
Clicking		0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.3	3.5	1.9	6.7	5.8	6.3
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.3	0.0	0.2	0.0	1.3	0.7
Reduced jaw mobility		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.7

6.6.3 Enamel defects (opacities, hypoplasia)

Table 6.17 and Fig. 6.17 presents the percent subjects with enamel defects by type of defect and Table 6.18 present the mean number of teeth affected with enamel defects by type of defects.

Structural enamel defects in teeth were recorded in terms of opacities and hypoplasias, types of opacities and combinations of both. The lower age group of 5 years was excluded from examination.

The prevalence of enamel defects was low: 3% of 12 year olds, 4% 0f 15 year olds and 0.6% of (35-44) year olds had enamel defects .Not of public health importance.

Fig. 6.17. Percent subjects with enamel defects in Pondicherry

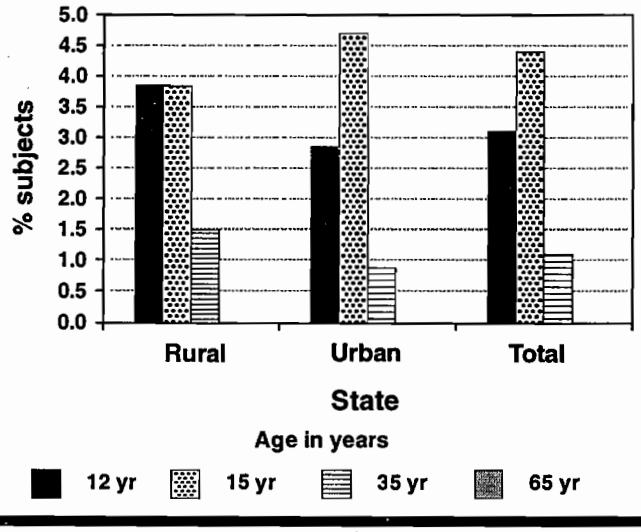


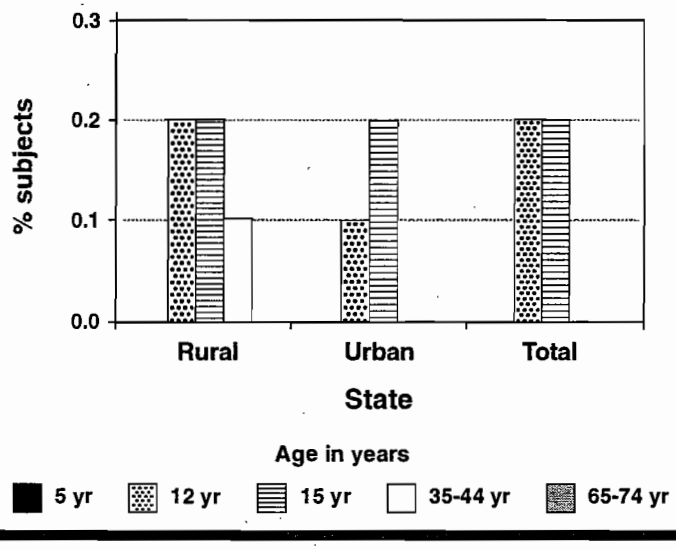
Table 6.17 Percent distribution of subjects with enamel defects (opacities/ hypoplasia) by age, sex & geographical area. State : Pondicherry

Enamel Opacities/Hypoplasia		12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	102	108	210	104	105	209	101	100	201	49	24	73
With enamel defects		2.0	5.6	3.8	3.8	3.8	3.8	1.0	2.0	1.5	0.0	0.0	0.0
with demarcated opacity		0.0	1.9	1.0	1.9	1.0	1.5	0.0	1.0	0.5	0.0	0.0	0.0
with diffuse opacity		0.0	0.0	0.0	0.0	1.0	0.5	1.0	1.0	1.0	0.0	0.0	0.0
with hypoplasia		1.0	0.9	1.0	0.0	0.0	0.0	1.0	0.0	0.5	0.0	0.0	0.0
with other defects		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with combinations of opacities and hypoplasia		1.0	2.8	1.9	1.9	1.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0
with all three conditions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Urban	n=	54	53	107	51	54	105	55	51	106	32	17	49
With enamel defects		3.7	1.9	2.8	2.0	7.4	4.7	1.8	0.0	0.9	0.0	0.0	0.0
with demarcated opacity		1.9	1.9	1.9	0.0	1.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0
with diffuse opacity		1.9	0.0	1.0	0.0	1.9	1.0	0.0	0.0	0.0	0.0	0.0	0.0
with hypoplasia		0.0	0.0	0.0	0.0	3.7	1.9	0.0	0.0	0.0	0.0	0.0	0.0
with other defects		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with combinations of opacities and hypoplasia		1.9	0.0	1.0	2.0	0.0	1.0	1.8	0.0	0.9	0.0	0.0	0.0
with all three conditions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Total	n=	156	161	317	155	159	314	156	151	307	81	41	122
With enamel defects		3.2	3.0	3.1	2.5	6.3	4.4	1.6	0.6	1.1	0.0	0.0	0.0
with demarcated opacity		1.3	1.9	1.6	0.6	1.6	1.1	0.0	0.3	0.2	0.0	0.0	0.0
with diffuse opacity		1.3	0.0	0.7	0.0	1.6	0.8	0.3	0.3	0.3	0.0	0.0	0.0
with hypoplasia		0.3	0.3	0.3	0.0	2.6	1.3	0.3	0.0	0.2	0.0	0.0	0.0
with other defects		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with combinations of opacities and hypoplasia		1.6	0.9	1.3	1.9	0.6	1.3	1.3	0.0	0.7	0.0	0.0	0.0
with all three conditions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 6.18 Mean number of teeth with enamel defects (opacities/ hypoplasia) by age, sex & geographical area. State : Pondicherry

Enamel opacities/Hypoplasia		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	*n=*	106	103	*209*	102	108	*210*	104	105	*209*	105	105	*210*	108	105	*213*
Mean no. of teeth with enamel defects		0.0	0.0	***0.0***	0.1	0.3	***0.2***	0.1	0.2	***0.2***	0.0	0.1	***0.1***	0.0	0.0	***0.0***
wiith demarcated opacity		0.0	0.0	***0.0***	0.0	0.1	***0.1***	0.0	0.1	***0.1***	0.0	0.1	***0.1***	0.0	0.0	***0.0***
with diffuse opacity		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with hypoplasia		0.0	0.0	***0.0***	0.0	0.1	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with other defects		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with combinations of opacities and hypoplasia		0.0	0.0	***0.0***	0.1	0.1	***0.1***	0.1	0.1	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
wiith all three conditions		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Urban	*n=*	52	53	*105*	54	54	*108*	51	54	*105*	55	53	*108*	50	55	*105*
Mean no. of teeth with enamel defects		0.0	0.0	***0.0***	0.2	0.0	***0.1***	0.0	0.3	***0.2***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
wiith demarcated opacity		0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.0	0.1	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with diffuse opacity		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with hypoplasia		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.2	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with other defects		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with combinations of opacities and hypoplasia		0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
wiith all three conditions		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Total	*n=*	158	156	*314*	156	162	*318*	155	159	*314*	160	158	*318*	158	160	*318*
Mean no. of teeth with enamel defects		0.0	0.0	***0.0***	0.2	0.1	***0.2***	0.0	0.3	***0.2***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
wiith demarcated opacity		0.0	0.0	***0.0***	0.1	0.1	***0.1***	0.0	0.1	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with diffuse opacity		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with hypoplasia		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.1	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with other defects		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with combinations of opacities and hypoplasia		0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
wiith all three conditions		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***

Fig. 6.18. Mean number of teeth with enamel defects in Pondicherry



6.6.4. Prosthetic status

The prosthetic status was recorded for subjects 15 yrs and above. The information was collected to assess the extent to which subjects were wearing dental prostheses including bridge, partial dentures and full dentures. The data was recorded separately for upper arch (maxillary teeth) and the lower arch (mandibular teeth).

Table 6.19 and Table 6.20 and Fig. 6.19 and 6.20 present the per cent subjects with prosthetic status of upper and lower dental arches, respectively, by type of prostheses. Table 6.21 presents the per cent subjects with full mouth removable dentures.

The prosthetic need refers to the unmet need for replacement of lost or missing teeth. Prostheses may include partial or full removable dentures and fixed prostheses including bridges. The data on prosthetic needs (upper and lower arches) should be correlated with the section on Prosthetic Status.

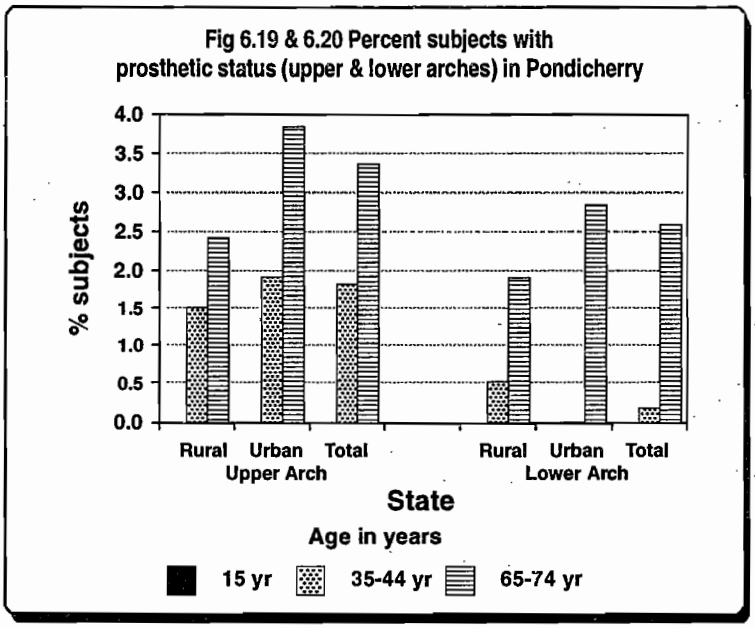


Table 6.19 Percent distribution of subjects with their prosthetic status (upper arch) by age, sex, and geographical area. State : Pondicherry

Prosthetic Status (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	*n=*	**104**	**105**	***209***	**105**	**105**	***210***	**108**	**105**	***213***
With Prostheses present		0.0	0.0	***0.0***	1.0	1.9	***1.5***	2.8	1.9	***2.4***
Bridge or more than one bridge		0.0	0.0	***0.0***	0.0	1.0	***0.5***	1.9	0.0	***1.0***
Partial denture		0.0	0.0	***0.0***	1.0	1.0	***1.0***	0.0	0.0	***0.0***
Both Bridge and partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Full removal Denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.9	1.9	***1.4***
State Urban	*n=*	**51**	**54**	***105***	**55**	**53**	***108***	**50**	**55**	***105***
With Prostheses present		0.0	0.0	***0.0***	1.8	1.9	***1.9***	4.0	3.6	***3.8***
Bridge or more than one bridge		0.0	0.0	***0.0***	1.8	1.9	***1.9***	2.0	0.0	***1.0***
Partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Both Bridge and partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Full removal Denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	2.0	3.6	***2.8***
State Total	*n=*	**155**	**159**	***314***	**160**	**158**	***318***	**158**	**160**	***318***
With Prostheses present		0.0	0.0	***0.0***	1.6	1.9	***1.8***	3.6	3.1	***3.4***
Bridge or more than one bridge		0.0	0.0	***0.0***	1.3	1.6	***1.5***	2.0	0.0	***1.0***
Partial denture		0.0	0.0	***0.0***	0.3	0.3	***0.3***	0.0	0.0	***0.0***
Both Bridge and partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Full removal Denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.7	3.1	***2.4***

Note: For information on the status and need for full mouth removable dentures, please refer to Tables 6.21 and 6.24 respectively.

Table 6.20 Percent distribution of subjects with their prosthetic status (lower arch) by age, sex, and geographical area. State : Pondicherry

Prosthetic Status (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	**104**	**105**	***209***	**105**	**105**	***210***	**108**	**105**	***213***
Prostheses present		0.0	0.0	***0.0***	0.0	1.0	***0.5***	1.9	1.9	***1.9***
Bridge or more than one bridge		0.0	0.0	***0.0***	0.0	1.0	***0.5***	0.9	0.0	***0.5***
Partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Both Bridge and partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Full removal Denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.9	1.9	***1.4***
State Urban	n=	**51**	**54**	***105***	**55**	**53**	***108***	**50**	**55**	***105***
Prostheses present		0.0	0.0	***0.0***	0.0	0.0	***0.0***	2.0	3.6	***2.8***
Bridge or more than one bridge		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	1.8	***0.9***
Both Bridge and partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Full removal Denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	2.0	1.8	***1.9***
State Total	n=	**155**	**159**	***314***	**160**	**158**	***318***	**158**	**160**	***318***
Prostheses present		0.0	0.0	***0.0***	0.0	0.3	***0.2***	2.0	3.1	***2.6***
Bridge or more than one bridge		0.0	0.0	***0.0***	0.0	0.3	***0.2***	0.3	0.0	***0.2***
Partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	1.3	***0.7***
Both Bridge and partial denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Full removal Denture		0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.7	1.8	***1.8***

Note: For information on the status and need for full mouth removable dentures, please refer to Tables 6.21 and 6.24 respectively.

Table 6.21 Percent subjects with full mouth removable denture (upper and lower arch) by age, sex and geographical area. State : Pondicherry

Prosthetic status (Full mouth removal dentures)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	104	104	*208*	104	105	*209*	106	105	*211*
% subjects with full mouth removable dentures		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.9	1.9	*1.4*
State Urban	n=	51	54	*105*	55	52	*107*	50	54	*104*
% subjects with full mouth removable dentures		0.0	0.0	*0.0*	0.0	0.0	*0.0*	2.0	1.9	*2.0*
State Total	n=	155	158	*313*	159	157	*316*	156	159	*315*
% subjects with full mouth removable dentures		0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.7	1.9	*1.8*

6.6.5 Prosthetic need (upper & lower)

Table 6.22 and Table 6.23 and Fig. 6.22 and 6.23 present the per cent subjects with need for prostheses of upper and lower dental arches, respectively, by type of prostheses.Table 6.24 presents the per cent subjects with need for full mouth removable dentures.

Less than 2% of (35-44) &3.5% of (65-74) age groups had prosthesis in the upper arch. Only 3% of the of (65-74) age groups had prosthesis in the lower arch. Nearly 3% of 15 year olds, 30% 0f (35-44) year olds, 76% (65-74) year olds needed prosthesis ranging from one unit (13%) to complete dentures (37%).

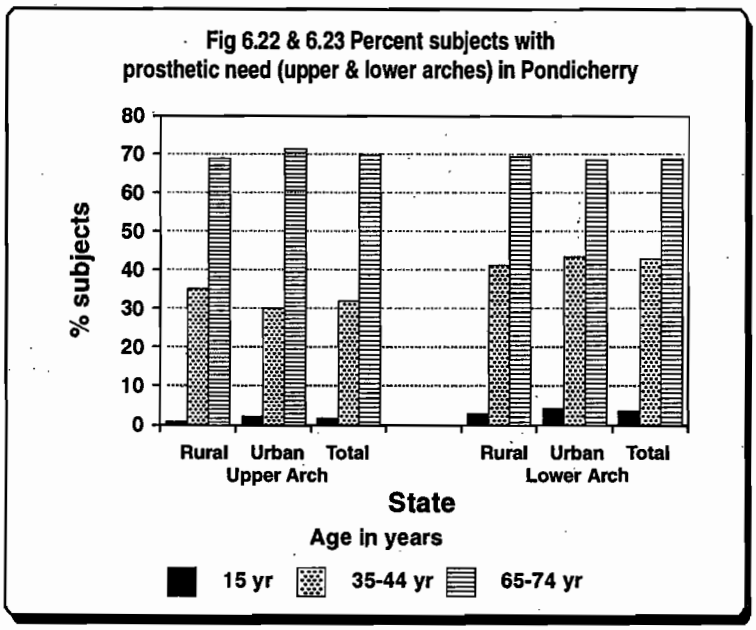


Table 6.22 Percent distribution of subjects with their prosthetic need status (upper arch) by age, sex, and geographical area. State : Pondicherry

Prosthetic Need (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	104	105	*209*	105	105	*210*	108	105	*213*
With Prosthetic need		0.0	1.9	*1.0*	27.6	41.9	*34.8*	68.5	65.7	*67.1*
Need for one unit prosthesis		0.0	1.9	*1.0*	10.5	19.0	*14.8*	4.6	4.8	*4.7*
Need for multi unit prosthesis		0.0	0.0	*0.0*	17.1	21.9	*19.5*	19.4	14.3	*16.9*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	1.0	*0.5*	0.9	1.0	*1.0*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	0.0	*0.0*	43.5	45.7	*44.6*
State Urban	n=	51	54	*105*	55	53	*108*	50	55	*105*
With Prosthetic need		3.9	0.0	*2.0*	27.3	32.1	*29.7*	78.0	63.6	*70.8*
Need for one unit prosthesis		3.9	0.0	*2.0*	14.5	11.3	*12.9*	12.0	3.6	*7.8*
Need for multi unit prosthesis		0.0	0.0	*0.0*	12.7	18.9	*15.8*	32.0	21.8	*26.9*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	1.9	*1.0*	34.0	38.2	*36.1*
State Total	n=	155	159	*314*	160	158	*318*	158	160	*318*
With Prosthetic need		2.7	0.6	*1.7*	27.4	35.1	*31.3*	75.0	64.3	*69.7*
Need for one unit prosthesis		2.7	0.6	*1.7*	13.3	13.7	*13.5*	9.6	4.0	*6.8*
Need for multi unit prosthesis		0.0	0.0	*0.0*	14.0	19.8	*16.9*	28.0	19.6	*23.8*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.3	*0.2*	0.3	0.3	*0.3*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	1.3	*0.7*	37.1	40.4	*38.8*

Note: For information on status and need for full mouth removable dentures, please refer to Tables 6.21 and 6.24 respectively.

Table 6.23 Percent distribution of subjects with their prosthetic need status (lower arch) by age, sex, and geographical area. State : Pondicherry

Prosthetic Need (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	104	105	*209*	105	105	*210*	108	105	*213*
With Prosthetic need		1.9	3.8	*2.9*	41.0	41.9	*41.5*	67.6	71.4	*69.5*
Need for one unit prosthesis		1.9	3.8	*2.9*	16.2	14.3	*15.3*	5.6	8.6	*7.1*
Need for multi unit prosthesis		0.0	0.0	*0.0*	24.8	26.7	*25.8*	20.4	16.2	*18.3*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.0	*0.5*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	1.0	*0.5*	41.7	45.7	*43.7*
State Urban	n=	51	54	*105*	55	53	*108*	50	55	*105*
With Prosthetic need		5.9	3.7	*4.8*	36.4	49.1	*42.8*	74.0	63.6	*68.8*
Need for one unit prosthesis		2.0	1.9	*2.0*	16.4	7.5	*12.0*	6.0	7.3	*6.7*
Need for multi unit prosthesis		3.9	1.9	*2.9*	20.0	39.6	*29.8*	34.0	18.2	*26.1*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	1.9	*1.0*	34.0	38.2	*36.1*
State Total	n=	155	159	*314*	160	158	*318*	158	160	*318*
With Prosthetic need		4.7	3.7	*4.2*	37.7	46.9	*42.3*	71.9	65.9	*68.9*
Need for one unit prosthesis		1.9	2.4	*2.2*	16.3	9.6	*13.0*	5.9	7.7	*6.8*
Need for multi unit prosthesis		2.7	1.3	*2.0*	21.4	35.7	*28.6*	29.6	17.6	*23.6*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.3	*0.2*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	1.6	*0.8*	36.5	40.4	*38.5*

Note: For information on status and need for full mouth removable dentures, please refer to Tables 6.21 and 6.24 respectively.

Table 6.24. Percent subjects with need for full mouth removable denture (upper and lower arch) by age, sex and geographical area. State : Pondicherry

Prosthetic need for full denture (upper & lower arch)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	104	103	207	104	105	209	106	104	210
% subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	0.0	0.0	42.5	44.2	43.4
State Urban	n=	51	54	105	55	52	107	50	54	104
% subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	1.9	1.0	34.0	37.0	35.5
State Total	n=	155	157	312	159	157	316	156	158	314
% subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	1.3	0.7	36.7	39.2	38.0

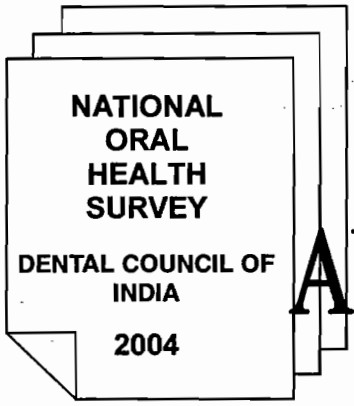
6.6.6 Community need for immediate care and referrals

Table 6.25 presents the percent subjects with life threatening conditions, pain or infection, other conditions, and referrals made.

All cases needing treatment were referred. Only 2% needed immediate care which was life threatening.

Table 6.25 Percent distribution of subjects with life threatening and painful conditions requiring immediate care and referral by age, sex and geographical area.
State : Pondicherry

Need For Care & Referral		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	105	102	207	102	108	210	104	105	209	103	105	208	100	99	199
Life threatening condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.0
Pain or infection		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.5
Referral		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	1.5
State Urban	n=	51	52	103	54	53	107	51	54	105	55	53	108	47	53	100
Life threatening condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.1
Pain or infection		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.0
Referral		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.1
State Total	n=	156	154	310	156	161	317	155	159	314	158	158	316	147	152	299
Life threatening condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.1
Pain or infection		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.3	0.8
Referral		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	1.2



ANNEXURES

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ANNEXURE - 1

CENTRAL SURVEY TEAM

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Prof. P. P. Talwar

Mr. H. B. Chanana

ANNEXURE - 2

TECHNICAL WORKING GROUP

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Dr. M.B. Aswathnarayana

Prof. P.P. Talwar

Dr. Amrit Tiwari

LIST OF STATES, REGIONS WITHIN STATES AND SELECTED DISTRICTS

ANNEXURE - 3

Sr. No	State	Regions	Region Code	Selected Districts
1	Andhra Pradesh	North Coastal Andhra	01	Vishakapatnam
		South Coastal Andhra	02	Guntur
		Nellore	03	Nellore
		Rayalseema	04	Chittoor
		S Telangana	05	Ranga Reddy
		N Telangana	06	Khammam
2	Assam	N Eastern Hills	01	Karbi Anglong
		Lower Brahamputra	02	Kamrup
		Upper Brahamputra	03	Jorhat
3	Gujarat	S Hills	01	Bulsar
		S Gujarat	02	Surat
		M Gujarat	03	Baroda
		N Gujarat	04	Ahmedabad
		N W Arid	05	Kutch
		N Saurashtra	06	Jamnagar
		Saurashtra	07	Junagarh
4	Haryana	Foot Hills of Shivalik	01	Yamunanagar
		Plains	02	Rohtak
		Arid	03	Sirsa
5	Himachal Pradesh		01	Simla
			02	Kinnaur
6	Punjab	N Punjab	01	Roppas (Ropar)
		C Punjab	02	Patiala
		S Punjab	03	Sangrur
7	Chandigarh	Chandigarh	01	Chandigarh
8	Delhi	Delhi	01	Delhi
9	Karnataka	N Dry Region	01	Dharwad
		Central Region	02	Bangalore
		S Region	03	Mysore
		Hills & Coastal Region	04	Kodagu
10	Kerala	Coastal Midland	01	Malappuram
		Midlands	02	Kottayam
		Hills	03	Wayanad
11	Madhya Pradesh	Bundelkhand	01	Chattarpur
		Chattisgarh Hills	02	Mandla
		Keymora Plateau & Satapura Hills	03	Jabalpur

Sr. No	State	Regions	Region Code	Selected Districts
		Vindhya Plateau	04	Bhopal
		Satpura Plateau	05	Chindwara
		Central Narmada Valley	06	Hoshangabad
		Gird	07	Guna
		Malwa & Nimar (?) Plateau	08	Indore
12	Maharashtra	E Vidharba	01	Bhandara
		W Hills & Plains	02	Nasik
		Scarcity Region	03	Ahmednagar
		C Plateau	04	Amrawati
		C Vidharba	05	Wardha
		Konkan	06	Thane
13	Goa	Goa	01	Goa
14	Orissa	Inland	01	Dhankonal
		N Plateau Hills	02	Keonjar
		S W Hills	03	Koraput
		Coastal	04	Cuttack
		Ganjan	05	Ganjam
15	Rajasthan	N Arid	01	Ganganagar
		S Plains	02	Udaipur
		E Plains	03	Jaipur
		S Plateau	04	Jhalawar
		W Arid	05	Sikar
16	Tamil Nadu	N Region	01	Salem
		C Region	02	Coimbatore
		NE Coastal	03	Chennai
		Delta	04	Thanjavur
		SE Coastal	05	Tirunevalli
		S Region	06	Kanyakumari
		Hills Region	07	Nilgiri
17	U P	N E Plains	01	Gonda
		E Plains	02	Ballia
		C Plains	03	Sitapur
		N W Plains	04	Ghaziabad
		S W Plains	05	Aligarh
		Bundelkhand	06	Banda
18	J & K	Ladhakh	01	Ladakh
		Kashmir Valley	02	Srinagar
		Jammu	03	Jammu
19	Pondicherry	Pondicherry	01	Pondicherry

ANNEXURE - 4

LIST OF PARTICIPATING DENTAL COLLEGES

1.	Regional Dental College, Guwahati, (Assam)
2.	Govt. Dental College & Hospital, Ahmedabad (Gujarat)
3.	Maulana Azad Dental College & Hospital, MAMC, Delhi
4.	B.R.S. Dental College & Hospital Panchkula (Haryana)
5.	Dental College, Rohtak (Haryana)
6.	H.P. Govt. Dental College, Shimla (H.P.)
7.	College of Dental Surgery, Kasturba Medical College, Mangalore (Karnataka)
8.	Govt. Dental College, Bangalore
9.	Bharati Vidyapeeth Dental College & Hospita, Pune
10.	Dental Wing, S.C.B. Medical College, Cuttak (Orissa)
11.	Mahatma Gandhi Dental College & Hospital, Pondicherry
12.	Faculty of Dental Science, C. S. M. S. S. University, Lucknow
13.	College of Dentistry, Indore (M.P)
14.	Sri Sai College of Dental Surgery, Vikarabad – 501 101 (R.R. Dist. – A.P.)
15.	Govt. Dental College, Thiruvananthapuram, Kerala
16.	Govt. Dental College, Calicut, Kerala
17.	Govt. Dental College, Kottayam. Kerala.

ANNEXURE - 5

REGIONAL COORDINATORS

S. No.	State	Regional Coordinator
1.	Andhra Pradesh	Dr. A. Jayakumar, Principal Sri Sai College of Dental Surgery, Vikarabad
2.	Assam	Dr. Rubi Kataki Deptt. of Conservative Dentistry, Regional Dental College, Guwahati
3.	Delhi	Dr. Mahesh Verma, Principal, Dental College & Hospital, Maulana Azad Medical College,New Delhi
4.	Gujarat	Dr. Jayesh K. Parikh Govt. Dental College & Hospital, Ahmedabad.
5.	Himachal Pradesh, Punjab, Haryana, Chandigarh	Dr. N.C. Rao H.P. Govt. Dental College & Hospital, Shimla Deptt. of Community Dentistry,
6.	Jammu & Kashmir	Dr. Tara Singh Govt. Dental College, Srinagar.
7.	Karnataka	Dr. S.S. Hiremath Deptt. Of Community Dentistry, Govt. Dental College, Bangalore.
8.	Kerala	Dr. K. Nanda Kumar, Dental College, Medical Campus, Trivandrum
9.	Madhya Pradesh	Dr. S.V. Dhodapkar, Professor & Head of the Deptt. of Periodontics, College of Dentistry, Indore.
10.	Maharashtra, Goa	Dr. S.G. Damle, Dean, Nair Hospital Dental College, Mumbai.
11.	Orissa	Dr. Ashok K. Mahapatra Deptt. of Community Dentistry, S.C.B. Medical College, Cuttack.
12.	Tamil Nadu, Pondicherry	Dr. M.B. Aswathnarayanan, Deptt. of Community Dentistry, Govt. Dental College & Hospital, Chennai.
13.	Rajasthan	Dr. G. V. N. Ramesh, Principal, Pacific Dental College, Udaipur

ANNEXURE - 6

TEAM MEMBERS (PONDICHERRY)

S. No.	Name	Designation
A.	**Regional Coordinator** (Tamilnadu & Pondicherry)	Dr. M.B. Aswath Narayanan, B.Sc., MDS Professor and Head Preventive & Community Dentistry Tamil Nadu Govt. Dental College and Hospital, Chennai – 600 003.
B.	**Supervisor (1)** i) Pondicherry	Dr. C. Ajith Krishnan MDS. Head of the Department Preventive & Community Dentistry Mahatma Gandhi Dental College & Hospital Old Secretariat Building, Indira Nagar, Gorimedu, Pondicherry – 605 006.
	Mahatama Gandhi Dental College	
1.	N. Diana	
2.	Karthikeyan D	
3.	Lioni A	
4.	Radhika G	
5.	Indumathy	
6.	Ezhil Chellam Christina	
7.	J. Valli	

ANNEXURE - 7

DENTAL COUNCIL OF INDIA, NEW DELHI
भारतीय दंत चिकित्सा परिषद, नई दिल्ली
NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING 2002
राष्ट्रीय मुख स्वास्थय सर्वेक्षण तथा फ्लोराइड मैपिंग 2002

(A NATIONAL EPIDEMIOLOGICAL STUDY OF ORAL HEALTH PROBLEMS AND FLUORIDE ESTIMATION IN WATER SAMPLES)
(मुख स्वास्थय समस्याओं सम्बन्धी महामारी विज्ञान का राष्ट्रीय अध्ययन तथा जल–नमूनों में फ्लोराइड एस्टीमेशन)

DATE / तिथि | | | | | 0 | 2 | (DAY) (MONTH) (YEAR)

FORM NO. फार्म संख्या | 1 | 0 | (1-2)

STATE / राज्य | | | (6-7)

TEAM NO. दल संख्या (टीम) | | | | (3-5)

ZONE / क्षेत्र (ज़ोन) | | | (8-9)

DISTRICT / जिला | | (10)

NAME OF VILLAGE / URBAN BLOCK _____ (11-12)
गांव/शहरी ब्लाक का नाम

VILLAGE CODE **R / U /** आर/यू **R = 1 U = 2** | 1 (R) | 2 (U) | (13)

SERIAL NO. OF HOUSEHOLD VISITED | | | | (14-16)
सर्वेक्षण किये गये (सर्वेक्षित) घरों की क्रम संख्या

NAME OF HEAD OF HOUSEHOLD Mr. / Mrs. _____
घर के मुखिया का नाम

NAME OF SPOUSE _____
पत्नी का नाम

ADDRESS OF THE HOUSEHOLD _____
घर का पता

_____

NAME OF INTERVIEWER _____
साक्षात्कार कर्ता का नाम **(NAME) /** नाम **(SIGN) /** हस्ताक्षर

FIELD CHECKED BY _____
क्षेत्र जांचकर्ता **(NAME) /** नाम **(SIGN) /** हस्ताक्षर **(SUPERVISOR) /** (सुपरवाइजर)

SCRUTINISED BY _____
जांचकर्ता **(NAME) /** नाम **(SIGN) /** हस्ताक्षर **(SUPERVISOR) /** (सुपरवाइजर)

CHECKED BY _____
जांचकर्ता **(NAME) /** नाम **(SIGN) /** हस्ताक्षर **(COORDINATOR) /** (संयोजक)

A. SOCIO-ECONOMIC & DEMOGRAPHIC CHARACTERISTICS OF THE FAMILY
अ. परिवार की सामाजिक–आर्थिक विशिष्टताएं

FORM NO. फार्म संख्या | 1 | 1 |

S. No./ क्रम सं.	Question / प्रश्न	Code / कोड	
1.	***Name of Respondent and his/her relationship with Head of HH*** उत्तरदाता का नाम तथा घर के मुखिया से उसका सम्बन्ध	***(Head of Household)*** ***Self/*** स्वयं ..... ***1*** ***FATHER/*** पिता ..... ***2*** ***MOTHER/*** माता ..... ***3*** ***BROTHER/*** भाई ..... ***4*** ***OTHER/*** अन्यं ***5***	
2.	***Age of Respondent (in completed years)*** उत्तरदाता की आयु (पूर्ण वर्षों में)	☐☐ ***Yrs./*** वर्ष	(17-18)
3.	***Sex of the Respondent*** उत्तरदाता का लिंग	***M=1/*** पु. ☐ ***M=2/*** स्त्री ☐	(19)
4.	***Religion of the Household*** धर्म *(Tick One)/* (एक पर चिन्ह लगायें)	***Hindu/*** हिन्दू ..... ***1*** ***Muslim/*** मुस्लिम ..... ***2*** ***Sikh/*** सिख ..... ***3*** ***Christian/*** ईसाई ..... ***4*** ***Others/*** अन्यं ***5***	(20)
5.	***Caste of the Household*** जाति *(Tick One)/* (एक पर चिन्ह लगायें)	***SC/*** अनु. जाति ..... ***1*** ***ST/*** आदिम जाति ..... ***2*** ***OBC/*** अन्य पिछड़ा वर्ग ..... ***3*** ***Others/*** अन्यं ***4***	(21)
6.	***What is the highest educational level completed by the Head of the HH?*** मुखिया का शिक्षा स्तर	***Illiterate*** अशिक्षित ..... ***1*** ***Primary*** प्राइमरी ..... ***2*** ***Middle*** मिडिल ..... ***3*** ***High School*** हाईस्कूल ..... ***4*** ***Graduate*** स्नातक ..... ***5*** ***Professional*** व्यवसायिक ***6***	(22)
7.	***How much is the TOTAL Monthly Expenditure of the Household?*** घर का कुल मासिक व्यय कितना है?	***TOTAL Rs.*** कुल रु. ☐☐☐☐☐	(23-27)
8.	***Type of House (Observe & record)*** मकान किस प्रकार का है? (देखें व लिखें)	***Kuccha/*** कच्चा ..... ***1*** ***Semi-Pucca/*** आधा–पक्का ..... ***2*** ***Pucca/*** पक्का ***3***	(28)

S. No./ क्रम सं.	Question / प्रश्न	Code / कोड	
9.	***Total No. of members in the family (probe and record the number)*** परिवार में कुल सदस्यों की संख्या (जांच करें व लिखें)	***M*** / पु.	***F*** / स्त्री (29-30)
10.	***No. of persons 5 years old*** पांच वर्ष की आयु के व्यक्तियों की संख्या	***M*** / पु.	***F*** / स्त्री (31-32)
11.	***No. of persons 12 years old*** बारह वर्ष की आयु के व्यक्तियों की संख्या	***M*** / पु.	***F*** / स्त्री (33-34)
12.	***No. of persons 15 years old*** पन्द्रह वर्ष की आयु के व्यक्तियों की संख्या	***M*** / पु.	***F*** / स्त्री (35-36)
13.	***No. of persons 35-44 years old*** 35–44 वर्ष की आयु के व्यक्तियों की संख्या	***M*** / पु.	***F*** / स्त्री (37-38)
14.	***No. of persons 65-74 years old*** 65–74 वर्ष की आयु के व्यक्तियों की संख्या	***M*** / पु.	***F*** / स्त्री (39-40)

B. FOOD HABITS / खाद्य सम्बन्धी आदतें

S. No./ क्रम सं.	Question / प्रश्न	Code / कोड	
15.	***What is your staple (main) food in the Household?*** आपका मुख्य अन्न क्या है? *(Tick One)/* (एक पर चिन्ह लगायें)	***Wheat*** / गेंहू ..... 1 ***Rice*** / चावल ..... 2 ***Maize*** / मक्का ..... 3 ***Jowar*** / ज्वार ..... 4 ***Bajra*** / बाजरा ..... 5 ***Others*** / अन्य 6	(41)
16.	***What is your main source of drinking water? (Take a sample of water in the given jar if the source of water is different from the one where earlier sample was collected)*** आपका पीने के पानी का मुख्य स्रोत क्या है? (पूर्व घर में एकत्रित नमूने से यदि यहाँ का स्रोत भिन्न है तो जार में पानी का नमूना लें) *(Tick One)/* (एक पर चिन्ह लगायें)	***Pipe/Tap*** / पाईप/टोटी ..... 1 ***Tubewell/Handpump*** / ट्यूबवैल ..... 2 ***Draw Well*** / हैंड पम्प ..... 3 ***Pond*** / कूआं ..... 4 ***River*** / नदी ..... 5 ***Others*** / अन्य 6	(42)
17.	***Identification of the drinking water source as marked on jar or bottle in which sample collected from this HH source or one before (if source is same)*** पानी के नमूने की संख्या?	☐	(43)
18.	***Is your family predominantly Veg./Non-Veg.*** क्या आपका परिवार मुख्य रूप से शाकाहारी/सामिस्र है? *(Tick One)/* (एक पर चिन्ह लगायें)	***Veg.*** / शाकाहारी ..... 1 ***Non-Veg.*** / सामिस्र 2	(44)

FORM NO. फार्म संख्या | 1 | 2 |

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		Interviewee's Age / साक्षात्कार देने वाले की आयु					
					5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
A. अ.	**Socio-demographic cherecteristics of the individual** व्यक्ति की सामाजिक विशिष्टताएं									
19.	*Name of Individual (Interviewee) /* साक्षात्कार देने वाले व्यक्ति का नाम									
20.	*Name of Respondent and his/her relationship with Individual (Interviewee)/* उत्तरदाता का व्यक्ति से संबंध	*Self /* स्वयं ..... 1 *FATHER/* पिता ..... 2 *MOTHER/* माता ..... 3 *BROTHER/* भाई ..... 4 *OTHER/* अन्य 5				N.A.	N.A.	N.A.	N.A.	(45-49)
21.	*Age of Individual (Interviewee) (in completed years) /* साक्षात्कार देने वाले की आयु (पूर्ण वर्षों में)				5 Yrs.	12 Yrs.	15 Yrs.			(50-59)
22.	*Sex /* लिंग	*M=1* *F=2* पुरुष–1 स्त्री–2			M = 1 F = 2	M = 1 F = 2	M = 1 F = 2	M = 1 F = 2	M = 1 F = 2	(60-64)
23.	*What is the level of Education attained by you? /* आप की शिक्षा का स्तर क्या है? *(Tick One)/* (एक पर चिन्ह लगायें)	*Illiterate /* अशिक्षित ..... 1 *Primary /* प्राइमरी ..... 2 *Middle /* मिडिल स्कूल ..... 3 *High School /* हाई स्कूल ..... 4 *Graduate /* स्नातक ..... 5 *Professional /* व्यवसायिक 6			NOT TO BE ASKED	*(MENTION CODE 1-6 AS APPLICABLE AGAINST EACH AGE GROUP)*				(65-69)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
24.	Your occupation or Profession ? / आपका रोजगार या व्यवसाय?	Farmer ..... 1 कृषक Agriculture Labour ..... 2 कृषि श्रमिक Business ..... 3 व्यापार Professional ..... 4 व्यवसाय White Collar Worker ..... 5 व्हाईट–कालर कार्य Skilled Worker ..... 6 सीखा हुआ कर्मचारी Unskilled Worker ..... 7 बिना सीखा हुआ कर्मचारी Other (Specify) ..... 8 अन्य			SKIPPED	SKIPPED				(70-74)
25.	How often do you read a Newspaper? / आप समाचार–पत्र कब पढ़ते है?	Daily ..... 1 प्रतिदिन Sometime ..... 2 कभी–कभी Not at all ..... 3 कभी नहीं			BE	BE				(75-79)
26.	How often do you listen to Radio? / आप रेडियो कब सुनते हैं?	Daily ..... 1 प्रतिदिन Sometime ..... 2 कभी–कभी Not at all ..... 3 कभी नहीं			TO	TO				(80-84)
27.	How often do you watch to TV? / आप टी वी कब देखते हैं?	Daily ..... 1 प्रतिदिन Sometime ..... 2 कभी–कभी Not at all ..... 3 कभी नहीं			NOT	NOT				(85-89)
28.	How often do you watch Cinema in a Hall? / आप सिनेमा हाल में कब देखते हैं? (Tick One)	Once in 3 months ..... 1 3 माह में एक बार Less often ..... 2 बहुत कम Not at all ..... 3 कभी नहीं								(90-94)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	

B. Abnormal Oral Habits

ब. मुख सम्बन्धी असामान्य आदतें

29.	***Does the interviewee generally breathe by nose or mouth ? /*** आप साधारणतया नाक से सांस लेते हैं या मुँह से?	***Nose/*** नाक	***1***							(95-99)
		Mouth/ मुँह	***2***							
		Can't Say/ कह नहीं सकता	***3***							
30.	***Did/does the interviewee have a habit of sucking or biting his/her fingers or Thumb?*** क्या आपको अपनी उँगली चूसने या दांतों से दबाने की आदत हैं या थी? (देखें और लिखें)	***No/*** नहीं	***1***							(100-104)
		Yes/ हां	***2***							
		Can't Say/ कह नहीं सकता	***3***							
31.	***Did/does the interviewee have a habit of thrusting his/her tongue on his/her teeth? (Observe & Record) /*** क्या आपको अपनी जीभ दांतों पर दबाने की आदत है या थी? (देखें और लिखें)	***No/*** नहीं	***1***							(105-109)
		Yes/ हां	***2***							
		Can't Say/ कह नहीं सकता	***3***							
32.	***Did/does the interviewee have a habit of bitting nails, lips or objects like a pencil*** क्या साक्षात्कार देने वाले को नाखून, होंठ या पेन्सिल जैसी चीजें चबाने की आदत है या थी?	***No/*** नहीं	***1***							(110-114)
		Yes/ हां	***2***							
		Can't Say/ कह नहीं सकता	***3***							
33.	***Did/does the interviewee have a habit of gritting or grinding his/her teeth consciously, unconsciously, during sleep or moments of stress? /*** क्या आपको जाने–अनजाने सोते समय या किसी दबाव के समय अपने दांत रगड़ने की आदत है या थी?	***No Habit/*** आदत नहीं	***1***							(115-119)
		In Sleep/ नींद में	***2***							
		In Stress/ दबाव में	***3***							
		Can't Say/ कह नहीं सकता	***4***							

C. Eating Habits

स. खान–पान की आदतें

34.	***How many times between today & yesterday have you taken anything sweet? (Help to recall number of times sweet taken during last 24 hrs.) /*** आपने कल और आज के बीच कितनी बार मीठा खाया? (पिछले 24 घंटों के दौरान कितनी बार मीठा खाया, याद दिलाने में सहायता करें)	***1 times/*** एक बार	***1***							(120-124)
		2 times/ 2 बार	***2***							
		3 times/ 3 बार	***3***							
		4 times/ 4 बार	***4***							
		5 times/ 5 बार	***5***							
		> 5 times/ 6 बार	***6***							
		Not taken/ नहीं खाई	***7***							

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
35.	When were these sweet eaten ? / मीठा कब–कब खाया गया?	During Meals ..... 1 भोजन के समय In Between Meals ..... 2 भोजन के समय के बीच During & In Between Meals ..... 3 भोजन के समय व बीच में N.A. / लागू नहीं होता 4								(125-129)

D. Oral Hygiene Practices
द. मुख की सफाई

36.	How do you generally clean your teeth?/ सामान्यतः आप अपने दांत कैसे साफ करते हैं?	Finger/ उंगली से ..... 1 Brush/ ब्रुश से ..... 2 Datun/ दातुन ..... 3 Others (Specify) ..... 4 अन्य		If Code chosen either 3 or 4, go to Q. 42.						(130-134)
37.	How often do you clean your teeth in a day ? / दिन में आप कितनी बार दांत साफ करते हैं?	Once/ दिन में एक बार ..... 1 Twice/ दिन में दो बार ..... 2 After every meal ..... 3 प्रति भोजन के बाद Don't clean every day ..... 4 प्रतिदिन साफ नहीं करते								(135-139)
38.	What are your timings of cleaning teeth ? / दांत साफ करने का समय क्या है?	Morning only/ केवल प्रातःकाल ..... 1 Night only (before going to bed) ..... 2 केवल रात में सोने से पहले Morning & Night ..... 3 प्रातःकाल व रात After meals ..... 4 भोजन के बाद Others (Specify) ..... 5 अन्य								(140-144)
39.	What material do you generally use to clean teeth ? / सामान्यतः आप अपने दांत किस चीज से साफ करते हैं?	Toothpaste ..... 1 टूथपेस्ट Toothpowder ..... 2 टूथपाउडर Others (Specify) ..... 3 अन्य		If Code chosen 3, go to Q. 41						(145-149)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
40.	***Check tooth paste/powder used and record whether it is fluoridated or non-fluoridated?*** प्रयुक्त किये गए टूथ पेस्ट/पाउडर को चैक करें व लिखें वह फ्लोराइड–युक्त है या फ्लोराइड रहित?	***Fluoridated*** ..... ***1*** फ्लोराइड–युक्त ***Non-Fluoridated*** ..... ***2*** फ्लोराइड–रहित ***Can't Say*** ..... ***3*** कह नहीं सकता ***None*** ***4***								(150-154)
41.	***(Ask only if code in Q. 36 was 2.)*** ***How often do you change your toothbrush?*** आप अपना टूथ ब्रश कितने समय बाद बदलते हैं?	***1-3 months/*** 1–3 माह ..... ***1*** ***4-6 months/*** 4–6 माह ..... ***2*** ***6 + months/*** ..... ***3*** 6 से अधिक ***NA (Not using/ Brush)*** ***4***								(155-159)
42.	***How often you rinse your mouth with water after eating? /*** क्या भोजन करने के बाद आप पानी से कुल्ला करते हैं।	***Never*** ..... ***1*** कभी नहीं ***Sometimes*** ..... ***2*** कभी–कभी ***Always*** ..... ***3*** सर्वदा								(160-164)
43.	***Do you use any other oral hygiene aids?*** क्या आप मुँह साफ करने के लिए किसी अन्य साधन का इस्तेमाल करते हैं? ***(Tick as many as reported)*** **(जितना बताएं सब लिखें)**	***Dental Floss*** ..... ***1*** डेन्टल फ्लॉश ***Interdental Brush*** ..... ***2*** इन्टरडेन्टल ब्रुश ***Toothpicks*** ..... ***3*** टूथ पिक्स ***Fluoride Mouthrinse*** ..... ***4*** फ्लोराइड माउथरिन्स ***Other*** ..... ***5*** ***Mouthwash/Rinse (Specify)*** अन्य माउथवाश/रिन्स लिखें ***None/*** कोई नहीं ***6***								(165-184)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	

E. Pattern of Practices for Dental Treatment

द. दंत–चिकित्सा के तरीके

44.	***Have you suffered from any mouth or teeth problems in the last one year?/*** क्या पिछले एक वर्ष में आपको मुख या दांत सम्बन्धी कोई बीमारी हुई है?	***No/*** नहीं ***Yes*** / हां ***Can't Say/*** कह नहीं सकता	***1*** ***2*** ***3***	**If No. Go to Q. 47**						(185-189)
45.	***What were or was the problem?*** यदि हां, तो समस्या क्या थी या है? ***(Tick as many as reported)*** (जितना बताएं सब लिखें)	***Dental decay*** दंत–क्षय ***Gum disease*** मसूड़ों की बीमारी ***Foul breath*** दुर्गन्धित सांस ***Bleeding gums*** मसूड़ों से खून बहना ***Trauma*** ट्रोमा (चोट) ***Abscess*** एबसेस (फोड़ा) ***Crooked teeth*** टेढ़े–मेढ़े दांत ***Ulcer*** अल्सर ***Others (Specify)*** अन्य (लिखें)	***1*** ***2*** ***3*** ***4*** ***5*** ***6*** ***7*** ***8*** ***9***							(190-209)
46.	***Who was or were consulted?*** आपने किससे राय ली? ***(Tick as many as reported)*** (जितना बताएं सब लिखें)	***None/*** कोई नहीं ***Friend/Neighbour*** मित्र / पड़ोसी ***Relative/*** रिश्तेदार ***Med. Practitioner*** मेडिकल प्रेक्टिश्नर ***Pharmacist/ Chemist*** फारमासिस्ट / कैमिस्ट ***Untrained Dentist*** अनट्रेण्ड डेन्टिस्ट ***Trained Dentist*** टेण्ड डेन्टिस्ट ***Others (Specify)*** अन्य	***1*** ***2*** ***3*** ***4*** ***5*** ***6*** ***7*** ***8***							(210-229)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
47.	***Are you suffering or have you ever suffered from one or more of the following :*** क्या आपको कभी निम्न बीमारियाँ थीं या हैं? ***(Tick as many as reported)*** (जितना बताएं सब लिखें)	***None/*** कोई नहीं ***Hypertension*** हाईपरटेन्शन ***Diabetes*** डाईबिटीज़ ***Epilepsy*** एपिलेप्सी ***Jaundice*** जोन्डिस ***Asthma*** अस्थमा ***Others (Specify)*** अन्य ***Can't Say/*** कह नहीं सकता	***1*** ***2*** ***3*** ***4*** ***5*** ***6*** ***7*** ***8***							(230-249)
48.	***What is or are the availability of dental treatment facilities in your area? /*** आपके क्षेत्र में दंत–चिकित्सा सम्बन्धी क्या सुविधाएं उपलब्ध हैं? ***(Tick as many as reported)*** (जितना बताएं सब लिखें)	***None/*** कोई नहीं ***Govt. Hosp./ Dispensary*** सरकारी हस्पताल/ डिस्पेन्सरी ***Private Hospitals*** निजी हस्पताल ***Private Practitioner*** प्राइवेट प्रेक्टिशनर ***Don't Know*** नहीं जानते	***1*** ***2*** ***3*** ***4*** ***5***							(250-269)
49.	***How accessible are the Oral health facilities with available transport?*** उपलब्ध परिवहन द्वारा मुख–स्वास्थ्य सुविधाओं तक पहुंच का समय।	***Less than ½ hour*** आधा घण्टा से कम ***½ to 1 hour*** आधा से 1 घण्टा ***> 1 hour*** 1 घण्टा से अधिक ***Can't Say*** कह नहीं सकता	***1*** ***2*** ***3*** ***4***							(270-274)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	

F. Awareness and Knowledge of Dental Health Problems

एफ. दंत–स्वास्थ्य समस्याओं की जानकारी व जागरूकता

50.	**What, in your opinion, are the common problems associated with mouth and teeth? /** आपकी राय में मुख व दांतों से सम्बन्धित सामान्य समस्याएँ क्या हैं? **(Tick as many as reported)** (जितना बताएं सब लिखें)	**Tooth Decay** ..... 1 दंत–क्षय **Gum Disease** ..... 2 मसूड़ों की बीमारी **Bad Smell** ..... 3 दुर्गन्ध **Crooked teeth** ..... 4 टेढ़े–मेढ़े दांत **Mouth Ulcers** ..... 5 मुख का अल्सर **Stained teeth** ..... 6 गन्दे दांत **Others (Specify)** ..... 7 अन्य **Don't Know** ..... 8 नहीं जानता			SKIP TO BE ASKED					(275-294)
51.	**What, in your opinion, are the major factors which cause dental problems?/** आपकी राय में, किन मुख्य कारणों से दांतों की समस्याएँ पैदा होती हैं? **(Tick as many as reported)** (जितना बताएं सब लिखें)	**Eating sweets icecreams/chocolates** ..... 1 मिठाई/आइसक्रीम/चाकलेट खाना **Not brushing regularly** ..... 2 नियमित रूप से ब्रुश न करना **Not rinsing** ..... 3 पानी से मुख साफ न करना **Consuming Tobacco products/** ..... 4 तम्बाकू उत्पाद खाना **Others (Specify)** ..... 5 अन्य **Don't Know** ..... 6 नहीं जानता								(295-314)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
52.	*How can you prevent dental problems?/* आप किस प्रकार दांतों की बीमारियों को रोक सकते हैं? *(Tick as many as reported)* (जितना बताएं सब लिखें)	*Not consuming tobacco products* / तम्बाकू उत्पादों का इस्तेमाल न करके	1		ASKED					(315-334)
		Regular cleaning of teeth with brush ब्रुश द्वारा दांतों की नियमित सफाई	2							
		Visiting dentist regularly दंत–चिकित्सक द्वारा नियमित जांच	3							
		Using Fluoride Toothpaste फ्लोराइड टूथ–पेस्ट का इस्तेमाल	4							
		Avoiding sweets icecreams/chocolates मिठाई, आइसक्रीम व चाकलेट छोड़कर	5							
		Others (Specify) अन्य तरीके	6							
		Don't Know नहीं जानता	7							

G. Tobacco Smoking and Chewing Habits
जी. तम्बाकू चबाने व पीने की आदतें

53.	*Do you smoke? /* क्या आप धूम्रपान करते हैं?	*No/* नहीं	1	In case NO go to Q. 61	NOT TOBE					(335-339)
		Yes/ हां	2							
54.	*What do you smoke? /* आप कौन सा धूम्रपान करते हैं? *(Tick as many as reported)* (जितना बताएं सब लिखें)	*Chillum/* चिलम	1							(340-359)
		Hookah/ हुक्का	2							
		Cigars/ सिगार	3							
		Cigarettes/ सिगरेट	4							
		Bidis/ बिड़ी	5							
		Others (Specify)/ अन्य	6							

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
55.	**Whether it is with or without Filter?** क्या यह फिल्टर सहित हैं या फिल्टर रहित?	**With Filter/** फिल्टर युक्त **Without Filter/** फिल्टर रहित **Don't Know/** नहीं जानता	1 2 3		D					(360-364)
56.	**How many times a day do you normally Smoke? /** एक दिन में सामान्यतः कितनी बार धूम्रपान करते हैं?	**< 5 times/** पांच बार तक **5-10 times/** पांच से दस बार **10-20 times/** दस से बीस बार **> 20 times/** बीस से अधिक	1 2 3 4		E K					(365-369)
57.	**Did you or do you chew pan with tobacco? /** क्या आप पान तम्बाकू के साथ चबाते हैं या चबाते थे?	**No/** नहीं **Yes/** हाँ **Don't Know/** पता नहीं	1 2 3	**If No, Go to Q. 61**	S A					(370-374)
58.	**Did you or do you chew pan-masala with tobacco? /** क्या आप पान–मसाला तम्बाकू के साथ चबाते हैं या चबाते थे?	**No/** नहीं **Yes/** हाँ **Don't Know/** पता नहीं	1 2 3		E					(375-379)
59	**How long have you been in the habit of chewing pan or pan masala with tobacco? /** आप कब से पान या पान–मसाला तम्बाकू के साथ चबाते रहें हैं? (एक पर टिक लगायें)	**< 5 Yrs./** 5 साल से **5-10 Yrs./** 5–10 साल से **> 10 Yrs./** 10 साल से अधिक	1 2 3		B O					(380-384)
60.	**How often do you chew tobacco in a day? /** एक दिन में आप तम्बाकू कितनी बार चबाते हैं? (एक पर टिक लगायें)	**< 5 times/** 5 बार **5-10 times/** 5–10 बार **> 10 times/** 10 से अधिक	1 2 3		T					(385-389)
61.	**Did you or do you take Alcohol? /** क्या आप अल्कोहल (शराब) लेते थे या लेते हैं? (एक पर टिक लगायें)	**No/** नहीं **Yes/** हाँ	1 2	**If No, End the interview here**	N O T					(390-394)
62.	**How often do you take Alcohol/** आप अल्कोहल (शराब) कितनी बार लेते हैं या लेते थे? (एक पर टिक लगायें)	**Daily/** प्रतिदिन **3 times a week/** सप्ताह में 3 बार **Occasionally/** कभी–कभी **< 3 times a week/** सप्ताह में 3 बार से अधिक	1 2 3 4		N					(395-399)

DENTAL COUNCIL OF INDIA, NEW DELHI

NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING

(A NATIONAL EPIDEMIOLOGICAL STUDY OF ORAL HEALTH PROBLEMS AND FLUORIDE ESTIMATION IN WATER SAMPLES)

DATE | | | | | 0 | 4 | (DAY) (MONTH) (YEAR)

FORM NO. 2 0 (1-2)

STATE | | | (6-7)

ZONE | | | (8-9)

TEAM NO. | | | | (3-5)

DISTRICT | | (10)

NAME OF VILLAGE / URBAN BLOCK _____ | | (11-12)

CODE

RURAL / URBAN | 1 | 2 | (13)

R U

SERIAL NO. OF HOUSEHOLD VISITED | | | | (14-16)

NAME OF HEAD OF HOUSEHOLD Mr. / Mrs. _____

NAME OF SPOUSE _____

ADDRESS OF THE HOUSEHOLD _____

_____

EXAMINER _____ (NAME) (SIGN)

RECORDER _____ (NAME) (SIGN)

NAME OF INTERVIEWER _____ (NAME) (SIGN)

FIELD CHECKED BY _____ (NAME) (SIGN)

SCRUTINISED BY _____ (NAME) (SIGN)

CHECKED BY _____ (NAME) (SIGN)

WHO ORAL HEALTH ASSESSMENT FORM (1997)

GENERAL INFORMATION

Name .....

Date of birth (17) Year Month (20)

Age in years (21) (22)

Sex (M = 1, F = 2) (23)

Ethnic group (24)

Occupation (25)

Geographical location (26) (27)

Location type : (28)

1 = Urban
2 = Periurban
3 = Rural

OTHER DATA (specify and provide codes)

..... (29)

..... (30)

CONTRAINDICATION TO EXAMINATION

Reason..... (31)

..... 0 = No 1 = yes

CLINICAL ASSESSMENT (32)

EXTRA-ORAL EXAMINATION

0 = Normal extra-oral appearance
1 = Ulceration, sores, erosions, fissures (head, neck, limbs)
2 = Ulceration, sores, erosions, fissures (nose, checks, chin)
3 = Ulceration, sores, erosions, fissures (commissures)
4 = Ulceration, sores, erosions, fissures (vermilion border)
5 = Cancrum oris
6 = Abnormalities of upper and lower lips
7 = Enlarged lymph nodes (head, neck)
8 = Other swellings of face and jaws

TEMPOROMANDIBULAR JOINT ASSESSSMENT

SYMPTOMS
0 = NO
1 = Yes
9 = Not recorded
(33)

SIGNS
0 = No
1 = Yes
9 = Not recorded

Clicking (34)
Tenderness (on palpation) (35)
Reduced jaw mobility (< 30 mm opening) (36)

ORAL MUCOSA

CONDITION

0 = No abnormal condition
1 = Malignant turmour (oral cancer)
2 = Leukoplakia
3 = Lichen Planus
4 = Ulceration (aphthous, herpetic, traumatic)
5 = Acute necrotizing gingivitis
6 = Candidiasis
7 = Abscess
8 = Other condition (specify if possible).....
9 = Not recorded

(37) (40)
(38) (41)
(39) (42)

LOCATION

0 = Vermilion border
1 = Commissures
2 = Lips
3 = Sulci
4 = Buccal Mucosa
5 = Floor of mouth
6 = Tongue
7 = Hard and / or soft palate
8 = Alveolar ridges / gingiva
9 = Not recorded

ENAMEL OPACITIES/HYPOPLASIA

Permanent teeth

0 = Normal
1 = Demarcated opacity
2 = Diffuse opacity
3 = Hypoplasia
4 = Other defects
5 = Demarcated and diffuse opacities
6 = Demarcated opacity and hypoplasia
7 = Diffuse opacity and hypoplasia
8 = All three conditions
9 = Not recorded

14 13 12 11 21 22 23 24
(43) (50)
(51) (52)
46 36

LOSS OF ATTACHMENT*

0 = Normal
1 = Questionable
2 = Very mild
3 = Mild
4 = Moderate
5 = Severe
8 = Excluded
9 = Not recorded

(53)

COMMUNITY PERIODONTAL INDEX (CPI)

0 = Healthy
1 = Bleeding
2 = Calculus
3 = Pocket 4-5 mm (black band on probe) partially visible)
4* = Pocket 6 mm or more (black band on probe not visible)
X = Excluded sextant
9 = Not recorded

*Not recorded under 15 years of age

17/16 11 26/27
(54) (56)
(57) (59)
47/46 31 36/37

LOSS OF ATTACHMENT*

0 = Healthy
1 = 4-5 mm (cementoenamel junction (CEJ) within black band)
2 = 6-8 mm (CEJ between upper limit of black band and 8.5 mm ring)
3 = 9-11 mm (CEJ between 8.5 mm and 11.5 mm rings)
4 = 12 mm or more (CEJ beyond 11.5 mm ring)
X = Excluded sextant
9 = Not recorded

*Not recorded under 15 years of age

17/16 11 26/27
(60) (62)
(63) (65)
47/46 31 36/37

DENTITION STATUS AND TREATMENT NEED

Identification Number

		55	54	53	52	51	61	62	63	64	65	
		18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28	
Crown	(66)																	(81)
Root	(82)																	(97)
Treatment	(98)																	(113)

		85	84	83	82	81	71	72	73	74	75	
		48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38	
Crown	(114)																	(129)
Root	(130)																	(145)
Treatment	(146)																	(161)

Primary teeth Crown	Permanent teeh Crown/Root		STATUS
A	0	0	Sound
B	1	1	Decayed
C	2	2	Filled, with decay
D	3	3	Filled, no decay
E	4	-	Missing, as a result of caries
-	5	-	Missing, any other reason
F	6	-	Fissure sealant
G	7	7	Bridge abutment special crown or veneer/implant
-	8	8	Unerupted tooth, (Crown) / unexposed root
T	T	-	Trauma (fracture)
-	9	9	Not recorded

TREATMENT

0 = None
P = Preventive, caries arresting care
F = Fissure sealant
1 = One surface filling
2 = Two or more surface fillings
3 = Crown for any reason
4 = Veneer or laminate
5 = Pulp care and restoration
6 = Extraction
7 = Need for other care (specify).....
8 = Need for other care (specify).....
9 = Not recorded

PROSTHETIC STATUS

Upper Lower
(162) [ ] [ ] (163)

0 = No Prosthesis
1 = Bridge
2 = More than one bridge
3 = Partial denture
4 = Both bridge (s) and partial denture (s)
5 = Full removable denture
9 = Not recorded

PROSTHETIC NEED

Upper Lower
(164) [ ] [ ] (165)

0 = No Prosthesis needed
1 = Need for one-unit prosthesis
2 = Need for multi-unit prosthesis
3 = Need for a combination of one- and/or multi-unit prostheses
4 = Need for full prosthesis (replacement of all teeth)
9 = Not recorded

DENTOFACIAL ANOMALIES

DENTITION

☐ (166) ☐ (167) Missing incisor, canine and premolar teeth-maxillary and mandibular - enter number of teeth

SPACE

☐ (168)
Crowding in the incisal segments.

0 = No crowding
1 = One segment crowding
2 = Two segments crowding

☐ (169)
Spacing in the incisal segments:

0 = No spacing
1 = One segment spaced
2 = Two segments spaced

☐ (170)
Diastema in mm

☐ (171)
Largest anterior maxillary irregulaity in mm

☐ (172)
Largest anterior mandibular irregularity in mm

OCCLUSION

☐ (173)
Anterior maxillary overjet in mm

☐ (174)
Anterior mandibular overjet in mm

☐ (175)
Vertical anterior openbite in mm

☐ (176)
Antero-posterior molar relation :

0 = Normal
1 = Half cusp
2 = Full cusp

NEED FOR IMMEDIATE CARE AND REFERRAL

Life-threatening condition ☐ (177)
Pain or infection ☐ (178)
Other condition (specify)..... ☐ (179)

0 = Absent
1 = Present
2 = Not recorded

Referral
0 = No
1 = Yes
9 = Not recorded

☐ (180)

NOTES