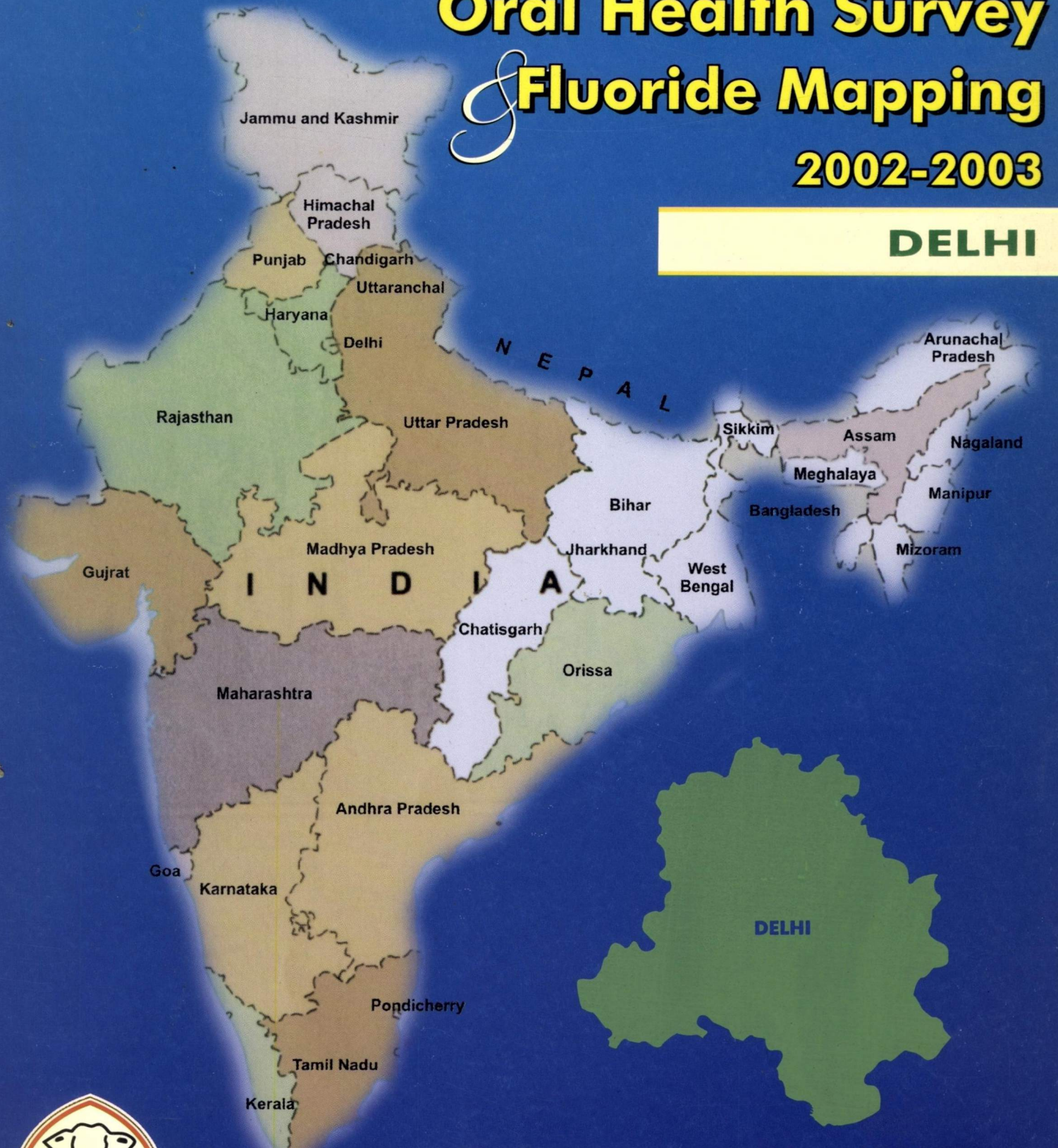
National Oral Health Survey & Fluoride Mapping 2002-2003

DELHI



Dental Council of India
New Delhi
2004

NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING

2002-2003

DELHI

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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
MPH	Master in Public Health
MSc	Master in Science
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
mnt/ MNT	Mean number of teeth (primary/ permanent)
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
ppm	Parts per million (of fluorides)

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 Praveen Kumar, Mr. 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

July 2004. **Dr. V. B. Mathur**

Prof. P. P. Talwar

H.B. Chanana

ACKNOWLEDGEMENTS

We wish to express our gratitude to Dr. R K Bali, President, Dental Council of India, for giving us the opportunity to participate and contribute in the National Oral Health Survey-2002-03.

We wish to put on record the untiring efforts put in by Dr. V.B. Mathur, Project Officer, Dr. P.P. Talwar, Consultant, Mr. H.B. Chanana, Statistician, that were a constant source of motivation for all of us.

We are grateful to the office of Registrar General and Census Commissioner of India, New Delhi, for providing us relevant census data that was crucial for completion of this study.

We also thank all our team members, i.e. Dental Surgeons and Auxiliaries, for their cohesive efforts because of which this report could see the light of day.

Last but not the least, we remain in debated to respondents/subjects for their cooperation and patience in providing the desired information.

Thanking one and all,

Dr. Mahesh Verma
Regional Coordinator

Dr. Arundeep Kaur
Joint Coordinator

Dr. Pankaj Goel
Supervisor

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CHAPTER 0

EXECUTIVE SUMMARY

1. GENESIS

Oral health is a very important component of the general health of the people. High prevalence of dental diseases like dental caries, periodontal diseases, various stages of malocclusion, and lack of access to the needed services leads to significant absenteeism and economic loss. The adverse effects of poor oral health make it important to take preventive measures and create the necessary services. For this purpose, it is necessary to know the prevalence of oral health problems and to understand the practices related to dental health that people follow. Such information is basic for the formulation of oral health policies and implementation of appropriate programmes to improve the awareness and knowledge of people on the preventive aspects of oral health, create needed services and train the dental manpower to meet those needs.

The Dental Council of India has been greatly concerned about this gap in knowledge and hence lack of appropriate policies and programmes. A great need has been felt to conduct a study on oral health problems and the related practices of people. Such a study could help bring about a balance between the oral health needs of the people and the services available. It could help organize need-based services so as to improve the level of oral health of the people. This study has to be a community survey with the objectives of assessment of (1) awareness and knowledge of people on oral health problems, (2) practices people adopt to clean their teeth and adopt preventive measure, (3) current status of oral health problems in the community, and (4) practices people adopt to get their dental problems treated, and (5) the effectiveness of fluoride as a preventive measure.

Keeping this gap and the needs in view, the Dental Council of India undertook a community survey, "National Oral Health Survey and Fluoride Mapping," to assess oral health problems and the practices people adopt in this regard. This survey was initiated in 2002; the idea was to know the ground situation and formulate policies and programmes to improve the oral health of the people. Mapping of fluoride levels was made a part of the survey since fluoride levels have association with oral health problems.

2. SCOPE OF THE SURVEY

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

- Level of fluoride in the drinking water
- Incidence/prevalence of oral health problems
- Eating habits affecting oral health
- Dental cleaning practices
- Awareness and knowledge of people on the factors affecting oral health, and
- Treatment-seeking behaviour of people for their oral health problems

It may be noted that this survey has gone much beyond the usual oral health surveys that generally focus on the levels and problems of oral health in the community. This survey has collected data on many of the dimensions that could help to understand practices people adopt that cause oral health problems and steps they take to seek treatment.

3. DESIGN OF THE SURVEY

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

3.1 Sample size

Three considerations were made in deciding the sample size: (1) The estimates should be valid at state level, (2) Intra-state regional variations may be captured in the oral health problems and practices, and (3) It should be possible to complete within the limited budget available for this survey. With this in view, World Health Organization's (WHO) recommendation that a sample of 300-600 dental examinations, of people of ages 5, 12, 15, 35-44 and 65-74 from a homogeneous region, be taken was adopted. It was decided that 315 households covering both rural and urban areas would be taken from each homogeneous region in a state. The sample of households would increase in case the sample of 315 subjects from each of the five age groups (5, 12, 15, 35-44 and 65-74) was not available from the 315 households selected. The major consideration on the number of households was that oral examination is done on 315 subjects in the age/age group 5, 12, 15, 35-44 and 65-74 years. Thus the sample of households from each homogeneous region would generally be more than 315 households. The sample of 315 households was split into 210 households from rural areas and 105 from urban to give representation to the urban oral health situation. Besides, it was also decided that the total number of examinations in each age group would be equally distributed between males and females; that is, 105 males and 105 females would be examined in each of the five age groups in rural areas, and 53 males and 53 females from each age group in urban areas.

3.2 Sample selection

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

A three-stage sampling design was adopted to select 210 rural households from a homogeneous region. The first stage was the selection of a random district from a region. The second stage was the selection of 15 villages with probability proportional to size (pps) of the village, and the third stage was the 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 more or less the same population size). In the next stage, 7 households were selected from each CEB. Again, examination was to be done for 105 subjects from each age group (5, 12, 15, 35-44 and 65-74); half of them were to be males and half females.

4. STUDY TOOLS

In order to cover all the aims of the study, two types of questionnaires/schedules were used in this survey. One was the WHO schedule on Oral Health Assessment, and the second was the individual questionnaire (specially developed by Dental Council of India) 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. **(Annexure-6)**

5. DATA COLLECTION

A small nucleus Central Survey Unit was set up in the office of the Dental Council of India in Delhi. For the field work, one dental state coordinator and his/her dental college was selected for each state. This coordinator was to oversee the total field work 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; the dentists were to examine oral health of the subjects and record information on the Oral Health Assessment Questionnaire and the social worker was to record information on the individual questionnaire of etiological factors.

The quality of data was given utmost consideration. Besides a Coordinator, supervisors were appointed to move with the teams when they go for data collection. The supervisors, who were senior members of the dental colleges, were given total responsibility for scrutiny and checking of the data. The data was scrutinized at three levels, field, state coordinator's office and at the central level, before processing.

Water samples were taken from the selected households for testing the fluoride levels. The test for the level of fluoride for all water samples was done in a laboratory in Mumbai.

6. CALIBRATION AND TRAINING WORKSHOPS

A three-day calibration and training workshop was organized where all the coordinators and supervisors were given thorough training in field logistics, data collection and standardization of the assessment of the oral health problems. The last was very important so that all field teams adopted uniform assessment methods to record the dental problems; a very thorough training was given on this aspect. Another workshop on report writing was organized in Mumbai to standardize the format of each state report.

7. AREA COVERAGE IN SURVEY

The National Oral Health Survey, was designed to cover all agro climate regions of the state. Since this state is divided into one Agro climatic region. This one was completely covered as per the design.

8. FINDINGS (FOOD HABITS AND ORAL HEALTH PRACTICE)

8.1 Characteristics of households surveyed

- About 90 percent subjects in Delhi lived in Pucca houses. About half of them, more in urban areas were spending more than Rs. 5500/- per month
- About 88 percent population was Hindu and 25 percent belonged to Scheduled Caste, Scheduled tribe and Other Backward Castes.
- Wheat was staple food of almost all and 90 percent reported themselves as vegetarian.
- Almost all in urban areas and 63 percent in rural areas were getting piped water.

8.2 Profile of population across age groups

- The literacy and educational level of subjects in younger ages was higher than the older subjects. Percentages literate in the age group 12 and 15 were about 99; this percentage in the age group was 82 and 65 for males and much lower for females.
- About 40 to 45 percent, across all ages, more males and more in urban areas read newspaper daily.
- Only about 15 to 17 percent, across all ages and both sexes, more in urban areas reported listening to radio daily.
- More than 75 percent, across all ages and both sexes, more in urban areas report habit of watching TV.
- About 8 to 10 percent, across all ages and both sexes, more in urban areas reported watching cinema once in three months.

8.3 Abnormal oral habits across age groups

- The prevalence of each of the abnormal habits like "breathing from mouth", "sucking or biting fingers or thumb", "thrusting tongue on teeth", "biting nails, lips or object like pencil", and "grinding teeth" was quite low.
- About seven to nine percent children aged 5,12, and 15 years, across both sexes, more in urban areas reported habit of "biting nails, lips or objects like pencils"
- Habit of "sucking or biting fingers or thumb" and "breathing from mouth" was reported in the children 5 and 12 years. Only about three percent respondents aged above 35 years, more females and more in rural areas reported problem of "grinding/gritting teeth".

8.4 Eating habits across age groups

- About 98 percent, across ages, sex and place of residence reported taking sugar atleast once in the last 24 hours. About 35 to 38 percent reported taking sugar/sweet even two or more times in this period.

8.5 Oral hygiene practices across age groups

- The habit of cleaning teeth regularly was universal. About 90 to 95 percent respondents in the age groups 5,12,15, and 35-44 years across both sexes, more in urban areas reported use of tooth brush to clean their teeth. This percent was 51 for respondents ages 65-74 years, more males and across place of residence.
- As regards frequency of cleaning, more than 75 percent in each age/age group, across sex, more in rural areas cleaned their teeth only once a day. More respondents in urban areas were cleaning their teeth twice daily. Around one percent respondents cleaned their teeth after every meal.
- About 80 percent in the age group 65-74 years and 92 to 95 percent in each of the remaining age groups, across sex, more in urban areas were using tooth paste. Use of tooth powder was only 6 to 13 percent, more in rural areas. More respondents in the age group 65 - 74 years reported use of tooth powder – 16 to 23 percent. Most of them either did not know whether the tooth paste/powder they were using was fluoridated or not or reported use of non-fluoridated paste/powder.
- Change of tooth brush was more frequent in urban areas – once in 1-3 months. In rural areas, the change was done in 4-6 months or even later.
- Rinsing seems to be quite common – 40 to 60 percent in the age group 5, 12, 15 reported rinsing after every meal; this percentage in age group 35-44 years and 65-74 years was more than 80.

8.6 Dental problems and treatment practices across age groups

- Nine to thirteen percent respondents in the age group 5, 12 and 15 and 30 to 45 in the age groups 35-44 and 65-74 years reported suffering from some oral health problem in the last one year. Reporting was higher among females and in urban areas. The problem reported was dental decay in early ages but gum disease and foul breath was also reported in higher ages. Very percent of them consulted a dentist, especially so in urban areas.
- Only 12 percent respondents were aware of governmental dental care facility. Eighty to eighty eight percent, mostly living in urban areas were aware of private dental facility. It took mostly less than half-an-hour to reach the facility in urban areas; in rural areas, it took half-an-hour to one hour

8.7 Awareness of oral health problems across age groups

- Sixty two to eighty three percent respondents were aware of dental health problems. The problems most often reported were dental decay and gum disease. A small percentage also reported foul breath and stained teeth.
- Sixth eight to eighty nine percent respondents were aware of causative factors of oral health problems. Most often cause was (by about 50 %) "not brushing regularly" and "eating sweets/ Ice cream". Twenty to thirty percent reported "not rinsing" also a factor.

8.8 Tobacco smoking and chewing habits across age groups

- About 25 percent respondents in each age group, mostly males and more in rural areas had habit of smoking. Seventy four percent of them in the age group 35-44 years, more females were smoking beedi. In the case of rural males in the age group 65-74 years Hookah was more popular. Cigarettes were more popular in urban areas.
- Eighty one percent of the smokers, more females and more in urban areas were smoking 10 or less number of times in a day. More male smokers and more in rural areas were smoking more than to times a day.
- A small percent of respondents, more males and more in urban areas chew pan and/or pan masala with tobacco.
- Twenty three percent respondents in the age group 35-44 years and seven percent in the age group 65-74, almost all males and in rural areas reported consuming alcohol. A quarter to one-third were taking it regularly

9. FINDINGS (ORAL HEALTH STATUS)

9.1. Dental caries

- Overall, the mean number of teeth present in the mouth of individuals decreased as age advanced. In the age group of 65-74 years, the mean number of teeth present was 16.5 in males and 13.8 in females indicating a loss of more than half of the normally present 32 teeth in an average mouth. About 36.4% subjects in the age group of 65-74 years age group, more females than males, were edentulous or without natural teeth, distributed more in urban than rural area.
- The prevalence of dental caries in Delhi increased incrementally as age advanced from 5 years to 65-74 years. The prevalence was 37.1% in the age group of 5 years; 46.8% in 12 years; 54.8% in 15 years; 77.4% in 35-44 years; and 94% in the age group of 65-74 years.
- The Mean DMFT values were highest for the age group 65-74yrs.. The mean dmft at 5 years was 1.3. The mean DMFT was 1.2 at 12 years of age; 1.7 at 15 years; 3.9 at 35-44 years and 17.9 at 65-74 years. This indicates a high cumulative level of caries experience as age advances in the subjects surveyed. The deft/ DMFT value of 1-3 teeth was most prevalent in subjects with caries experience in all age groups except in 65-74 years. where the DMFT value of 25-32 was most prevalent.
- The component of decayed teeth (dt/DT) contributed most to the dmft/ DMFT in all age groups except in the 65-74 years age group where the missing teeth component (MT) contributed most. The filled teeth component (ft/FT) contributed only negligibly to the deft/ DMFT and that too only in urban residents. The mean DMFT appeared slightly higher in urban subjects than in rural subjects. The pattern of distribution of the components of DMFT was similar in rural and urban areas.
- The SIC Index measures the mean DMFT for the one third of the population with highest DMFT values. This identifies the group of population with the highest caries experience by

number of teeth affected and therefore the high risk group. The SIC Index was lowest in subjects aged 12 years. At 65-74 years, the SIC Index approached 32, which is maximum, because of a high number of edentulous subjects in that age group.

- The prevalence of root caries was approximately 14% in the age group of 35-44 years and 20% in 65-74 years. The mean number of teeth with Root Caries was very low and ranged from 0.3 to 0.9 tooth. There were no subjects in the state with root fillings.
- The high levels of mean number of teeth decayed and missing, together with negligible numbers of filled teeth indicate that either there was little priority for treatment of decayed teeth or it is not affordable for most people. Another possibility is the inaccessibility (difficult to reach facilities) or non-availability of dental services in the area where the subjects live. Since Delhi is the capital with a high density of quality dental services both in the government and the private sector, at competitive prices, the lack of priority of the people to avail the services appears to be the primary cause for their neglect of dental health. Intensive motivational health education may help in raising the priority of oral health care in people's minds.

9.2 Treatment need

- The treatment need was lowest in the 5 years age group 40.2% and highest for the 65-74 age group (95%). Preventive care was recommended by the examining dentists for only male subjects (0.7%) in the 5 years age group.
- Amongst the subjects requiring treatment, the majority required fillings and a small number required pulp care across age groups except for the 65-74 years age group where the need for extractions was higher than the need for fillings. More female subjects than male subjects needed fillings except in the 65-74 years age group where the need for fillings was higher amongst male subjects. The need for extractions was inversely related to age groups so that the age group of 12 years. required the least extractions (0.8 % for both males and female subjects).
- The mean number of teeth which required treatment in the state was highest in the highest age group of 65-74 years (Fig 6.05). The mean number of teeth requiring treatment was about 1.2 in 5 years age group; about 1.5 to 1.8 in 12 years and 15 years age groups; and about 3.9 teeth in the 35-44 years age group. The picture was more or less similar for both rural and urban areas. The mean number of teeth requiring fillings was lowest in children aged 5 years. While it was highest in the 35-44 years age group. The mean number of teeth indicated for extraction was very low and ranged from 0.1 to 1.0 and was higher in the age groups of 35-44 years and 65-74 years. There were no marked rural and urban differentials.

9.3 Periodontal status

- The periodontal status was assessed using the Community Periodontal Index (CPI) with its three indicators of gingival bleeding, calculus and periodontal pockets. In addition, the loss of attachment was also measured to provide an indication of the status of periodontal health.

- Bleeding and Calculus was present in 3.7 per cent children aged 5 years. The prevalence of periodontal disease in the state steadily increased with age. In subjects with periodontal disease, the two most prevalent conditions were bleeding and calculus. In the 12, 15, and 35-44 years age groups, bleeding was more prevalent compared with calculus. But in 65-74 years old subjects, the prevalence of calculus was higher than bleeding. Pockets (shallow and deep) were detected only in the age groups of 35-44 and 65-74 years and their prevalence was very low.
- The mean number of sextants with bleeding (2.2) and calculus (2.0) was the highest in the 35-44 years. age group. While gingival bleeding was a more prevalent condition in the lower age groups, accumulated calculus became an increasingly high problem as age advanced.
- Overall, the prevalence of subjects with Loss of Attachment in one or more sextants was lowest in the 15 years age group and highest in the 65-74 years age group in the state. The least severe form of loss of attachment was the most prevalent in all age groups followed by the more severe form of 6-8 mm.
- The proportion of rural residents with Loss of Attachment was higher than urban residents but the pattern of distribution of severity of the Loss of Attachment remained similar in rural and urban areas.

9.4 Malocclusion

The prevalence of malocclusion (definite malocclusion) was high in 15 years. age group where 10.5% males and 21% females were affected. About 15% subjects in 35-44yrs. age group had definite malocclusion.

9.5 Fluorosis

The prevalence of fluorosis was low in the state and did not exceed 5% in any age group. Mild to moderate fluorosis in small proportions was prevalent in all age groups and in both males and females. Severe form of fluorosis was virtually absent

9.6 Other lesions

9.6.1 Extra oral lesions

The percent male subjects examined in the state who had extra oral lesions was 0.5% (lowest) in age 12 years and 2.7% (highest) in the age group 35-44 years. The lesions appeared less prevalent in female subjects.

The most prevalent extra oral lesion in the state was Ulceration, sores, erosions or fissures in the head, neck and limbs region. The enlarged lymph nodes (head and neck region) had a low prevalence of no more than 0.1% in all except the age group of 12 years where they were absent in the sample.

9.6.2 T M joint symptoms and signs

TM Joint Signs had a low prevalence in almost all age groups and in both sexes. Clicking was present in approximately 2.9% subjects (age group 5 years); 5% subjects (age group 12 years); and 7.2% subjects (age group 15 years). In adults, 7.9% (35-44 years) and 8.3% (65-74 years) subjects respectively has clicking. Tenderness in T M Joint was found in only 0.7% female subjects in the age group 35-44 years and 0.1% females in the age group 65-74 years.

9.6.3 Enamel defects

Overall, there was a low prevalence of enamel defects including opacities and hypoplasia in the state. The proportion of subjects with enamel defects ranged from about 6% in the age group 65-74yrs. to a maximum of about 9.5% in the age group of 12 years. Ranked by the type of defect and the mean number of teeth affected, the demarcated opacity had the highest mean score followed by diffuse opacity and then followed by hypoplasia.

9.6.4 Prosthetic status and need

- The percent subjects wearing prostheses in the age group 35-44 years. was low (3.2%) but higher in the 65-74 years age group (19.2%). The full denture prosthesis was the most prevalent amongst subjects wearing prostheses (65-74 years) followed by a much lower prevalence of partial dentures. The bridges were the least prevalent. More female subjects compared to male subjects were wearing prostheses in the higher age group of 65-74 years.
- There was a higher need for prostheses as the age advanced. In the highest age group of 65-74yrs., the need for full prostheses was most prevalent amongst both male and female subjects (about 26% males and 28.2% females). In the 35-44yrs. age group, the most prevalent need was for one-unit and multi-unit prostheses followed by a combination of the two.
- There appeared to be a relatively greater need for prostheses in the lower arch in subjects compared to the upper arch.

9.6.5 Community need for immediate care and referrals

Life threatening conditions were recorded only in 0.1% males in the 65-74 years age group which represented 1.9% of rural males. Pain or infection was recorded in 0.1% females in the 5 years age group, 0.1% females in the 15yrs. age group and 0.7% female subjects in the 35-44yrs. age group. Referrals were made for almost all of the conditions recorded.

Table: Summary of findings of important oral health conditions and practices by age in DELHI state.

	Findings	Age in years				
		5	12	15	35-44	65-74
1.	**Oral disease conditions**					
1.1	Mean number of teeth present	19.6	27.2	28.0	30.4	15.4
1.2	Dental Caries					
	% Prevalence	37.1	46.8	54.8	77.4	94.0
	Mean DMFT	1.3	1.2	1.3	3.9	17.9
	SiC Index	3.5	3.0	4.1	8.5	32.0
1.3	Periodontal disease					
	Bleeding, calculus or pockets					
	% Prevalence	3.7	31.3	50.5	85.0	90.1
	Mean no of Sextants affected	0.1	0.4	1.7	4.3	2.7
1.4	Loss of attachment					
	% Prevalence	NA	NA	5.0	32.1	59.0
	Mean no of Sextants affected	NA	NA	0.1	0.8	1.3
1.5	Malocclusion (%)	0.4	19.0	20.3	28.0	NA
1.6	Dental Fluorosis (%)	1.6	3.8	2.8	3.3	4.8
1.7	Oral mucosal conditions (%)	2.0	1.0	4.0	8.0	5.0
1.8	Edentulousness (%)	NA	NA	3.0	27.1	66.2
2	**Oral Health Practices**					
2.1	Sugar Intake in last 24 hours					
	Once	8.8	10.6	11.7	5.8	7.0
	Two & more times	90.2	87.8	87.4	91.9	91.3
2.2	Clean teeth with					
	Tooth Brush	90.4	93.9	94.7	92.8	50.8
	Fingers	9.1	5.6	4.4	6.0	15.1
2.3	Rinsing mouth					
	Always	45.9	51.6	62.1	83.5	86.3
	Sometimes	30.5	37.6	30.2	12.8	10.4
2.4	Tobacco smoking	NA	NA	NA	14.7	14.8
2.5	Frequency of tobacco smoking					
	Less than 10 times	NA	NA	NA	58.7	71.7
	10 or more times	NA	NA	NA	41.4	28.3

CHAPTER 1
INTRODUCTION

1.1 BACKGROUND OF THE STATE

1.1.1 Geographical location

Delhi, capital of India and a state in itself, has a unique position among 35 geographical units in which India is divided. Its small area (1483 Sq. Km) borders Haryana, and Uttar Pradesh; the migration from these states is very large though it attracts a large number of migrants from other states as well. The annual number of migrants are more than its natural increase. It is often referred as "Mini India", suggesting that all the states and Union Territories in India are very well represented here. A large number of annual migrants has led to increase in number of slums with all its associated problems of unemployment, law and order and shortage of basic civic amenities.

1.1.2 Population and demographic profile

Delhi's population was 4.1 million in 1971; it increased to 13.4 million in 2001. Of all the metropolitan areas, this city is growing at the fastest pace after Independence. Its growth rate is almost double that of India as a whole. The percent population living in urban areas in Delhi is 93 in 2001 compared to only 27 for the country.

The level of infant mortality rate (infants deaths per 1000 births) in Delhi (Sample Registration System) is 31 compared to 68 for the country. The sex ratio (females per 1000 males) in 2001 was 821, much lower than 933 for India. Though it reflects movement/migration of predominantly males yet it creates its own social problems for the city. Almost 35 percent of its population is child dependent (below 15 years of age) that needs to be productively deployed in schools or industries to channelise their energies constructively.

The level of birth rate in the state has declined from 34 births per 1000 population in 1970 to 20 in 1999. The corresponding level of death rate is only 4.8, both are much lower than the country

The level of couple protection rate (percent couples practicing family planning methods) in Delhi has increased from 19 percent in 1971 to 30 percent in 1998, much lower than overall India where it is 45 percent. It may, partly, be due to lack of demand because male migrants are living alone without their families and partly it may speak of the type of population which is migrating to the city.

1.1.3 Composition of population

Eighty four percent of Delhi's population comprises of Hindus, followed by 8 percent Muslims and five and one percent Sikhs and Christians respectively (NFHS). Almost 18 percent of its population belongs to Scheduled castes and 15 percent to other backward classes; tribal population is almost nil. The average size of a household is 5.3; that is, 5.3 members live in a household in Delhi.

1.1.4 Socio-economic characteristics

Educational level in Delhi is much higher than that for all India. According to the 2001 census, the literacy level among population aged 7 years and over is 82 percent; this level for India is only 65. This 82 percent is composed of 87 percent males and 75 percent females.

Delhi has total land area of 1483 square km.. Its population density is 9294 persons per sq. km. compared to only 324 for the India. This high density has its own consequences – proliferating slums, low per capita availability of civic amenities, high rental value of the property, heavy vehicular traffic, increasing solid and semi-solid wastes and increasing air and water pollution. It has greatly affected quality of life in Delhi. A good deal of resources of Delhi are consumed for betterment of the living conditions of people in this city-state.

Despite large slum population, Delhi's per capita net domestic product (NDP) increased from Rs.4031 in 1981 to Rs.6049 in 1995-96 at 1980-81 prices. The manufacturing sector's contribution in Delhi's NDP has increased from 18 percent in 1981-91 to 22 percent in 1995-96. This is at the cost of contribution of the agriculture sector which has declined from 4 percent to 0.7 percent in the same period.

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, and 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 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. Strong need exists to know the oral health care practices of people, treatment-seeking behaviour 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 improve 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 knowledge and behavioural practices of people for prevention and curing the 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 President ship 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 under the President ship 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 presiding financial 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 major financial assistance for the national survey.

1.4.3 Support of Individuals and dental colleges in India

The Dental Council of India did not have manpower to manage this large survey itself and thus decided to carry it out by collaborating with the dental colleges in India and Indian Association of Public Health Dentistry. A bare minimum technical unit was set up for this purpose. It consisted of Dr. R.K.Bali as Chairman & Project Coordinator, Dr.V.B.Mathur as Project officer and Mr. H.B.Chanana as Statistician. Professor P.P.Talwar 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 Dental Council of India office in New Delhi. It was decided that the Central Survey Team will involve Principals/ Deans/ Heads of Dental Colleges at Regional/ State & a few members of Indian Association of Public Health Dentistry levels for technical development of the survey, data collection in their states and later 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 endeavour.

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 incidence/ 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
- Eating habits affecting oral health
- 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 was to be addressed in the survey.

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

- 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,

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 for each state comprise 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. Food habits and Oral Health Practices
6. Status of Oral Health
7. Factors Affections Oral Health of people

CHAPTER II

METHODOLOGY AND DATA COLLE`CTION

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:

(i) The estimates should be valid at state level, and

(ii) 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 18 major states 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 (other than 18), 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 315was equally divided between males and females. **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, 350 or more to cover 28350 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 1,41,750. The actual coverage comes to a minimum of 18585 households. That is, 92925 examinations were done. Their state-wise, rural/urban distribution is shown below:

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 reports. **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.

Table 2.1 Number of regions and the sample size of rural/urban households for each state.

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
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 Delhi.

Table 2.1(a) Statement showing regions/districts within region and Sampled district in the state of Delhi

				Coverage as per design			*Actual Coverage*		
				No. of Households			*No. of Households*		
Code	**Region**	**Districts**	**Sampled District**	**Rural**	**Urban**	**Total**	**Rural**	**Urban**	**Total**
1		Delhi	Delhi	210	105	315	210	105	315
Total		**1**	**1**	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.

2.3.2 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. **(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 taken on deputation from the Delhi Municipal Corporation, 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 find out senior dental surgeons from the dental colleges as their field team supervisors at 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 9 dentists involved in the field work) 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. For such training and standardization exercise, the Dental Council of India collaborated with the Manipal Academy of Higher Education (MAHE). A three-day Calibration workshop was organized 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 & 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 Assessment; Enamel Opacities and Hypoplasia; Prosthetic Status & 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 years, 15 years and 35-44 years 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 to M/s Medlar Laboratories Pvt Ltd., (a Unit of M/s CIPLA), Mumbai by the various Regional Coordinators Dr. P M Dixit, Chief Chemist, has prouded— the following in function 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 analyzer:

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- Mis 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: selection of teams

In order to make sure that field teams are formed by those who have interest in the field work/ experience and were willing to go to the field, the Coordinator for Delhi survey decided to seek volunteers for the field work. The word was passed around seeking volunteers who were willing to go to the field. Fortunately, a overwhelming response was received – students from the level of BDS third year to the faculty members, all, showed interest in the work. This gave the opportunity to the Coordinator to be selective and he could select the best people for the work. Only Resident Dental Surgeons and Dental auxilaries who had both time and qualifications to suit the work were selected to form five teams. **Annexure-6.**

2.8.2 Training/calibration of the team

A three day's training workshop, starting from August 9, 2002 was held in the Maulana Azad Medical College, Delhi. Not only Coordinator and the supervisors but members of the Central Survey team located in Delhi were also used as trainers. Three days were so distributed that the teams were given a thorough training in theoretical, clinical and field aspects of the data collection

work. The teams were taken to the field to fill the questionnaires/schedules to make sure that they had understood all the necessary details. Their filled in questionnaires were scrutinized thoroughly and the gaps were reinforced. After making sure that all the necessary details have been well-understood, they were taken to the field for actual data collection from the sampled households.

It was felt necessary that the teams should have identity cards. Each team member, therefore, was given an identification card that was to be shown to respondents. This was in addition to the letter indicating the objectives of the survey for which the teams were collecting data.

2.8.3 Efforts to seek cooperation of the respondents

All the concerned authorities in Delhi Municipal Corporation, census office and the press were briefed about the survey and requested to provide support. The newspapers carried the news in their English and Hindi versions of the newspaper. Thus many people came to know about the survey.

The college also issued request letters to people for cooperation and support; these letters were carried by the team members, in case somebody wishes to know the purpose of the teams visiting the areas. It also served as identity cards though such cards were issued separately also.

2.8.4 Mobility

The College had a vehicle for Mobile Dental Clinic which was lying unused for some time. A driver was requisitioned to use this vehicle for the period of the survey.

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 filled in forms before the team returned from the area of data collection. It was his/her responsibility to scrutinize the forms if they could not be checked in the field. This scrutiny was necessary before they were submitted to the state Coordinator for onward transmission to the Central Survey Unit. The Coordinator was also responsible to scrutinize the forms, fully in the initial stages and then on sample basis before sending them to the Central Survey Unit in Delhi.

The Central Survey Unit at DCI was particularly careful in scrutiny of the forms from each state. First two batches of forms of each survey team from each state were thoroughly scrutinized to determine gaps in the form of blanks, wrong recording and inconsistencies. The Coordinators were immediately contacted by telephone to point out the data problems. The same concerns were reinforced by sending a Fax. After such reporting, the next batch received was also scrutinized carefully to ensure that deficiencies pointed out earlier have been taken care of in the next batch of forms filled. After initial total scrutiny, the data were scrutinized on a sample basis to ensure that there was no slackness in efforts later – the fatigue factor should not reduce quality of data.

2.10 DATA ANALYSIS

In the absence of any resources for data analysis at the Dental Council of India, the total job of data entry, validity checks and production of desired tables (as per analysis plan) was contracted out to TNS MODE, an organization with a good deal of research experience in studies related to health. All efforts were made to monitor quality of this work at this stage. The Central Survey Unit had worked out the type of tables needed, the level (Zone or Region/ State/ Country) for which such analysis was needed. The necessary weights were also worked out to ensure that the estimates were valid for the level to which they relate. These blank tables were given to the agency (TNS MODE) to fill in the data in different cells. In order to ensure that the values given in each cell of the table 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 Assam as model reports after detailed discussions on the report format and the format of tables. 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, for which they had collected data. The idea was to conduct a Report Writing Workshop to orient them with the chapterization plan, data tables of their own states and share with them style of writing adopted in the model reports (Delhi and Assam). This was felt necessary to make sure that all state reports were written in uniform style/pattern. For other states, it was decided that the Central Survey Unit, Delhi would write reports and send 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 for all the reports. These chapters were also given to the states Coordinators who were involved inn the Report Writing Workshop.

Dr. S. G. Damle, Dean, Nair Hospital Dental, Mumbai and Additional Director Health, 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 the Coordinators of the States: Andhra Pradesh, Goa, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Pondicherry, Punjab and Tamil Nadu.. They were given two reports (model), a set of tables for their own state and even a CD containing raw data for their own state. They were told that their state report should adopt the format shown in the model reports; they can 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 THE SURVEYED POPULATION

3.1 CHARACTERISTICS OF HOUSEHOLDS

The household characteristics of the surveyed population are shown in Table 3.1. It may be noted that more than 90 percent of households live in pucca houses. Surprisingly, this percentage is

Table 3.1 Percent distribution of the households by characteristics

STATE : Delhi

	Household Charactersties		STATE		
			R	U	T
1	**Type of household**	n=	**136**	**287**	**423**
	Kuccha		0.7	1.0	1.0
	Semi Pucca		5.1	8.7	8.6
	Pucca		94.1	90.2	90.4
2	**Monthly expenditure (in Rs.)**				
	<= 2500		16.9	6.6	7.0
	2,501 - 5,500		52.9	39.7	40.2
	5,501 - 10,000		26.5	47.0	46.3
	10,000 +		3.7	6.6	6.5
3	**Religon**				
	Hindus		85.3	87.8	87.7
	Muslims		14.7	3.1	3.5
	Sikhs		0.0	8.7	8.4
	Christians		0.0	0.3	0.3
4	**Caste**				
	Scheduled Caste		14.7	7.0	7.2
	Scheduled Tribe		0.0	1.0	1.0
	Other Backward Classes		29.4	16.4	16.8
	Others		55.9	75.6	74.9
5	**Sources of drinking water**				
	Pipe/tap		62.5	99.0	97.7
	Tubewell/handpump		22.1	0.7	1.4
	Others		15.4	0.3	0.9
6	**Staple food**				
	Wheat		97.8	97.2	97.2
	Rice		2.2	2.8	2.8
7	**Nature of food**				
	Vegetarian		83.8	91.3	91.0
	Non-vegetarian		16.2	8.7	9.0

higher in rural areas than urban; perhaps this may be due to increase in per capita in come of people in rural like in the urban.

The monthly expenditure was taken as proxy of monthly income in this survey. Around 53 percent households in Delhi reported their monthly expenditure of Rs. 5500 or more. This percentage in rural areas was only 30.

About 88 percent population was of Hindus, followed by Sikhs (8 percent). Muslims and Christians formed only a small proportion of the population. In rural areas, Muslim population seems to be quite large – about 15 percent in contrast to urban areas where their percentage is only three.

While seven percent of population belonged to Scheduled Castes, only 1.0 percent of population was of Scheduled Tribes. There was a large percentage of population belonging to "Other Backward Castes". In the case of rural areas, almost 44 percent population belonged to the categories of Scheduled Caste and "Other Backward castes"; this percentage in urban areas was only 23 – almost half of the rural areas.

Delhi was supplying piped tap water to almost 98 percent population; this percentage in rural areas was only 63. The remaining residents of rural areas were dependent on tubewell/handpump or some other sources of water for drinking purposes.

Most of Delhi's population was taking wheat as their staple food and were vegetarians.

CHARACTERISTICS OF HOUSEHOLDS SURVEYED (SUMMING UP)

- About 90 percent subjects in Delhi lived in Pucca houses. About half of them, more in urban areas were spending more than Rs. 5500/- per month
- About 88 percent population was Hindus and 25 percent belonged to Scheduled Caste, Scheduled tribe and Other Backward Castes.
- Wheat was staple food of almost all and 90 percent reported themselves as vegetarian.
- Almost all in urban areas and 63 percent in rural areas were getting piped water.

3.2 PROFILE OF POPULATION

3.2.3 15 year olds

3.2.3.1 Educational levels

A small percentage of respondents, across both sexes and more in rural, were illiterate in the state. About seven percent population in this age group was illiterate in rural areas; this percentage was only about 2.0 in urban areas (Table 3.2.3). While it is bad to see that as high as seven percent children are still illiterate in the capital of the country after 55 years of independence, it is gratifying to note that there is not much of a differential between males and females. The male/ female differences start appearing when one looks at the figures by years of schooling. There were more males, and more in urban, who had had education up to middle and high school and above.

3.2.3.2 Exposure to media

About 27 percent, more females and more in rural did not read newspaper in the state. It is also interesting that one-third of the population (both males and females) in rural areas reported reading newspapers daily, whereas 47 percent males and 38 percent females in urban were reading newspaper daily

Listening to the radio was quite low, both in rural and urban areas as well as among males and females. About 60 percent reported not listening to radio at all in the state. Similarly, cinema is also not being watched by very large percent of population in rural and urban areas. In contrast, more than 90 percent population of this age group in the state views TV daily.

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

AGE: 15 yrs **STATE : Delhi**

	Education Level & Media Exposure		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**54**	**117**	**171**	**51**	**112**	**163**	**334**
	Illiterate		7.4	1.7	1.9	7.8	0.0	0.3	**1.1**
	Upto middle		53.7	73.5	72.8	70.6	63.4	63.6	**68.2**
	High school & above		38.9	24.8	25.3	21.6	36.6	36.1	**30.7**
2	**Newspaper reading habits**								
	Daily		31.5	47.0	46.5	33.3	38.4	38.2	**42.4**
	Sometimes		18.5	29.1	28.7	27.5	33.0	32.9	**30.8**
	Not at all		50.0	23.9	24.8	39.2	28.6	28.9	**26.9**
3	**Radio listening habits**								
	Daily		20.4	18.8	18.9	21.6	15.2	15.4	**17.2**
	Sometimes		14.8	22.2	22.0	19.6	30.4	30.0	**26.0**
	Not at all		64.8	59.0	59.2	58.8	54.5	54.6	**56.9**
4	**TV watching habits**								
	Daily		74.1	91.5	90.9	84.3	91.1	90.8	**90.9**
	Sometimes		3.7	3.4	3.4	3.9	2.7	2.7	**3.1**
	Not at all		22.2	5.1	5.7	11.8	6.3	6.4	**6.1**
5	**Cinema watching habits**								
	Once in 3 months		0.0	10.3	9.9	2.0	10.7	10.4	**10.2**
	Less often		7.4	23.9	23.4	3.9	17.0	16.5	**20.0**
	Not at all		92.6	65.8	66.7	94.1	72.3	73.0	**69.9**

3.2.4 35-44 year olds

3.2.4.1 Educational levels

The male/female differentials in literacy levels in this age group is quite obvious, both in rural and urban areas, with larger differences in rural areas than urban. Sixteen percent males and one-third of the females in rural areas and 9 and 13 percent males and females in urban areas respectively were illiterate (Table 3.2.4) in the state.

3.2.3.2 Exposure to media

About 52 percent of respondents, more males and more in urban, reported reading the newspaper daily. About 26 percent more females and more in rural reported, "not reading at all". Another 23 percent, more females and more in urban than in rural were reading newspaper sometimes in the state.

The scenario with regard to exposure to radio, TV and cinema was quite similar in this age group as in the age 15 years. Radio is not being listened too much, so is the case with cinema going. But TV is watched by a large percent of population, by both males and females, and in rural and urban areas of the state.

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 : Delhi

	Education Level & Media Exposure		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	57	124	181	66	140	206	387
	Illiterate		15.8	8.9	9.1	33.3	12.1	12.9	**11.0**
	Upto middle		36.8	16.9	17.6	37.9	32.9	33.0	**25.3**
	High school & above		47.4	74.2	73.3	28.8	55.0	54.1	**63.7**
2	**Newspaper reading habits**								
	Daily		36.8	57.3	56.6	24.2	47.1	46.4	**51.5**
	Sometimes		7.0	21.8	21.3	18.2	25.0	24.8	**23.1**
	Not at all		56.1	21.0	22.1	57.6	27.9	28.9	**25.5**
3	**Radio listening habits**								
	Daily		21.1	19.4	19.4	15.2	16.4	16.4	**17.9**
	Sometimes		21.1	26.6	26.4	16.7	27.9	27.5	**27.0**
	Not at all		57.9	54.0	54.2	68.2	55.7	56.1	**55.2**
4	**TV watching habits**								
	Daily		70.2	88.7	88.1	71.2	90.7	90.0	**89.1**
	Sometimes		12.3	5.6	5.9	9.1	5.0	5.1	**5.5**
	Not at all		17.5	5.6	6.0	19.7	4.3	4.8	**5.4**
5	**Cinema watching habits**								
	Once in 3 months		0.0	8.9	8.6	1.5	10.7	10.4	**9.5**
	Less often		5.3	17.7	17.3	4.5	25.7	25.0	**21.2**
	Not at all		94.7	73.4	74.1	93.9	63.6	64.6	**69.4**

3.2.5 65-74 year olds

3.2.5.1 Educational levels

About 39 percent of population, more females and more in rural areas, were illiterate (Table 3.2.5). The remaining 61 percent of the population, more males and more in urban, had had education up to middle and high school and above in the state.

3.2.5.2 Exposure to media

About 43 percent more males and more in rural areas reported "not reading" newspaper at all in the state. Listening to radio was not popular at all – 60 percent of respondents, more females and more in rural areas, reported that they did not listen to radio at all. Similar is the case with cinema – very few people reported watching cinema at least once in a three-month period. As expected, TV was quite popular; 77 percent of respondents across both sexes and more in urban areas reported watching TV daily in the state.

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 : Delhi

	Education Level & Media Exposure		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**52**	**113**	**165**	**58**	**124**	**182**	**347**
	Illiterate		51.9	21.2	22.3	86.2	54.8	55.9	**39.1**
	Upto middle		21.2	35.4	34.9	3.4	34.7	33.6	**34.3**
	High school & above		26.9	43.4	42.8	10.3	10.5	10.5	**26.7**
2	**Newspaper reading habits**								
	Daily		32.7	51.3	50.7	12.3	26.6	26.1	**38.4**
	Sometimes		11.5	20.4	20.1	3.5	16.9	16.5	**18.3**
	Not at all		55.8	28.3	29.2	84.2	56.5	57.4	**43.3**
3	**Radio listening habits**								
	Daily		26.9	16.8	17.2	7.0	13.7	13.5	**15.4**
	Sometimes		5.8	25.7	25.0	14.0	21.8	21.5	**23.3**
	Not at all		67.3	57.5	57.8	78.9	64.5	65.0	**61.4**
4	**TV watching habits**								
	Daily		61.5	77.7	77.1	63.2	77.4	76.9	**77.0**
	Sometimes		13.5	13.4	13.4	8.8	11.3	11.2	**12.3**
	Not at all		25.0	8.9	9.5	28.1	11.3	11.9	**10.7**
5	**Cinema watching habits**								
	Once in 3 months		1.9	7.1	6.9	0.0	8.9	8.6	**7.8**
	Less often		0.0	9.7	9.4	3.5	7.3	7.1	**8.3**
	Not at all		98.1	83.2	83.7	96.5	83.9	84.3	**84.0**

PROFILE OF POPULATION ACROSS AGE GROUPS (SUMMING UP)

- The literacy and educational level of subjects in younger ages was higher than the older subjects. Percentages literate in the age group 12 and 15 were about 99; this percentage in the age group was 82 and 65 for males and much lower for females.
- About 40 to 45 percent, across all ages, more males and more in urban areas read newspaper daily.
- Only about 15 to 17 percent, across all ages and both sexes, more in urban areas reported listening to radio daily.
- More than 75 percent, across all ages and both sexes, more in urban areas report habit of watching TV.
- About 8 to 10 percent, across all ages and both sexes, more in urban areas reported watching cinema once in three months.

CHAPTER IV

MAPPING OF FLUORIDE LEVELS

4.1 INTRODUCTION

As stated in the section on objectives (chapter 2), 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 water samples from the households they visited for collection of information related to oral health practices and the current situation of the oral health. This chapter presents results of the analysis of the fluoride levels from those 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 will carry along with them a set of sterilized plastic bottles supplied to them when they go to the field. These bottles were ordered from a manufacturer in Hyderabad especially for this purpose and had the following characteristics.

(1) Its capacity was 500 ml as per recommendations of the Medlab, Mumbai, India where the water samples were to be analyzed for fluoride levels. (This lab, now has agreed that a sample of even 200 ml would have been enough).This quantity of water was decided to take account of the possible spillage of water during transportation.

(2) The quality of plastic for bottles was so decided that they could stand the pressure of transportation from Hyderabad to each state where survey was conducted, travel with the field teams and then dispatched to Mumbai for analysis.

(3) It was sterilized to ensure that collected water did not get contaminated from any source, and

(4) The bottles had two corks to make sure that spillage of water was minimum and the Medlab got quantity of water sufficient to analyze its fluoride levels.

2. Every field team was instructed to collect water samples from the first household they visited every day. Water sample was collected from the next household only if the source of drinking water of the household was different from the previous household from where water sample was collected. In other words, water samples were collected from all the sampled households that had different sources of drinking water in the area of coverage. If the source of drinking water in the household was the same as collected previously then water sample was not collected. It means that water samples were collected from a representative sample of households of the villages/urban blocks and one knew number of household in the sampled area who were using water of the specific ppm level. 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 and the results give distribution of household with different levels of ppm.

3. All water sample bottles had identification particulars of the household including its state, zone and serial number of the household, which were numbered within each zone.

4. Since a specified number of households were covered from each zone, the field teams were instructed to number the households in each zone serially, starting from 1 to the last number in a zone. Thus, every household covered had a unique serial number within a zone. The water sample bottles had this number recorded; thus, each water sample was uniquely matched with the household so that the water sample could be linked to the household from where other information on oral health was collected.

5. The collected water samples were transported to Medlab, Mumbai, India for analysis.

   This collection of water sample and its linking with the household was done for two purposes. The first was that the collected household drinking water samples represent the situation of rural and urban households of the zone and ultimately of the state (by giving proper weights to the rural and urban areas of the zone/state). This analysis would help to map the fluoride levels in different areas of the state and the country as the sampled areas and households were a representative sample of the total areas. The other purpose was to try to relate the fluoride levels of drinking water, oral health related dental practices and the actual status of the oral health of the households and individuals.

4.3. ANALYSIS OF WATER SAMPLES

Since analysis of water samples for its fluoride levels requires special equipment, the President, Dental Council of India, Dr. R.K.Bali contacted the Colgate-India for help in the analysis. They have been supportive to the total effort of the Dental Council of India in the conduct of the National Oral Health Survey including the funding they provided. They agreed to the request of the Dental Council of India for the analysis of the water samples for fluoride levels and identified Medlab, Mumbai for such analysis.

The methodology they adopted in analysis of the fluoride levels has been described in section 2.3.3 of the chapter on Methodology and Data Collection.

4.4. FINDINGS

The levels of fluoride levels, both in rural and urban areas and total Delhi are shown in Table 4.1. It may be noted that most of the drinking water sources in urban areas of Delhi have fluoride levels of below 0.5 ppm – only about 17 percent household use drinking water where fluoride levels are between 0.51 – 1.00 ppm. In rural areas, higher percentage of households (almost 50 percent) had fluoride levels of more than 0.5 ppm. Only one well, serving about seven sampled households had fluoride levels of 2.954.

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

Levels of fluoride (ppm)	% distribution of water samples		
	Rural (n = 222)	Urban (n = 230)	Total (n = 452)
0.0 – 0.5	49.5	82.6	80.1
0.51 – 1.00	46.5	16.5	19.5
1.01 – 1.50	0.5	0.0	0.0
1.51 – 2.00	0.0	0.0	0.0
2.01 – 4.00	3.2	0.0	0.4
4.01 – 8.00	0.0	0.9	0.0
8.01+	0.0	0.0	0.0

Fig. 4.1 Drinking water levels of fluoride in Delhi

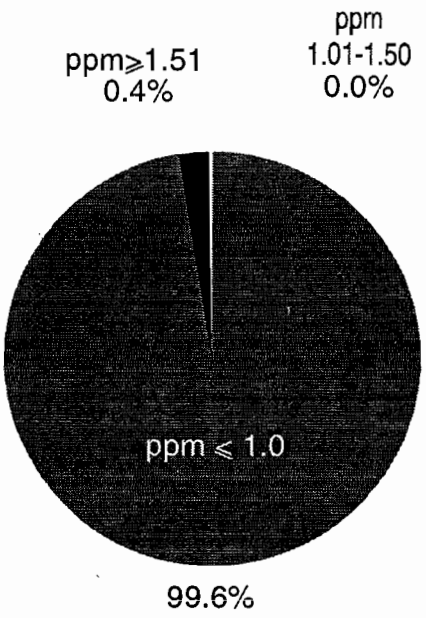
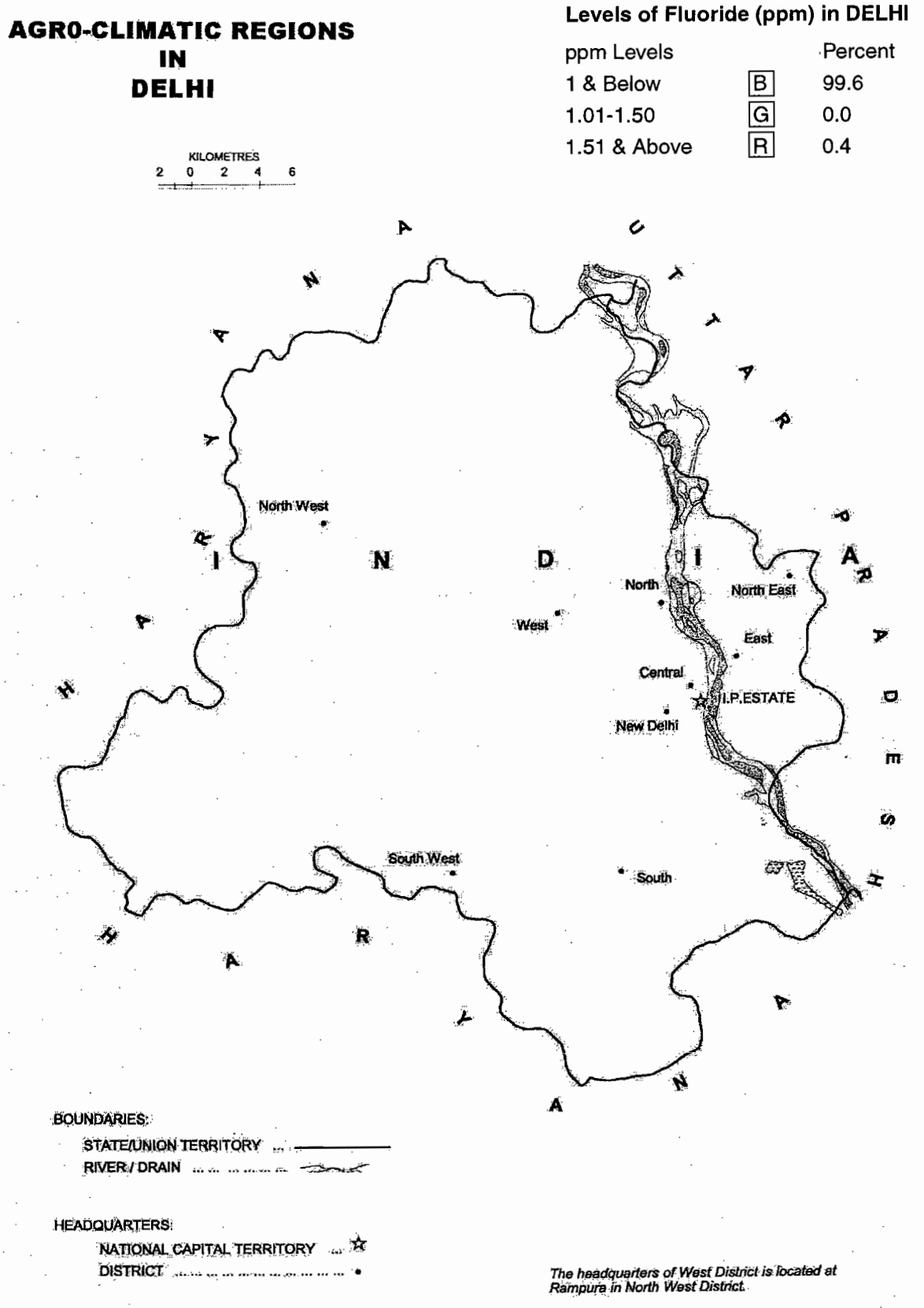


Fig. 4.2 Drinking water levels of Fluoride (ppm) in Delhi, INDIA



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. Prevalence of each of those practices for different ages/age groups, males and females, rural and urban areas, and for each region, are discussed in this chapter. These figures should suggest the oral health risk practices so that appropriate educational activities can be promoted 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/or "habit of grinding/gritting teeth", were asked of each adult respondent (for child, from his/her care-taker). The responses are reported in Table 5.1 and discussed in this section.

The respondents were asked whether they breathe from mouth. About 7 percent of the population in the age 5 years, across both sexes and more in urban, reported breathing from their mouths. The percentages in other ages/age groups were quite low – varied from 0.5 percent and 3.0 percent, that is, higher in the ages 5 and 12 and lower in higher ages beyond in the state.

Another question on the habit of "sucking finger or thumb" was asked. The prevalence of this habit was quite low in most of the ages/age groups 15 and above – around zero to 1 percent. But 11 percent and 4 percent of children of the ages 5 years and 12 years respectively reported this habit in the state. This habit was prevalent equally in both sexes and more in urban.

The interviewers were asked to observe whether respondents had a habit of thrusting tongue on teeth. This habit was prevalent in less than one percent of the population belonging to age/age group 5, 12, 15, 35-44 and 65-74 years.

A question was asked to know the extent of the "habit of biting nails, lips or any other object like pencil" from each age group of the population. This habit was reported to be of the order of 6-10 percent in the ages 5, 12 and 15 years, and low as 2 percent in the age group 35-44 years and 0.5 percent in age group 65-74. It was slightly higher in urban areas and more in males in the state.

The respondents were asked about the habit of "grinding/ gritting" of teeth consciously or unconsciously. This percentage varied from 1.4 to 4.1 percent without any pattern by age, sex and places of residence.

ABNORMAL ORAL HEALTH HABITS ACROSS AGE GROUPS (SUMMING UP)

1. The prevalence of each of the abnormal habits like "breathing from mouth", "sucking or biting fingers or thumb", "thrusting tongue on teeth", "biting nails, lips or object like pencil", and "grinding teeth" was quite low.

2. About seven to nine percent children aged 5, 12, and 15 years, across both sexes, more in urban areas, reported the habit of "biting nails, lips or objects like pencils"

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

AGE: 5 yrs — STATE : Delhi

	Habits affecting Oral Health		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
		n=	58	132	190	55	117	172	362
1	Breathing from mouth		1.7	6.8	6.7	3.6	6.0	5.9	6.3
2	Sucking fingers/thumb		1.7	11.4	11.1	3.6	11.1	10.9	11.0
3	Thrusting tongue on teeth		0.0	0.8	0.7	0.0	1.7	1.7	1.2
4	Biting nails/lips/objects like pencil		6.9	5.3	5.4	3.6	6.0	5.9	5.7
5	Grinding / gritting teeth		6.9	1.5	1.7	3.6	3.4	3.4	2.6

AGE: 12 yrs — STATE : Delhi

	Habits affecting Oral Health		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	Breathing from mouth	n=	58	121	179	49	122	171	350
			5.2	2.5	2.6	6.1	3.3	3.4	3.0
2	Sucking fingers/thumb		0.0	2.5	2.4	0.0	4.9	4.8	3.6
3	Thrusting tongue on teeth		0.0	0.8	0.8	0.0	0.0	0.0	0.4
4	Biting nails/lips/objects like pencil		6.9	9.9	9.8	0.0	9.0	8.8	9.3
5	Grinding / gritting teeth		6.9	3.3	3.4	2.0	4.9	4.8	4.1

AGE: 15 yrs — STATE : Delhi

	Habits affecting Oral Health		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	Breathing from mouth	n=	54	117	171	51	112	163	334
			1.9	0.0	0.1	2.0	0.9	0.9	0.5
2	Sucking fingers/thumb		1.9	1.7	1.7	0.0	0.0	0.0	0.9
3	Thrusting tongue on teeth		0.0	0.9	0.8	0.0	0.0	0.0	0.4
4	Biting nails/lips/objects like pencil		3.7	8.5	8.4	5.9	5.4	5.4	6.9
5	Grinding / gritting teeth		0.0	0.9	0.8	3.9	1.8	1.9	1.4

AGE: 35-44 yrs — STATE : Delhi

	Habits affecting Oral Health		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	Breathing from mouth	n=	57	124	181	66	140	206	387
			0.0	0.0	0.0	3.0	2.9	2.9	1.5
2	Sucking fingers/thumb		0.0	0.0	0.0	0.0	0.0	0.0	0.0
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		1.8	1.6	1.6	1.5	1.4	1.4	1.5
5	Grinding / gritting teeth		5.3	1.6	1.7	0.0	5.0	4.8	3.3

AGE: 65-74 yrs — STATE : Delhi

	Habits affecting Oral Health		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	Breathing from mouth	n=	52	113	165	57	124	181	346
			1.9	0.0	0.1	0.0	1.6	1.6	0.9
2	Sucking fingers/thumb		0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	0.9	0.9	0.0	0.0	0.0	0.5
5	Grinding / gritting teeth		3.8	0.0	0.1	7.0	4.8	4.9	2.5

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

AGE: 5 yrs **STATE : Delhi**

	Pattern of Sugar Intake in last one day		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
		n=	58	132	190	55	117	172	362
1	Not taken		1.7	0.8	0.8	0.0	0.9	0.8	0.8
2	Taken one time		13.8	11.4	11.4	9.1	6.0	6.1	8.8
3	Taken two times		48.3	47.0	47.0	52.7	57.3	57.1	52.1
4	Taken 2+ times		36.2	40.9	40.8	38.2	35.9	36.0	38.4

AGE: 12 yrs **STATE : Delhi**

	Pattern of Sugar Intake in last one day		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
		n=	58	121	179	49	122	171	350
1	Not taken		6.9	0.8	1.0	0.0	2.5	2.4	1.7
2	Taken one time		19.0	10.7	11.0	22.4	9.8	10.2	10.6
3	Taken two times		43.1	54.5	54.1	49.0	52.5	52.4	53.3
4	Taken 2+ times		31.0	33.9	33.8	28.6	35.2	35.1	34.5

AGE: 15 yrs **STATE : Delhi**

	Pattern of Sugar Intake in last one day		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
		n=	54	117	171	51	112	163	334
1	Not taken		5.6	0.0	0.2	0.0	1.8	1.7	1.0
2	Taken one time		13.0	9.4	9.5	25.5	13.4	13.8	11.7
3	Taken two times		46.3	53.8	53.6	60.8	50.9	51.2	52.4
4	Taken 2+ times		35.2	36.8	36.7	13.7	33.9	33.3	35.0

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

	Pattern of Sugar Intake in last one day		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
		n=	57	124	181	66	140	206	387
1	Not taken		3.5	4.0	4.0	0.0	0.7	0.7	2.4
2	Taken one time		22.8	7.3	7.8	9.1	3.6	3.8	5.8
3	Taken two times		54.4	54.0	54.0	57.6	52.9	53.0	53.5
4	Taken 2+ times		19.3	34.7	34.2	33.3	42.9	42.5	38.4

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

	Pattern of Sugar Intake in last one day		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
		n=	52	113	165	57	124	181	346
1	Not taken		0.0	2.7	2.6	3.5	0.8	0.9	1.75
2	Taken one time		9.6	8.0	8.0	17.5	5.6	6.0	7.0
3	Taken two times		59.6	48.7	49.0	49.1	57.3	57.0	53.0
4	Taken 2+ times		30.8	40.7	40.4	29.8	36.3	36.1	38.3

Habit of "sucking or biting fingers or thumb" and "breathing from mouth" was reported in the children 5 and 12 years. Only about three percent respondents aged above 35 years, more females and more in rural areas reported problem of "grinding/gritting teeth".

5.2 SUGAR CONSUMPTION

The respondents were asked, "How many times they had taken anything sweet in the last 24 hours?" Very few reported that they had not taken any sweet in the last 24 hours (0 to 6 percent) (Table 5.2). Most of them reported to having taken sweets two to three times in the last 24 hours. It was so across all ages, males and females and urban/rural residence.

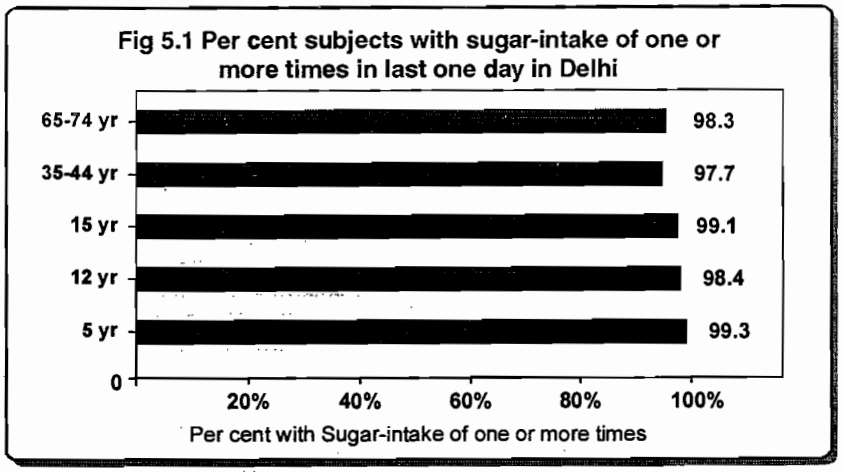


Fig 5.1 Per cent subjects with sugar-intake of one or more times in last one day in Delhi

SUGAR CONSUMPTION (SUMMING UP)

About 98 percent, across ages, sex and place of residence reported taking sugar at least once in the last 24 hours. About 35 to 38 percent reported taking sugar/sweet even two or more times in this period.

5.3 ORAL HYGIENE PRACTICES

A series of questions were asked about oral hygiene practices covering aspects like how the teeth are cleaned, what material is used to clean, whether it is fluoridated, 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 are discussed in the sections below, by given age groups of the respondents.

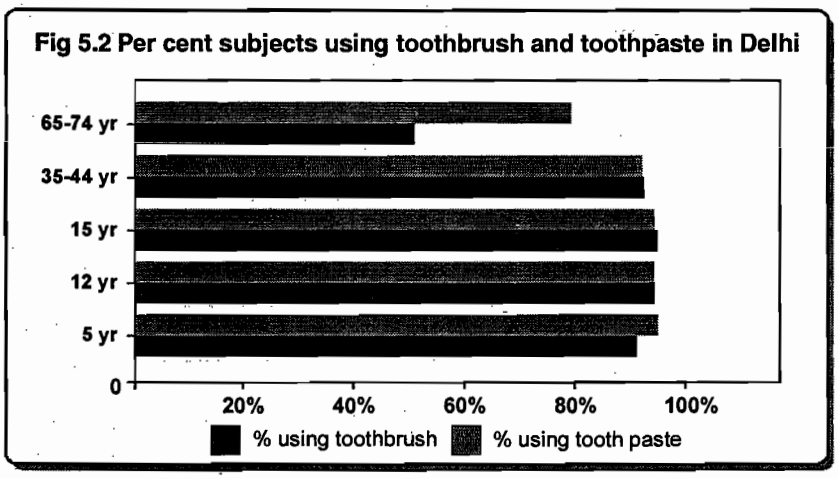


Fig 5.2 Per cent subjects using toothbrush and toothpaste in Delhi

5.3.1 5 year olds

About 90 percent respondents of this age across both sexes and more in urban reported using tooth brush for cleaning their teeth. Most of the respondents clean their teeth once only, in the morning. They made use of tooth paste (94 to 95 percent, slightly more in urban areas), more than 70 percent of which non-fluoridated. Only about one-third of them were using fluoridated toothpaste or powder in the state.

With regard to change of toothbrushes, 60 percent, across both sexes and more in urban, changed once in 1-3 months. Another 27 percent, more males and more in rural, changed once in four to six months. Only about 10 percent more females and more in rural changed their toothbrush after six or more months.

When asked about habit of rinsing, about 46 percent, more females irrespective of places of residence reported rinsing their mouth every time they eat. When this percentage is added with the category "sometimes rinsing after meals", more than 75 percent across both sexes and places of residence reported rinsing their teeth after meals in the state. (Table 5.3.1)

Table 5. 3. 1 Percent 5 year olds by oral hygiene practices, sex & geographical area.

AGE: 5 yrs **STATE : Delhi**

	Oral Hygiene Practices		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**57**	**131**	**188**	**54**	**117**	**171**	**359**
	finger		14.0	7.6	7.8	14.8	10.3	10.4	**9.1**
	brush		82.5	91.6	91.3	81.5	89.7	89.5	**90.4**
	datun		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	others		3.5	0.8	0.9	3.7	0.0	0.1	**0.5**
2	**Frequency of cleaning teeth**	n=	**55**	**130**	**185**	**52**	**117**	**169**	**354**
	Once a day		85.5	86.2	86.1	90.4	78.6	79.0	**82.6**
	Twice a day		9.1	13.1	13.0	5.8	20.5	20.0	**16.5**
	After every meal		3.6	0.0	0.1	0.0	0.0	0.0	**0.1**
3	**Material used for cleaning teeth**								
	Tooth paste		92.7	93.8	93.8	82.7	95.7	95.3	**94.6**
	Tooth powder		5.5	6.2	6.1	15.4	3.4	3.8	**5.0**
4	**Type of toothpaste/ powder**	n=	**54**	**130**	**184**	**51**	**116**	**167**	**351**
	Flouridated		33.3	26.2	26.4	27.5	31.0	30.9	**28.7**
	Non flouridated		66.7	73.1	72.9	70.6	66.4	66.5	**69.7**
5	**Change of toothbrush once in**	n=	**47**	**120**	**167**	**44**	**105**	**149**	**316**
	1-3 months		36.2	61.7	60.9	20.5	61.9	60.6	**60.8**
	4-6 months		31.9	29.2	29.2	36.4	24.8	25.1	**27.2**
	6 + months		31.9	8.3	9.0	43.2	13.3	14.2	**11.6**
6	**Rinse mouth after eating**	n=	**57**	**131**	**188**	**54**	**117**	**171**	**359**
	Sometimes		45.6	34.4	34.7	44.4	25.6	26.3	**30.5**
	Always		40.4	39.7	39.7	51.9	52.1	52.1	**45.9**

5.3.2 – 5.3.3 12 and 15 year olds

The oral hygiene practices followed by children of these ages were similar to those of aged 5 years except for small differences in percentages. It means that the current generation of children, up to 15 years of age, is following similar cleaning practices. These practices are: use of toothbrush, which is changed in about a three-month period – less often in rural areas. They use toothpaste that is mostly non-fluoridated. A small percentage use tooth powder also. Brushing is done mostly in the mornings. The practice of rinsing mouth after every meal is also prevalent. Mouth is rinsed by 86 to 91 percent of population – more rinsing "always" than "sometimes" rinsing. The "always" practice is higher in rural areas than in urban. (Table 5.3.2 & 5.3.3)

Table 5. 3. 2 Percent 12 year olds by oral hygiene practices, sex & geographical area.

AGE: 12 yrs **STATE : Delhi**

	Oral Hygiene Practices		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**58**	**121**	**179**	**48**	**122**	**170**	**349**
	finger		12.1	5.8	6.0	14.6	4.9	5.2	**5.6**
	brush		86.2	93.4	93.1	83.3	95.1	94.7	**93.9**
	datun		0.0	0.8	0.8	2.1	0.0	0.1	**0.5**
	others		1.7	0.0	0.1	0.0	0.0	0.0	**0.1**
2	**Frequency of cleaning teeth**	n=	**57**	**120**	**177**	**47**	**122**	**169**	**346**
	Once a day		82.5	81.7	81.7	93.6	78.7	79.1	**80.4**
	Twice a day		12.3	18.3	18.1	4.3	19.7	19.2	**18.7**
	After every meal		1.8	0.0	0.1	2.1	0.0	0.1	**0.1**
3	**Material used for cleaning teeth**								
	Tooth paste		87.7	93.3	93.1	85.1	95.1	94.8	**94.0**
	Tooth powder		10.5	5.8	6.0	12.8	4.9	5.1	**5.6**
4	**Type of toothpaste/ powder**	n=	**56**	**119**	**175**	**46**	**122**	**168**	**343**
	Flouridated		32.1	28.6	28.7	37.0	27.0	27.3	**28**
	Non flouridated		66.1	70.6	70.4	60.9	70.5	70.2	**70.3**
5	**Change of toothbrush once in**	n=	**50**	**113**	**163**	**40**	**116**	**156**	**319**
	1-3 months		38.0	65.5	64.6	12.5	59.5	58.3	**61.5**
	4-6 months		34.0	21.2	21.7	37.5	31.0	31.2	**26.5**
	6 + months		28.0	12.4	12.9	50.0	9.5	10.5	**11.7**
6	**Rinse mouth after eating**	n=	**58**	**121**	**179**	**48**	**122**	**170**	**349**
	Sometimes		39.7	40.5	40.5	33.3	33.6	33.6	**37.1**
	Always		53.4	50.4	50.5	60.4	52.5	52.7	**51.6**

Table 5. 3. 3 Percent 15 year olds by oral hygiene practices, sex & geographical area.

AGE: 15 yrs STATE : Delhi

	Oral Hygiene Practices		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**53**	**117**	**170**	**51**	**112**	**163**	**333**
	finger		5.7	5.1	5.1	7.8	3.6	3.7	**4.4**
	brush		92.5	93.2	93.1	90.2	96.4	96.2	**94.7**
	datun		1.9	1.7	1.7	0.0	0.0	0.0	**0.9**
	others		0.0	0.0	0.0	2.0	0.0	0.1	**0.1**
2	**Frequency of cleaning teeth**	n=	**52**	**115**	**167**	**50**	**112**	**162**	**329**
	Once a day		88.5	79.1	79.4	90.0	73.2	73.8	**76.6**
	Twice a day		7.7	20.9	20.4	10.0	26.8	26.2	**23.3**
	After every meal		1.9	0.0	0.1	0.0	0.0	0.0	**0.1**
3	**Material used for cleaning teeth**								
	Tooth paste		86.5	93.9	93.7	86.0	92.9	92.6	**93.2**
	Tooth powder		11.5	5.2	5.4	12.0	7.1	7.3	**6.4**
4	**Type of toothpaste/ powder**	n=	**51**	**114**	**165**	**49**	**112**	**161**	**326**
	Flouridated		31.4	26.3	26.5	34.7	29.5	29.6	**28.1**
	Non flouridated		68.6	73.7	73.5	65.3	67.9	67.8	**70.7**
5	**Change of toothbrush once in**	n=	**49**	**109**	**158**	**46**	**108**	**154**	**312**
	1-3 months		24.5	54.1	53.2	34.8	62.0	61.2	**57.2**
	4-6 months		34.7	38.5	38.4	39.1	22.2	22.7	**30.6**
	6 + months		40.8	7.3	8.4	26.1	14.8	15.2	**11.8**
6	**Rinse mouth after eating**	n=	**53**	**117**	**170**	**51**	**112**	**163**	**333**
	Sometimes		37.7	35.9	36.0	31.4	24.1	24.3	**30.2**
	Always		54.7	58.1	58.0	66.7	66.1	66.1	**62.1**

5.3.4 35-44 year olds

About 93 percent in this age group, across both sexes and more in urban, reported the use of toothbrush. Other six percent of respondents reported use of fingers for cleaning their teeth, more in rural than in urban. Change of the toothbrushes, about 88 percent across both sexes and more in urban less in rural areas changed toothbrushes once before six months of use and 12 percent, more females and more in urban changed toothbrush after six months.

78 percent, across both sexes and more in urban, were cleaning teeth once a day and 21 percent, more in urban, reported cleaning teeth twice a day. 93 percent, across both sexes and more in urban were using toothpaste. Only 7 percent reported the use of tooth powder.

Table 5. 3. 4 Percent 35-44 year olds by oral hygiene practices. sex & geographical area.

AGE: 35-44 yrs STATE : Delhi

	Oral Hygiene Practices		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	57	124	181	66	140	206	387
	finger		10.5	5.6	5.8	16.7	5.7	6.1	**6.0**
	brush		82.5	93.5	93.2	77.3	92.9	92.3	**92.8**
	datun		7.0	0.8	1.0	4.5	0.7	0.8	**0.9**
	others		0.0	0.0	0.0	1.5	0.7	0.7	**0.4**
2	**Frequency of cleaning teeth**	n=	53	123	176	62	138	200	376
	Once a day		83.0	79.7	79.8	95.2	76.1	76.7	**78.3**
	Twice a day		11.3	20.3	20.0	4.8	23.2	22.6	**21.3**
	After every meal		3.8	0.0	0.1	0.0	0.7	0.7	**0.4**
3	**Material used for cleaning teeth**								
	Tooth paste		84.9	91.9	91.7	90.3	93.5	93.4	**92.6**
	Tooth powder		13.2	7.3	7.5	8.1	6.5	6.6	**7.1**
4	**Type of toothpaste/ powder**	n=	52	122	174	61	138	199	373
	Flouridated		34.6	22.1	22.5	39.3	31.2	31.4	**27.0**
	Non flouridated		65.4	76.2	75.9	57.4	64.5	64.3	**70.1**
5	**Change of toothbrush once in**	n=	47	116	163	51	130	181	344
	1-3 months		29.8	50.0	49.4	21.6	50.0	49.2	**49.3**
	4-6 months		36.2	39.7	39.6	35.3	37.7	37.6	**38.6**
	6 + months		34.0	9.5	10.2	41.2	12.3	13.1	**11.7**
6	**Rinse mouth after eating**	n=	57	124	181	66	140	206	387
	Sometimes		15.8	8.9	9.1	18.2	16.4	16.5	**12.8**
	Always		82.5	87.9	87.7	77.3	79.3	79.2	**83.5**

With regard to type of tooth paste/powder used, 70 percent, more males and more in urban, and 27 percent, more females and more in rural, reported the use of non-fluoridated and fluoridated tooth paste/powder respectively.

One important finding for this age group (and for the next higher age group) was that more respondents reported the habit of rinsing mouth after every meal. It was so for males and females and both in rural and urban areas. (Table 5.3.4)

5.3.5 65-74 year olds

This age group seems to be different from other age groups; of course, more similar to the age group 35-44 years (Table 5.3.5). 23 percent males and 21 percent females reported the practice of datun in rural areas. The practice of using finger was also quite a bit prevalent in this age group (14 to 16%). About 51 percent more males and more in urban reported using tooth brush to clean their teeth.

87 percent and 12 percent, across both sexes and places of residence, were cleaning teeth once a day and twice a day respectively in the state.

Table 5. 3. 5 Percent 65-74 year olds by oral hygiene practices, sex & geographical area.

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

	Oral Hygiene Practices		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**52**	**113**	**165**	**57**	**124**	**181**	**346**
	finger		11.5	14.2	14.1	14.0	16.1	16.1	**15.1**
	brush		44.2	56.6	56.2	52.6	45.2	45.4	**50.8**
	datun		23.1	6.2	6.8	21.1	4.8	5.4	**6.1**
	others		21.2	23.0	22.9	12.3	33.9	33.1	**28**
2	**Frequency of cleaning teeth**	n=	**29**	**80**	**109**	**38**	**76**	**114**	**223**
	Once a day		82.8	87.5	87.4	89.5	86.8	86.9	**87.2**
	Twice a day		10.3	11.3	11.2	10.5	13.2	13.1	**12.2**
	After every meal		6.9	1.3	1.4	0.0	0.0	0.0	**0.7**
3	**Material used for cleaning teeth**								
	Tooth paste		82.8	81.3	81.3	68.4	80.3	79.8	**80.6**
	Tooth powder		17.2	16.3	16.3	28.9	19.7	20.1	**18.2**
4	**Type of toothpaste/ powder**	n=	**29**	**78**	**107**	**37**	**76**	**113**	**220**
	Flouridated		41.4	24.4	24.8	32.4	26.3	26.5	**25.7**
	Non flouridated		51.7	69.2	68.8	56.8	71.1	70.5	**69.7**
5	**Change of toothbrush once in**	n=	**23**	**64**	**87**	**30**	**56**	**86**	**173**
	1-3 months		13.0	40.6	39.9	6.7	44.6	43.2	**41.6**
	4-6 months		13.0	51.6	50.5	30.0	37.5	37.2	**43.9**
	6 + months		73.9	7.8	9.6	56.7	16.1	17.6	**13.6**
6	**Rinse mouth after eating**	n=	**52**	**113**	**165**	**57**	**124**	**181**	**346**
	Sometimes		11.5	11.5	11.5	17.5	8.9	9.2	**10.4**
	Always		82.7	85.8	85.7	82.5	87.1	86.9	**86.3**

80 percent, irrespective of their sex or places of residence, were cleaning teeth with toothpaste. Another 18 percent, more females and more in rural, reported the use of tooth powder. 70 percent and 26 percent of these were using non-fluoridated and fluoridated tooth paste/powder respectively.

About 85 percent, more in urban, changed tooth brush once before 6 months of use. The rest, more females and more in urban, changed toothbrush after 6 months.

86 percent, across both sexes, and more in urban, rinsed the mouth always.

ORAL HYGIENE PRACTICES ACROSS AGE GROUPS (SUMMING UP)

1. The habit of cleaning teeth regularly was universal. About 90 to 95 percent respondents in the age groups 5,12,15, and 35-44 years across both sexes, more in urban areas, reported use of tooth brush to clean their teeth. This percent was 51 for respondents aged 65-74 years, more males and across place of residence.

2. As regards frequency of cleaning, more than 75 percent in each age/age group, across sex, more in rural areas, cleaned their teeth only once a day. More respondents in urban areas were cleaning their teeth twice daily. Around one percent respondents cleaned their teeth after every meal.

3. About 80 percent in the age group 65-74 years and 92 to 95 percent in each of the remaining age groups, across sex, more in urban areas, were using toothpaste. Use of tooth powder was only 6 to 13 percent, more in rural areas. More respondents in the age group 65-74 years reported use of tooth powder – 16 to 23 percent. Most of them either did not know whether the tooth paste/powder they were using was fluoridated or not or reported use of non-fluoridated paste/powder.

4. Change of toothbrush was more frequent in urban areas – once in 1-3 months. In rural areas, the change was done in 4-6 months or even later.

5. Rinsing seems to be quite common – 40 to 60 percent in the age group 5, 12, 15 reported rinsing after every meal; this percentage in age group 35-44 years and 65-74 years was more than 80.

5.4 DENTAL PROBLEMS AND TREATMENT PRACTICES

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

5.4.1 5 year olds

About 13 percent, of respondents, 9 percent male and 17 percent female children, more in urban areas, reported dental problems in the last one-year in the state. Almost all reported the problem of dental decay. 74 percent of them, more males and more in urban, consulted a trained dentist. The remaining did not consult anybody. Only 12 percent across both sexes and more in rural were aware of government dental care facilities, 95 percent of these reported half an hour to reach the facility places. (Table 5.4.1)

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 : Delhi**

	Nature of Dental Problems and Treatment related aspects		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**57**	**131**	**188**	**54**	**117**	**171**	**359**
	problems in last one year		0.0	9.2	8.9	9.3	17.1	16.8	**12.9**
2	**Type of oral health problems**	n=	**0**	**12**	**12**	**5**	**20**	**25**	**37**
	Dental decay			83.3	83.3	80.0	95.0	94.7	**89.0**
	Gum disease			0.0	0.0	20.0	0.0	0.4	**0.2**
	Foul breath			0.0	0.0	0.0	0.0	0.0	**0.0**
	Bleeding gums			0.0	0.0	0.0	0.0	0.0	**0.0**
	Others			8.3	8.3	0.0	0.0	0.0	**4.2**
3	**Consulted (out of those suffered)**								
	None			16.7	16.7	40.0	25.0	25.3	**21.0**
	Trained dentist			83.3	83.3	40.0	65.0	64.5	**73.9**
4	**Availaibility of dental facility**	n=	**57**	**131**	**188**	**54**	**117**	**171**	**359**
	None		14.0	1.5	1.9	24.1	0.9	1.6	**1.8**
	Govt. facility		15.8	10.7	10.8	16.7	12.8	12.9	**11.9**
	Pvt. facility		71.9	90.1	89.5	57.4	86.3	85.4	**87.5**
	Do not know		3.5	1.5	1.6	3.7	0.9	1.0	**1.3**
5	**Time taken to reach the facility**	n=	**48**	**128**	**176**	**40**	**115**	**155**	**331**
	Less than 1/2 hr.		91.7	95.3	95.2	87.5	94.8	94.6	**94.9**
	1/2 - 1 hr.		4.2	3.9	3.9	0.0	5.2	5.1	**4.5**
	> 1 hr.		4.2	0.8	0.9	12.5	0.0	0.3	**0.6**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**57**	**131**	**188**	**54**	**117**	**171**	**359**
	Hypertension		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Epilepsy		0.0	0.8	0.7	0.0	0.0	0.0	**0.4**
	Jaundice		0.0	0.0	0.0	1.9	0.0	0.1	**0.1**
	Asthma		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

5.4.2 12 year olds

21 percent in this age group, more females and more in urban reported dental problem in the last one year in the state. This problem was mostly of dental decay, though a small percentage reported gum disease also. More than 80 percent consulted some trained dentist – more in urban areas and less in rural areas. Only 12 percent, across both sexes and more in rural, were aware of a Government dental care facility. 96 percent of these, irrespective of sex and places of residence, reported less than half hour to reach the facility places (Table 5.4.2).

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 : Delhi**

	Nature of Dental Problems and Treatment related aspects		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**58**	**121**	**179**	**48**	**122**	170	**349**
	problems in last one year		5.2	19.8	19.3	8.3	23.8	23.3	**21.3**
2	**Type of oral health problems**	n=	**3**	**24**	**27**	**4**	**29**	**33**	**60**
	Dental decay		100.0	83.3	83.5	75.0	86.2	86.1	**84.8**
	Gum disease		0.0	4.2	4.1	25.0	6.9	7.1	**5.6**
	Foul breath		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Bleeding gums		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Others		0.0	8.3	8.3	0.0	3.4	3.4	**5.9**
3	**Consulted (out of those suffered)**								
	None		100.0	12.5	13.3	25.0	13.8	13.9	**13.6**
	Trained dentist		0.0	83.3	82.6	75.0	82.8	82.7	**82.7**
4	**Availaibility of dental facility**	n=	**58**	**121**	**179**	**48**	**122**	**170**	**349**
	None		8.6	0.8	1.1	20.8	0.0	0.6	**0.9**
	Govt. facility		19.0	12.4	12.6	6.3	12.3	12.1	**12.4**
	Pvt. facility		55.2	72.7	72.1	58.3	80.3	79.7	**75.9**
	Do not know		24.1	18.2	18.4	16.7	9.8	10.0	**14.2**
5	**Time taken to reach the facility**	n=	**39**	**98**	**137**	**31**	**110**	**141**	**278**
	Less than 1/2 hr.		94.9	96.9	96.9	93.5	95.5	95.4	**96.2**
	1/2 - 1 hr.		0.0	3.1	3.0	0.0	3.6	3.6	**3.3**
	> 1 hr.		2.6	0.0	0.1	6.5	0.9	1.0	**0.6**
	Cannot say		2.6	0.0	0.1	0.0	0.0	0.0	**0.1**
6	**Ever suffered from**	n=	**58**	**121**	**179**	**48**	**122**	**170**	**349**
	Hypertension		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Epilepsy		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Jaundice		0.0	0.8	0.8	0.0	0.8	0.8	**0.8**
	Asthma		0.0	0.0	0.0	0.0	0.8	0.8	**0.4**

5.4.3 15 year olds

20 percent of respondents in this age group, more females and more in urban, reported dental health problem in the last one year. The main problem was of dental decay though a small percentage also reported gum disease in urban areas. Most of them consulted a trained dentist; in the case of rural areas, they did not consult a trained dentist. Only 11 percent, more males and more in rural, were aware of a Government dental care facility. 47 percent of these reported less than half hour to reach facility places (Table 5.4.3).

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 : Delhi**

	Nature of Dental Problems and Treatment related aspects		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**53**	**117**	**170**	**51**	**112**	**163**	**333**
	problems in last one year		1.9	18.8	18.2	11.8	22.3	22.0	**20.1**
2	**Type of oral health problems**	n=	**1**	**22**	**23**	**6**	**25**	**31**	**54**
	Dental decay		0.0	81.8	81.5	66.7	88.0	87.6	**84.6**
	Gum disease		100.0	4.5	4.9	0.0	8.0	7.9	**6.4**
	Foul breath		0.0	0.0	0.0	0.0	4.0	3.9	**2.0**
	Bleeding gums		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Others		0.0	4.5	4.5	16.7	0.0	0.3	**2.4**
3	**Consulted (out of those suffered)**								
	None		0.0	9.1	9.1	66.7	8.0	9.0	**9.05**
	Trained dentist		100.0	86.4	86.4	16.7	84.0	82.8	**84.6**
4	**Availaibility of dental facility**	n=	**53**	**117**	**170**	**51**	**112**	**163**	**333**
	None		15.1	2.6	3.0	7.8	0.0	0.3	**1.65**
	Govt. facility		17.0	13.7	13.8	13.7	7.1	7.4	**10.6**
	Pvt. facility		58.5	74.4	73.8	70.6	87.5	86.9	**80.4**
	Do not know		15.1	13.7	13.7	11.8	7.1	7.3	**10.5**
5	**Time taken to reach the facility**	n=	**38**	**98**	**136**	**41**	**104**	**145**	**281**
	Less than 1/2 hr.		92.1	95.9	95.8	95.1	97.1	97.1	**96.5**
	1/2 - 1 hr.		0.0	3.1	3.0	0.0	2.9	2.8	**2.9**
	> 1 hr.		7.9	1.0	1.2	2.4	0.0	0.1	**0.65**
	Cannot say		0.0	0.0	0.0	2.4	0.0	0.1	**0.05**
6	**Ever suffered from**	n=	**53**	**117**	**170**	**51**	**112**	**163**	**333**
	Hypertension		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Epilepsy		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Jaundice		1.9	0.0	0.1	0.0	0.9	0.9	**0.5**
	Asthma		0.0	0.9	0.8	0.0	0.0	0.0	**0.4**

5.4.4 35-44 year olds

38 percent of respondents in this age group, more females and more in urban, reported occurrence of dental problems in the last one year in the state. Many in this age group reported dental decay and gum disease including gum bleeding; females, particularly in rural areas, reported higher incidence of bleeding gums and gum disease. Quite a large percentage (90%) consulted trained dentist.

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 : Delhi**

	Nature of Dental Problems and Treatment related aspects		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**57**	**124**	**181**	**66**	**140**	**206**	**387**
	problems in last one year		22.8	29.8	29.6	33.3	47.1	46.7	**38.2**
2	**Type of oral health problems**	n=	**13**	**37**	**50**	**22**	**66**	**88**	**138**
	Dental decay		69.2	64.9	65.0	18.2	50.0	49.2	**57.1**
	Gum disease		53.8	56.8	56.7	72.7	68.2	68.3	**62.5**
	Foul breath		0.0	8.1	7.9	9.1	1.5	1.7	**4.8**
	Bleeding gums		7.7	2.7	2.8	4.5	4.5	4.5	**3.7**
	Others		0.0	8.1	7.9	13.6	10.6	10.7	**9.3**
3	**Consulted (out of those suffered)**								
	None		15.4	5.4	5.7	31.8	6.1	6.7	**6.2**
	Trained dentist		69.2	91.9	91.3	54.5	89.4	88.5	**89.9**
4	**Availaibility of dental facility**	n=	**57**	**124**	**181**	**66**	**140**	**206**	**387**
	None		8.8	0.8	1.1	15.2	0.0	0.5	**0.8**
	Govt. facility		22.8	16.1	16.4	21.2	7.9	8.3	**12.4**
	Pvt. facility		71.9	86.3	85.8	69.7	92.1	91.4	**88.6**
	Do not know		1.8	0.8	0.8	0.0	0.7	0.7	**0.8**
5	**Time taken to reach the facility**	n=	**51**	**122**	**173**	**56**	**139**	**195**	**368**
	Less than 1/2 hr.		92.2	94.3	94.2	92.9	97.8	97.7	**96**
	1/2 - 1 hr.		2.0	5.7	5.6	1.8	1.4	1.4	**3.5**
	> 1 hr.		5.9	0.0	0.2	5.4	0.7	0.9	**0.6**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**57**	**124**	**181**	**66**	**140**	**206**	**387**
	Hypertension		7.0	10.5	10.4	10.6	14.3	14.2	**12.3**
	Diabetes		5.3	7.3	7.2	0.0	3.6	3.4	**5.3**
	Epilepsy		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Jaundice		0.0	0.8	0.8	1.5	0.7	0.7	**0.8**
	Asthma		0.0	0.8	0.8	0.0	2.1	2.1	**1.5**

Only 12 percent, across both sexes and more in rural, were aware of a Government dental care facility. More than 96 percent of respondents reported less than half hour to reach the dental care facility places.

About 10 percent males and 14 percent females reported that they had the problem of hypertension. Another seven percent males and three percent females reported diabetes. Their incidence was lower in rural areas than urban. A small percentage of urban females also reported the problem of asthma. (Table 5.4.4)

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 : Delhi**

	Nature of Dental Problems and Treatment related aspects		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**52**	**113**	**165**	**57**	**124**	**181**	**346**
	problems in last one year		21.2	33.6	33.2	15.8	34.7	34.0	**33.6**
2	**Type of oral health problems**	n=	**11**	**38**	**49**	**9**	**43**	**52**	**101**
	Dental decay		36.4	44.7	44.6	33.3	37.2	37.1	**40.9**
	Gum disease		63.6	63.2	63.2	66.7	72.1	72.0	**67.6**
	Foul breath		0.0	5.3	5.2	0.0	4.7	4.6	**4.9**
	Bleeding gums		0.0	2.6	2.6	0.0	7.0	6.9	**4.8**
	Others		0.0	7.9	7.7	0.0	7.0	6.9	**7.3**
3	**Consulted (out of those suffered)**								
	None		45.5	13.2	13.8	11.1	4.7	4.8	**9.3**
	Trained dentist		45.5	81.6	80.8	77.8	93.0	92.8	**86.8**
4	**Availaibility of dental facility**	n=	**52**	**113**	**165**	**57**	**124**	**181**	**346**
	None		19.2	0.9	1.5	12.3	0.8	1.2	**1.4**
	Govt. facility		9.6	11.5	11.4	21.1	8.9	9.3	**10.4**
	Pvt. facility		73.1	88.5	88.0	63.2	90.3	89.4	**88.7**
	Do not know		0.0	0.9	0.9	7.0	1.6	1.8	**1.4**
5	**Time taken to reach the facility**	n=	**42**	**110**	**152**	**46**	**121**	**167**	**319**
	Less than 1/2 hr.		97.6	95.5	95.5	91.3	96.7	96.5	**96.0**
	1/2 - 1 hr.		0.0	2.7	2.7	0.0	3.3	3.2	**3.0**
	> 1 hr.		2.4	0.9	1.0	8.7	0.0	0.2	**0.6**
	Cannot say		0.0	0.9	0.9	0.0	0.0	0.0	**0.5**
6	**Ever suffered from**	n=	**52**	**113**	**165**	**57**	**124**	**181**	**346**
	Hypertension		1.9	15.9	15.5	12.3	25.8	25.4	**20.5**
	Diabetes		0.0	12.4	12.0	7.0	12.9	12.7	**12.4**
	Epilepsy		0.0	0.0	0.0	0.0	0.8	0.8	**0.4**
	Jaundice		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Asthma		3.8	3.5	3.6	3.5	4.8	4.8	**4.2**

5.4.5 65-74 year olds

About one-third of respondents, across both sexes and more in urban reported some dental problem in the last one year in the state.

About 41 percent, more males and more in urban, had problem of dental decay. Another 72 percent of these, more females and more in urban, reported gum disease including gum bleeding. A few in urban suffered from foul breath.

87 percent of those who had had problems, more females and more in urban, consulted trained dentist. Only 10 percent, irrespective of their sex and places of residence, were aware of a Government dental care facility in their areas.

96 percent of awared reported less than half an hour to reach facility places.

20 percent, more females and more in rural, reported ever having suffered from hypertension. This is followed by another 12 percent, across both sexes and more in urban, who had the problem of diabetes. There were a few who reported to have suffered from each of the remaining diseases. (Table 5.4.5)

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

1. Nine to thirteen percent respondents in the age group 5, 12 and 15 and 30 to 45 in the age groups 35-44 and 65-74 years reported suffering from some oral health problem in the last one year. Reporting was higher among females and in urban areas. The problem reported was dental decay in early ages but gum disease and foul breath was also reported in higher ages. Very percent of them consulted a dentist, especially so in urban areas.
2. Only 12 percentage of the respondents were aware of a governmental dental care facility. Eighty to eighty eight percent, mostly living in urban areas, were aware of a private dental facility. It took mostly less than half-an-hour to reach the facility in urban areas; in rural areas, it took half-an-hour to one hour.

5.5 AWARENESS OF DENTAL HEALTH PROBLEMS

Three questions were asked about awareness of the dental health problems. The first was about the common dental problems, the second about the major factors responsible for the problems and the third about how these dental problems could be prevented. The responses on these problems are shown in Tables 5.5.2 to 5.5.5 and are discussed below.

5.5.2 12 year olds

About 62 percent of respondents, 58 percent males and 67 percent females, and more living in urban areas, reported knowledge of the dental problems (Table 5.5.2). The percentages were lower among males and higher among females in rural areas, perhaps because females start taking responsibility for their family members at an early age. Most often the problem reported was of tooth decay (52% males and 62% females), followed by gum disease (32% males and 46% females). Other problems reported were bad smell and strained teeth (about 8 to 10 percent of respondents).

When asked about the factors responsible for the problems, 68 percent of respondents, 61 percent males and 75 percent females were aware of the factors in the state. These percentages were similar both in urban and rural areas. The most frequently reported factor was eating sweets/ice cream/chocolates (52% males and 66% females), followed by "not brushing regularly", 'not rinsing" and consuming tobacco. In general, females had greater awareness than males. There was not very much difference between urban and rural areas except that of tobacco as a factor causing oral health problems in rural areas.

When asked about the preventive measures, the percentage that was aware, was the same as for the reported factors, responsible for oral health problems. The two most important preventive measure suggested were regular cleaning of teeth (53 percent males and 71 percent females) and avoid sweets (42% males and 44% females), irrespective of their places of residence.

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 : Delhi**

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	**58**	**121**	**179**	**49**	**122**	**171**	**350**
	No knowledge		50.0	42.1	42.4	26.5	32.8	32.6	**37.5**
	Tooth decay		43.1	52.1	51.8	73.5	61.5	61.8	**56.8**
	Gum disease		34.5	32.2	32.3	53.1	45.9	46.1	**39.2**
	Bad smell		6.9	8.3	8.2	12.2	9.0	9.1	**8.7**
	Stained teeth		10.3	10.7	10.7	12.2	9.0	9.1	**9.9**
	Others		1.7	1.7	1.7	0.0	3.3	3.2	**2.5**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		46.6	51.7	51.5	67.3	65.6	65.6	**58.6**
	Not brushing regularly		41.4	49.2	48.9	55.1	59.0	58.9	**53.9**
	Not rinsing		17.2	16.7	16.7	22.4	13.1	13.4	**15.1**
	Consuming tobacco		6.9	1.7	1.9	8.2	2.5	2.6	**2.3**
	Do not know		36.2	39.2	39.1	20.4	24.6	24.5	**31.8**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		8.6	5.0	5.1	10.2	4.1	4.3	**4.70**
	Cleaning teeth regularly		58.6	52.9	53.1	63.3	71.3	71.1	**62.1**
	Visiting dentist regularly		10.3	9.9	9.9	4.1	6.6	6.5	**8.2**
	Using flouride paste / powder		3.4	0.8	0.9	2.0	0.0	0.1	**0.5**
	Avoid sweet items		25.9	42.1	41.6	38.8	44.3	44.1	**42.9**
	Do not know		32.8	39.7	39.4	28.6	24.6	24.7	**32.1**

5.5.3 15 year olds

About 76 percent of this age group, almost equal males and females, across places of residence, reported knowledge of oral health problems in the state (Table 5.5.3). The problem most cited was tooth decay (67percent respondents), followed by gum disease (48 percent). The other two relatively less known problems reported were stained teeth and bad smell (17 percent).

About 86 percent of respondents, more females than males, had knowledge of factors that cause oral health problems, and awareness was higher among urban respondents than rural – may be because of greater exposure to the media. Two factors reported to be responsible for dental problems were "eating sweets" and "not brushing teeth regularly" – 68 percent reported each of these factors as cause of dental problems. In rural areas, 8 to 11 percent reported tobacco consuming as factor for the dental problems. It is significant to note that about 17 percent males and about 10 percent females reported that they did not know the factors that cause dental problems.

About 81 percent, more females, across places of residence, reported awareness of preventive measures. As expected, about 70 to 75 percent respondents suggested brushing teeth regularly as the most important way to prevent oral health problems. Another about 49 to 53 percent suggested avoiding sweets as other important factor for prevention.

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 : Delhi**

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	**54**	**117**	**171**	**51**	**112**	**163**	**334**
	No knowledge		27.8	23.9	24.1	17.6	23.2	23.0	**23.6**
	Tooth decay		59.3	66.7	66.4	72.5	67.9	68.0	**67.2**
	Gum disease		40.7	44.4	44.3	47.1	50.9	50.8	**47.6**
	Bad smell		13.0	12.0	12.0	13.7	15.2	15.1	**13.6**
	Stained teeth		13.0	11.1	11.2	13.7	20.5	20.3	**15.8**
	Others		1.9	3.4	3.4	5.9	1.8	1.9	**2.7**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		57.4	66.4	66.1	58.8	69.6	69.3	**67.7**
	Not brushing regularly		59.3	62.9	62.8	60.8	72.3	71.9	**67.4**
	Not rinsing		24.1	16.4	16.6	23.5	23.2	23.2	**19.9**
	Consuming tobacco		11.1	4.3	4.5	7.8	1.8	2.0	**3.3**
	Do not know		16.7	17.2	17.2	11.8	9.8	9.9	**13.6**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		11.1	8.5	8.6	7.8	3.6	3.7	**6.2**
	Cleaning teeth regularly		68.5	71.8	71.7	72.5	75.0	74.9	**73.3**
	Visiting dentist regularly		9.3	14.5	14.4	7.8	13.4	13.2	**13.8**
	Using flouride paste / powder		1.9	0.0	0.1	2.0	0.0	0.1	**0.1**
	Avoid sweet items		46.3	48.7	48.6	39.2	53.6	53.1	**50.9**
	Do not know		16.7	22.2	22.0	11.8	16.1	15.9	**19.0**

5.5.4 35-44 year olds

About 82 percent, more females than males, and more in rural, were aware of oral health problems in the state. There were more aware of tooth decay followed by gum disease and bad smell. 17 percent, across both sexes and places of residence were aware of the problem of strained teeth. In general the more respondents in urban area were aware of oral health problems than in the rural areas (Table 5.5.4).

As regards knowledge of factors that cause oral health problems, 89 percent, more females and more in urban reported awareness. 66 percent and another 77 percent, more females and more in urban, reported eating sweets/ice cream and not brushing regularly. Another 32 percent, more males and more in urban, reported not rinsing, and a small percent (7 percent), more males and more in rural, talked of consuming tobacco as factor responsible for oral health problems.

As regards knowledge about preventive measures, about 90 percent more males and more in urban, reported knowing the measures. Three-fourths, more females and more in rural, reported cleaning teeth regularly. Other 54 percent, more females and more in urban, who reported avoid sweet items. This followed by small percentage pointed preventive measures such as not consuming tobacco and visiting dentists regularly.

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 : Delhi**

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	**57**	**124**	**181**	**66**	**140**	**206**	**387**
	No knowledge		10.5	20.2	19.8	18.2	15.0	15.1	**17.5**
	Tooth decay		75.4	71.0	71.1	50.0	69.3	68.6	**69.9**
	Gum disease		63.2	62.9	62.9	65.2	67.1	67.1	**65.0**
	Bad smell		26.3	27.4	27.4	16.7	27.9	27.5	**27.5**
	Stained teeth		17.5	16.9	17.0	9.1	17.1	16.9	**17.0**
	Others		1.8	1.6	1.6	6.1	6.4	6.4	**4.0**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		59.6	65.0	64.9	47.0	67.9	67.1	**66.0**
	Not brushing regularly		73.7	74.0	74.0	59.1	81.4	80.7	**77.4**
	Not rinsing		31.6	38.2	38.0	22.7	26.4	26.3	**32.2**
	Consuming tobacco		15.8	9.8	10.0	7.6	2.9	3.0	**6.5**
	Do not know		12.3	12.2	12.2	15.2	9.3	9.5	**10.9**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		15.8	15.3	15.3	7.6	5.0	5.1	**10.2**
	Cleaning teeth regularly		80.7	75.0	75.2	68.2	81.4	81.0	**78.1**
	Visiting dentist regularly		19.3	17.7	17.8	12.1	17.9	17.7	**17.8**
	Using flouride paste / powder		7.0	0.0	0.2	1.5	0.7	0.7	**0.5**
	Avoid sweet items		49.1	50.8	50.8	31.8	57.9	57.0	**53.9**
	Do not know		10.5	12.1	12.0	15.2	7.1	7.4	**9.7**

5.5.5 65-74 year olds

The awareness of dental problems of this age group is completely different than that in earlier age groups discussed above (Table 5.5.5). Males were more aware of dental problems than females (contrary to the findings in the earlier ages) but lower than other ages (76% males and 70% females). Nineteen percent males in rural areas were not aware of the dental problems compared to 36 percent females who lacked awareness. (These levels are much lower in other ages.) Two major problems, of tooth decay and gum diseases, were equally reported by more than half of the respondents – both males and females and in rural and urban areas.

In response to the query on factors that cause dental problems, besides eating sweets (49%), not brushing regularly (by 56%), the other important factor reported was not rinsing (34% males and 29% females). It may also be noted that almost a quarter of the female respondents and one-seventh of male respondents reported no knowledge of the factors, which cause dental problems.

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 : Delhi**

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	52	113	165	58	124	182	347
	No knowledge		19.2	23.9	23.7	36.2	29.8	30.1	**26.9**
	Tooth decay		67.3	57.5	57.8	41.4	54.8	54.4	**56.1**
	Gum disease		59.6	57.5	57.6	46.6	56.5	56.1	**56.9**
	Bad smell		17.3	14.2	14.3	3.4	12.9	12.6	**13.5**
	Stained teeth		15.4	13.3	13.3	8.6	9.7	9.6	**11.5**
	Others		0.0	0.9	0.9	0.0	0.8	0.8	**0.9**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		46.2	51.8	51.6	37.9	46.7	46.4	**49.0**
	Not brushing regularly		59.6	59.8	59.8	37.9	53.3	52.7	**56.3**
	Not rinsing		36.5	34.8	34.9	20.7	29.5	29.2	**32.1**
	Consuming tobacco		17.3	9.8	10.1	6.9	4.1	4.2	**7.2**
	Do not know		13.5	14.3	14.3	39.7	27.0	27.5	**20.9**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		15.4	15.9	15.9	8.6	8.1	8.1	**12.00**
	Cleaning teeth regularly		65.4	60.2	60.4	50.0	54.8	54.7	**57.6**
	Visiting dentist regularly		7.7	16.8	16.5	8.6	6.5	6.5	**11.5**
	Using flouride paste / powder		1.9	0.0	0.1	3.4	0.0	0.1	**0.1**
	Avoid sweet items		44.2	44.2	44.2	27.6	39.5	39.1	41.7
	Do not know		17.3	15.9	16.0	36.2	33.1	33.2	**24.6**

Since the respondents did not know the factors that cause dental problems, they did not know how to prevent them – almost one-third of female and one-sixth of male respondents reported no knowledge of preventive measures. 58 percent and 42 percent, more males and more in urban, reported cleaning teeth regularly and avoid sweet items as measures to prevent oral health problems.

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

1. Sixty two to eighty three percent respondents were aware of dental health problems. The problems most often reported were dental decay and gum disease. A small percentage also reported foul breath and stained teeth.

2. Sixth eight to eighty nine percent respondents were aware of causative factors of oral health problems. Most often cause was (by about 50%) "not brushing regularly" and "eating sweets/ Ice cream". Twenty to thirty percent reported, "not rinsing" also a factor.

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 was asked. These questions related to the habit of smoking, chewing paan with tobacco and drinking alcohol. This section summarizes findings on those questions. Since these questions have relevance for the ages 35-44 and 65-74 years, discussion will cover only these two age groups. The data are shown in Tables 5.6.4 and 5.6.5.

5.6.4 35-44 year old

15 percent of respondents, more males and more in rural reported the habit of smoking in the state. About 40 percent males and 4 percent females reported smoking in rural areas (Table 5.6.4). Their distribution by the type of smoking, among smokers, is shown below.

Type of smoking	percent
Males (Rural areas):	
Bidi	60.9
Cigarettes	30.4
Hookah	8.7
Females: (Rural)	
Bidi	66.7
Hookah	33.3

Majority of the males (61%) reported smoking less than 10 times a day, one quarter of them smoke 10-20 times a day. Relatively few smoke more than 20 times. In the case of females, though only 4 percent reported smoking, their distribution in three categories of smoking, less than 10 times, 10-20 times and more than 20 times, was 33 percent each.

The degree of smoking was much less in urban areas – 28 percent among males and 0.7 percent among females. Among males, most of them reported smoking bidis (54%), followed by cigarettes (40%) and cigars (6%). They were not heavy smokers: almost 75 percent reported smoking less than 10 cigarettes a day.

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 : Delhi

	Tobacco Smoking or Chewing with Pan Masala and Alcohol taking habits		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Smoking Habits**	n=	57	124	181	66	140	206	387
	Subjects smoking tobacco		40.4	28.2	28.6	4.5	0.7	0.8	14.7
2	**Nature of Smoking**	n=	23	35	58	3	1	4	62.0
	Chillum		0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Hookah		8.7	0.0	0.4	33.3	0.0	6.1	3.3
	Cigars		0.0	5.7	5.4	0.0	0.0	0.0	2.7
	Cigarettes		30.4	40.0	39.5	0.0	0.0	0.0	19.8
	Bidis		60.9	54.3	54.6	66.7	100.0	93.9	74.3
3	**Number of times Smoking in a day**								
	< 10 times		60.9	74.3	73.7	33.3	100.0	87.7	80.7
	10-20 times		26.1	20.0	20.3	33.3	0.0	6.1	13.2
	20 + times		13.0	5.7	6.1	33.3	0.0	6.1	6.1
4	**Chewing pan/pan masala habits**	n=	57	124	181	66	140	206	387
	Chew pan or pan masala with tobacco		5.3	9.7	9.5	3.0	0.0	0.1	4.8
5	**Number of years of chewing pan or**								
	pan masala with Tobacco	n=	3	12	15	2	0	2	17
	Less than 5 years		100	16.7	18.2	0.0	0.0	0.0	9.1
	5 - 10 years		0.0	50.0	49.1	0.0	0.0	0.0	24.6
	> 10 years		0.0	33.3	32.7	100	0.0	100	66.4
6	**Number of times of chewing tobacco**								
	in a day								
	Less than 5 times		100.0	41.7	42.7	50.0	0.0	50.0	46.4
	5 - 10 times		0.0	25.0	24.5	0.0	0.0	0.0	12.3
	> 10 times		0.0	33.3	32.7	50.0	0.0	50.0	41.4
7	**Alcohol consumption habits**	n=	57	124	181	66	140	206	387
	Consuming alcohol		29.8	22.6	22.8	0.0	0.0	0.0	11.4
8	**Frequency of alcohol consumption**	n=	17	28	45	0	0	0	45
	Daily		23.5	21.4	21.5	0.0	0.0	0.0	10.8
	3 times a week		5.9	25.0	24.2	0.0	0.0	0.0	12.1
	Occasionally		52.9	53.6	53.5	0.0	0.0	0.0	26.8

About 5 percent males in rural areas reported using paan masala with tobacco; all of them were taking it less than five times a day. This percentage among females was three. In the case of urban areas, only ten percent males reported taking paan masala with tobacco; 50 percent of them were taking it 5-10 times a day. Females were not taking paan masala with tobacco at all.

About 30 percent males in rural areas reported taking alcohol; seven percent daily, about two percent three times a week and 21 percent occasionally. No females reported taking alcohol. In the case of urban areas, 23 percent males reported taking alcohol; most of them occasionally (54%). Only 21 percent of them were regular consumers of alcohol.

5.6.5 65-74 year olds

The smoking habits in rural areas in this age group were similar to that in the age group 35-44 years (Table 5.6.5). In urban areas, about four percent female reported smoking compared to only 0.7 percent in the age group 35-44 years. For males, the practice was similar to the age group 35-44 years. The pattern of smoking by number of cigarettes smoked in a day was also similar

The habit of chewing paan masala with tobacco in rural areas was similar in this age group to that in the age group 35-44 years. But in urban areas eight percent men reported chewing paan masala with tobacco. About 2 percent females also reported chewing paan masala with tobacco compared to none in the age group 35-44 years.

About one quarter of male in rural areas and 11 percent in urban areas reported taking alcohol. Most of them were taking occasionally; in rural areas about 33 percent were taking it regularly: either daily or thrice a week.

TOBACCO SMOKING AND CHEWING HABITS (SUMMING UP)

1. About 25 percent respondents in each age group, mostly males and more in rural areas, had the habit of smoking. Seventy four percent of them in the age group 35-44 years, more females, were smoking bidi. In the case of rural males in the age group 65-74 years, hookah was more popular. Cigarettes were more popular in urban areas.
2. Eighty one percent of the smokers, more females and more in urban areas, were smoking 10 or less number of times in a day. More male smokers and more in rural areas were smoking more than 10 times a day.
3. A small percent of respondents, more males and more in urban areas chew paan and/or paan masala with tobacco.
4. Twenty three percent respondents in the age group 35-44 years and seven percent in the age group 65-74, almost all males and in rural areas, reported consuming alcohol. A quarter to one-third was taking it regularly.

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 : Delhi

	Tobacco Smoking or Chewing with Pan Masala and Alcohol taking habits		MALE STATE			FEMALE STATE			STATE TOTAL
			R	U	T	R	U	T	
1	**Smoking Habits**	n=	**52**	**112**	**164**	**57**	**124**	**181**	**345**
	Subjects smoking tobacco		40.4	25.0	25.5	5.3	4.0	4.1	**14.8**
2	**Nature of Smoking**	n=	**21**	**28**	**49**	**3**	**5**	**8**	**57.0**
	Chillum		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Hookah		61.9	17.9	20.2	0.0	60.0	57.4	**38.8**
	Cigars		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cigarettes		4.8	21.4	20.5	0.0	0.0	0.0	**10.3**
	Bidis		33.3	60.7	59.3	100.0	40.0	42.6	**51**
3	**Number of times Smoking in a day**								
	< 10 times		71.4	64.3	64.7	33.3	100.0	97.1	**80.9**
	10-20 times		28.6	25.0	25.2	66.7	0.0	2.9	**14.1**
	20 + times		0.0	10.7	10.1	0.0	0.0	0.0	**5.1**
4	**Chewing pan/pan masala habits**	n=	**52**	**112**	**164**	**57**	**124**	**181**	**345**
	Chew pan or pan masala with tobacco		5.8	8.0	8.0	3.5	2.4	2.5	**5.3**
5	**Number of years of chewing pan or**								
	pan masala with Tobacco	n=	**3**	**9**	**12**	**2**	**3**	**5**	**17**
	Less than 5 years		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	5 - 10 years		0.0	11.1	10.8	50.0	0.0	2.4	**6.6**
	> 10 years		100.0	88.9	89.2	50.0	100.0	97.6	**93.4**
6	**Number of times of chewing tobacco**								
	in a day								
	Less than 5 times		33.3	22.2	22.5	0.0	33.3	31.7	**27.1**
	5 - 10 times		33.3	55.6	55.0	50.0	33.3	34.1	**44.6**
	> 10 times		33.3	22.2	22.5	50.0	33.3	34.1	**28.3**
7	**Alcohol consumption habits**	n=	**52**	**112**	**164**	**57**	**124**	**181**	**345**
	Consuming alcohol		23.1	10.7	11.1	0.0	2.4	2.3	**6.7**
8	**Frequency of alcohol consumption**	n=	**12**	**12**	**24**	**0**	**3**	**3**	**27**
	Daily		25.0	33.3	32.8	0.0	0.0	0.0	**16.4**
	3 times a week		8.3	0.0	0.6	0.0	0.0	0.0	**0.3**
	Occasionally		58.3	66.7	66.1	0.0	100.0	100.0	**83.1**

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.

Tables (tabulated data) and Figures (charts and graphs) accompany the narrative report. The tables present a detailed picture of the findings (male and female subjects) while figures present the high points of the prevalence patterns based on totals (percentages combined for male and female subjects). The tables are numbered based on the chapter and section they represent while the figures are similarly numbered and represent the tables from which the data is drawn. The figures are only selectively prepared and do not always follow a table. The consistency of numbering is maintained and therefore, certain numbers of figures may be absent. A complete list of tables and figures is separately included in the report.

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 dmft values can range from 0 to 20 (primary teeth) and DMFT values can range from 0 to 32 (permanent teeth). The range of dmft/DMFT values has been grouped in such a way as to provide some indication of the decayed, missing and/or filled teeth expressed as a percentage of the normally present teeth in an average mouth. The number of normally present teeth is taken as 20 (age 5 years); 28 (age 12 and 15 years); and 32 (age 35-44 and 65-74 years).

The WHO's Significant Caries Index (SIC) helps identify the high risk group in the surveyed population. The SIC Index is represented by the mean dmft/DMFT score of the one third of the population with the highest mean dmft/DMFT scores.

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.

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

State: Delhi

Decayed, Missing, Filled Teeth		5 years			Decayed, Missing, Filled Teeth		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=**	**58**	**55**	***113***	**State Rural**	**n=**	**58**	**49**	***107***	**54**	**51**	***105***	**57**	**66**	***123***	**52**	**58**	***110***
With caries experience		36.2	23.6	***29.9***	With caries experience		34.5	55.1	***44.8***	50.0	51.0	***50.5***	77.2	78.8	***78.0***	100.0	93.1	***96.6***
dmft value 1-3		22.4	10.9	***16.7***	DMFT value 1-3		25.9	40.8	***33.4***	29.6	41.2	***35.4***	43.9	28.8	***36.4***	19.2	8.6	***13.9***
dmft value 4-5		10.3	7.3	***8.8***	DMFT value 4-7; 4-8		6.9	14.3	***10.6***	18.5	9.8	***14.2***	21.1	37.9	***29.5***	13.5	20.7	***17.1***
dmft value 6-10		1.7	5.5	***3.6***	DMFT value 8-14; 9-16		1.7	0.0	***0.9***	0.0	0.0	***0.0***	10.5	10.6	***10.6***	11.5	20.7	***16.1***
dmft value 11-15		1.7	0.0	***0.9***	DMFT value 15-21; 17-24		0.0	0.0	***0.0***	1.9	0.0	***1.0***	0.0	1.5	***0.8***	13.5	12.1	***12.8***
dmft value 16 - 20		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***	1.9	0.0	***1.0***
					DMFT value 29 -32		0.0	0.0	NA	0.0	0.0	NA	1.8	0.0	***0.9***	40.4	31.0	***35.7***
State Urban	**n=**	**132**	**116**	***248***	**State Urban**	**n=**	**121**	**122**	***243***	**117**	**112**	***229***	**124**	**140**	***264***	**113**	**124**	***237***
With caries experience		36.4	44.4	***40.4***	With caries experience		42.1	53.3	***47.7***	57.3	56.3	***56.8***	74.2	80.0	***77.1***	91.2	94.4	***92.8***
dmft value 1-3		25.8	30.8	***28.3***	DMFT value 1-3		32.2	45.9	***39.1***	40.2	37.5	***38.9***	30.6	37.1	***33.9***	11.5	6.5	***9.0***
dmft value 4-5		6.8	8.5	***7.7***	DMFT value 4-7; 4-8		8.3	4.1	***6.2***	13.7	17.0	***15.4***	27.4	27.1	***27.3***	15.9	17.7	***16.8***
dmft value 6-10		3.0	2.6	***2.8***	DMFT value 8-14; 9-16		1.7	3.3	***2.5***	3.4	1.8	***2.6***	14.5	15.0	***14.8***	20.4	19.4	***19.9***
dmft value 11-15		0.8	2.6	***1.7***	DMFT value 15-21; 17-24		0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.6	0.7	***1.2***	7.1	4.0	***5.6***
dmft value 16 -20		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***	2.7	4.0	***3.4***
					DMFT value 29 - 32		0.0	0.0	NA	0.0	0.0	NA	0.0	0.0	***0.0***	33.6	42.7	***38.2***
State Total	**n=**	**190**	**171**	***361***	**State Total**	**n=**	**179**	**171**	***350***	**171**	**163**	***334***	**181**	**206**	***387***	**165**	**182**	***347***
With caries experience		36.3	37.8	***37.1***	With caries experience		39.7	53.8	***46.8***	55.0	54.6	***54.8***	75.1	79.6	***77.4***	93.9	94.0	***94.0***
dmft value 1-3		24.7	24.4	***24.6***	DMFT value 1-3		30.2	44.4	***37.3***	36.8	38.7	***37.8***	34.8	34.5	***34.7***	13.9	7.1	***10.5***
dmft value 4-5		7.9	8.1	***8.0***	DMFT value 4-7; 4-8		7.8	7.0	***7.4***	15.2	14.7	***15.0***	25.4	30.6	***28.0***	15.2	18.7	***17.0***
dmft value 6-10		2.6	3.5	***3.1***	DMFT value 8-14; 9-16		1.7	2.3	***2.0***	2.3	1.2	***1.8***	13.3	13.6	***13.5***	17.6	19.8	***18.7***
dmft value 11-15		1.1	1.7	***1.4***	DMFT value 15-21; 17-24		0.0	0.0	***0.0***	0.6	0.0	***0.3***	1.1	1.0	***1.1***	9.1	6.6	***7.9***
dmft value 16 - 20		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***	2.4	2.7	***2.6***
					DMFT value 29 - 32		0.0	0.0	NA	0.0	0.0	NA	0.6	0.0	***0.3***	35.8	39.0	***37.4***

Note: The DMFT values 4-7, 8-14, 15-21 and 22-28 have been computed and apply to subjects aged 12 and 15 years (max. 28 teeth, and DMFT values 4-8, 9-16, 17-24, 25-29, and 29-32 to ages 35-44 and 65-74 yeras (max. 32 teeth). In 35-44 and 65-74 years, the 'M' (Missing) component includes teeth missing due to caries and other reasons. Related Tables : **6.02** and **6.03**.

6.1.1 Coronal caries

Table 6.01 presents the percentage of subjects by age and sex who were caries-free and those who had experienced caries (dmft/DMFT>0). The dmft values can range from 0 to 20 (primary teeth) and DMFT values can range from 0 to 32 (permanent teeth). The range of dmft/DMFT values has been grouped in such a way as to provide some indication of the percentage of normally present teeth in an average mouth which were decayed, missing and/or filled.

Table 6.02 presents the mean number of teeth decayed, missing and filled (mean dmft and mean DMFT) in the surveyed population and includes the Significant Caries (SIC) Index. The SIC Index gives the mean of the one third of the surveyed population with the highest DMFT values, The table 6.02 also gives the mean number of teeth present in the mouth of the surveyed population and the percentage of subjects who were edentulous.

Table 6.03 presents the breakup of the percentage of subjects with missing teeth, due to caries and due to other reasons. This is presented only for age groups 35-44 and 65-74 years, since in these two age groups, the score for the Missing or 'M' component of the DMFT includes both missing teeth due to caries or other reasons. In all other age groups, the 'm' or 'M' component only includes teeth missing due to caries.

The overall percentage of subjects with caries experience in 5 year old subjects (primary teeth) was about 37.1% (36.3% males and 37.8% females). A frequency distribution of the dmft values by the percentage of subjects who had experienced caries (Table 6.01) showed that about 24.6% subjects had a dmft value of 1-3 followed by about 8% with a dmft value of 4-5. About 12.5% subjects had experienced caries in 4 or more teeth at 5 years of age. About 3.1% subjects had experienced caries in 6-10 teeth (25-50% teeth) and only about 1.4% had experienced caries in more than 10 (50%) of their teeth.

The mean dmft (5 year olds) in the state was 1.3 (Table 6.02). The decayed teeth (dt) component contributed to the almost the whole of dmft value in this age group. There was a negligibly small component of missing teeth (mt) in females in the urban area (0.1) which disturbed the otherwise expected mean number of teeth present in the mouth (females) to be 19.9 instead of 20 in the state. The SIC Index was 3.5 and was more than twice the mean dmft value for the state.

There were no clear gender related differentials and there was marginally higher prevalence of caries in urban than in rural area.

The caries experience, in permanent teeth (DMFT>0), increased as age advanced: it was approximately 46.8 percent (12 years); 54.8 percent (15 years); 77.4 percent (35-44) years; and 94 percent (65-74 years).

Fig 6.01. Percent subjects with caries experience in Delhi

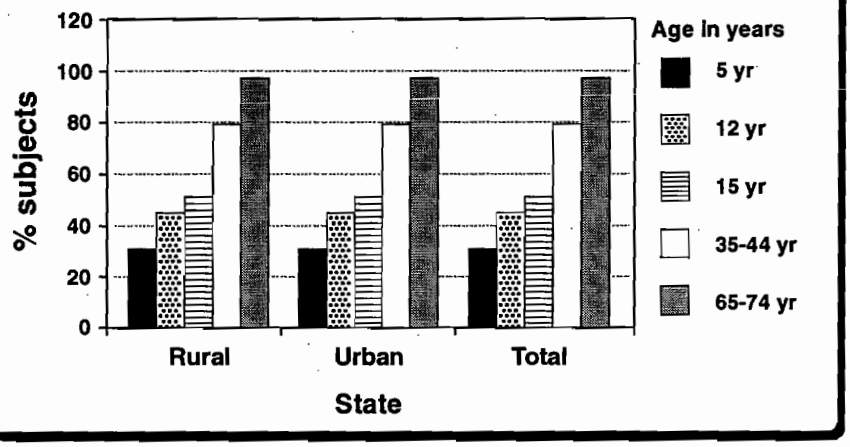


Table 6.02. Mean number of decayed, missng and filled teeth by age, sex and geographical area.

State: Delhi

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=	**58**	**55**	***113***	**58**	**49**	***107***	**54**	**51**	***105***	**57**	64	***121***	**52**	**58**	***110***
Mean no. of teeth present (mnt/MNT)		19.9	19.2	***19.6***	26.8	27.6	***27.2***	28.0	28.0	***28.0***	30.5	30.2	***30.4***	14.4	16.4	***15.4***
Mean dmft and Mean DMFT		1.2	1.0	***1.1***	0.9	1.4	***1.2***	1.8	1.2	***1.5***	3.6	4.1	***3.9***	18.1	16.1	***17.1***
Mean no. of Decayed teeth (dt/DT)		1.2	1.0	***1.1***	0.9	1.3	***1.1***	1.8	1.2	***1.5***	2.0	2.2	***2.1***	0.5	0.5	***0.5***
Mean no. of Missing teeth (mt/MT)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.5	1.8	***1.7***	17.6	15.6	***16.6***
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***	0.1	0.1	***0.1***	0.0	0.0	***0.0***
SIC Index		3.6	3.1	***3.4***	2.7	3.3	***3.0***	4.6	2.9	***3.8***	8.4	8.3	***8.4***	32.0	31.4	***31.7***
No. of subjects edentulous		NA	NA	NA	NA	NA	NA	NA	NA	NA	1	0	***1***	21	17	***38***
State Urban	n=	**132**	**116**	***248***	**120**	**122**	***242***	**117**	**112**	***229***	**124**	**139**	***263***	**113**	**123**	***236***
Mean no. of teeth present (mnt/MNT)		20.0	19.8	***19.9***	27.4	27.0	***27.2***	28.0	28.0	***28.0***	30.3	30.6	***30.5***	16.6	13.7	***15.2***
Mean dmft and Mean DMFT		1.1	1.4	***1.3***	1.1	1.2	***1.2***	1.7	1.7	***1.7***	3.8	4.0	***3.9***	16.5	19.2	***17.9***
Mean no. of Decayed teeth (dt/DT)		1.0	1.4	***1.2***	1.0	1.2	***1.1***	1.5	1.6	***1.6***	2.0	2.5	***2.3***	1.1	0.8	***1.0***
Mean no. of Missing teeth (mt/MT)		0.0	0.1	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.7	1.4	***1.6***	15.4	18.3	***16.9***
Mean no. of Filled teeth (ft/FT)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.2	0.1	***0.2***	0.2	0.1	***0.2***	0.1	0.1	***0.1***
SIC Index		3.1	3.9	***3.5***	3.0	3.1	***3.1***	4.3	4.2	***4.3***	8.5	8.4	***8.5***	31.9	32.0	***32.0***
No. of subjects edentulous		NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0	***0***	35	53	***88***
State Total	n=	**190**	**171**	***361***	**178**	**171**	***349***	**171**	**163**	***334***	**181**	**203**	***384***	**165**	**181**	***346***
Mean no. of teeth present (mnt/MNT)		20.0	19.7	***19.9***	27.3	27.0	***27.2***	28.0	28.0	***28.0***	30.3	30.6	***30.5***	16.5	13.8	***15.2***
Mean dmft and Mean DMFT		1.1	1.4	***1.3***	1.1	1.2	***1.2***	1.7	1.7	***1.7***	3.8	4.0	***3.9***	16.6	19.1	***17.9***
Mean no. of Decayed teeth (dt/DT)		1.0	1.4	***1.2***	1.0	1.2	***1.1***	1.5	1.6	***1.6***	2.0	2.5	***2.3***	1.1	0.8	***1.0***
Mean no. of Missing teeth (mt/MT)		0.1	0.0	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.7	1.4	***1.6***	15.5	18.2	***16.9***
Mean no. of Filled teeth (ft/FT)		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.2	0.1	***0.2***	0.2	0.1	***0.2***	0.1	0.1	***0.1***
SIC Index		3.2	3.8	***3.5***	2.9	3.2	***3.1***	4.4	3.8	***4.1***	8.5	8.4	***8.5***	32.0	32.0	***32.0***
No. of subjects edentulous		NA	NA	NA	NA	NA	NA	NA	NA	NA	1	0	***1***	56	70	***126***

Note: The DMFT values 4-7, 8-14, 15-21 and 22-28 have been computed and apply to subjects aged 12 and 15 years (max. 28 teeth, and DMFT values 4-8, 9-16, 17-24, 25-29, and 29-32 to ages 35-44 and 65-74 yeras (max. 32 teeth). In 35-44 and 65-74 years, the 'M' (Missing) component includes teeth missing due to caries and other reasons. Related Tables : **6.01** and **6.03**. NA= Not Applicable

The majority of children aged 12 and 15 years had experienced caries in one or more and upto a quarter (25%) of the teeth present. About 2% or less had experienced caries in about half (50%) of their dentition in these age groups. This percentage increased in adults to 13.5 (35-44 years) and 18.7 (65-74 years). In the case of subjects aged 65-74 years, the majority (40%) had experienced caries in 25-32 teeth (75-100% teeth).

The mean DMFT at 12 and 15 years was 1.2 and 1.7 respectively. It increased rapidly as age advanced and was 3.9 (35 -44 years) and 17.9 (65-74 years). Almost the whole of DMFT was contributed by the decayed teeth (DT) component in the state in children aged 5, 12 and 15 years. In adults aged 35-44 years, the missing teeth component was 1.6 while in older adults (65-74 years), it was the dominant component (16.9). The filled teeth (FT) component was negligibly small acroos age groups indicating a very high unmet treatment need for dental caries in the state. Except in the older adults (65-74 years) where the majority had missing teeth due to reasons other than caries, the missing teeth were due to caries in the majority of cases.

Fig 6.02. Mean dmft/DMFT in Delhi

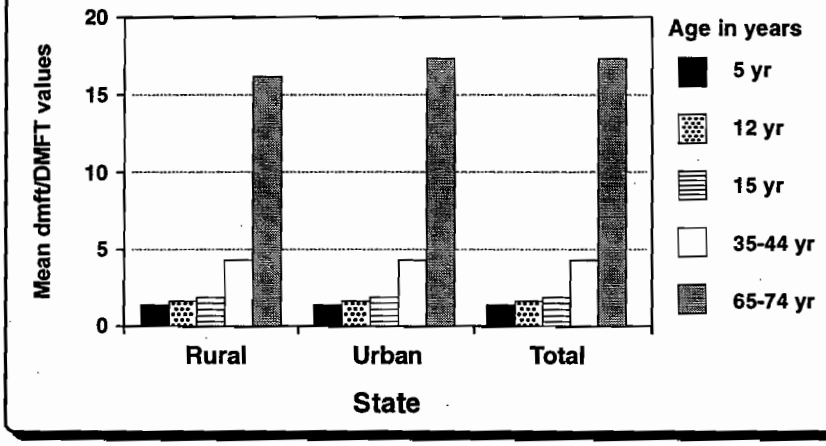


Table 6.03. Mean number of teeth missng due to caries or other reasons by age, sex and geographical area.

State : Delhi

Missing Teeth		35-44 years			65-74 years		
		M	F	T	M	F	T
State Rural	n=	57	64	*121*	52	58	*110*
Mean no. of teeth missing due to caries		0.8	1.3	*1.1*	6.7	6.3	*6.5*
Mean no. of teeth missing due to other reasons		0.7	0.6	*0.7*	10.9	9.3	*10.1*
State Urban	n=	124	139	*263*	113	123	*236*
Mean no. of teeth missing due to caries		1.3	1.1	*1.2*	6.8	5.8	*6.3*
Mean no. of teeth missing due to other reasons		0.3	0.3	*0.3*	8.6	12.5	*10.6*
State Total	n=	181	203	*384*	165	181	*346*
Mean no. of teeth missing due to caries		1.3	1.1	*1.2*	6.8	5.8	*6.3*
Mean no. of teeth missing due to other reasons		0.3	0.3	*0.3*	8.7	12.4	*10.6*

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. Related Tables : **6.01 and 6.02.**

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.

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 proportion of subjects with root caries was approximately 14.1% and 20% respectively in the age groups 35-44 and 65-74 years.

There were more females than males in subjects aged 35-44 years who had root caries and the opposite was true for 65-74 year old subjects. The figures for root caries were marginally higher in urban than in rural areas.

There were no subjects in the state with root fillings.

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

State : Delhi

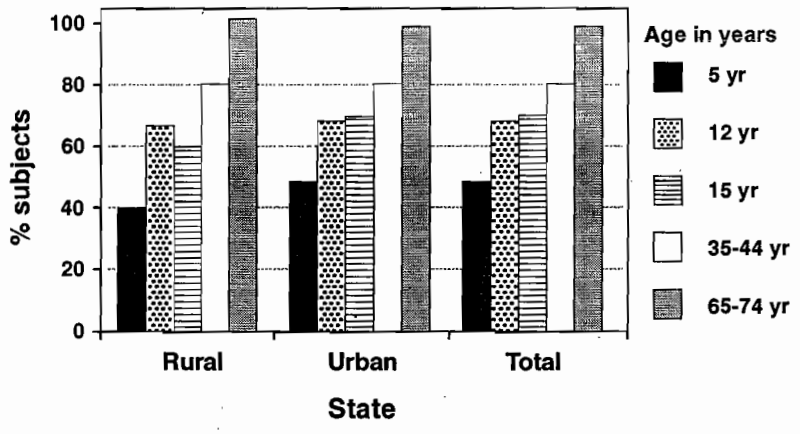
Root Caries		35-44 years			65-74 years		
		M	F	T	M	F	T
State Rural	n=	57	66	*123*	52	58	*110*
% Subjects with Root caries		7.0	9.1	*8.1*	13.5	20.7	*17.1*
Mean nos of teeth with Root Caries		0.1	0.2	*0.2*	0.5	0.9	*0.7*
% Subjects with Root fillings		0.0	0.0	*0.0*	0.0	0.0	*0.0*
Mean nos of teeth with Root fillings		0.0	0.0	*0.0*	0.0	0.0	*0.0*
State Urban	n=	124	140	*264*	113	124	*237*
% Subjects with Root caries		12.1	16.4	*14.3*	24.8	15.3	*20.1*
Mean nos of teeth with Root Caries		0.4	0.5	*0.5*	1.3	0.6	*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 Total	n=	181	206	*387*	165	182	*347*
% Subjects with Root caries		11.9	16.2	*14.1*	24.4	15.5	*20.0*
Mean nos of teeth with Root Caries		0.3	0.4	*0.4*	1.0	0.7	*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 need

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

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

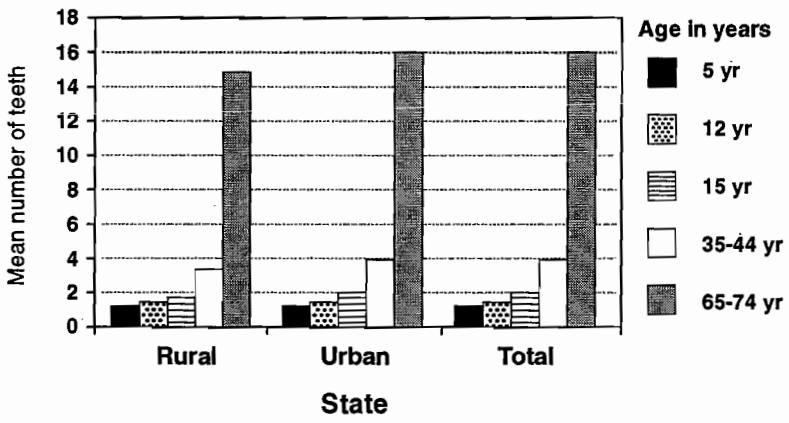
Fig 6.05. Percent subjects with treatment need in Delhi



Overall, a direct correlation existed between age and treatment need (Fig 6.05) in the state: the treatment need was lowest in the 5 year olds (40.2 percent) and highest for the 65-74 age group (95 percent). Preventive care was recommended by the examining dentists for only 5 year olds, male subjects (0.7%).

Amongst the subjects requiring treatment, the majority required fillings and a small number required pulp care across age groups except for the subjects aged 65-74 years where the need for extractions was higher than the need for fillings. More female subjects than male subjects needed fillings except in 65-74 years where the need for fillings was higher amongst male subjects. The need for extractions was inversely related to age groups so that subjects aged 12 years required the least extractions (0.8 percent). The pattern of distribution of treatment need was similar in both rural and urban areas.

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



The mean number of teeth which required treatment in the state was highest (about 16.3) in the highest age group of 65-74 years (Table 6.06). The mean number of teeth requiring treatment was about 1.2 in 5 year age group; about 1.5 and 1.5 in 12 and 15 years respectively; and about 3.9 teeth in 35-44 years. The picture was more or less similar for both rural and urban areas. The mean number of teeth requiring fillings was lowest in 5 year olds while it was highest in

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

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=	58	55	*113*	58	49	*107*	54	51	*105*	57	66	*123*	52	58	*110*
Treatment needed		37.9	27.3	*32.6*	48.3	61.2	*54.8*	53.7	51.0	*52.4*	71.9	77.3	*74.6*	100.0	93.1	*96.6*
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		37.9	27.3	*32.6*	43.1	59.2	*51.2*	51.9	47.1	*49.5*	56.1	63.6	*59.9*	25.0	20.7	*22.9*
Crown & Veneer		0.0	0.0	*0.0*	1.7	0.0	*0.9*	0.0	0.0	*0.0*	0.0	1.5	*0.8*	0.0	0.0	*0.0*
Pulp care		1.7	0.0	*0.9*	0.0	0.0	*0.0*	1.9	0.0	*1.0*	0.0	1.5	*0.8*	0.0	5.2	*2.6*
Extraction		0.0	0.0	*0.0*	3.4	4.1	*3.8*	1.9	3.9	*2.9*	7.0	7.6	*7.3*	11.5	20.7	*16.1*
Need for other care		0.0	0.0	*0.0*	3.4	2.0	*2.7*	3.7	2.0	*2.9*	24.6	40.9	*32.8*	92.3	84.5	*88.4*
State Urban	n=	132	117	*249*	121	122	*243*	117	112	*229*	124	140	*264*	113	124	*237*
Treatment needed		35.6	45.3	*40.5*	51.2	60.7	*56.0*	59.0	58.9	*59.0*	73.4	76.4	*74.9*	93.8	96.0	*94.9*
Preventive care & fissure sealant		0.8	0.0	*0.4*	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		35.6	44.4	*40.0*	46.3	56.6	*51.5*	54.7	55.4	*55.1*	53.2	65.0	*59.1*	30.1	29.0	*29.6*
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	0.8	*0.4*
Pulp care		0.0	0.0	*0.0*	4.1	2.5	*3.3*	1.7	0.0	*0.9*	4.0	1.4	*2.7*	1.8	0.8	*1.3*
Extraction		0.8	3.4	*2.1*	7.4	4.9	*6.2*	4.3	2.7	*3.5*	9.7	16.4	*13.1*	24.8	16.1	*20.5*
Need for other care		0.0	0.0	*0.0*	2.5	0.8	*1.7*	3.4	4.5	*4.0*	41.1	29.3	*35.2*	81.4	87.1	*84.3*
State Total	n=	190	172	*362*	179	171	*350*	171	163	*334*	181	206	*387*	165	182	*347*
Treatment needed		35.7	44.7	*40.2*	51.1	60.7	*55.9*	58.8	58.7	*58.8*	73.3	76.5	*74.9*	94.0	95.9	*95.0*
Preventive care & fissure sealant		0.7	0.0	*0.4*	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		35.7	43.9	*39.8*	46.2	56.6	*51.4*	54.6	55.1	*54.9*	53.3	65.0	*59.2*	29.9	28.7	*29.3*
Crown & Veneer		0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.0	0.0	*0.0*	0.0	0.1	*0.1*	0.0	0.8	*0.4*
Pulp care		0.1	0.0	*0.1*	4.0	2.4	*3.2*	1.7	0.0	*0.9*	3.9	1.4	*2.7*	1.7	1.0	*1.4*
Extraction		0.7	3.3	*2.0*	7.3	4.9	*6.1*	4.2	2.7	*3.5*	9.6	16.1	*12.9*	24.3	16.3	*20.3*
Need for other care		0.0	0.0	*0.0*	2.5	0.9	*1.7*	3.4	4.4	*3.9*	40.6	29.7	*35.2*	81.8	87.0	*84.4*

Note: Related Table : **6.06**

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

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=	58	55	*113*	58	49	*107*	54	51	*105*	57	64	*121*	52	58	*110*
Treatment needed		1.2	1.0	*1.1*	1.2	1.5	*1.4*	1.7	1.2	*1.5*	3.1	3.6	*3.4*	16.2	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		1.2	1.0	*1.1*	1.1	1.4	*1.3*	1.6	1.1	*1.4*	2.0	2.1	*2.1*	0.5	0.5	*0.5*
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		0.0	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	*0.1*
Extraction		0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.0	0.0	*0.0*	0.1	0.2	*0.2*	0.4	1.2	*0.8*
Need for other care		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.1	*0.1*	1.0	1.4	*1.2*	15.3	12.8	*14.1*
State Urban	n=	132	116	*248*	121	122	*243*	117	112	*229*	124	139	*263*	113	123	*236*
Treatment needed		1.0	1.4	*1.2*	1.4	1.6	*1.5*	1.7	1.9	*1.8*	4.0	3.7	*3.9*	15.3	17.3	*16.3*
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		1.0	1.4	*1.2*	1.2	1.5	*1.4*	1.5	1.7	*1.6*	2.1	2.4	*2.3*	1.3	0.8	*1.1*
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		0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.1	0.0	*0.1*	0.1	0.0	*0.1*	0.0	0.0	*0.0*
Extraction		0.0	0.1	*0.1*	0.1	0.1	*0.1*	0.0	0.0	*0.0*	0.3	0.5	*0.4*	1.1	0.8	*1.0*
Need for other care		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.1	*0.1*	1.6	0.8	*1.2*	12.9	15.7	*14.3*
State Total	n=	190	171	*361*	179	171	*350*	171	163	*334*	181	203	*384*	165	181	*346*
Treatment needed		1.0	1.4	*1.2*	1.4	1.6	*1.5*	1.7	1.9	*1.8*	4.0	3.7	*3.9*	15.3	17.2	*16.3*
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		1.0	1.3	*1.2*	1.2	1.5	*1.4*	1.5	1.7	*1.6*	2.1	2.4	*2.3*	1.2	0.8	*1.0*
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		0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.1	0.0	*0.1*	0.1	0.0	*0.1*	0.0	0.0	*0.0*
Extraction		0.0	0.1	*0.1*	0.1	0.1	*0.1*	0.0	0.0	*0.0*	0.3	0.5	*0.4*	1.0	0.8	*0.9*
Need for other care		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.1	*0.1*	1.5	0.8	*1.2*	13.0	15.6	*14.3*

Note: Related Table : **6.05**

the 35-44 yearss age group. The mean number of teeth indicated for extraction was very low and ranged from 0 to 0.9 across age groups. There were no marked rural and urban differentials.

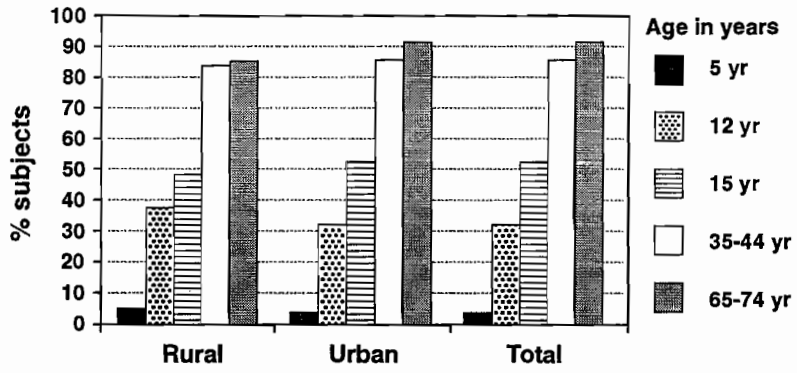
6.2. PERIODONTAL STATUS

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.

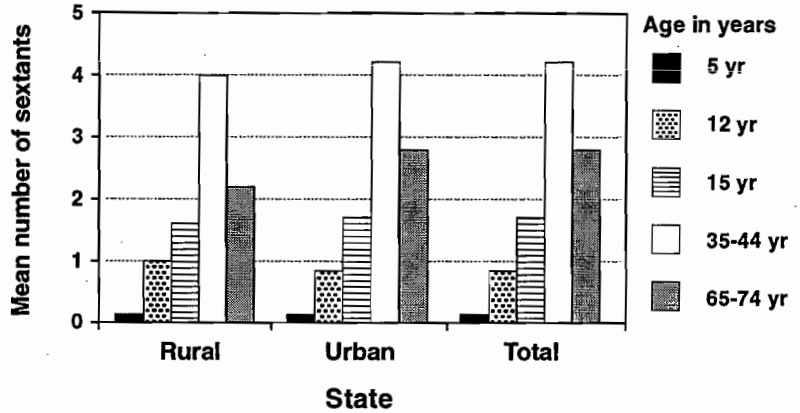
Table 6.07 presents the percent subjects with their periodontal status (bleeding, calculus and pockets) by level of severity and Table 6.08 presents the mean number of teeth with bleeding, calculus and pockets.

Fig 6.07. Percent subjects with bleeding, calculus & pockets in Delhi.



Overall, the prevalence of periodontal disease in the state advanced steadily with age (Fig 6.07). In the lowest age group of 5 years, the proportion of subjects with periodontal disease (bleeding, calculus) was low (3.6%). In 35-44 years, the prevalence (bleeding, calculus and pockets) was 85% and in 65-74 years, the prevalence across male and female subjects increased further to 90%. The two most prevalent conditions were bleeding and calculus. In the 12, 15, and 35-44 year olds, bleeding was more prevalent or equal in prevalence to calculus. But in 5 and 65-74 year old subjects, the prevalence of calculus was higher than bleeding. Pockets (4-5 mm and 6 mm) were recorded only in the age groups of 15, 35-44 and 65-74 years. Shallow pockets (4-5 mm) were detected in 0.9 percent subjects in 35-44 years age group and 2.2 percent subjects in 65-74 year old subjects. Deep pockets (6 mm or more) were even less prevalent and were detected in 35-44 and 65-74 years age groups in both male and female subjects.

Fig 6.08. Mean number of sextants with periodontal disease in Delhi.



The pattern of distribution of periodontal disease conditions (bleeding, calculus and pockets) was similar in both rural and urban areas in the state. The level of severity of disease conditions, in general, however, tended to be slightly higher in rural areas compared to the urban areas.

The mouth is divided into six sextants, three upper and three lower, for examination of

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

State: Delhi

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=	57	55	*112*	58	48	*106*	54	51	*105*	56	63	*119*	30	37	*67*
With bleeding,calculus, or pockets		5.3	5.5	***5.4***	37.9	37.5	***37.7***	51.9	43.1	***47.5***	82.1	84.1	***83.1***	90.0	78.4	***84.2***
with bleeding		5.3	5.5	***5.4***	29.3	29.2	***29.3***	44.4	33.3	***38.9***	50.0	54.0	***52.0***	40.0	32.4	***36.2***
with calculus		0.0	0.0	***0.0***	15.5	10.4	***13.0***	20.4	15.7	***18.1***	55.4	60.3	***57.9***	73.3	64.9	***69.1***
with pockets 4-5 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.8	3.2	***2.5***	6.7	0.0	***3.4***
with pockets 6 mm		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	2.7	***1.4***
with bleeding or higher		5.3	5.5	***5.4***	29.3	29.2	***29.3***	44.4	33.3	***38.9***	50.0	54.0	***52.0***	40.0	32.4	***36.2***
with calculus or higher		0.0	0.0	***0.0***	8.6	8.3	***8.5***	7.4	9.8	***8.6***	30.4	30.2	***30.3***	46.7	45.9	***46.3***
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***	1.8	0.0	***0.9***	3.3	0.0	***1.7***
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***	0.0	0.0	***0.0***
State Urban	n=	132	117	*249*	119	122	*241*	117	112	*229*	124	139	*263*	75	69	*144*
With bleeding,calculus, or pockets		3.8	3.4	***3.6***	31.1	31.1	***31.1***	54.7	46.4	***50.6***	88.7	81.3	***85.0***	89.3	91.3	***90.3***
with bleeding		1.5	2.6	***2.1***	22.7	22.1	***22.4***	42.7	35.7	***39.2***	57.3	56.1	***56.7***	34.7	44.9	***39.8***
with calculus		3.0	0.9	***2.0***	9.2	11.5	***10.4***	18.8	17.9	***18.4***	57.3	51.1	***54.2***	73.3	72.5	***72.9***
with pockets 4-5 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.6	0.0	***0.8***	2.7	1.4	***2.1***
with pockets 6 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.8	0.0	***0.4***	0.0	0.0	***0.0***
with bleeding or higher		1.5	2.6	***2.1***	22.7	22.1	***22.4***	42.7	35.7	***39.2***	57.3	56.1	***56.7***	34.7	44.9	***39.8***
with calculus or higher		2.3	0.9	***1.6***	8.4	9.0	***8.7***	12.0	10.7	***11.4***	31.5	25.2	***28.4***	54.7	46.4	***50.6***
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***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
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***	0.0	0.0	***0.0***
State Total	n=	189	172	*361*	177	170	*347*	171	163	*334*	180	202	*382*	105	106	*211*
With bleeding,calculus, or pockets		3.8	3.5	***3.7***	31.3	31.3	***31.3***	54.6	46.3	***50.5***	88.5	81.4	***85.0***	89.4	90.8	***90.1***
with bleeding		1.6	2.7	***2.2***	22.9	22.3	***22.6***	42.8	35.6	***39.2***	57.0	56.0	***56.5***	34.8	44.4	***39.6***
with calculus		2.9	0.8	***1.9***	9.5	11.4	***10.5***	18.9	17.8	***18.4***	57.2	51.4	***54.3***	73.3	72.2	***72.8***
with pockets 4-5 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.6	0.1	***0.9***	2.8	1.4	***2.1***
with pockets 6 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.8	0.0	***0.4***	0.0	0.1	***0.1***
with bleeding or higher		1.6	2.7	***2.2***	22.9	22.3	***22.6***	42.8	35.6	***39.2***	57.0	56.0	***56.5***	34.8	44.4	***39.6***
with calculus or higher		2.2	0.8	***1.5***	8.4	9.0	***8.7***	11.8	10.7	***11.3***	31.4	25.3	***28.4***	54.4	46.4	***50.4***
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***	0.1	0.0	***0.1***	0.1	0.0	***0.1***
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***	0.0	0.0	***0.0***

Note: Related Table is **6.08**

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

State: Delhi

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=	58	55	113	58	49	107	54	51	105	57	66	123	52	58	110
Mean no. of healthy sextants		5.5	5.5	5.5	4.4	4.7	4.6	4.2	4.7	4.5	2.0	1.9	2.0	0.6	0.6	0.6
With bleeding, calculus, pockets		0.1	0.1	0.1	1.2	0.9	1.1	1.8	1.3	1.6	3.9	3.7	3.8	2.2	2.4	2.3
with bleeding		0.1	0.1	0.1	0.8	0.7	0.8	1.2	1.0	1.1	1.6	1.5	1.6	0.7	0.7	0.7
with calculus		0.0	0.0	0.0	0.4	0.2	0.3	0.6	0.3	0.5	2.3	2.1	2.2	1.3	1.6	1.5
with pockets(4-5 mm)		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	0.0	0.1
with pockets (6mm or more)		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
Excluded sextants		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2
Not recorded		0.4	0.4	0.4	0.3	0.4	0.4	0.0	0.0	0.0	0.1	0.3	0.2	3.1	2.8	3.0
State Urban	n=	132	117	249	121	122	243	117	112	229	124	140	264	113	124	237
Mean no. of healthy sextants		5.2	5.1	5.2	4.3	4.6	4.5	4.2	4.4	4.3	1.3	2.0	1.7	0.6	0.4	0.5
With bleeding, calculus, pockets		0.1	0.1	0.1	1.0	0.7	0.9	1.8	1.6	1.7	4.6	3.9	4.3	2.8	2.5	2.7
with bleeding		0.1	0.1	0.1	0.7	0.5	0.6	1.4	1.2	1.3	2.3	2.2	2.3	0.7	0.9	0.8
with calculus		0.0	0.0	0.0	0.3	0.3	0.3	0.5	0.5	0.5	2.3	1.7	2.0	2.1	1.6	1.9
with pockets(4-5 mm)		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 pockets (6mm or more)		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
Excluded sextants		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	0.2	0.3
Not recorded		0.7	0.8	0.8	0.7	0.6	0.7	0.0	0.0	0.0	0.1	0.1	0.1	2.3	2.9	2.6
State Total	n=	190	172	362	179	171	350	171	163	334	181	206	387	165	182	347
Mean no. of healthy sextants		5.2	5.1	5.2	4.3	4.6	4.5	4.2	4.4	4.3	1.4	2.0	1.7	0.6	0.4	0.5
With bleeding, calculus, pockets		0.1	0.1	0.1	1.0	0.8	0.9	1.8	1.6	1.7	4.6	3.9	4.3	2.8	2.5	2.7
with bleeding		0.1	0.1	0.1	0.7	0.5	0.6	1.4	1.2	1.3	2.2	2.2	2.2	0.7	0.9	0.8
with calculus		0.0	0.0	0.0	0.3	0.3	0.3	0.5	0.5	0.5	2.3	1.7	2.0	2.1	1.6	1.9
with pockets(4-5 mm)		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 pockets (6mm or more)		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
Excluded sextants		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	0.2	0.3
Not recorded		0.7	0.8	0.8	0.7	0.6	0.7	0.0	0.0	0.0	0.1	0.1	0.1	2.3	2.9	2.6

Note: Related Table is **6.07**

periodontal status. The mean number of healthy sextants (i.e., those sextants in the mouth with no bleeding, calculus or pockets) was highest in the lowest age group of 5 years (Fig 6.08). The mean number of sextants for bleeding (2.3) and calculus (2.0) was the highest in the 35-44 year old subjects. While gingival bleeding was a more prevalent condition in the lower age groups, accumulated calculus became an increasingly high problem as age advanced.

6.2.2. Loss of attachment

Tables 6.09 presents the percent subjects with loss of periodontal attachment by severity, and Table 6.10 presents 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 in subjects aged 15, 35-44, and 65-74 years. The CPI Probe was used to measure pocket depth.

Fig. 6.09. Percent subjects with Loss of Attachment in Delhi.

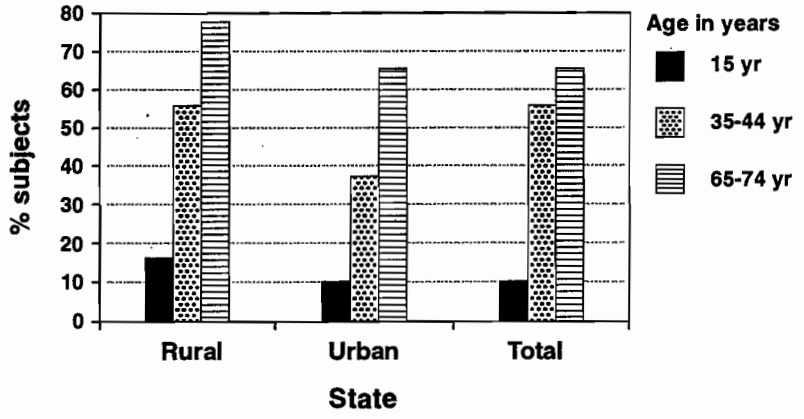


Fig. 6.10. Mean number of sextants with Loss of Attachment in Delhi.

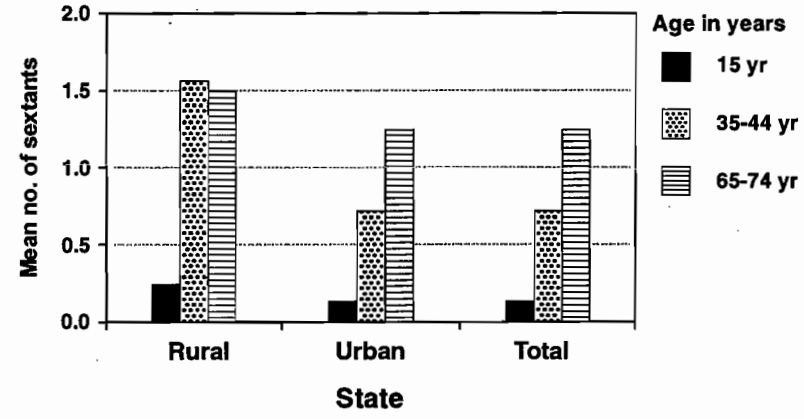


Table 6.09. Percent subjects with severity of loss of attachment by age, sex, and geographical area. **State: Delhi**

Loss of Attachment (LOA)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	54	51	*105*	56	63	*119*	30	38	*68*
With no loss of attachment (0-3 mm)		85.2	92.2	*88.7*	46.4	47.6	*47.0*	23.3	26.3	*24.8*
With loss of attachment		14.8	7.8	*11.3*	51.8	52.4	*52.1*	76.7	68.4	*72.6*
with loss of attachment 4-5 mm		14.8	5.9	*10.4*	48.2	49.2	*48.7*	43.3	44.7	*44.0*
with loss of attachment 6-8 mm		0.0	2.0	*1.0*	3.6	3.2	*3.4*	20.0	13.2	*16.6*
with loss of attachment 9-11 mm		0.0	0.0	*0.0*	0.0	0.0	*0.0*	13.3	7.9	*10.6*
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*
State Urban	n=	117	112	*229*	124	138	*262*	75	69	*144*
With no loss of attachment (0-3 mm)		94.0	96.4	*95.2*	66.9	69.6	*68.3*	40.0	33.3	*36.7*
With loss of attachment		6.0	3.6	*4.8*	32.3	30.4	*31.4*	52.0	65.2	*58.6*
with loss of attachment 4-5 mm		6.0	3.6	*4.8*	28.2	28.3	*28.3*	40.0	55.1	*47.6*
with loss of attachment 6-8 mm		0.0	0.0	*0.0*	4.0	1.4	*2.7*	9.3	8.7	*9.0*
with loss of attachment 9-11 mm		0.0	0.0	*0.0*	0.0	0.0	*0.0*	2.7	1.4	*2.1*
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*
State Total	n=	171	163	*334*	180	201	*381*	105	107	*212*
With no loss of attachment (0-3 mm)		93.7	96.3	*95.0*	66.3	68.8	*67.6*	39.5	33.1	*36.3*
With loss of attachment		6.3	3.7	*5.0*	32.9	31.2	*32.1*	52.7	65.3	*59.0*
with loss of attachment 4-5 mm		6.3	3.6	*5.0*	28.9	29.0	*29.0*	40.1	54.7	*47.4*
with loss of attachment 6-8 mm		0.0	0.1	*0.1*	4.0	1.5	*2.8*	9.6	8.9	*9.3*
with loss of attachment 9-11 mm		0.0	0.0	*0.0*	0.0	0.0	*0.0*	3.0	1.7	*2.4*
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*

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

Loss of Attachment (LOA)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	54	51	*105*	57	66	*123*	52	58	*110*
With no loss of attachment (0-3 mm)		5.6	5.9	*5.8*	4.1	4.4	*4.3*	1.3	1.3	*1.3*
With loss of attachment		0.4	0.1	*0.3*	1.8	1.3	*1.6*	1.5	1.5	*1.5*
with loss of attachment 4-5 mm		0.4	0.1	*0.3*	1.7	1.2	*1.5*	1.2	1.2	*1.2*
with loss of attachment 6-8 mm		0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.3	0.3	*0.3*
with loss of attachment 9-11 mm		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.1	*0.1*
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	0.0	*0.0*	0.2	0.2	*0.2*
Not recorded		0.0	0.0	*0.0*	0.1	0.3	*0.2*	3.1	2.9	*3.0*
State Urban	n=	117	112	*229*	124	140	*264*	113	124	*237*
With no loss of attachment (0-3 mm)		5.9	5.9	*5.9*	5.1	5.2	*5.2*	2.2	1.8	*2.0*
With loss of attachment		0.1	0.1	*0.1*	0.9	0.6	*0.8*	1.3	1.2	*1.3*
with loss of attachment 4-5 mm		0.1	0.1	*0.1*	0.8	0.6	*0.7*	1.1	1.1	*1.1*
with loss of attachment 6-8 mm		0.0	0.0	*0.0*	0.1	0.0	*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*	0.0	0.0	*0.0*	0.3	0.1	*0.2*
Not recorded		0.0	0.0	*0.0*	0.0	0.2	*0.1*	2.2	3.0	*2.6*
State Total	n=	171	163	*334*	181	206	*387*	165	182	*347*
With no loss of attachment (0-3 mm)		5.9	5.9	*5.9*	5.0	5.2	*5.1*	2.2	1.7	*2.0*
With loss of attachment		0.1	0.1	*0.1*	0.9	0.6	*0.8*	1.3	1.2	*1.3*
with loss of attachment 4-5 mm		0.1	0.1	*0.1*	0.9	0.6	*0.8*	1.1	1.1	*1.1*
with loss of attachment 6-8 mm		0.0	0.0	*0.0*	0.1	0.0	*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*	0.0	0.0	*0.0*	0.3	0.1	*0.2*
Not recorded		0.0	0.0	*0.0*	0.0	0.2	*0.1*	2.2	3.0	*2.6*

Overall, the prevalence proportion of subjects with Loss of Attachment in one or more sextants was lowest in the 15 years age group and highest for the 65-74 years age group in the state (Fig 6.09). The Loss of Attachment was higher in the male subjects (6.3%) than female subjects (3.7%) in 15 years; it was almost equally distributed by sex in 35-44 years (approx. 32%) and higher in females (65.3%) than males (52.7%) in the 65-74 years' age group. The least severe form of loss of attachment was the most prevalent in all age groups followed by the more severe form of 6-8 mm. The more severe form (9-11 mm) appeared only in the 65-74 years age group. None of the subjects in any of the age groups had the severest form of loss of attachment of 12 mm or more (Table 6.09).

The mean number of sextants with loss of attachment ranged from 0.1 tooth in 15 year olds to 1.3 in 65-74 year olds (Fig 6.10). The mean number of sextants with loss of attachment of 4-5 mm was higher than 6-8 mm in both 35-44 and 65-74 year olds.

The proportion of rural residents with Loss of Attachment was higher than urban residents but the pattern of distribution of severity of the Loss of Attachment remained similar in rural and urban areas.

6.3. MALOCCLUSION STATUS

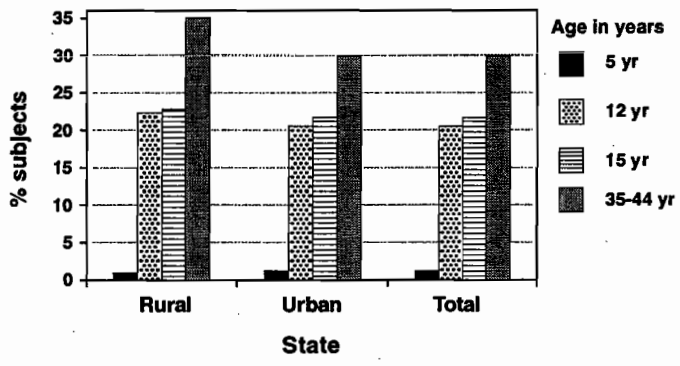
Table 6.11 presents the malocclusion status of subjects measured by DAI scores. The Dental Aesthetic Index (DAI), recommended by the WHO, was used to analyze the severity of malocclusion in the surveyed population.

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 subjects aged 5 years where only primary teeth are present.

The proportion of subjects with malocclusion increased as age advanced. More females than males had malocclusion in the state in 12 and 15 year olds but more males had malocclusion in 35-44 years. More rural than urban subjects had malocclusion. However, there were exceptions in the case of 15 year olds, females, and 35-44 year olds, males, where malocclusion was higher than corresponding rural subjects.

Fig. 6.11. Percent subjects with malocclusion in Delhi.



'Definite' malocclusion was recorded in about 10% males and 18% females in 12 year olds in the state (Fig 6.12). 'Very severe' (handicapping) malocclusion was found in 4.8% males and 2.4% females. Only 0.9% males and 1.8% females had severe form of malocclusion at 12 years. The 'definite' malocclusion was present in 17.2% males and 14.3% females in rural area.

The prevalence of malocclusion ('definite' malocclusion) was about 16 % in 15 year olds (10.5% males and 21% females). About 15% subjects in 35-44 years age group had definite malocclusion. Severe and very severe forms of malocclusion were low but relatively more prevalent in subjects aged 35-44 years compared with 15 year olds.

Overall, there appeared to be higher proportion of subjects across age groups and sex in rural area with more severe forms of malocclusion than in urban area.

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

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=	58	55	*113*	58	49	*107*	54	51	*105*	57	66	*123*
No malocclusion (<25)		100.0	100.0	*100.0*	79.3	77.6	*78.5*	75.9	80.4	*78.2*	75.4	59.1	*67.3*
Malocclusion present		0.0	0.0	*0.0*	20.7	22.4	*21.6*	24.1	19.6	*21.9*	24.6	40.9	*32.8*
Definite malocclusion (26 -30)		0.0	0.0	*0.0*	17.2	14.3	*15.8*	16.7	17.6	*17.2*	12.3	15.2	*13.8*
Severe malocclusion (31 - 35)		0.0	0.0	*0.0*	1.7	8.2	*5.0*	5.6	0.0	*2.8*	3.5	7.6	*5.6*
V Severe malocclusion (36 or more)		0.0	0.0	*0.0*	1.7	0.0	*0.9*	1.9	2.0	*2.0*	8.8	18.2	*13.5*
State Urban	n=	132	117	*249*	121	122	*243*	117	112	*229*	124	140	*264*
No malocclusion (<25)		100.0	99.1	*99.6*	84.3	77.9	*81.1*	85.5	74.1	*79.8*	69.4	75.0	*72.2*
Malocclusion present		0.0	0.9	*0.5*	15.7	22.1	*18.9*	14.5	25.9	*20.2*	30.6	25.0	*27.8*
Definite malocclusion (26 -30)		0.0	0.0	*0.0*	9.9	18.0	*14.0*	10.3	21.4	*15.9*	15.3	14.3	*14.8*
Severe malocclusion (31 - 35)		0.0	0.0	*0.0*	0.8	1.6	*1.2*	3.4	1.8	*2.6*	7.3	4.3	*5.8*
V Severe malocclusion (36 or more)		0.0	0.9	*0.5*	5.0	2.5	*3.8*	0.9	2.7	*1.8*	8.1	6.4	*7.3*
State Total	n=	190	172	*362*	179	171	*350*	171	163	*334*	181	206	*387*
No malocclusion (<25)		100.0	99.2	*99.6*	84.1	77.9	*81.0*	85.1	74.3	*79.7*	69.6	74.5	*72.1*
Malocclusion present		0.0	0.8	*0.4*	15.9	22.1	*19.0*	14.9	25.7	*20.3*	30.4	25.5	*28.0*
Definite malocclusion (26 -30)		0.0	0.0	*0.0*	10.2	17.9	*14.1*	10.5	21.3	*15.9*	15.2	14.3	*14.8*
Severe malocclusion (31 - 35)		0.0	0.0	*0.0*	0.9	1.8	*1.4*	3.5	1.7	*2.6*	7.1	4.4	*5.8*
V Severe malocclusion (36 or more)		0.0	0.8	*0.4*	4.8	2.4	*3.6*	0.9	2.7	*1.8*	8.1	6.8	*7.5*

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

6.4. ORAL CANCER & OTHER ORAL MUCOSAL CONDITIONS

Tables 6.12 presents the number of subjects with oral mucosal conditions including oral cancer and precancerous lesions. The precancerous lesions include leukoplakia and probably lichen planus (Mehta & Hammer, 1993). Table 6.13 presents the distribution of conditions by location in the mouth of subjects.

The prevalence of oral mucosal conditions was quite low in the state (Fig 6.12). It was highest in the 35-44 year age group (2 percent). This was followed by the prevalence of oral mucosal lesions in the 65-74 year olds (1.5 percent). In the lower age groups of 15 years 1.2 percent had oral mucosal lesions.

No case of oral cancer was detected in the state. However, small proportions of pre-cancerous lesions (Leukoplakia and Lichen Planus) were detected in age groups 12 years and higher. Leukoplakia was more prevalent in the age group of 35-44 years (2.4% male subjects and 0.8% female subjects) than in other age groups where its prevalence was less than 1%.

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

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=	56	54	110	56	49	105	53	51	104	56	64	120	52	58	110
Oral mucosal lesions present		0	0	0	0	0	0	3	1	4	1	1	2	2	0	2
Oral Cancer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leukoplakia		0	0	0	0	0	0	1	0	1	1	1	2	0	0	0
Lichen Planus		0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
Ulceration		0	0	0	0	0	0	1	1	2	1	0	1	0	0	0
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	0	0
Abscess		0	0	0	0	0	0	1	0	1	0	0	0	1	0	1
Any other condition		0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
State Urban	n=	131	115	246	120	122	242	117	110	227	124	138	262	111	123	234
Oral mucosal lesions present		0	2	2	0	1	1	0	0	0	4	2	6	2	1	3
Oral Cancer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leukoplakia		0	0	0	0	1	1	0	0	0	3	1	4	0	1	1
Lichen Planus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ulceration		0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0
Abscess		0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
Any other condition		0	0	0	0	0	0	0	0	0	1	1	2	2	0	2
State Total	n=	187	169	356	176	171	347	170	161	331	180	202	382	163	181	344
Oral mucosal lesions present		0	2	2	0	1	1	3	1	4	5	3	8	4	1	5
Oral Cancer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leukoplakia		0	0	0	0	1	1	1	0	1	4	2	6	0	1	1
Lichen Planus		0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
Ulceration		0	2	2	0	0	0	1	1	2	1	0	1	0	0	0
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	0	0
Abscess		0	0	0	0	0	0	1	0	1	0	1	1	1	0	1
Any other condition		0	0	0	0	0	0	0	0	0	1	1	2	4	0	4

Table 6.13. Distibution of numbers of subjects with oral mucosal conditions by location of conditions in the mouth.

State : Delhi

Location	Oral Mucosal Condition																	
	Oral Cancer		Leuko-plakia		Lichen Planus		Ulceration		ANUG		Candi-diasis		Abscess		Others		Total by Location	
	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	0	0	0	0	0	0	0	0	1	0	**1**	**0**
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	1	0	0	0	0	0	0	0	0	**0**	**1**
Sulci	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**0**
Buccal mucosa	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	**2**	**1**
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	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Hard/Soft palate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Alv ridges/ Gingiva	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**0**
Rural Total	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**5**	**2**
State Urban																		
Vermilion Border	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**
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	5	1	0	0	0	0	0	0	0	0	0	0	2	0	**7**	**1**
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	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**	**0**
Hard/Soft palate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**	**0**
Alv ridges/ Gingiva	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**1**
Urban Total	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**9**	**2**
State Total																		
Vermilion Border	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**	**0**
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	1	0	0	0	0	0	0	0	0	**0**	**1**
Sulci	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**0**
Buccal mucosa	0	0	5	2	0	0	0	0	0	0	0	0	1	0	3	0	**9**	**2**
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	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**	**0**
Hard/Soft palate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**1**	**0**
Alv ridges/ Gingiva	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	**1**	**1**
State Total	**0**	**0**	**7**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**6**	**0**	**14**	**4**

The other more prevalent but still very rare conditions were Ulceration and Abscess appearing in the age groups 5 years, 15 years, and 35-44 years and 65-74 years age groups.

The prevalence proportion of various oral mucosal lesions appeared to be slightly higher in rural area than in urban area although the distribution pattern of conditions was more or less similar in rural and urban areas.

A broad analysis of the numbers of lesions by location in the oral mucosa (Table 6.14) showed that Leukoplakia was present in the sulci, buccal mucosa or alveolar ridges/ gingiva. Ulceration was almost invariably observed on the lips and abscesses occurred on buccal mucosa. Other conditions were observed on the vermillion border, buccal mucosa, tongue or the hard/soft palate.

6.5. DENTAL FLUOROSIS STATUS

Table 6.14 presents the percent subjects with dental fluorosis by level of severity

There was no fluorosis in the subjects aged 5 years in the state.

The prevalence proportion of fluorosis was low and did not exceed 5 percent in the state in any age group (Fig 6.14). Mild to moderate fluorosis in small proportions was prevalent in all age groups and in both males and females. Severe form of fluorosis was virtually absent except in 0.1% of females in the age group of 12 yearss and 0.7% females in the age group of 35-44 yearss There was a higher prevalence of fluorosis in rural area compared with the urban areas.

Fig. 6.14. Percent subjects with fluorosis in Delhi

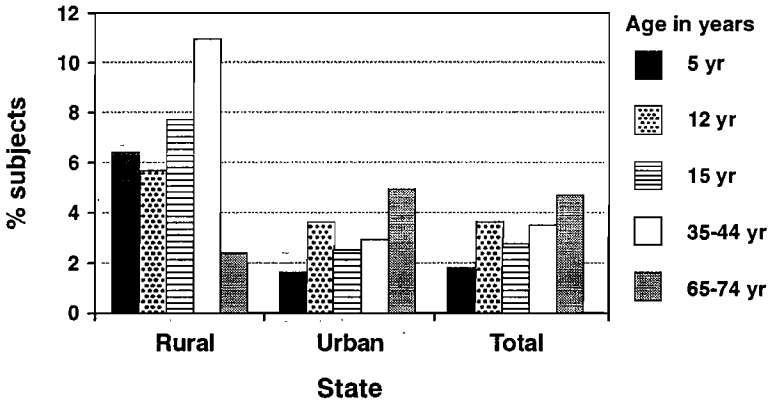


Table 6.14. Percent distribution of subjects with severity of dental fluorosis by age, sex and geographical area. State: Delhi

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=	55	54	*109*	58	49	*107*	53	51	*104*	56	63	*119*	30	39	*69*
With Fluorosis		5.5	7.4	*6.5*	5.2	6.1	*5.7*	3.8	11.8	*7.8*	12.5	9.5	*11.0*	0.0	5.1	*2.6*
Questionable		3.6	5.6	*4.6*	1.7	2.0	*1.9*	1.9	5.9	*3.9*	5.4	1.6	*3.5*	0.0	0.0	*0.0*
V Mild & Mild		1.8	1.9	*1.9*	3.4	2.0	*2.7*	1.9	5.9	*3.9*	5.4	4.8	*5.1*	0.0	5.1	*2.6*
Moderate		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.8	3.2	*2.5*	0.0	0.0	*0.0*
Severe		0.0	0.0	*0.0*	0.0	2.0	*1.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
State Urban	n=	124	111	*235*	120	122	*242*	116	112	*228*	123	139	*262*	72	72	*144*
With Fluorosis		0.0	2.7	*1.4*	3.3	4.1	*3.7*	3.4	1.8	*2.6*	2.4	3.6	*3.0*	5.6	4.2	*4.9*
Questionable		0.0	0.0	*0.0*	1.7	0.8	*1.3*	0.9	0.0	*0.5*	0.0	0.7	*0.4*	1.4	0.0	*0.7*
V Mild & Mild		0.0	2.7	*1.4*	0.8	3.3	*2.1*	2.6	1.8	*2.2*	2.4	1.4	*1.9*	4.2	4.2	*4.2*
Moderate		0.0	0.0	*0.0*	0.8	0.0	*0.4*	0.0	0.0	*0.0*	0.0	0.7	*0.4*	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	0.7	*0.4*	0.0	0.0	*0.0*
State Total	n=	179	165	*344*	178	171	*349*	169	163	*332*	179	202	*381*	102	111	*213*
With Fluorosis		0.2	2.9	*1.6*	3.4	4.2	*3.8*	3.5	2.1	*2.8*	2.8	3.8	*3.3*	5.4	4.2	*4.8*
Questionable		0.1	0.2	*0.2*	1.7	0.9	*1.3*	0.9	0.2	*0.6*	0.2	0.7	*0.5*	1.3	0.0	*0.7*
V Mild & Mild		0.1	2.7	*1.4*	0.9	3.2	*2.1*	2.6	1.9	*2.3*	2.5	1.5	*2.0*	4.0	4.2	*4.1*
Moderate		0.0	0.0	*0.0*	0.8	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.8	*0.5*	0.0	0.0	*0.0*
Severe		0.0	0.0	*0.0*	0.0	0.1	*0.0*	0.0	0.0	*0.0*	0.0	0.7	*0.0*	0.0	0.0	*0.0*

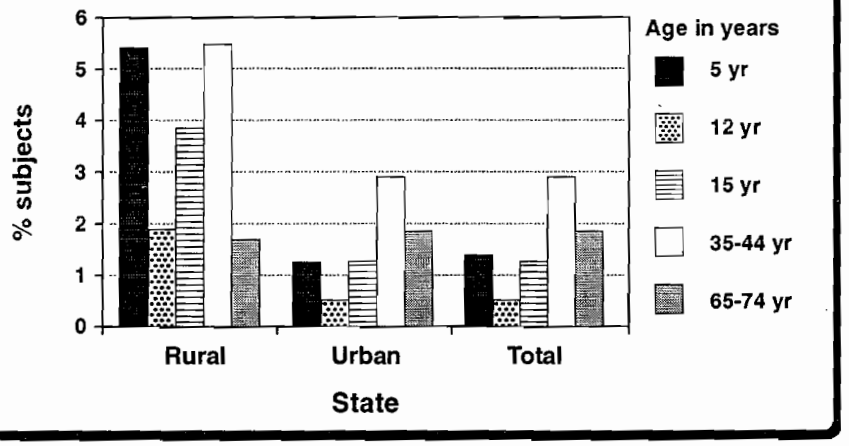
6.6. OTHER LESIONS

6.6.1 Extra oral lesions

Table 6.15 presents the percent subjects with extra oral lesions by type of lesions.

The percent male subjects examined in the state who had extra oral lesions was 0.1% (lowest) in age 12 years and 3.2% (highest) in the age group 35-44 years (Table 6.15). The lesions appeared less prevalent in female subjects (0.9% in the age groups of 12 and 15 years and 2.2 % in the age group of 35-44 years).

Fig. 6.15. Percent subjects with extra oral lesions in Delhi.



The prevalence was higher in rural than in urban area (Fig 6.15) but the pattern of distribution of the lesions was similar between rural and urban subjects.

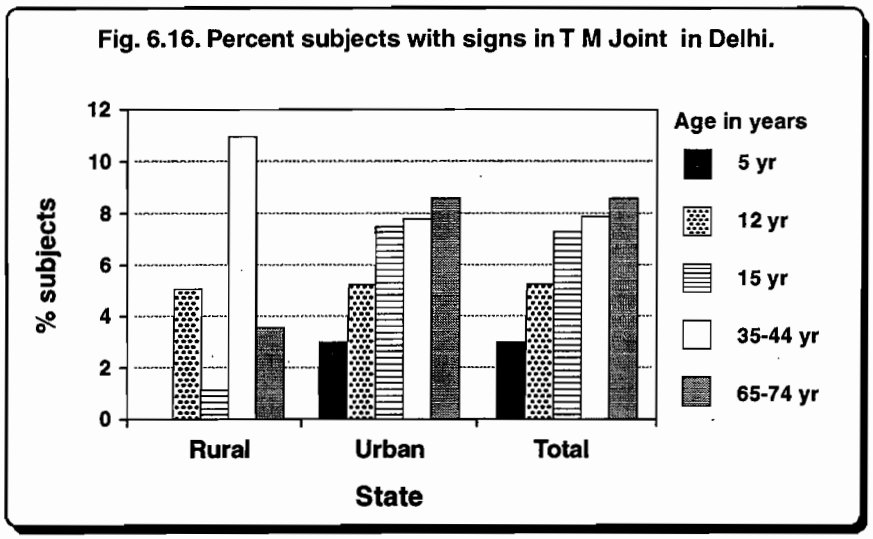
Table 6.15. Percent distribution of subjects with extra oral lesions by age, sex and geographical area. **State: Delhi**

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=	58	55	113	58	49	107	54	51	105	57	64	121	52	58	110
With extra oral lesions		5.2	5.5	5.4	1.7	2.0	1.9	5.6	2.0	3.8	3.5	4.7	4.1	0.0	3.4	1.7
Ulceration,sores,erosions,fissures		1.7	5.5	3.6	1.7	2.0	1.9	3.7	0.0	1.9	1.8	3.1	2.5	0.0	1.7	0.9
head, neck, limbs		0.0	1.8	0.9	1.7	2.0	1.9	1.9	0.0	1.0	1.8	1.6	1.7	0.0	1.7	0.9
nose, cheeks, chin		1.7	3.6	2.7	0.0	0.0	0.0	1.9	0.0	1.0	0.0	1.6	0.8	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	0.0	0.0
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	1.8	0.0	0.9	0.0	0.0	0.0
Enlarged lymph nodes(head & neck)		3.4	0.0	1.7	0.0	0.0	0.0	0.0	2.0	1.0	0.0	1.6	0.8	0.0	1.7	0.9
State Urban	n=	132	116	248	120	122	242	117	112	229	124	139	263	113	123	236
With extra oral lesions		0.8	1.7	1.3	0.0	0.8	0.4	1.7	0.9	1.3	3.2	2.2	2.7	2.7	0.8	1.8
Ulceration,sores,erosions,fissures		0.8	0.9	0.9	0.0	0.8	0.4	1.7	0.9	1.3	3.2	1.4	2.3	2.7	0.8	1.8
head, neck, limbs		0.8	0.9	0.9	0.0	0.8	0.4	0.9	0.9	0.9	0.8	0.7	0.8	1.8	0.8	1.3
nose, cheeks, chin		0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.5	1.6	0.0	0.8	0.9	0.0	0.5
commissures		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	0.8	0.0	0.0	0.0
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	0.0	0.0	0.0
Enlarged lymph nodes(head & neck)		0.0	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.0	0.0
State Total	n=	190	171	361	178	171	349	171	163	334	181	203	384	165	181	346
With extra oral lesions		0.9	1.9	1.4	0.1	0.9	0.5	1.8	0.9	1.4	3.2	2.2	2.7	2.6	0.9	1.8
Ulceration,sores,erosions,fissures		0.8	1.0	0.9	0.1	0.9	0.5	1.8	0.9	1.4	3.2	1.5	2.4	2.6	0.8	1.7
head, neck, limbs		0.7	0.9	0.8	0.1	0.9	0.5	0.9	0.9	0.9	0.8	0.7	0.8	1.7	0.8	1.3
nose, cheeks, chin		0.1	0.1	0.1	0.0	0.0	0.0	0.9	0.0	0.5	1.6	0.1	0.9	0.9	0.0	0.5
commissures		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	0.8	0.0	0.0	0.0
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	0.1	0.0	0.1	0.0	0.0	0.0
Enlarged lymph nodes(head & neck)		0.1	0.8	0.5	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.7	0.4	0.0	0.1	0.1

The most prevalent extra oral lesion in the state was Ulceration, sores, erosions or fissures in the head, neck and limbs region. The enlarged lymph nodes (head and neck region) had a low prevalence in all except the age group of 12 years where they were absent in the sample. The prevalence was no more than 0.1%.

6.6.2 T M joint symptoms and signs

Table 6.16 presents the percentage of subjects with temporomandibular joint (TM Joint) symptoms and signs.



None of the male and female subjects in the age group of 5 years had any T M Joint symptoms or signs. It is possible that these were not recorded by the examiners for this age group.

TM Joint Symptoms were rare (Table 6.16) with only 0.1% males in age 12 years to about 1.6% females in the age group 65-74 years) being affected. More females than males reported symptoms.

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

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=	58	55	113	58	49	107	54	51	105	57	64	121	51	58	109
Symptoms present		0.0	0.0	0.0	1.7	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Signs present		0.0	0.0	0.0	5.2	4.1	4.7	1.9	0.0	1.0	7.0	14.1	10.6	0.0	6.9	3.5
Clicking		0.0	0.0	0.0	5.2	4.1	4.7	1.9	0.0	1.0	7.0	14.1	10.6	0.0	6.9	3.5
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	3.4	1.7
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	0.0	1.7	0.9
State Urban	n=	132	115	247	120	122	242	117	111	228	124	139	263	113	122	235
Symptoms present		0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.8	1.4	1.1	0.0	1.6	0.8
Signs present		1.5	4.3	2.9	3.3	6.6	5.0	9.4	5.4	7.4	4.8	10.8	7.8	8.0	9.0	8.5
Clicking		1.5	4.3	2.9	3.3	6.6	5.0	9.4	5.4	7.4	4.8	10.8	7.8	8.0	9.0	8.5
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	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 Total	n=	190	170	360	178	171	349	171	162	333	181	203	384	164	180	344
Symptoms present		0.0	0.0	0.0	0.1	0.0	0.1	0.8	0.9	0.9	0.8	1.4	1.1	0.0	1.6	0.8
Signs present		1.5	4.2	2.9	3.4	6.5	5.0	9.1	5.2	7.2	4.9	10.9	7.9	7.7	8.9	8.3
Clicking		1.5	4.2	2.9	3.4	6.5	5.0	9.1	5.2	7.2	4.9	10.9	7.9	7.7	8.9	8.3
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.1	0.1
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	0.1	0.1

TM Joint Signs were present in almost all age groups (Fig .16) and in both sexes. Clicking was the most prevalent sign present, appearing in about 8% subjects (age group 35-44 years) and about 8.5% subjects (age group 65-74 years). Clicking was present in approximately 2.8% subjects (age group 5 years); 5% subjects (age group 12 years); and 7.1% subjects (age group 15 years). Tenderness in T M Joint was found in only 0.7% female subjects in the age group 35-44 years and 0.1% females in the age group 65-74 years. Reduced jaw mobility was virtually absent, with only 0.1% females in the age group 65-74 years being affected.

Symptoms were reported in more urban than rural residents while signs were present in more rural than urban residents. The distribution pattern of conditions was similar in rural and urban areas

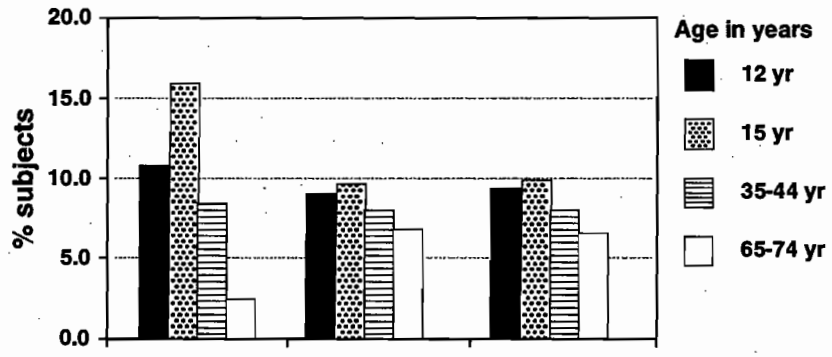
6.6.3 Enamel defects (opacities, hypoplasia)

Table 6.17 presents the percent subjects with enamel defects by type of defect and Table 6.18 presents 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.

Overall, there was a low prevalence of enamel defects including opacities and hypoplasia in the state (Fig 6.17). The proportion of subjects with enamel defects ranged from about 6% in the age group 65-74 yearss to a maximum of about 9% in the age group of 12 years.

Fig. 6.17. Percent subjects with enamel defects in Delhi.



The most prevalent enamel defect was demarcated opacity. More males than females, in general were affected with enamel defects in the state. An was the age group 65-74 years where the opposite was true.

There were no major rural and urban or male and female differentials in the pattern of distribution of enamel defects by type.

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

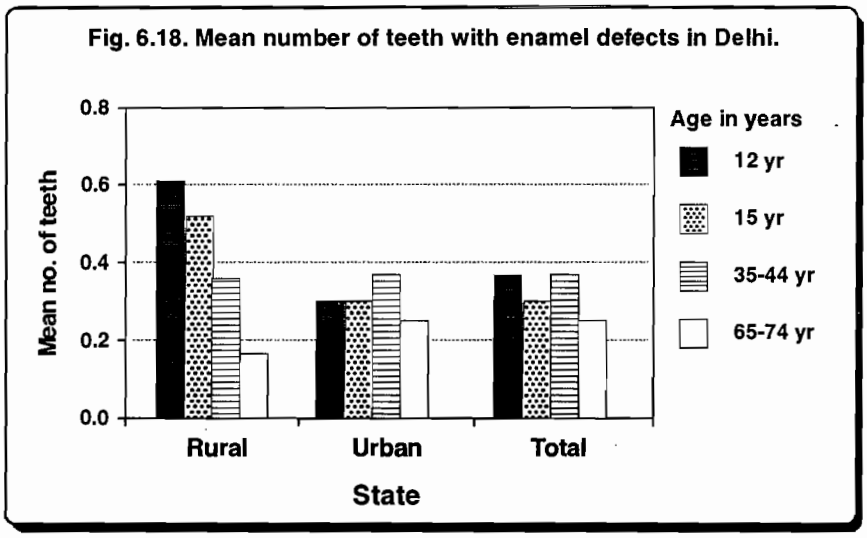
Enamel Opacities/Hypoplasia		12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	58	49	*107*	54	51	*105*	56	64	*120*	30	40	*70*
With enamel defects		6.9	14.3	*10.6*	20.4	11.8	*16.1*	7.1	9.4	*8.3*	0.0	5.0	*2.5*
demarcated opacity		1.7	4.1	*2.9*	14.8	5.9	*10.4*	1.8	3.1	*2.5*	0.0	2.5	*1.3*
diffuse opacity		5.2	12.2	*8.7*	5.6	5.9	*5.8*	3.6	6.3	*5.0*	0.0	0.0	*0.0*
hypoplasia		0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.8	0.0	*0.9*	0.0	0.0	*0.0*
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*
combinations of opacities and hypoplasia		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	2.5	*1.3*
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=	120	122	*242*	116	112	*228*	123	139	*262*	74	71	*145*
With enamel defects		10.0	8.2	*9.1*	10.3	8.0	*9.2*	8.9	5.8	*7.4*	5.4	7.0	*6.2*
demarcated opacity		7.5	5.7	*6.6*	10.3	5.4	*7.9*	7.3	5.0	*6.2*	5.4	2.8	*4.1*
diffuse opacity		0.8	2.5	*1.7*	0.0	1.8	*0.9*	1.6	0.0	*0.8*	0.0	1.4	*0.7*
hypoplasia		1.7	0.8	*1.3*	0.0	0.9	*0.5*	0.0	0.7	*0.4*	0.0	1.4	*0.7*
other defects		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.4	*0.7*
combinations of opacities and hypoplasia		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
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=	178	171	*349*	170	163	*333*	179	203	*382*	104	111	*215*
With enamel defects		9.9	8.4	*9.2*	10.7	8.2	*9.5*	8.9	5.9	*7.4*	5.2	7.0	*6.1*
demarcated opacity		7.3	5.7	*6.5*	10.5	5.4	*8.0*	7.1	5.0	*6.1*	5.2	2.8	*4.0*
diffuse opacity		1.0	2.7	*1.9*	0.2	1.9	*1.1*	1.7	0.2	*1.0*	0.0	1.4	*0.7*
hypoplasia		1.6	0.8	*1.2*	0.0	0.9	*0.5*	0.1	0.7	*0.4*	0.0	1.4	*0.7*
other defects		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.4	*0.7*
combinations of opacities and hypoplasia		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.1	*0.1*
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*

Note: Related Table **6.18**

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

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=*	58	49	*107*	54	51	*105*	57	66	*123*	52	58	*110*
Mean no. of teeth with enamel defects		0.4	0.8	*0.6*	0.5	0.5	*0.5*	0.2	0.5	*0.4*	0.0	0.3	*0.2*
demarcated opacity		0.0	0.1	*0.1*	0.4	0.1	*0.3*	0.0	0.0	*0.0*	0.0	0.2	*0.1*
diffuse opacity		0.4	0.8	*0.6*	0.1	0.4	*0.3*	0.2	0.4	*0.3*	0.0	0.0	*0.0*
hypoplasia		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 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*
combinations of opacities and hypoplasia		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.1	*0.1*
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=*	121	122	*243*	117	112	*229*	124	140	*264*	113	124	*237*
Mean no. of teeth with enamel defects		0.3	0.3	*0.3*	0.3	0.3	*0.3*	0.4	0.3	*0.4*	0.3	0.2	*0.3*
demarcated opacity		0.2	0.2	*0.2*	0.3	0.2	*0.3*	0.3	0.3	*0.3*	0.3	0.1	*0.2*
diffuse opacity		0.1	0.1	*0.1*	0.0	0.1	*0.1*	0.1	0.0	*0.1*	0.0	0.0	*0.0*
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*
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*
combinations of opacities and hypoplasia		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
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=*	179	171	*350*	171	163	*334*	181	206	*387*	165	182	*347*
Mean no. of teeth with enamel defects		0.3	0.4	*0.4*	0.3	0.3	*0.3*	0.4	0.3	*0.4*	0.3	0.2	*0.3*
demarcated opacity		0.2	0.2	*0.2*	0.3	0.2	*0.3*	0.3	0.2	*0.3*	0.3	0.1	*0.2*
diffuse opacity		0.1	0.1	*0.1*	0.0	0.1	*0.1*	0.1	0.0	*0.1*	0.0	0.0	*0.0*
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*
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*
combinations of opacities and hypoplasia	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	
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*

Note: Related Table **6.17**

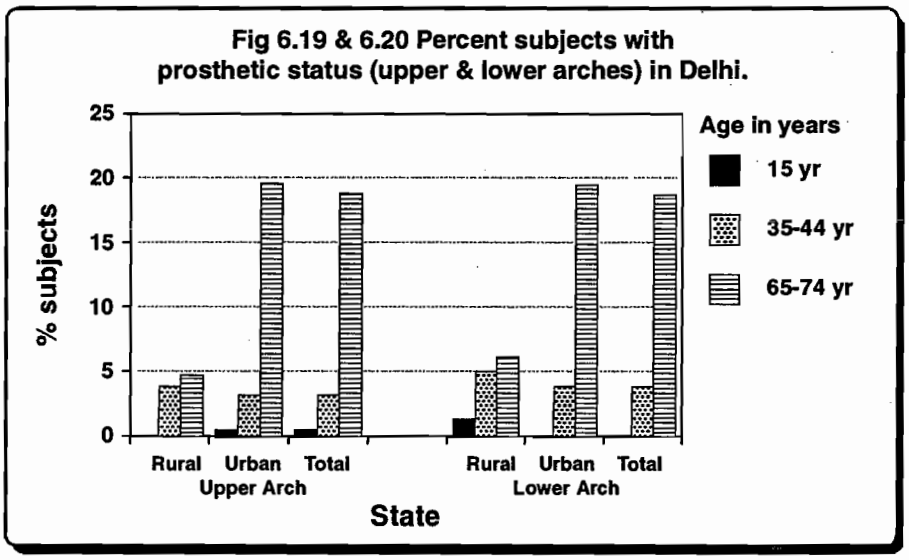


There were 10 index teeth in the mouth used for assessing the mean number of teeth with enamel defects per individual. The mean number of teeth affected with enamel defects was only about 0.5 in the age groups 12, 15 and 35-44 year (Table 6.18). There was no major difference between male and female subjects. However, in age 5 years and the age group 65-74 years, the mean number of teeth affected with enamel defects were about 3.8 and 4.8 respectively. Ranked by the type of defect and the mean number of teeth affected, the demarcated opacity had the highest mean score followed by diffuse opacity and then followed by hypoplasia. The pattern of distribution of scores by type of enamel defect was similar in rural and urban area.

6.6.4. Prosthetic status (upper & lower)

The prosthetic status was recorded for subjects 15 yearss 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).

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



No subjects aged 15 years were wearing a prosthesis in the upper or lower arches. The

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

Prosthetic Status (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	54	51	105	56	66	122	52	57	109
Prostheses present		0.0	0.0	0.0	1.8	6.1	4.0	5.8	3.5	4.7
Bridge or more than one bridge		0.0	0.0	0.0	1.8	1.5	1.7	0.0	0.0	0.0
Partial denture		0.0	0.0	0.0	0.0	4.5	2.3	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	1.8	0.9
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	5.8	0.0	2.9
State Urban	n=	117	112	229	124	139	263	113	124	237
Prostheses present		0.9	0.0	0.5	0.8	5.8	3.3	16.8	22.6	19.7
Bridge or more than one bridge		0.9	0.0	0.5	0.0	2.9	1.5	0.9	0.8	0.9
Partial denture		0.0	0.0	0.0	0.8	2.9	1.9	2.7	2.4	2.6
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	1.4
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	10.6	19.4	15.0
State Total	n=	171	163	334	180	205	385	165	181	346
Prostheses present		0.8	0.0	0.4	0.8	5.8	3.3	16.4	21.9	19.2
Bridge or more than one bridge		0.8	0.0	0.4	0.1	2.8	1.5	0.9	0.8	0.9
Partial denture		0.0	0.0	0.0	0.8	2.9	1.9	2.6	2.4	2.5
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.1	1.4
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	10.5	18.7	14.6

Note: For information on status and need for full mouth removable dentures, please refer to Tables **6.21** and **6.24** respectively. Related Table : **6.20**

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

Prosthetic Status (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	54	51	105	57	66	123	52	58	110
Prostheses present		0.0	2.0	1.0	5.3	4.5	4.9	5.8	5.2	5.5
Bridge or more than one bridge		0.0	2.0	1.0	3.5	3.0	3.3	0.0	0.0	0.0
Partial denture		0.0	0.0	0.0	1.8	1.5	1.7	0.0	1.7	0.9
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.9
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	5.8	1.7	3.8
State Urban	n=	117	112	229	124	140	264	113	124	237
Prostheses present		0.0	0.0	0.0	3.2	2.9	3.1	15.9	23.4	19.7
Bridge or more than one bridge		0.0	0.0	0.0	0.8	1.4	1.1	0.0	1.6	0.8
Partial denture		0.0	0.0	0.0	1.6	1.4	1.5	1.8	2.4	2.1
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	1.4
Full removable denture		0.0	0.0	0.0	0.8	0.0	0.4	11.5	19.4	15.5
State Total	n=	171	163	334	181	206	387	165	182	347
Prostheses present		0.0	0.1	0.1	3.3	2.9	3.1	15.6	22.8	19.2
Bridge or more than one bridge		0.0	0.1	0.1	0.9	1.5	1.2	0.0	1.6	0.8
Partial denture		0.0	0.0	0.0	1.6	1.4	1.5	1.7	2.4	2.1
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.1	1.4
Full removable denture		0.0	0.0	0.0	0.8	0.0	0.4	11.3	18.8	15.1

Note: For information on status and need for full mouth removable dentures, please refer to Tables **6.21** and **6.24** respectively. Related Table : **6.19**

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

State : Delhi

Prosthetic status of full denture (upper & lower arch)		35-44 years			65-74 years		
		M	F	T	M	F	T
State Rural	n=	**57**	**64**	***121***	**52**	**58**	***110***
Percent subjects with full mouth removable denture		0.0	0.0	***0.0***	5.8	0.0	***2.9***
State Urban	n=	**124**	**139**	***263***	**113**	**122**	***235***
Percent subjects with full mouth removable denture		0.0	0.0	***0.0***	10.6	19.7	***15.2***
State Total	n=	**181**	**203**	***384***	**165**	**180**	***345***
Percent subjects with full mouth removable denture		0.0	0.0	***0.0***	10.5	19.0	***14.8***

Note: Related Tables are **6.19** and **6.20.**

overall proportion of subjects wearing one or the other type of prostheses in the upper and lower arches was low in the state but the percent subjects wearing prostheses increased as age advanced (Tables 6.19, 6.20).

The percent subjects aged 35-44 years wearing prostheses (upper and/or lower arch) was about 3.2 percent while it was about 19.2 percent in subjects aged 65-74 years.

The full denture in either arch was the most prevalent prostheses amongst the 65-74 yearss age group followed by a much lower prevalence of partial dentures. In the age group 35-44 years, the most prevalent prostheses were the partial dentures.

Full mouth removable dentures (upper and lower arches) were being worn by subjects aged 65-74 years with a prevalence of 14.8 percent, distributed more in urban than rural areas, in the state (Table 6.21).

More female subjects compared to male subjects were generally wearing a prostheses. The prevalence pattern of subjects wearing prostheses in the upper arch and their pattern of distribution by type of prostheses was similar in rural and urban subjects and in the regions.

6.6.5 Prosthetic need (upper & lower)

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.

Tables 6.22 and 6.23 present the percentage of subjects with prosthetic need of upper and lower dental arches, respectively, by type of prostheses. Table 6.24 presents the percentage of subjects needing full mouth removable dentures.

The need for prostheses was only 23.2 percent (upper arch) and 31.1 percent (lower arch) in 35-44 year old subjects but increased rapidly to about 65.8 (upper arch) and 66.7 percent (lower arch) in 65-74 years.

There was a need for prostheses in 2.2 percent (upper arch) and 3.9 percent (lower arch) of 15 year olds and all these needed a one unit prosthesis in upper arch. The need was divided between one and multi-unit prsotheses in lower arch. There appeared a greater need in lower arch than in the upper arch. In the age group 35-44 years, the most prevalent need was for one- or multi-unit prostheses. In the 65-74 years old subjects, the most prevalent need was for full prostheses followed by multi-unit prostheses.

The prevalence pattern and distribution of need by type of prostheses was similar in both rural and urban areas and regions although the prevalence appeared higher in rural compared with urban areas. There were no marked gender related differentials.

Fig 6.22 & 6.23 Percent subjects with prosthetic need (upper & lower arches) in Delhi.

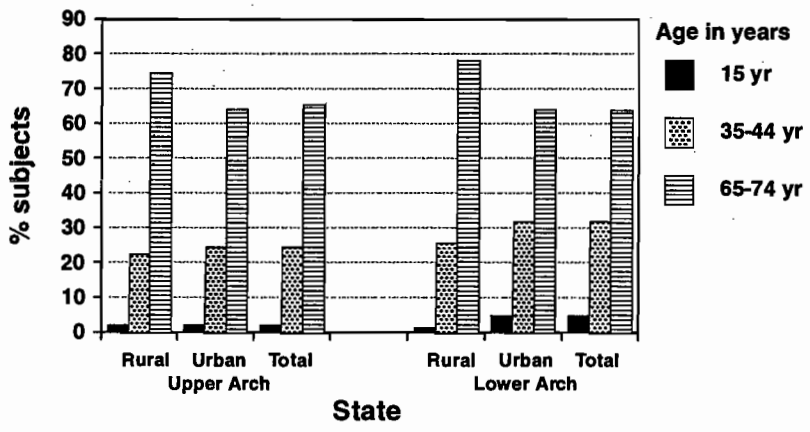


Table 6.22. Percent distribution of subjects with their prosthetic need status (upper arch) by age, sex, and geographical area. State: Delhi

Prosthetic Need (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	54	51	*105*	57	66	*123*	52	58	*110*
With Prosthetic need		1.9	2.0	***2.0***	14.0	28.8	***21.4***	76.9	74.1	***75.5***
Need for one unit prosthesis		1.9	2.0	***2.0***	5.3	12.1	***8.7***	9.6	5.2	***7.4***
Need for multi unit prosthesis		0.0	0.0	***0.0***	3.5	12.1	***7.8***	23.1	20.7	***21.9***
Need for combination of one and/or MUP		0.0	0.0	***0.0***	3.5	3.0	***3.3***	7.7	12.1	***9.9***
Need for full prosthesis		0.0	0.0	***0.0***	1.8	1.5	***1.7***	36.5	36.2	***36.4***
State Urban	n=	117	112	*229*	124	140	*264*	113	124	*237*
With Prosthetic need		2.6	1.8	***2.2***	24.2	22.1	***23.2***	65.5	65.3	***65.4***
Need for one unit prosthesis		2.6	1.8	***2.2***	12.9	8.6	***10.8***	8.8	6.5	***7.7***
Need for multi unit prosthesis		0.0	0.0	***0.0***	8.9	8.6	***8.8***	21.2	21.0	***21.1***
Need for combination of one and/or MUP		0.0	0.0	***0.0***	2.4	5.0	***3.7***	9.7	10.5	***10.1***
Need for full prosthesis		0.0	0.0	***0.0***	0.0	0.0	***0.0***	25.7	27.4	***26.6***
State Total	n=	171	163	*334*	181	206	*387*	165	182	*347*
With Prosthetic need		2.5	1.8	***2.2***	23.9	22.4	***23.2***	65.9	65.6	***65.8***
Need for one unit prosthesis		2.5	1.8	***2.2***	12.6	8.7	***10.7***	8.9	6.4	***7.7***
Need for multi unit prosthesis		0.0	0.0	***0.0***	8.7	8.7	***8.7***	21.3	21.0	***21.2***
Need for combination of one and/or MUP		0.0	0.0	***0.0***	2.5	4.9	***3.7***	9.7	10.5	***10.1***
Need for full prosthesis		0.0	0.0	***0.0***	0.1	0.1	***0.1***	26.0	27.7	***26.9***

Note: For information on status and need for full mouth removable dentures, please refer to Tables **6.21** and **6.24** respectively. Related Table : **6.23**

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

Prosthetic Need (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	54	51	*105*	57	66	*123*	52	58	*110*
With Prosthetic need		1.9	0.0	***1.0***	19.3	30.3	***24.8***	73.1	82.8	***78.0***
Need for one unit prosthesis		1.9	0.0	***1.0***	10.5	9.1	***9.8***	7.7	3.4	***5.6***
Need for multi unit prosthesis		0.0	0.0	***0.0***	5.3	15.2	***10.3***	23.1	34.5	***28.8***
Need for combination of one and/or MUP		0.0	0.0	***0.0***	1.8	4.5	***3.2***	5.8	8.6	***7.2***
Need for full prosthesis		0.0	0.0	***0.0***	1.8	1.5	***1.7***	36.5	36.2	***36.4***
State Urban	n=	117	112	*229*	124	140	*264*	113	124	*237*
With Prosthetic need		4.3	3.6	***4.0***	35.5	27.1	***31.3***	67.3	65.3	***66.3***
Need for one unit prosthesis		1.7	1.8	***1.8***	21.0	8.6	***14.8***	8.8	8.1	***8.5***
Need for multi unit prosthesis		2.6	1.8	***2.2***	10.5	15.0	***12.8***	24.8	25.0	***24.9***
Need for combination of one and/or MUP		0.0	0.0	***0.0***	4.0	3.6	***3.8***	8.8	6.5	***7.7***
Need for full prosthesis		0.0	0.0	***0.0***	0.0	0.0	***0.0***	24.8	25.8	***25.3***
State Total	n=	171	163	*334*	181	206	*387*	165	182	*347*
With Prosthetic need		4.2	3.5	***3.9***	34.9	27.3	***31.1***	67.5	65.9	***66.7***
Need for one unit prosthesis		1.7	1.7	***1.7***	20.6	8.6	***14.6***	8.8	7.9	***8.4***
Need for multi unit prosthesis		2.5	1.7	***2.1***	10.3	15.0	***12.7***	24.7	25.3	***25.0***
Need for combination of one and/or MUP		0.0	0.0	***0.0***	4.0	3.6	***3.8***	8.7	6.5	***7.6***
Need for full prosthesis		0.0	0.0	***0.0***	0.1	0.1	***0.1***	25.2	26.2	***25.7***

Note: For information on status and need for full mouth removable dentures, please refer to Tables **6.21** and **6.24** respectively. Related Table : **6.22**

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

State : Delhi

Prosthetic need of full denture (upper & lower arch)		35-44 years			65-74 years		
		M	F	T	M	F	T
State Rural	n=	57	64	*121*	51	58	*109*
Percent subjects needing full mouth removable denture		1.8	1.6	*1.7*	35.3	34.5	*34.9*
State Urban	n=	124	139	*263*	113	121	*234*
Percent subjects needing full mouth removable denture		0.0	0.0	*0.0*	24.8	25.6	*25.2*
State Total	n=	181	203	*384*	164	179	*343*
Percent subjects needing full mouth removable denture		0.1	0.1	*0.1*	25.1	25.9	*25.5*

Note: Related Tables are **6.22** and **6.23.**

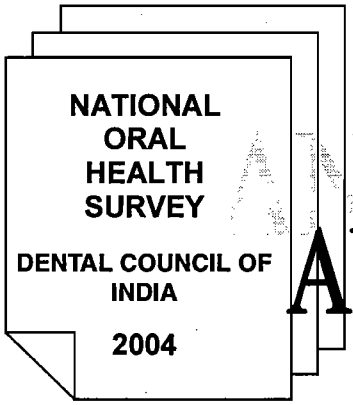
6.6.6 Community need for immediate care and referrals

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

Overall, life threatening and painful or infective conditions were extremely rare in the state. Life threatening conditions were recorded only in 0.1% males in the 65-74 yearss age group which represented 1.9% of rural males. Pain or infection was recorded in 0.1% females in the 5 years age group, 0.1% females in the 15 yearss age group and 0.7% female subjects in the 35-44 yearss age group. Referrals were made for almost all of the conditions recorded.

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

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=	58	55	*113*	58	49	*107*	54	50	*104*	56	64	*120*	52	57	*109*
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*	1.9	0.0	*1.0*
Pain or infection		0.0	1.8	*0.9*	0.0	0.0	*0.0*	1.9	0.0	*1.0*	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	0.0	*0.0*
Referral		0.0	1.8	*0.9*	0.0	0.0	*0.0*	1.9	0.0	*1.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
State Urban	n=	132	117	*249*	120	122	*242*	117	112	*229*	124	136	*260*	113	120	*233*
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*	0.0	0.0	*0.0*
Pain or infection		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.7	*0.4*	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	0.0	*0.0*
Referral		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.7	*0.4*	0.0	0.0	*0.0*
State Total	n=	190	172	*362*	178	171	*349*	171	162	*333*	180	200	*380*	165	177	*342*
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*	0.1	0.0	*0.1*
Pain or infection		0.0	0.1	*0.1*	0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.0	0.7	*0.4*	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	0.0	*0.0*
Referral		0.0	0.1	*0.1*	0.0	0.0	*0.0*	0.1	0.0	*0.1*	5.7	4.6	*5.2*	0.0	0.0	*0.0*



ANNEXURES

DENTAL COUNCIL OF INDIA

EXECUTIVE COMMITTEE

Dr. R K Bali
President
New Delhi

Dr. C. Bhasker Rao,
Vice President,
Dharwad.

Dr. Anil Kohli
New Delhi

Dr. Ravindra Ratolikar,
Hyderabad

Dr. S. G. Damle
Mumbai

Dr. B. H. Sripathi Rao
Mangalore.

Dr. J. R. Sabharwal
New Delhi

Dr. S. P. Agarwal,
New Delhi

OUTGOING MEMBERS

Dr. Mahesh Verma, New Delhi.

Dr. V. Surindera Shetty, Mangalore.

Dr. B. Suresh Chandra, Mangalore.

SUPPORT STAFF

Mr. A. L. Miglani, Secretary (Retd.)

Mr. S.S. Arora, Secretary I/c.

Mr. C.L. Bhatia

Mr. K. V. Abraham

Mr. P. K. De

Mr. Shiv Kumar

Mr. Praveen Kumar

Mr. S. S. Kanyal

Mr. Puneet Bansal

Mr. Anil Kumar

NOHS SECRETARIAT

Mrs. Sarita Verma

ANNEXURE - 1

CENTRAL SURVEY TEAM

Dr. R. K. Bali

Dr. V. B. Mathur

Prof. P. P. Talwar

Mr. H. B. Chanana

ANNEXURE - 2

TECHNICAL WORKING GROUP

Dr. R. K. Bali, President, DCI

Dr. V.B. Mathur

Dr. Shankar Aradhya

Dr. K.V.V. Prasad

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.	Dental College & Hospital, 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 & Hospital, Pune
10.	Dental Wing, S.C.B. Medical College, Cuttak (Orissa)
11.	Mahatma Gandhi Dental College & Hospital, Pondicherry.
12.	Dental College & Hospital, Lucknow
13.	Govt Dental College, Indore (M.P)
14.	Principal, Sri Sai College of Dental Surgery, Vikarabad – 501 101 (R.R. Dist. – A.P.)
15.	Govt. Dental College, Srinagar (J&K)
16.	Pacific Dental College, Udaipur, Rajasthan

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

NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING

ANNEXURE - 6

TEAM MEMBERS (DELHI)

S. No.	Name	Designation
1	Dr. Mahesh Verma	Regional Coordinator
2	Dr. Arundeep Kaur	Joint Coordinator
3	Dr. Pankaj Goel	Supervisor
4	Dr. Rahul Verma	Dental Surgeon
5	Dr. Rahul Rehani	Dental Surgeon
6	Dr. Rahul Kashyap	Dental Surgeon
7	Dr. Sumant Mishra	Dental Surgeon
8	Dr. Vineet Jain	Dental Surgeon
9	Dr. Deepak Ghai	Dental Surgeon
10	Dr. Alok Katharya	Dental Surgeon
11	Dr. Swasti Shree	Dental Surgeon
12	Mr. Arun Rudra	Dental Surgeon
13	Mr. Sunder Sham	Dental Surgeon
14	Mrs. Madhu Gupta	Dental Surgeon
15	Mr. Dhirender Katiyar	Dental Surgeon
16	Mr. A.K. Dubey	Dental Hygienist
17	Mr. N.K. Sharma	Dental Hygienist

ANNEXURE - 6

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 | 2 | (13)
R U

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** / टयूबवैल ..... 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/सामिश्र है? *(Tick One)/* (एक पर चिन्ह लगायें)	**Veg.** / शाकाहारी ..... 1 **Non-Veg.** / सामिश्र 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			A S K E D	A S K E D				(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			B E	B E				(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			O	O				(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			T	T				(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			N O	N O				(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* भोजन के समय	1							(125-129)
		In Between Meals भोजन के समय के बीच	2							
		During & In Between Meals भोजन के समय व बीच में	3							
		N.A. / लागू नहीं होता	4							

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

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*** ..... फ्लोराइड–युक्त ***Non-Fluoridated*** ..... फ्लोराइड–रहित ***Can't Say*** ..... कह नहीं सकता ***None***	***1*** ***2*** ***3*** ***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 ..... ***4-6 months/*** 4–6 माह ..... ***6 + months/*** ..... 6 से अधिक ***NA (Not using/ Brush)***	***1*** ***2*** ***3*** ***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*** ..... कभी नहीं ***Sometimes*** ..... कभी–कभी ***Always*** ..... सर्वदा	***1*** ***2*** ***3***							(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*** ..... डेन्टल फ्लॉश ***Interdental Brush*** ..... इन्टरडेन्टल ब्रुश ***Toothpicks*** ..... टूथ पिक्स ***Fluoride Mouthrinse*** ..... फ्लोराइड माउथरिन्स ***Other*** ..... ***Mouthwash/Rinse (Specify)*** अन्य माउथवाश/रिन्स लिखें ***None/*** कोई नहीं	***1*** ***2*** ***3*** ***4*** ***5*** ***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 प्रैक्टिशनर *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			N O T T O B E A S K E D					(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		A S K E D					(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	A S K E D N O T E B O O T					(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							(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 (R) | 2 (U) | (13)

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

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 teeth 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