National Oral Health Survey & Fluoride Mapping 2002-2003

CHANDIGARH

Dental Council of India
New Delhi
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NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING

2002-2003

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ABBREVIATIONS & ACRONYMS

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

FOREWORD

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

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

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

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

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

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

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

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

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

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

Dr R. K. Bali

President, Dental Council of India.

July 2004.

PREFACE

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Dr. R. K. Bali

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

Prof. P. P. Talwar

H.B. Chanana

ACKNOWLEDGEMENTS

I gratefully acknowledge the help and assistance rendered by a number of colleagues and friends, who participated in this Survey so willingly. The list is long but I would wish to record my gratitude, appreciation and thanks to all the organizations and individuals who have contributed towards the success of this survey in one way or the other. I am indebted to Padmshri Dr. R.K.Bali, President, Dental Council of India, for giving me this opportunity to be a part of this mammoth project as a Regional Co-ordinator for the northern region, comprising of three states viz. Himachal Pradesh, Punjab and Haryana, and one Union Territory, i.e., Chandigarh. The Survey will have far reaching influence on planning manpower, resources and Dental & Oral Health Care services for the people of Chandigarh.

I wish to express my profound recognition of the constant help of the Central Survey Team headed by Padmashri. Dr. R.K. Bali and Dr. V.B. Mathur, Project Officer, for all the support and assistance during the various stages of the survey. Prof. P.P. Talwar, Consultant and Mr. H.B. Chanana, were also helpful for designing the protocol, calibration training at Manipal, and statistical analysis etc.

Furthermore, the help afforded by Shri. Vineet Chaudhary, Health Secretary to the Govt. of Himachal Pradesh, Dr. Asha Goel, Director of Medical Education and Dr. S.K. Dhiman, Director of Health Services (H.P.), during the entire survey is duly appreciated. I thank Dr. S.C. Sharma, the then Principal, H.P. Govt. Dental College & Hospital, Shimla (h.P.), for providing all help and facilitating the survey during the initial stages.

I am grateful to Shri Anoop Garg, Chairman of the B.R.S. Dental College & Hospital, Kotbilla (Haryana), who readily agreed to host the 2-day Training & Calibration Workshop for the northern region, along with hospitality, at B.R.S. Dental College & Hospital.

I gratefully acknowledge the help rendered by Shri R.S. Thakur, Deputy Director, Census Operations (H.P.), in providing all data regarding the logistics of field work and the census data for the selected villages and urban agglomerations (U.A.) of Chandigarh Union Territory Region.

I would like to express my sincere thanks to the Managements, Principals and staff of various Dental Colleges for their valuable support and co-operation during the survey by providing transport facilities, logistics and above all, personnel for survey teams. Notably among them are:

1. H.P. Govt Dental College & Hospital, Shimla (H.P.)
2. B.R.S. Dental College & Hospital, Kotbilla, Panchkula (Haryana)
3. Bhojia Dental College & Hospital, Budh, Tehsil Nalagarh (H.P.)
4. National Dental College & Hospital, Gulabgarh, Derabassi (Punjab)
5. D.A.V. Centenary Dental College, Model Town, Yamuna Nagar (Haryana)

I wish to record my appreciation of the invaluable assistance rendered by Dr. C.L. Dileep, Supervisor, under my guidance and supervision, in all aspects of the survey including co-ordination with the Central Survey Team, managing logistics, training and calibration, field work, compiling & analyzing raw data, developing tabulation plans and writing the Report for the Union Territory of Chandigarh.

While every person associated with the survey has contributed selflessly to this national project, I wish to place on record the special contribution of Shri Anoop Garg, chairman B.R.S. Dental College & Hospital, Kotbilla, Panchkula (Haryana), Shri Vikram Bhojia, Chairman, Bhojia Dental College & Hospital, Budh, Tehsil Nalagarh (H.P.) and Dr. O.P. Verma, Senior Dental Surgeon, Chandigarh, for their extraordinary generosity and help during the field work.

Though I have tried to acknowledge a few organizations and individuals by name, there are several other good Samaritans whose names could not be included for reasons of brevity. To them, I gratefully acknowledge their selfless help, benign support and timely contributions.

Dr. N.C. Rao
Regional Coordinator
Northern Region (Chandigarh),
National Oral Health Survey
and Fluoride Mapping 2002

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CHAPTER 0
EXECUTIVE SUMMARY

1. GENESIS

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

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

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

2. SCOPE OF THE SURVEY

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

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

4. Dental cleaning practices,

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

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

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

3. DESIGN OF THE SURVEY

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

3.1 Sample size

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

3.2 Sample selection

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

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

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

4. STUDY TOOLS

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

5. DATA COLLECTION

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

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

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

6. CALIBRATION AND TRAINING WORKSHOPS

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

7. AREA COVERAGE IN SURVEY

The National Oral Health Survey, was designed to cover all the agro-climatic regions in which the state is divided. Since whole of Chandigarh, a union territory is termed a one agro-climatic region.

This was completely covered.

8. FINDINGS (ORAL HEALTH KNOWLEDGE AND PRACTICES)

8.1 Characteristics of households surveyed

93 per cent of households (96 per cent in urban & 65 per cent in rural) live in pucca houses.

36 per cent (58 per cent in urban & 34 per cent in rural) reported spending Rs 5501-10,000 per month & another 49 per cent (51 per cent in urban & 27 per cent in rural) had monthly expenditure of Rs. 10,000 & above.

78 per cent of population, more in urban was Hindus followed by other 17 per cent Sikh, more of them living in rural areas.

Almost all respondents belongs to other than Schedule Castes, Schedule Tribes & Backward Classes.

Almost all households were getting piped/tap water for drinking.

Wheat is the staple food of almost all & 68 per cent of them take vegetarian food.

8.2 Profile of surveyed population

(i) Except 15 per cent in 65-74 age group, there was either none or about 1-2 per cent illiterate in the younger ages/age group.

(ii) More than 50 per cent in each age group, more males & more in urban, reported reading newspaper daily.

(iii) 8 per cent across age group, reported listening to radio daily.

(iv) 80 per cent across age group, more in urban reported watching TV daily.

(v) There were more females aged 15 & 35-44 years & more in urban, had watched cinema once in three months.

8.3 Abnormal habits across age group

A small per cent of children aged 5 & 12 years olds had the habits of "sucking fingers/thumbs" & "biting nails/lips/object like pencils". While a small per cent of respondents aged (35-44) & (65-74) years old reported the habit of "grinding/gritting teeth" While none of respondent from either of age or age group, reported the habit of "breathing from mouth" & "thrusting tongue on teeth".

8.4 Sweet/sugar-taking habits across age group

About 90-100 per cent of respondents aged 5, 12, 15 & 35-44 years old & surprisingly only 5 per cent 65-74 years olds irrespective of their sex & places of residence taken had sugar two or more times in last one day.

There were 61 per cent of (65-74) years olds respondents, did not take sugar at all in last one day.

8.5 Oral hygiene practices across age group

(i) 47 per cent of respondents aged (65-74) years olds and almost all in other ages/age groups reported the use of tooth brush to clean their teeth.

(ii) Almost all from each age/age group had cleaned teeth at least once a day.

(iii) As regard change of tooth brushes 42 per cent more females & more in urban irrespective of age differences changed tooth brush once in 1-3 months. While other about 55 per cent, more males & more in rural irrespective of their age differences reported the change of tooth brush once in 4-6 months. A small per cent across both sexes & places of residence had changed tooth brush once after 6 months of use.

(iv) 96-100 per cent of respondents, irrespective of age, sex & places of residence reported the use of tooth paste and that fluoridated one.

(v) None from 5, 12, & 15 years olds reported rinsing mouth always. But 50 per cent & more, from these age groups, & more in urban, had rinsed mouth sometimes.

There were more females & more in rural area & more males & more in urban belonging to age groups 35-44 & 65-74 years had rinsed mouth always & sometimes respectively.

8.6 Dental problems and treatment practices across age group

(i) Percent reported suffered from oral health problems in last one year increased with increase in the age. The problems were reported by more males & more in rural areas.

(ii) A large per cent, irrespective of age differences had dental decay, followed gum disease.

(iii) About 60-80 per cent of respondents, generally more males & more in urban areas consulted trained dentist.

(iv) 37 per cent & 96 per cent were aware of Govt. & Pvt. Dental care facilities in their respective areas.

(v) About 94 per cent of them reported less than half hour to reach the facility places.

8.7 Awareness of dental health problems across age group

About 95 per cent of respondents irrespective their ages, sex and places of residence reported knowledge of oral health problems, factors responsible for oral health problems & measures to prevent the problems.

More than two third of respondents from each age group more males & more in rural, told oral health problems such as dental decay & gum disease. Another about 40-50 per cent from each age group, more females & more in rural cited strained, teeth, bad smell etc..

As regard knowledge of factors that can cause oral health problems, more than 90 per cent from each age group, across both sexes & places of residence reported "factors such as not brushing regularly & not rinsing. Other factors comparatively reported by small percents, were consuming tobacco, eating sweet/ice creams etc.

As regard knowledge of preventive measures, about 95 per cent of respondents from each group, more males & more in urban reported measures such as cleaning of teeth regularly, visiting dentist regularly. Besides these nearly 40-50 per cent from each age group told avoid sweet items, not consuming tobacco & use of fluoridated tooth paste etc.

8.8 Tobacco Smoking and Chewing Habits across Age Group

(i) 22 per cent & 18 per cent of respondents, aged 35-44 & 65-74 year olds, more males & more in rural, had habit of smoking tobacco.

(ii) Three fourth & more smokers, more males & more in urban reported smoking cigarettes. The rest, more males & more in rural were smoking Bidis. About 90 per cent of smokers reported smoking less than ten times in a day.

(iii) Only 5 per cent of respondents, irrespective of their age, more males & more in rural, reported chewing pan or pan masala with tobacco.

About 85 per cent of them were chewing pan or pan masala with tobacco for the last 5-10 years & mostly were chewing 5-10 times in a day.

(iv) Nearly one third of respondents, irrespective of their ages, more males reported consuming alcohol. A few of them were consuming alcohol daily.

9. FINDINGS (ORAL HEALTH ASSESSMENT)

9.1 Dental caries

- Overall, the mean numbers of teeth present in individuals decreased as age advanced. The mean number of teeth present in subjects aged 65-74 years was 14 (a loss of 18 out of 32 teeth, which is more than one half of the normal dentition). About 46.3 per cent subjects (more females than males) were edentulous (without natural teeth) in this age group.
- The prevalence of dental caries (dmft/ DMFT>0) was unusually high in all age groups surveyed and increased incrementally with the age of subjects examined: it was 85.4 per cent in 5 year olds (primary teeth); 93.0 per cent in 12 year olds; 97.2 per cent in 15 year olds; 97.2 per cent in 35-44 year age-group and 99.7 per cent in 65-74 year age-group.
- The mean dmft value was 2.3 in 5 year old subjects, contributed in whole by the decayed teeth (dt) component. The mean DMFT at 12 years was 4.5 which rose to 5.0 in 15 year old subjects. The mean DMFT was highest for the age group of 65-74 years (22.8).
- Although the majority of subjects in all age groups had experienced caries, the number of teeth affected per individual was low (dmft/ DMFT value of 1-3 teeth) in all age groups except in 65-74 years where the DMFT value of 29-32 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 year age-group where the missing teeth component (MT) contributed the most. There were virtually no subjects with fillings in their teeth so that the filled-teeth component (ft/FT) contributed only negligibly to the dmft/DMFT and that too only in urban residents. The mean DMFT was slightly higher in urban subjects than in rural subjects but the pattern of distribution of the components of DMFT was similar in rural and urban areas.

- The Significant Caries (Sic) Index measures the mean DMFT for the one third of the population with highest DMFT scores. This identifies the group of population with the highest caries experience by number of teeth affected and therefore the high-risk sub-group in the population. The Sic Index was lowest in subjects aged 5 years (3.7) but increased incrementally as age advanced. At 65-74 years, the SiC Index approached 32, which is maximum, possibly because of a high number of edentulous subjects (MT component) in that age group.

- Root caries was recorded for the two age groups of 35-44 and 65-74 years. The prevalence of root caries was approximately 15.6 per cent in the age group of 35-44 years and 25 per cent in 65-74 years. The mean number of teeth with Root Caries was very low (0.7) in both age groups. 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 Chandigarh is the capital of the states of Haryana and Punjab, with 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 the 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 subjects were clinically assessed for their need for both preventive and treatment care, based on their caries experience and dentition status. The treatment need in this section, refers to the need for treatment arising from caries or its consequences. It included the need for preventive care; one-or-more-surface fillings; extractions of teeth; pulp care, and crowns or veneers.

- The treatment need was consistently high (over 60 per cent) in all age groups examined. It ranged from 85.8 per cent to 97.1 per cent in subjects aged 5 years to 35-44 years. Subjects in the age group of 15 years recorded the highest treatment need (97.1 per cent) while this percentage was lowest in the age group of 65-74 years (63.9 per cent).

- The mean number of teeth with treatment need increased as age advanced and was highest in the highest age group of 65-74 years (9.5). It was lowest in 5 year old subjects (1.9) and was 3.5 and 3.9 at 12 and 15 years of age respectively. It was 5.9 in 35-44 year old subjects.

- A frequency distribution of the treatment need by type of need showed that the most commonly occurring need was for one-or-more-surface fillings followed by extractions and pulp care. There was a high, unspecified need for treatment across age groups.

- There were no marked rural and urban or gender related differentials. The pattern of need was similar in between regions.

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 periodontal attachment was also measured to provide an indication of the status of periodontal health.

- The prevalence of periodontal disease in the state ranged from about 65.1 per cent in 12 year olds to 93.4 per cent in 35-44 year old subjects. It was lowest in the highest age group of 65-74 years (55.9 per cent), possibly because of high edentulousness (partial or full).
- In subjects with periodontal disease, the two most prevalent conditions were bleeding and calculus. In the 12 and 15 years age-groups, bleeding was more prevalent compared to calculus. But in 35-44 and 65-74 year old subjects, the prevalence of calculus was higher than bleeding. Pockets (shallow and deep) were detected in the age groups of 35-44 and 65-74 years and their prevalence was high (about 40 per cent in 35-44 year olds and about 47 per cent in 65-74 year olds respectively). The majority of subjects with pockets had deep pockets in 65-74 year old subjects while shallow pockets were more prevalent in the age group of 35-44 years.
- The mean number of sextants with periodontal disease, i.e., sextants with bleeding, calculus and/ or pockets was highest in 35-44 year old subjects (4.6). The mean number of teeth with calculus was generally higher than with pockets and bleeding in the higher age groups. While gingival bleeding was a more prevalent condition in the lower age groups, accumulated calculus became an increasingly high problem as age advanced.
- The pattern was similar for rural and urban areas and there were no marked gender related or regional differentials. .

9.4 Loss of attachment

- Overall, the prevalence of loss of periodontal attachment in one or more sextants was highest in 65-74 years in the state. The least severe form of loss of attachment (4-5 mm), followed by the more severe form of 6-8 mm, was the most prevalent across age groups and place of residence.
- 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.

9.5 Malocclusion

- The Dental Aesthetic Index (DAI), recommended by the WHO, was used to analyze the severity of malocclusion in the surveyed population.
- Surprisingly, no malocclusion was either recorded or reported in the state in subjects 12 and 15 years of age. Malocclusion was reported in 6.4 per cent subjects in 35-44 year olds.

9.6 Fluorosis

- Chandigarh reported a very high prevalence of fluorosis. It was 15.6, 29.5, 39.4, 52 and 48.6 per cent for 5, 12, 15, 35-44 and 65-74 year old subjects, respectively.

- However, only 11.2 and 8 per cent subjects aged 35-44 and 65-74 years respectively, of those affected had 'very mild' or 'mild' type of fluorosis.
- The rest of those affected had 'questionable' fluorosis. 'Moderate' or 'severe' fluorosis was virtually absent.

9.7 Other lesions

9.7.1 Extra oral lesions

- The extra oral lesions were prevalent in all age groups: 13 per cent in 12 year old subjects; 20 per cent in 15 year old subjects; 58 per cent in 35-44 year old subjects; and 61 per cent in 65-74 year old subjects.
- The majority of the lesions recorded were ulcerations, sores, erosions, and fissures in the head, neck, or limbs region.
- There were no marked gender based or rural and urban related differentials.

9.7.2 T M joint symptoms and signs

- Overall, TM Joint symptoms and signs were virtually absent in the lower age groups of 5, 12 and 15 years. However, the prevalence of both TM Joint symptoms and signs was unusually high in the higher age groups of 35-44 and 65-74 years. about 18.6 to 19.1 per cent subjects (35-44 years) reportedly had TM Joint signs or symptoms while these figures were 25.3 to 26.5 for subjects in the age group of 65-74 years.
- The signs present were clicking and tenderness, in that order of prevalence.These were prevalent more in urban residents and more in females.

9.7.3 Oral cancer & oral mucosal lesions

- Oral cancer was reported in the state in 6 subjects, equally distributed by gender, in the age groups of 15, 35-44 and 65-74 year age-groups. The subjects were from urban areas. The lesions were located in the mouth on the commissures, vermillion border and tongue. Lichen planus and leukoplakia were the pre-cancerous lesions which were prevalent. Ulcerations and abscesses were more common.

9.7.4 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 2 per cent (35-44 years) to a maximum of 11.5 per cent (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.

9.8 Prosthetic status and need

- The per cent subjects wearing prostheses in the age group 65-74 years was high (64.3 per cent). The full denture prosthesis was the most prevalent amongst subjects wearing prostheses, followed by a much lower prevalence of partial dentures. In contrast only 7.4 per cent subjects were wearing any prostheses in the age group of 35-44 years.
- The bridges were the least prevalent in 65-74 years but most prevalent in the younger age group of 35-44 years. More female subjects compared to male subjects were wearing prostheses in the higher age group of 65-74yrs.
- There was a higher need for prostheses as the age advanced. In the highest age group of 65-74 years. The need for full prostheses was most prevalent. 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.
- The percentage subjects wearing full mouth removable dentures was as high as 47.8 in 65-74 year old subjects. The percentage subjects who needed full mouth removable dentures was 16.2.

9.9 Community need for immediate Care and Referrals

No conditions were recorded in the state under life threatening, painful, infective or other conditions.

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

	Findings	Age in years				
		5	12	15	35-44	65-74
1.	**Oral disease conditions**					
1.1	Dental Caries					
	% Prevalence	85.4	93.4	96.5	97.5	99.7
	Mean DMFT	2.3	4.5	5.0	9.5	22.8
	SiC Index	3.7	7.0	7.6	12.8	32.0
1.2	Periodontal disease					
	Bleeding, calculus or pockets					
	% Prevalence	13.5	65.1	74.8	93.4	55.9
	Mean no of Sextants affected	0.0	2.4	2.8	4.6	2.6
1.3	Loss of attachment					
	% Prevalence	NA	NA	2.8	4.6	2.6
	Mean no of Sextants affected	NA	NA	0.0	0.2	0.4
1.4	Malocclusion (%)	0.0	0.0	0.6	6.4	74.4
1.5	Dental Fluorosis (%)	15.6	29.5	39.4	52.0	48.6
1.6	Oral mucosal conditions (Nos.)	0.0	18	61	158	168
1.7	Oral Cancer (Nos.)	0	0	1	2	3
1.8	Edentulousness (%)	NA	NA	0.0	0.0	16.1
2	**Oral Health Practices**					
2.1	Sugar Intake in last 24 hours					
	Once	0.3	0.6	1.2	7.9	17.5
	Two & more times	99.7	99.4	98.8	89.1	21.4
2.2	Clean teeth with					
	Tooth Brush	99.4	99.4	99.1	99.1	47.1
	Fingers	0.6	0.7	0.9	0.9	4.0
2.3	Rinsing mouth					
	Always	0.0	0.5	1.8	18.4	36.4
	Sometimes	40.1	55.6	78.2	76.8	60.1
2.4	Tobacco smoking	NA	NA	NA	21.5	17.5
2.5	Frequency of tobacco smoking					
	Less than 10 times	NA	NA	NA	98.8	88.7
	10 or more times	NA	NA	NA	1.2	11.4

CHAPTER I

INTRODUCTION

1.1 BACKGROUND OF THE STATE

1.1.1 Geographical location

Chandigarh is a India's youngest city. It was planned by the famous French architect Le Corbusier. It is a capital of the States of Punjab and Haryana. But it does not belong to either of them. It is a Union-Territory. This means that the city is under the administration of the Government of India and not constituted as a state and it does not own legislative assembly. It had a total area of 114.00 sq.km. In 1971, rural and urban area of Chandigarh had almost an equal area i.e. 56.40 sq.km. and 57.60 sq.km. respectively. But with rapid urbanization, Chandigarh is over whelmingly urban now.

1.1.2 Population and demographic profile

The population of Chandigarh (U.T.) has increased manifold. The landscape of Chandigarh, which has been described as a futurist poem is under heavy stress. Despite the "Periphery Control Act" and **Lal dora** (settlement boundary) which envisaged a control over the spread of the city and villages, beyond a stipulated boundary, the unplanned expansion of rural areas is taking place. Large number of unauthorized labour colonies (mostly slums) have come up in the peripheral area of the city. The total population of Chandigarh has crossed nine lakhs, which is beyond its absorbing, supporting and sustaining capacity.

After the Chandigarh U.T. came into existence, the growth of population during 1951-61 was too high which was +394.13%. 1961-71 was the peak time when people from other states wanted to settle down in Chandigarh keeping in view its excellent urban planning, large open spaces, very good quality civic amenities, better educational and medical facilities etc. The growth of population was 114.59% during 1961-71. But the rate of growth came down to 75.55% in 1971-81 and further dropped to 42.16% during 1981-91. This trend continued during 1991-2001 also and the growth of population was 40.33%. The main reason for such a high growth rate of population is migration of all kinds of people for enjoying better quality of life, employment opportunities, medical and educational facilities, from the adjoining states.

There has been down ward trend in the sex ratio from the very beginning till 1951. The decades 1961-71 & 1971-81 have registered a marked improvement in the sex ratio 749 and 769 respectively. The sex ratio has further improved in 1991 Census at 790. But in the recent Census the trend of sex ratio has gone down to 773. When compared the sex ratio of Chandigarh with India, it is seen that in 2001 Census, India's sex ratio has gained 6 points as compared to 1991 from 927 to 933. The decline in Chandigarh's sex ratio can be more attributed to the influx of migrant predominantly males.

The crude birth rate in 2002 was 14.6 (21.5 in rural & 13.8 in urban)in Chandigarh (U.T.). The crude death rate & infant mortality were 3.4 (4.1 in rural & 3.4 in urban) & 25 (30 in rural & 24 in urban) respectively during the same year 2002.

1.1.3 Composition of population

Since Chandigarh is mainly urbanized & inhabited by large number of migrants & 71 (i.e. 15-59 years old) mostly young, the population of the city is mostly comprised of young. About 31 per cent of population is aged 0-14 years old. While 5.4 per cent is aged 60+. Sex ratio is 773 compared to 933 in the country.

The total dependency ratio was 572 i.e. more earners than dependents, in 1991. Hindus formed 76 per cent of the total population in 1991, Sikhs 20 per cent & Muslims, Christian only 4 per cent.

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 per cent of children and 95-100 per cent adult population suffer from periodontal disease at a point in time. About 35 per cent 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 per cent of body cancers are oral cancers. That is, incidence of simple oral morbidity becomes chronic and ultimately life-threatening. One needs not only to take preventive measures, but early curative steps as well. It is unfortunate that oral health has received much less attention perhaps because of its lower life threatening risk. Its role in quality of life, now, has been recognized and thus all efforts should be afoot to improve oral health of the people.

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

1.2.2 Lack of data for policies and manpower development

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

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

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

1.3 INITIATIVE OF THE DENTAL COUNCIL OF INDIA

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

1.4 NATIONAL ORAL HEALTH SURVEY

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

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

1.4.1 Support of Government of India

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

1.4.2 Support from Colgate India/ International

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

1.4.3 Support of individuals and dental colleges in India

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

for their support and participation. As expected, almost all resource persons and Deans/ Principals of Dental Colleges readily agreed with his request and expressed willingness to participate in this national endeavor.

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

1.5 SCOPE OF THE SURVEY

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

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

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

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

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

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

1.6 OBJECTIVES

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

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

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

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

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

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

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

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

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

1.7 CHAPTERIZATION PLAN

The report is comprised of the following main chapters:

0 Executive Summary

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

CHAPTER II

METHODOLOGY AND DATA COLLECTION

2.1 BASIC CONSIDERATIONS IN DESIGNING THE SURVEY

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

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

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

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

2.2 SAMPLE DESIGN

2.2.1 Sample size

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

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

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

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

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

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

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

2.2.2 Selection of sample

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

2.2.2.1 Rural sample

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

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

2.2.2.2 Urban sample

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

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

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

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

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

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

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

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

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

2.3 STUDY TOOLS

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

2.3.1 Oral health assessment form

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

2.3.2 Questionnaire on oral health knowledge and practices

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

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

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

2.4 DATA COLLECTION

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

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

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

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

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

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

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

2.5 CALIBRATION AND TRAINING

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

2.6 CLINICAL ASSESSMENT AND CONSIDERATIONS

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

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

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

1. Mouth Mirrors, Tweezers, Curved double ended probes and WHO CPI ball ended probes.

2. Supplies of cotton rolls, masks and gloves, cold sterilizing solution, alcohol or spirit, instrument trays and chittle forceps. The cold sterilizing solution was used in field conditions for the instruments although the sets of instruments were previously boiled for 20-30 minutes.

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

4. Torches and batteries.

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

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

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

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

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

1. Summary of Findings

2. Dental Caries Status and Treatment Need

3. Periodontal Disease Status

4. Malocclusion Status
5. Oral Cancers and other Oral Mucosal Lesions
6. Status of Dental Fluorosis
7. Other conditions:

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

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

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

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

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

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

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

2.7 FLUORIDE ESTIMATION IN DRINKING WATER SAMPLES

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

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

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

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

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

The following modules were used to assemble the fluoride analyser:

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

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

2.8 FIELD WORK EXPERIENCES

2.8.1 Pre-fieldwork activity

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

It may be noted that the Union Territory of Chandigarh has been considered as a single region and since it is predominantly urban, two-thirds of the sample was from urban areas and the rest from rural areas.

2.8.2 Identification and training the field teams

Three teams were formed, each consisting of two dentists and one social scientist. The dentists were taken from the dental faculty of the Regional Dental College. The Social scientists were taken from the faculty of social sciences of the university. **Annexure - 6**

After the rainy season, in the month of July, extensive training was given to the field teams. They were explained the questionnaire and logistics of the field work. In order to make sure that these dentists follow the standardized methods of assessing and recording the dental problems as decided in the the Manipal training, the dentists were taken to the OPD of the Regional Dental College. They were given a thorough training on clinical examinations and on assessment of the dental problems.

2.8.3 Fieldwork

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

Despite the extensive training, both in the class and in the field, the teams faced several initial problems. The supervisors who were accompanying the teams helped them to overcome those problems. Very soon the teams acquired the required confidence and the field work became smooth operation.

The supervisors were very alert to make sure that data was complete and consistent. They made sure that all the forms were scrutinized and corrected before they were submitted to the coordinator.

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

2.9 SCRUTINY OF DATA

As stated earlier, all efforts were made to ensure that quality of data was good. A senior level person was moving with the teams to guide them in case of any doubts. He/ she was also responsible for scrutiny of the 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 SURVEYED POPULATION

3.1 CHARACTERISTICS OF HOUSEHOLDS

The characteristics of the surveyed households shown in Table 3.1, reveal that 93 per cent of household (96 per cent in urban & 65 per cent in rural) live in pucca houses. Another 7 per cent, (4 per cent in urban & 32 per cent in rural) live in Semi pucca houses.

Table 3.1 Percent distribution of the households by characteristics and geographical area.

STATE : Chandigarh

	Household Charactersties		STATE		
			R	U	T
1	**Type of household**	n=	**156**	**298**	**454**
	Kuccha		3.2	0.3	0.6
	Semi Pucca		32.1	3.7	6.8
	Pucca		64.7	96.0	92.6
2	**Monthly expenditure (in Rs.)**				
	<= 2500		1.3	12.1	10.9
	2,501 - 5,500		13.5	3.0	4.2
	5,501 - 10,000		58.3	33.6	36.3
	10,000 +		26.9	51.3	48.7
3	**Religon**				
	Hindus		62.2	80.2	78.2
	Muslims		5.1	2.0	2.4
	Sikhs		30.1	15.4	17.0
	Christians		1.9	1.0	1.1
4	**Caste**				
	Scheduled Caste		0.0	1.0	0.9
	Scheduled Tribe		0.0	0.0	0.0
	Other Backward Classes		0.6	0.0	0.1
	Others		99.4	99.0	99.0
5	**Sources of drinking water**				
	Pipe/tap		100.0	100.0	100.0
	Tubewell/handpump		0.0	0.0	0.0
	Others		0.0	0.0	0.0
6	**Staple food**				
	Wheat		99.4	100.0	99.9
	Rice		0.6	0.0	0.1
7	**Nature of food**				
	Vegetarian		55.8	29.2	32.1
	Non-vegetarian		44.2	70.8	67.9

This scenario may be because of Chandigarh a newly built city & inhabited mostly by economically well off people.

The monthly expenditure was taken as proxy of income of people in this survey. About 11 per cent of the households mostly in urban, had monthly expenditure of Rs 2500/-& below. Other 36 per cent of respondents (58 per cent in urban & 34 per cent in rural) had monthly expenditure of Rs 5501-10,000 while another 49 per cent (51 per cent in urban & 27 per cent in rural) were spending Rs 10,000 & above per month.

About 78 per cent of households, more in urban was of Hindus, followed by 17 per cent more in rural was of Sikh. The rest were of Muslim & Christian.

Almost all belonged to others than Schedule Caste, Schedule Tribes and OBC Castes. Almost all household in Chandigarh were getting piped/tap water for drinking. Wheat was staple food of almost all. As regard nature of food 68 per cent, (71 per cent in urban & 44 per cent in rural) were vegetarian.

CHARACTERISTICS OF HOUSEHOLD (SUMMING UP)

(1) 93 per cent of households (96 per cent in urban & 65 per cent in rural) live in pucca houses.

(2) 36 per cent (58 per cent in urban & 34 per cent in rural) reported spending Rs 5501-10,000 per month & another 49 per cent (51 per cent in urban & 27 per cent in rural) had monthly expenditure of Rs. 10,000 & above.

(3) 78 per cent of population, more in urban was Hindus followed by other 17 per cent Sikh, more of them living in rural areas.

(4) Almost all respondents belongs to other than Schedule Castes, Schedule Tribes & Backward Classes.

(5) Almost all households were getting piped/tap water for drinking.

(6) Wheat is the staple food of almost all & 68 per cent of them take vegetarian food.

3.2 PROFILE OF POPULATION

3.2.2 12 year olds

3.2.2.1 Educational level

There were none in this age group illiterate. Almost all irrespective of their sex & places of residence, had education up to middle. Table 3.2.2

3.2.3 15 year olds

3.2.3.1 Educational level

About 99 per cent, across both sexes & more in urban, were high school & above.

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

AGE: 12 yrs STATE : Chandigarh

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	Illiterate		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Upto middle		98.2	100.0	99.8	98.0	100.0	99.8	**99.8**
	High school & above		1.8	0.0	0.2	2.0	0.0	0.2	**0.2**
2	**Newspaper reading habits**				NOT ASKED				
3	**Radio listening habits**				NOT ASKED				
4	**TV watching habits**				NOT ASKED				
	Daily								
	Sometimes								
	Not at all								
5	**Cinema watching habits**				NOT ASKED				
	Once in 3 months								
	Less often								
	Not at all								

3.2.3.2 Exposure to media

52 per cent of respondents in this age, more females than males (58 per cent in urban & 4 per cent in rural) reported reading newspaper daily. Only 16 per cent, more males than females, (82 per cent in rural & 8 per cent in urban) did not read newspaper at all. The rest of respondents, across both sexes & more in urban, reported reading newspaper sometimes.

53 per cent, across both sexes & more in rural did not listen to radio at all. Only about 8 per cent, (9 per cent females & 6 per cent males) reported listening to radio daily. The rest across both sexes & more in urban were listening to radio sometimes in the union territory.

TV & Cinema were more popular media than news paper reading and radio. 86 per cent of respondents, 89 per cent males & 83 per cent females, 90 per cent in urban & 51 per cent in rural, were watching TV daily. Only 4 per cent, across both sexes & more in rural reported not watching TV at all. The remaining 10 per cent, more females & more in rural had watched TV sometimes.

36 per cent, more females & more in urban reported the habit of watching cinema once in three months. Whereas 50 per cent, more males & more in urban had watched cinema less often. Other 14 per cent more males & more in rural did not watch cinema at all. This may likely because of more cinema houses in the urban area. Table 3.2.3

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

AGE: 15 yrs STATE : Chandigarh

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**50**	**107**	**157**	**56**	**101**	**157**	**314**
	Illiterate		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Upto middle		4.0	0.0	0.4	1.8	2.0	2.0	**1.2**
	High school & above		96.0	100.0	99.6	98.2	98.0	98.0	**98.8**
2	**Newspaper reading habits**								
	Daily		2.0	56.1	50.7	5.4	59.4	53.2	**52.0**
	Sometimes		12.0	34.6	32.3	16.1	34.7	32.5	**32.4**
	Not at all		86.0	9.3	16.9	78.6	5.9	14.3	**15.6**
3	**Radio listening habits**								
	Daily		4.0	6.5	6.3	5.4	9.9	9.4	**7.9**
	Sometimes		26.0	41.1	39.6	21.4	40.6	38.4	**39.0**
	Not at all		70.0	52.3	54.1	73.2	49.5	52.2	**53.2**
4	**TV watching habits**								
	Daily		44.0	94.4	89.4	57.1	86.1	82.8	**86.1**
	Sometimes		34.0	3.7	6.7	17.9	11.9	12.6	**9.7**
	Not at all		22.0	1.9	3.9	25.0	2.0	4.6	**4.3**
5	**Cinema watching habits**								
	Once in 3 months		16.0	33.6	31.9	25.0	42.6	40.6	**36.3**
	Less often		24.0	55.1	52.1	26.8	50.5	47.8	**50.0**
	Not at all		60.0	11.2	16.0	48.2	6.9	11.7	**13.9**

3.2.4 35-44 year olds

3.2.4.1 Educational level

Almost all respondents, across both sexes & places of residence, had education up to Middle and above. There were more up to Middle in rural while were more High school & above in the urban areas. Table 3.2.4

3.2.4.2 Exposure to media

Only 12 per cent of respondents in this age group, across both sexes & more in rural, did not read newspaper at all. Whereas 76 per cent, across both sexes & more in urban, reported reading newspaper daily. The remaining 13 per cent, more females & more in rural, had read newspaper sometimes in the Union Territory.

Like in the previous age group, there were small per cent (7 per cent) reported listening to radio daily. 41 per cent of respondents, more females & more in rural did not listen to radio at all. The remaining 52 per cent, more males & more in urban had listened to radio sometimes.

6 per cent of respondents, more in rural, did not watch TV at all. While 86 per cent more females & more in urban had watched TV daily.

About 15 per cent, more females & more in rural did not watch cinema at all. This may be because of most of cinema houses located in urban areas. 27 per cent, more females & more in urban had watched cinema once in 3 months. While 58 per cent, more males & more in urban had watched cinema less often in the Union Territory.

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

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

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	Illiterate		1.9	0.0	0.2	0.0	1.0	0.9	**0.6**
	Upto middle		55.6	6.7	12.0	67.9	5.9	13.1	**12.6**
	High school & above		42.6	93.3	87.8	32.1	93.1	86.1	**87.0**
2	**Newspaper reading habits**								
	Daily		14.8	84.6	77.0	3.6	83.2	74.0	**75.5**
	Sometimes		31.5	8.7	11.1	30.4	11.9	14.0	**12.6**
	Not at all		53.7	6.7	11.8	66.1	5.0	12.0	**11.9**
3	**Radio listening habits**								
	Daily		5.6	8.7	8.3	5.4	5.0	5.0	**6.7**
	Sometimes		46.3	55.8	54.7	44.6	50.5	49.8	**52.3**
	Not at all		48.1	35.6	36.9	50.0	44.6	45.2	**41.1**
4	**TV watching habits**								
	Daily		46.3	87.5	83.0	53.6	93.1	88.5	**85.8**
	Sometimes		37.0	9.6	12.6	19.6	3.0	4.9	**8.8**
	Not at all		16.7	2.9	4.4	26.8	4.0	6.6	**5.5**
5	**Cinema watching habits**								
	Once in 3 months		22.2	23.1	23.0	17.9	32.7	31.0	**27.0**
	Less often		25.9	70.2	65.4	17.9	55.4	51.1	**58.3**
	Not at all		51.9	6.7	11.6	64.3	11.9	17.9	**14.8**

3.2.5 65-74 year olds

3.2.5.1 Educational level

15 per cent of respondents, in this age group, across both sexes & more in rural were illiterate. While 82 per cent, across both sexes & more in urban were high school & above. Only 3 per cent, more males & more in rural had education up to Middle, in the Union Territory. Table 3.2.5

3.2.5.2 Exposure to Media

18 per cent, across both sexes & more in rural, did not read news paper at all. Other 66 per cent more males & more in urban reported reading newspaper daily. The remaining more females & more in urban, were reading newspaper sometimes.

About 8 per cent of respondents in this age group, more males & more in urban reported listening to radio daily. Other 35 per cent, across both sexes & more in rural did not listen to radio at all. The remaining 57 per cent, across both sexes & more in urban had listened to radio sometimes.

Only 8 per cent, across both sexes & more in rural, did not watch TV at all. About 80 per cent, across both sexes & more in urban were watching TV daily.

As regard watching of cinema habit, 38 per cent across both sexes & more in rural did not watch cinema at all. Only 10 per cent, more females & more in urban reported watching cinema once in 3 months. The remaining 52 per cent across both sexes & more in urban had watched cinema less often.

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

AGE: 65-74 yrs STATE : Chandigarh

	Education Level & Media Exposure		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Educational level**	n=	53	104	157	52	105	157	314
	Illiterate		69.8	7.7	14.3	86.5	7.6	15.8	15.1
	Upto middle		15.1	2.9	4.2	7.7	1.0	1.7	3.0
	High school & above		15.1	89.4	81.5	5.8	91.4	82.5	82.0
2	**Newspaper reading habits**								
	Daily		7.5	80.8	73.0	1.9	64.8	58.2	65.6
	Sometimes		1.9	9.6	8.8	1.9	26.7	24.1	16.5
	Not at all		90.6	9.6	18.3	96.2	8.6	17.7	18.0
3	**Radio listening habits**								
	Daily		5.7	10.6	10.1	0.0	7.6	6.8	8.5
	Sometimes		28.3	59.6	56.3	23.1	61.0	57.0	56.7
	Not at all		66.0	29.8	33.7	76.9	31.4	36.2	35.0
4	**TV watching habits**								
	Daily		26.4	87.5	81.0	26.9	84.8	78.7	79.9
	Sometimes		28.3	8.7	10.8	38.5	10.5	13.4	12.1
	Not at all		45.3	3.8	8.3	34.6	4.8	7.9	8.1
5	**Cinema watching habits**								
	Once in 3 months		1.9	9.6	8.8	0.0	12.4	11.1	10.0
	Less often		7.5	57.7	52.3	0.0	57.1	51.2	51.8
	Not at all		90.6	32.7	38.9	100.0	30.5	37.7	38.3

PROFILE OF SURVEYED POPULATION ACROSS AGE GROUPS (SUMMING UP)

(i) Except 15 per cent in 65-74 age group, there was either none or about 1-2 per cent illiterate in the younger ages/age group.

(ii) More than 50 per cent in each age group, more males & more in urban, reported reading newspaper daily.

(iii) 8 per cent across age groups reported listening to radio daily.

(iv) 80 per cent across age groups, more in urban reported watching TV daily.

(v) There were more females aged 15 & 35-44 years & more in urban, had watched 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 specially 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 Chandigarh are shown in Table 4.1.

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

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

Water in Chandigarh has very low levels of fluoride – almost 100 per cent households use water with ppm levels between 0.0-0.5.

Fig. 4.1 Drinking water levels of fluoride in Chandigarh

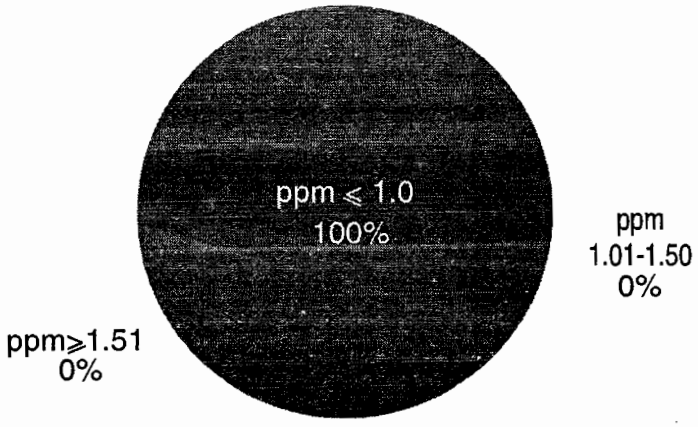
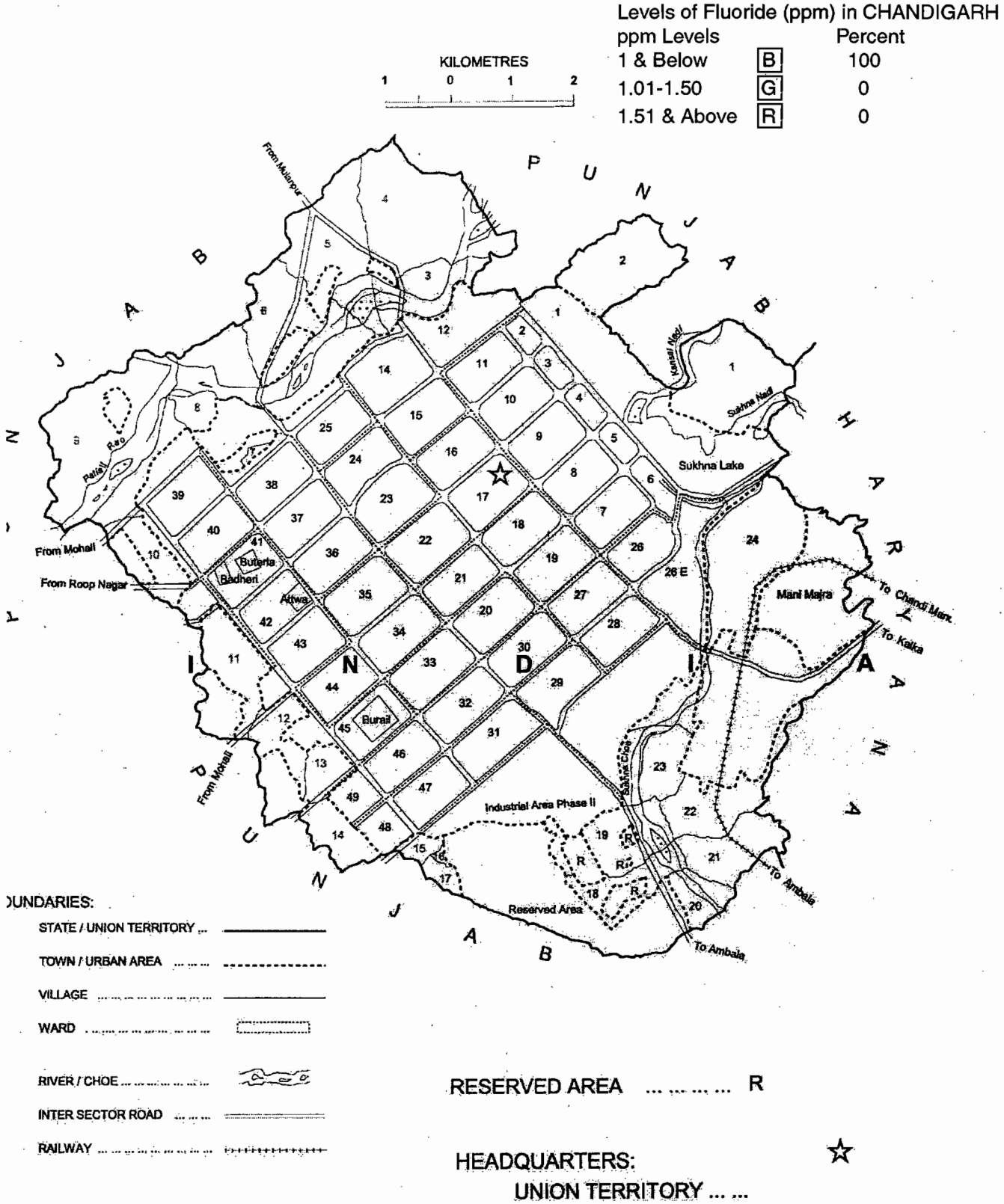


Fig. 4.2 Drinking water levels of Fluoride (ppm) in CHANDIGARH, INDIA



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, from respondents of different ages /age groups, sex & places of residence across state & regions. The responses to each of these questions are discussed in this chapter. The findings are likely to provide information on oral risk practices which may likely be used for initiating educational activities for bringing improvement in oral health conditions of the people.

5.1 ABNORMAL ORAL HEALTH HABITS

Five questions on abnormal habits such as "breathing from mouth", "sucking or biting fingers/ thumbs", "thrusting tongue on teeth", "biting nails, lips or object like pencils" and ""grinding/ gritting teeth" were asked from each respondent. (Incase of 5 years old respondents, these questions were asked on his/her behalf from his/her care taker)

The responses as obtained from 5, 12, 15, 35-44 & 65-74 year olds, are presented in Table 5.1 and discussed as below:

(i) 5 year olds

There were 16 per cent of children, 21% males & 12 per cent females, 14 per cent in urban & 36 per cent in rural, had the habit of "sucking fingers/thumbs". This followed by other 3 per cent, more males & more in rural having the habit of "biting nails/lips/object like pencils". Another 7 per cent of children, all in rural areas, reported the habit of "grinding/gritting teeth".

(ii) 12 year olds

There were 6 per cent of respondents of this age, more males & mainly in rural had the habit of "sucking fingers/thumbs". Other 6 per cent of them, across both sexes & mainly in rural, reported the habit of "biting nails/lips/object like pencils". Another 8 per cent more females & all in rural, had the habit of "grinding/gritting teeth, in the Union Territory.

(iii) 15 year olds

Except the habit of "biting nails/lips/object like pencil" in 6 per cent respondents, more males & more in rural and "grinding/gritting teeth" in 9 per cent, mostly males & all in rural, the prevalence of each of other habits was either negligible or zero.

Table 5.1 Percent Males and Females in different Regions / State by habits affecting Oral Health

AGE: 5 yrs — STATE : Chandigarh

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	55	102	157	52	106	158	315
1	Breathing from mouth		0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Sucking fingers/thumb		41.8	18.6	21.2	30.8	9.4	11.6	16.4
3	Thrusting tongue on teeth		0.0	0.0	0.0	1.9	0.0	0.2	0.1
4	Biting nails/lips/objects like pencil		21.8	2.0	4.2	5.8	0.9	1.4	2.8
5	Grinding / gritting teeth		7.3	0.0	0.8	5.8	0.9	1.4	1.1

AGE: 12 yrs — STATE : Chandigarh

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	56	103	159	51	106	157	316
1	Breathing from mouth		0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Sucking fingers/thumb		10.7	10.7	10.7	7.8	0.0	0.8	5.8
3	Thrusting tongue on teeth		0.0	0.0	0.0	0.0	1.9	1.7	0.9
4	Biting nails/lips/objects like pencil		23.2	2.9	5.2	17.6	4.7	6.0	5.6
5	Grinding / gritting teeth		3.6	1.0	1.3	11.8	0.0	1.2	1.3

AGE: 15 yrs — STATE : Chandigarh

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	50	107	157	56	101	157	314
1	Breathing from mouth		0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	1.9	1.7	1.8	0.0	0.2	1.0
4	Biting nails/lips/objects like pencil		12.0	7.5	7.9	5.4	4.0	4.1	6.0
5	Grinding / gritting teeth		12.0	0.9	2.0	5.4	0.0	0.6	1.3

AGE: 35-44 yrs — STATE : Chandigarh

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	54	104	158	56	101	157	315
1	Breathing from mouth		0.0	0.0	0.0	0.0	0.0	0.0	0.0
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		9.3	1.0	1.9	5.4	2.0	2.4	2.2
5	Grinding / gritting teeth		14.8	1.0	2.5	1.8	2.0	2.0	2.3

AGE: 65-74 yrs — STATE : Chandigarh

	Habits affecting Oral Health		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	53	104	157	52	105	157	314
1	Breathing from mouth		0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Sucking fingers/thumb		0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Thrusting tongue on teeth		3.8	1.0	1.3	1.9	0.0	0.2	0.8
4	Biting nails/lips/objects like pencil		0.0	0.0	0.0	1.9	0.0	0.2	0.1
5	Grinding / gritting teeth		9.4	2.9	3.6	1.9	1.0	1.1	2.4

(iv) 35-44 year olds

Except the habits of "biting nails/lips/objects like pencils" & "grinding/gritting teeth" in 7 percents & 8 percents of subjects, mostly males, living in rural areas, the occurrence of other abnormal" habits in this group of respondents were either negligible or zero.

(v) 65-74 year olds

Except the habit of "grinding/gritting teeth" in 2.4 per cent, across both sexes & mainly in rural, the occurrence of each of remaining habit was either negligible or zero in this group of respondents in the Union Territory.

ABNORMAL ORAL HEALTH HABITS ACROSS AGE GROUPS (SUMMING UP)

A small per cent of children aged 5 & 12 years olds had the habits of "sucking fingers/thumbs" & "biting nails/lips/object like pencils". While a small per cent of respondents aged (35-44) & (65-74) years old reported the habit of "grinding/gritting teeth" While none of respondent from either of age or age group, reported the habit of "breathing from mouth" & "thrusting tongue on teeth".

5.2 SWEET/SUGAR-TAKING HABITS

Since sweet/sugar taking habits affect oral health, the respondents belonging to ages 5, 12, 15, 35-44 & 65-74 years, both sexes by places of residence were asked about their pattern of sugar intake in last one day. The responses obtained from each group of resondents are presented in Table 5.2 and Fig. 5.1 and are discussed below.

(i) 5, 12 & 15 year olds

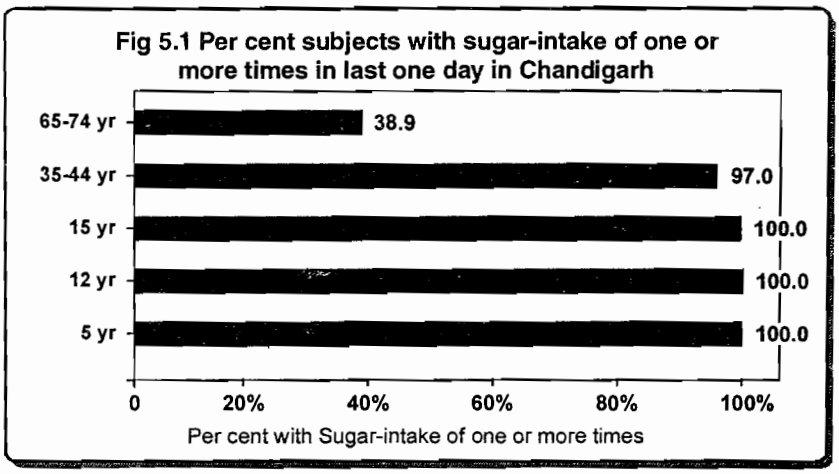
Almost all respondents in these age groups irrespective of their sex & places of residence reported taking sugar two or more times in last one day.

(ii) 35-44 year olds

Only 3 per cent, of this age grouop, more females & more in rural, did not take sugar in last one day. Other 8 per cent more females & more in rural reported taken sugar one time in last one day. The remaining 89 per cent, more males & more in urban had taken sugar two & more times, in last one day.

(iii) 65-74 year olds

It is surprising to find that 61 per cent, of this age group, more females & more in urban did not take sugar at all in last one day. Other 34 per cent, across both sexes & more in rural took sugar one to two times in last one day. The rest about 5 per cent, across both sexes & more in urban reported taken sugar two & more times in last one day.



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

About 90-100 .per cent of respondents aged 5, 12, 15 & 35-44 year olds & surprisingly only 5 percent of 65-74 year olds irrespective of their sex & places of residence had taken sugar two or more times in last one day.

There were 61 per cent of 65-74 year olds, respondents did not take sugar at all in last one day.

Table 5.2 Percent distribution of Males and Females in different Regions / State by Pattern of Sugar intake

AGE: 5 yrs **STATE : Chandigarh**

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	55	102	157	52	106	158	315
1	Not taken		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	Taken one time		3.6	0.0	0.4	3.8	0.0	0.4	**0.4**
3	Taken two times		50.9	46.1	46.6	48.1	40.6	41.3	**44.0**
4	Taken 2+ times		45.5	53.9	53.0	48.1	59.4	58.3	**55.7**

AGE: 12 yrs **STATE : Chandigarh**

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	56	103	159	51	106	157	316
1	Not taken		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	Taken one time		8.9	0.0	1.0	2.0	0.0	0.2	**0.6**
3	Taken two times		46.4	55.3	54.3	33.3	46.2	44.9	**49.6**
4	Taken 2+ times		44.6	44.7	44.7	64.7	53.8	54.9	**49.8**

AGE: 15 yrs **STATE : Chandigarh**

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	50	107	157	56	101	157	314
1	Not taken		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	Taken one time		2.0	0.0	0.2	10.7	1.0	2.1	**1.2**
3	Taken two times		58.0	53.3	53.7	53.6	46.5	47.3	**50.5**
4	Taken 2+ times		40.0	46.7	46.1	35.7	52.5	50.5	**48.3**

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

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	54	104	158	56	101	157	315
1	Not taken		7.4	1.0	1.7	25.0	2.0	4.6	**3.2**
2	Taken one time		24.1	3.8	6.0	23.2	7.9	9.7	**7.9**
3	Taken two times		53.7	59.6	59.0	46.4	61.4	59.7	**59.4**
4	Taken 2+ times		14.8	35.6	33.3	5.4	28.7	26.0	**29.7**

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

	Pattern of Sugar Intake in last one day		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
		n=	53	104	157	52	105	157	314
1	Not taken		52.8	58.7	58.0	59.6	64.8	64.2	**61.1**
2	Taken one time		22.6	18.3	18.7	25.0	15.2	16.3	**17.5**
3	Taken two times		22.6	18.3	18.7	13.5	15.2	15.1	**16.9**
4	Taken 2+ times		1.9	4.8	4.5	1.9	4.8	4.5	**4.5**

5.3 ORAL HYGIENE PRACTICES

A series of questions were asked about oral hygiene practices covering aspects like how teeth are cleaned, what material used to clean, whether it is fluoridated, how often teeth are cleaned and how often mouth is rinsed after meals. The responses as obtained from respondents belonging to ages/age groups 5, 12, 15, 35-44 & 65-74 years are presented in Tables 5.3.1 to 5.3.5 and Fig. 5.2 & discussed as below:

5.3.1 5 year olds

Almost all of this age group, irrespective of sex & places of residence, reported the use of tooth brush to clean teeth.

42 per cent, across both sexes & significantly more in rural, had cleaned teeth once a day. Other about 58 per cent, across both sexes & more in urban, had cleaned teeth twice a day & after every meal.

As regard change of tooth brushes, 42 per cent, more males & more in urban reported change of tooth brushes once in 1-3 months. While another 55 per cent, more males & more in rural, had changed tooth brushes once in 4-6 months. The remaining only 3 per cent, mostly in rural, reported changing tooth brushes once after six months of use.

Almost all, across both sexes & more in urban reported the use of tooth pastes and that fluoridated type. None of the respondent of this age reported rinsed always. While 40 per cent, more females & more in urban had rinsed mouth sometimes in the Union Territory. (Table 5.3.1).

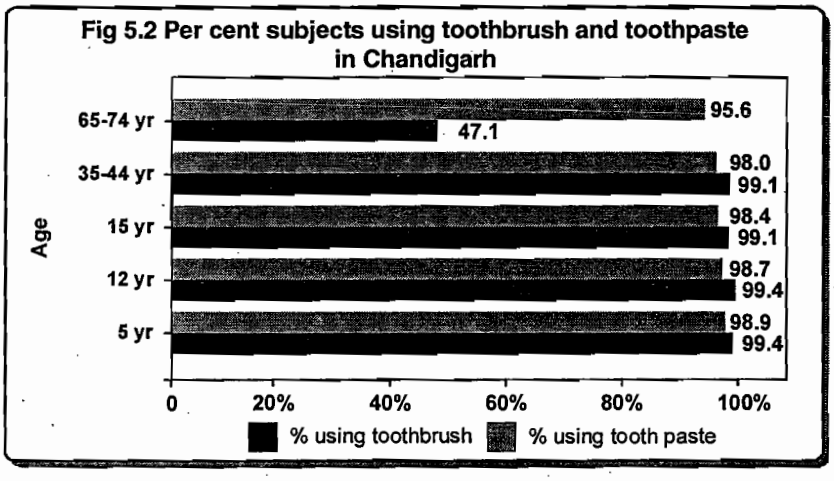


Table 5. 3. 1 Percent 5 year olds by oral hygiene practices, sex & geographical area.

AGE: 5 yrs **STATE : Chandigarh**

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**55**	**102**	157	**52**	**106**	**158**	**315**
	finger		1.8	0.0	0.2	1.9	0.9	1.0	**0.6**
	brush		98.2	100.0	99.8	98.1	99.1	99.0	**99.4**
	datun		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Frequency of cleaning teeth**	n=	**55**	**102**	**157**	**52**	**106**	**158**	**315**
	Once a day		96.4	36.3	43.0	96.2	34.0	40.4	**41.7**
	Twice a day		3.6	62.7	56.1	3.8	62.3	56.2	**56.2**
	After every meal		0.0	1.0	0.9	0.0	3.8	3.4	**2.2**
3	**Material used for cleaning teeth**								
	Tooth paste		96.4	100.0	99.6	88.5	99.1	98.0	**98.8**
	Tooth powder		3.6	0.0	0.4	11.5	0.9	2.0	**1.2**
4	**Type of toothpaste/ powder**	n=	**55**	**102**	**157**	**52**	**106**	**158**	**315**
	Flouridated		90.9	100.0	99.0	98.1	100.0	99.8	**99.4**
	Non flouridated		9.1	0.0	1.0	1.9	0.0	0.2	**0.6**
5	**Change of toothbrush once in**	n=	**54**	**102**	**156**	**51**	**105**	**156**	**312**
	1-3 months		18.5	39.2	36.9	15.7	50.5	46.9	**41.9**
	4-6 months		70.4	59.8	61.0	60.8	48.6	49.8	**55.4**
	6 + months		11.1	1.0	2.1	23.5	1.0	3.3	**2.7**
6	**Rinse mouth after eating**	n=	**55**	**102**	**157**	**52**	**106**	**158**	**315**
	Sometimes		9.1	37.3	34.1	3.8	50.9	46.1	**40.1**
	Always		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

5.3.2 12 year olds

99 per cent, across both sexes & places of residence reported using tooth brush to clean teeth.

38 per cent, across both sexes & more in rural, had cleaned teeth once a day. Other 59 per cent, across both sexes & more in urban reported cleaning teeth twice a day. Another about 3 per cent cleaned teeth after every meal.

As regard change of tooth brushes, 43 per cent, more females & more in urban reported change of tooth brushes once in 1-3 months. Other 54 per cent, more males & more in rural had changed tooth brushes once in 4-6 months. Only 3 per cent had changed tooth brushes once in after six months of use.

99 per cent reported the use of tooth paste and that fluoridated type, for cleaning teeth. Like in the previous age group, none reported rinsing mouth always. While about 56 per cent, across both sexes & more in urban, had rinsed mouth after eating sometime in the Union Territory. (Table 5.3.2).

5.3.3 15 year olds

Like the previous age group, 99 per cent, across both sexes & places of residence reported the use of tooth brush to clean teeth.

40 per cent, more males & more in rural, had cleaned teeth once a day. While other 58 per cent, more females & more in urban reported cleaning teeth twice a day. The remaining 3 per cent reported cleaning after every meal.

43 per cent, more females & more in urban had changed tooth brushes once in 1-3 months. Other 54 per cent more males & more in rural reported change of tooth brushes once in 4-6 months. Only 4 per cent more in rural had changed tooth brushes once after six months of use.

98 per cent, across both sexes & more in urban reported using tooth paste & almost all used fluoridated type. Only 2 per cent of respondents of this age rinsed mouth always. Others 78 per cent, more males & more in urban reported rinsing mouth sometimes. (Table 5.3.3).

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

AGE: 12 yrs STATE : Chandigarh

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	finger		3.6	1.0	1.3	0.0	0.0	0.0	**0.7**
	brush		96.4	99.0	98.7	100.0	100.0	100.0	**99.4**
	datun		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Frequency of cleaning teeth**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	Once a day		94.6	32.0	39.1	92.2	31.1	37.3	**38.2**
	Twice a day		3.6	65.0	58.1	7.8	66.0	60.1	**59.1**
	After every meal		1.8	2.9	2.8	0.0	2.8	2.5	**2.7**
3	**Material used for cleaning teeth**								
	Tooth paste		94.6	98.1	97.7	96.1	100.0	99.6	**98.7**
	Tooth powder		5.4	1.0	1.5	3.9	0.0	0.4	**1.0**
4	**Type of toothpaste/ powder**	n=	**56**	**102**	**158**	**51**	**106**	**157**	**315**
	Flouridated		91.1	100.0	99.0	96.1	100.0	99.6	**99.3**
	Non flouridated		8.9	0.0	1.0	3.9	0.0	0.4	**0.7**
5	**Change of toothbrush once in**	n=	**54**	**102**	**156**	**51**	**106**	**157**	**313**
	1-3 months		22.2	43.1	40.8	15.7	49.1	45.7	**43.3**
	4-6 months		64.8	55.9	56.9	66.7	50.0	51.7	**54.3**
	6 + months		13.0	1.0	2.3	17.6	0.9	2.6	**2.5**
6	**Rinse mouth after eating**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	Sometimes		17.9	61.2	56.3	13.7	59.4	54.8	**55.6**
	Always		0.0	1.0	0.9	0.0	0.0	0.0	**0.5**

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

AGE: 15 yrs **STATE : Chandigarh**

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**50**	**107**	**157**	**56**	**101**	**157**	**314**
	finger		0.0	0.9	0.8	0.0	1.0	0.9	**0.9**
	brush		98.0	99.1	99.0	100.0	99.0	99.1	**99.1**
	datun		2.0	0.0	0.2	0.0	0.0	0.0	**0.1**
	others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Frequency of cleaning teeth**	n=	**49**	**107**	**156**	**56**	**101**	**157**	**313**
	Once a day		95.9	39.3	44.7	91.1	27.7	35.0	**39.9**
	Twice a day		4.1	57.0	51.9	8.9	70.3	63.2	**57.6**
	After every meal		0.0	3.7	3.4	0.0	2.0	1.8	**2.6**
3	**Material used for cleaning teeth**								
	Tooth paste		93.9	100.0	99.4	92.9	98.0	97.4	**98.4**
	Tooth powder		6.1	0.0	0.6	7.1	1.0	1.7	**1.2**
4	**Type of toothpaste/ powder**	n=	**49**	**107**	**156**	**56**	**100**	**156**	**312**
	Flouridated		100.0	100.0	100.0	96.4	100.0	99.6	**99.8**
	Non flouridated		0.0	0.0	0.0	3.6	0.0	0.4	**0.2**
5	**Change of toothbrush once in**	n=	**49**	**106**	**155**	**56**	**100**	**156**	**311**
	1-3 months		14.3	40.6	38.0	19.6	51.0	47.4	**42.7**
	4-6 months		67.3	57.5	58.5	60.7	47.0	48.6	**53.6**
	6 + months		18.4	1.9	3.5	19.6	2.0	4.0	**3.8**
6	**Rinse mouth after eating**	n=	**50**	**107**	**157**	**56**	**101**	**157**	**314**
	Sometimes		42.0	85.0	80.8	32.1	81.2	75.5	**78.2**
	Always		0.0	0.0	0.0	0.0	4.0	3.5	**1.8**

5.3.4 35-44 year olds

99 per cent. of respondents. across both sexes & more in urban reported the use of tooth brush to clean teeth. 33 per cent, more males & more in rural had cleaned teeth once a day. Other about 64 per cent, more females & more in urban reported cleaning teeth twice a day. There were 3 per cent who cleaned teeth after every meal.

About 42 per cent, more females & more in urban, had changed tooth brushes once in 1-3 months. Other 53 per cent more males, reported changing tooth brushes after 4-6 months. While 6 per cent, more females & more in rural changed tooth brushes after 6 months of use.

98 per cent, across both sexes & places of residence reported the use of tooth paste and that fluoridated type, to clean teeth.

About 18 per cent of the respondents, more females & more in urban were rinsing mouth always. Other 77 per cent, across both sexes & more in rural reported rinsing mouth sometimes. (Table 5.3.4).

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

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

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	finger		3.7	0.0	0.4	3.6	1.0	1.3	**0.9**
	brush		96.3	100.0	99.6	94.6	99.0	98.5	**99.1**
	datun		0.0	0.0	0.0	1.8	0.0	0.2	**0.1**
	others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Frequency of cleaning teeth**	n=	**54**	**104**	**158**	**55**	**101**	**156**	**314**
	Once a day		90.7	27.9	34.7	92.7	23.8	31.6	**33.2**
	Twice a day		9.3	68.3	61.9	7.3	73.3	65.8	**63.9**
	After every meal		0.0	3.8	3.4	0.0	3.0	2.6	**3.0**
3	**Material used for cleaning teeth**								
	Tooth paste		96.3	98.1	97.9	90.9	99.0	98.1	**98**
	Tooth powder		3.7	1.0	1.3	9.1	1.0	1.9	**1.6**
4	**Type of toothpaste/ powder**	n=	**54**	**103**	**157**	**55**	**101**	**156**	**313**
	Flouridated		98.1	100.0	99.8	96.4	100.0	99.6	**99.7**
	Non flouridated		1.9	0.0	0.2	3.6	0.0	0.4	**0.3**
5	**Change of toothbrush once in**	n=	**52**	**104**	**156**	**53**	**100**	**153**	**309**
	1-3 months		13.5	39.4	36.7	13.2	51.0	46.8	**41.8**
	4-6 months		59.6	58.7	58.8	47.2	46.0	46.1	**52.5**
	6 + months		26.9	1.9	4.5	39.6	3.0	7.0	**5.8**
6	**Rinse mouth after eating**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	Sometimes		81.5	77.9	78.3	82.1	74.3	75.2	**76.8**
	Always		0.0	18.3	16.3	1.8	22.8	20.4	**18.4**

5.3.5 65-74 year olds

47 per cent of respondent in this age group, more males & more in urban had used tooth brush to clean their teeth.

44 per cent, across both sexes & more in rural reported cleaning teeth once a day. Other about 52 per cent, across both sexes & more in urban, had cleaned teeth twice a day. Only 4 per cent cleaned teeth after every meal.

As regard change of tooth brushes, 50 per cent more females & more in urban had changed tooth brushes once in (1-3) months. Other about 40 per cent more males & more in rural reported change of tooth brushes once in 4-6 months. Nearly 10 per cent across both sexes & more in rural reported changing tooth brushes after six months of use.

About 96 per cent, across both sexes & more in urban reported the use of tooth paste to clean teeth. Almost all these used fluoridated tooth paste. 36 per cent of respondents, more females & more in urban, reported rinsing mouth always. Others 60 per cent, more males & more in rural had rinsed mouth sometimes in the Union Territory. (Table 5.3.5).

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

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

	Oral Hygiene Practices		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Clean teeth with**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	finger		11.3	2.9	3.8	23.1	1.9	4.1	**4.0**
	brush		32.1	53.8	51.5	32.7	43.8	42.7	**47.1**
	datun		5.7	0.0	0.6	1.9	1.0	1.1	**0.9**
	others		50.9	43.3	44.1	42.3	53.3	52.2	**48.2**
2	**Frequency of cleaning teeth**	n=	**23**	**59**	**82**	**29**	**48**	**77**	**159**
	Once a day		91.3	40.7	44.9	96.6	35.4	43.0	**44.0**
	Twice a day		8.7	57.6	53.5	0.0	58.3	51.1	**52.3**
	After every meal		0.0	1.7	1.6	3.4	6.3	5.9	**3.8**
3	**Material used for cleaning teeth**								
	Tooth paste		78.3	96.6	95.1	82.8	97.9	96.0	**95.6**
	Tooth powder		21.7	3.4	4.9	17.2	2.1	4.0	**4.5**
4	**Type of toothpaste/ powder**	n=	**23**	**59**	**82**	**29**	**48**	**77**	**159**
	Flouridated		91.3	100.0	99.3	93.1	97.9	97.3	**98.3**
	Non flouridated		8.7	0.0	0.7	6.9	0.0	0.9	**0.8**
5	**Change of toothbrush once in**	n=	**17**	**56**	**73**	**17**	**46**	**63**	**136**
	1-3 months		17.6	46.4	44.5	0.0	60.9	56.0	**50.3**
	4-6 months		47.1	46.4	46.5	41.2	32.6	33.3	**39.9**
	6 + months		35.3	7.1	9.0	58.8	6.5	10.7	**9.9**
6	**Rinse mouth after eating**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	Sometimes		77.4	60.6	62.4	71.2	56.2	57.7	**60.1**
	Always		11.3	37.5	34.7	5.8	41.9	38.1	**36.4**

ORAL HYGIENE PRACTICE ACROSS AGE GROUPS (SUMMING UP)

(i) 47 per cent of respondents aged (65-74) years olds and almost all in other ages/age groups reported the use of tooth brush to clean their teeth.

(ii) Almost all from each age/age group had cleaned teeth at least once a day.

(iii) As regard change of tooth brushes 42 per cent more females & more in urban irrespective of age differences changed tooth brush once in 1-3 months. While other about 55 per cent, more males & more in rural irrespective of their age differences reported the change of tooth brush once in 4-6 months. A small per cent across both sexes & places of residence had changed tooth brush once after 6 months of use.

(iv) 96-100 per cent of respondents, irrespective of age, sex & places of residence reported the use of tooth paste and that fluoridated one.

(v) None from 5, 12, & 15 years olds reported rinsing mouth always. But 50 per cent & more, from these age groups, & more in urban, had rinsed mouth sometimes.

There were more females & more in rural area & more males & more in urban belonging to age groups 35-44 & 65-74 years had rinsed mouth always & sometimes respectively.

5.4 DENTAL PROBLEMS AND TREATMENT PRACTICES

The respondents were asked whether they had any dental problem in last one year and whom consulted for the problem they had. They were also asked about the access they had to the dental facility. Further they were asked whether they ever had hypertension, diabetes, epilepsy, jaundice & asthma.

Responses obtained from respondents belonging to ages/ age groups 5, 12, 15, 35-44 & 65-74 years olds, both sexes by places of their residence are presented in Tables 5.4.1 to 5.4.5 and discussed as below:

5.4.1 5 year olds

About 4 per cent of respondents of this age group, across both sexes & more in rural had oral health problems in last one year.

About 81 per cent of them, more males & more in rural had dental decay. Other 36 per cent, more females & more in urban, reported the problem of gum disease including bleeding gums. Another 22 per cent, across both sexes & more in urban had problem of foul breath.

46 per cent, more males & more in urban, consulted trained dentist. 25 per cent of respondents, more males & more in urban reported awareness of Govt. dental care facility. But more, were aware of Pvt. dental care facilities.

As regard time required to reach the facility places, 94 per cent, reported less than half hour. While only 6 per cent more males & more in rural, told half to one hour.

There were few, except 4 per cent from Jaundice, ever suffered from Hypertension or other diseases. (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 : Chandigarh**

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**55**	**102**	**157**	**52**	**106**	**158**	**315**
	problems in last one year		12.7	3.9	4.9	5.8	3.8	4.0	**4.5**
2	**Type of oral health problems**	n=	7	**4**	**11**	**3**	**4**	**7**	**18**
	Dental decay		100.0	75.0	82.3	100.0	75.0	78.7	**80.5**
	Gum disease		14.3	0.0	4.2	0.0	50.0	42.5	**23.4**
	Foul breath		14.3	25.0	21.9	0.0	25.0	21.3	**21.6**
	Bleeding gums		14.3	0.0	4.2	0.0	25.0	21.3	**12.8**
	Others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Consulted (out of those suffered)**								
	None		14.3	0.0	4.2	66.7	25.0	31.2	**17.7**
	Trained dentist		42.9	75.0	65.6	33.3	25.0	26.2	**45.9**
4	**Availaibility of dental facility**	n=	**55**	**102**	**157**	**52**	**106**	**158**	**315**
	None		0.0	0.0	0.0	1.9	0.0	0.2	**0.1**
	Govt. facility		20.0	28.4	27.5	19.2	23.6	23.1	**25.3**
	Pvt. facility		80.0	100.0	97.8	82.7	99.1	97.4	**97.6**
	Do not know		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
5	**Time taken to reach the facility**	n=	**55**	**102**	**157**	**51**	**106**	**157**	**314**
	Less than 1/2 hr.		80.0	95.1	93.4	86.3	96.2	95.2	**94.3**
	1/2 - 1 hr.		20.0	4.9	6.6	13.7	3.8	4.8	**5.7**
	> 1 hr.		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**55**	**102**	**157**	**52**	**106**	**158**	**315**
	Hypertension		1.8	0.0	0.2	3.8	0.0	0.4	**0.3**
	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		5.5	3.9	4.1	0.0	2.8	2.5	**3.3**
	Asthma		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

5.4.2 12 year olds

About 6 per cent of respondents of this age, had oral health problems in last one year. 82 per cent of these, across both sexes & more in urban, suffered from dental decay. Other 82 per cent & 25 per cent, more males & more in urban had problem of gum disease including gum bleeding and foul breath respectively. 56 per cent of them, more females & more in urban, consulted trained dentist.

As regard their awareness of dental care facilities, about 27 per cent & 97 per cent, across both sexes & more in urban told Govt. & Pvt. facilities respectively in their respective areas. 94 per cent of them, across both sexes & more in urban reported less them half hour to reach these facility places. While the rest, across both sexes & more in rural reported half to one hour.

None of the respondents of this age, except a small per cent from hypertension ever suffered from any other diseases. (Table 5.4.2).

5.4.3 15 year olds

About 18 per cent of respondents of this age, across both sexes & more in rural had oral health problems in last one year. 97 per cent of these, across both sexes & places of residence suffered from dental decay. While 65 per cent, (72 per cent males & 58 per cent females) more in urban, had problem of gum disease. Other 25 per cent, more males & more in rural, had bleeding gum problem. There were another 28 per cent, more females and more in urban, suffered from foul breath, in last one year.

74 per cent, more males & more in urban consulted trained dentist. As regard respondents aware of dental care facility. 27 per cent & 96 per cent across both sexes & more in urban, were aware of Govt. & Pvt. dental care facilities respectively in the union territory.

94 per cent of them, more females & more in urban reported less than half to reach the facility places. Only 6 per cent, more males & more in rural, told half to one hour to reach the facility places. (Table 5.4.3).

None of respondents except some males respondents in rural had hypertension only.

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 : Chandigarh**

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	problems in last one year		16.1	2.9	4.4	17.6	9.4	10.3	**7.4**
2	**Type of oral health problems**	n=	**9**	**3**	**12**	**9**	**10**	**19**	**31**
	Dental decay		100.0	66.7	80.4	100.0	80.0	83.5	**82.0**
	Gum disease		44.4	100.0	77.1	33.3	50.0	47.1	**62.1**
	Foul breath		22.2	33.3	28.7	22.2	20.0	20.4	**24.6**
	Bleeding gums		44.4	33.3	37.9	11.1	0.0	1.9	**19.9**
	Others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Consulted (out of those suffered)**								
	None		11.1	33.3	24.2	33.3	0.0	5.8	**15.0**
	Trained dentist		22.2	66.7	48.3	33.3	70.0	63.6	**56.0**
4	**Availaibility of dental facility**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	None		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Govt. facility		21.4	26.2	25.7	17.6	28.3	27.2	**26.5**
	Pvt. facility		82.1	99.0	97.1	84.3	98.1	96.7	**96.9**
	Do not know		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
5	**Time taken to reach the facility**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	Less than 1/2 hr.		85.7	95.1	94.1	84.3	94.3	93.3	**93.7**
	1/2 - 1 hr.		14.3	4.9	5.9	15.7	5.7	6.7	**6.3**
	> 1 hr.		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	Hypertension		1.8	1.0	1.1	0.0	0.0	0.0	**0.6**
	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	0.0	0.0	2.0	0.0	0.2	**0.1**
	Asthma		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

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 : Chandigarh**

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**50**	**107**	**157**	**56**	**101**	**157**	**314**
	problems in last one year		22.0	18.7	19.0	30.4	14.9	16.6	**17.8**
2	**Type of oral health problems**	n=	**11**	**20**	**31**	**17**	**15**	**32**	**63**
	Dental decay		90.9	100.0	99.0	100.0	93.3	94.7	**96.9**
	Gum disease		45.5	75.0	71.6	52.9	60.0	58.5	**65.1**
	Foul breath		36.4	25.0	26.3	17.6	33.3	30.0	**28.2**
	Bleeding gums		54.5	25.0	28.4	52.9	13.3	21.7	**25.1**
	Others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
3	**Consulted (out of those suffered)**								
	None		18.2	0.0	2.1	41.2	0.0	8.6	**5.4**
	Trained dentist		9.1	90.0	80.8	17.6	80.0	66.9	**73.9**
4	**Availaibility of dental facility**	n=	**50**	**107**	**157**	**56**	**101**	**157**	**314**
	None		2.0	0.0	0.2	0.0	0.0	0.0	**0.1**
	Govt. facility		24.0	28.0	27.6	21.4	23.8	23.5	**25.6**
	Pvt. facility		80.0	97.2	95.5	83.9	99.0	97.3	**96.4**
	Do not know		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
5	**Time taken to reach the facility**	n=	**49**	**107**	**156**	**56**	**101**	**157**	**313**
	Less than 1/2 hr.		85.7	92.5	91.9	85.7	97.0	95.7	**93.8**
	1/2 - 1 hr.		14.3	7.5	8.1	14.3	3.0	4.3	**6.2**
	> 1 hr.		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**50**	**107**	**157**	**56**	**101**	**157**	**314**
	Hypertension		4.0	0.9	1.2	1.8	0.0	0.2	**0.7**
	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		6.0	0.0	0.6	0.0	0.0	0.0	**0.3**
	Asthma		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**

5.4.4 35-44 year olds

The per cent of respondents of this age group, reported oral health problems, were comparatively much more than those belonging to earlier age who had problems in last one year. 42 per cent of respondents of this age, more males & more in urban suffered from oral health problems in last one year. 92 per cent of these across both sexes & more in urban, suffered from dental decay. While 46 per cent, more females & across places of residence had gum disease. Other about 61 per cent & 66 per cent, more females & more in rural, had suffered from foul breath & gum bleeding respectively.

80 per cent, across both sexes & more in urban consulted trained dentist. 27 per cent and other 96 per cent, across both sexes & more in urban were aware of Govt. & Pvt. dental care facilities respectively.

94 per cent, across both sexes & more in urban reported less than half hour to reach the dental care facility places. While only 6 per cent, across both sexes & more in rural told half to one hour to reach the facility places.

As regard ever suffered from non communicable diseases, 32 per cent, across both sexes & more in rural reported suffered from hypertension. Other about 8 per cent, more females & more in rural had problem of diabetes. There were more males as well as females in rural reported ever suffered from Jaundice & Asthma. (Table 5.4.4).

5.4.5 65-74 year olds

About 26 per cent, (31 per cent males & 21 per cent females) & more in rural reported oral health problems in last one year. 80 per cent of these more males & more in urban suffered from dental decay. While 64 per cent, across both sexes & more in urban, had gum disease. Other 64 per cent, more males & across places of residence, suffered from foul breath.

69 per cent with problems, more males & more in urban, consulted trained dentist. 26 per cent and 97 per cent, across both sexes & more in urban had knowledge of Govt. & Pvt. dental care facilities in their areas respectively.

93 per cent of these, more females & more in urban reported less than half hour to reach the dental care facility. Another 7 per cent, more males & more in rural, told half to one hour to reach the dental care facility places.

As regard ever suffered from non-communicable diseases, 76 per cent more females and more in rural, had hypertension. This followed by other 57 per cent across both sexes & more in rural had suffered from diabetes. Another 10 per cent and 8 per cent across both sexes & more in rural, reported ever suffered from Jaundice & Asthma respectively. (Table 5.4.5).

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 : Chandigarh**

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	problems in last one year		59.3	43.3	45.0	48.2	37.6	38.8	**41.9**
2	**Type of oral health problems**	n=	**32**	**45**	**77**	**27**	**38**	**65**	**142**
	Dental decay		90.6	93.3	92.9	77.8	92.1	90.1	**91.5**
	Gum disease		37.5	40.0	39.6	51.9	52.6	52.5	**46.1**
	Foul breath		68.8	53.3	55.5	63.0	65.8	65.4	**60.5**
	Bleeding gums		68.8	57.8	59.3	77.8	71.1	72.0	**65.7**
	Others		0.0	6.7	5.7	0.0	5.3	4.5	**5.1**
3	**Consulted (out of those suffered)**								
	None		12.5	0.0	1.8	18.5	2.6	4.9	**3.4**
	Trained dentist		37.5	84.4	77.7	40.7	84.2	78.0	**77.9**
4	**Availaibility of dental facility**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	None		0.0	0.0	0.0	1.8	0.0	0.2	**0.1**
	Govt. facility		20.4	28.8	27.9	25.0	25.7	25.7	**26.8**
	Pvt. facility		81.5	97.1	95.4	80.4	99.0	96.9	**96.2**
	Do not know		0.0	1.0	0.9	0.0	0.0	0.0	**0.5**
5	**Time taken to reach the facility**	n=	**54**	**104**	**158**	**55**	**101**	**156**	**314**
	Less than 1/2 hr.		83.3	95.2	93.9	78.2	97.0	94.9	**94.4**
	1/2 - 1 hr.		16.7	4.8	6.1	21.8	3.0	5.1	**5.6**
	> 1 hr.		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	Hypertension		35.2	31.7	32.1	35.7	31.7	32.1	**32.1**
	Diabetes		29.6	3.8	6.6	30.4	5.9	8.8	**7.7**
	Epilepsy		1.9	0.0	0.2	0.0	0.0	0.0	**0.1**
	Jaundice		20.4	0.0	2.2	14.3	0.0	1.6	**1.9**
	Asthma		11.1	1.9	2.9	3.6	3.0	3.0	**3.0**

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 : Chandigarh

	Nature of Dental Problems and Treatment related aspects		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Suffered from oral health**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	problems in last one year		56.6	27.9	31.0	51.9	17.1	20.8	**25.9**
2	**Type of oral health problems**	n=	**30**	**29**	**59**	**27**	**18**	**45**	**104**
	Dental decay		70.0	86.2	83.0	77.8	77.8	77.8	**80.4**
	Gum disease		40.0	58.6	55.0	44.4	55.6	52.7	**53.9**
	Foul breath		70.0	72.4	71.9	59.3	55.6	56.5	**64.2**
	Bleeding gums		83.3	72.4	74.5	74.1	77.8	76.8	**75.7**
	Others		0.0	6.9	5.5	3.7	11.1	9.2	**7.4**
3	**Consulted (out of those suffered)**								
	None		13.3	3.4	5.4	22.2	5.6	9.9	**7.7**
	Trained dentist		33.3	79.3	70.3	22.2	83.3	67.4	**68.9**
4	**Availaibility of dental facility**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	None		1.9	0.0	0.2	0.0	0.0	0.0	**0.1**
	Govt. facility		18.9	26.9	26.1	19.2	25.7	25.0	**25.6**
	Pvt. facility		81.1	98.1	96.3	82.7	100.0	98.2	**97.3**
	Do not know		0.0	0.0	0.0	0.0	1.0	0.9	**0.5**
5	**Time taken to reach the facility**	n=	**52**	**104**	**156**	**52**	**105**	**157**	**313**
	Less than 1/2 hr.		82.7	92.3	91.3	84.6	96.2	95.0	**93.2**
	1/2 - 1 hr.		17.3	7.7	8.7	15.4	3.8	5.0	**6.9**
	> 1 hr.		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cannot say		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Ever suffered from**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	Hypertension		75.5	73.1	73.3	80.8	78.1	78.4	**75.9**
	Diabetes		67.9	55.8	57.1	67.3	55.2	56.5	**56.8**
	Epilepsy		3.8	1.9	2.1	1.9	2.9	2.8	**2.5**
	Jaundice		32.1	7.7	10.3	38.5	5.7	9.1	**9.7**
	Asthma		34.0	5.8	8.8	32.7	4.8	7.7	**8.3**

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

(i) Percent reported suffered from oral health problems in last one year increased with increase in the age. The problems were reported by more males & more in rural areas.

(ii) A large per cent, irrespective of age differences had dental decay, followed by gum disease.

(iii) About 60-80 per cent of respondents, generally more males & more in urban areas consulted trained dentist.

(iv) 37 per cent & 96 per cent were aware of Govt. & Pvt. Dental care facilities respectively in their respective areas.

(v) About 94 per cent of them reported less than half hour to reach the facility places.

5.5 AWARENESS OF DENTAL HEALTH PROBLEMS

Three questions were asked about awareness of the dental health problems. The first asked about the common dental problems, the second about the major factors responsible for the problems and the third about how these problems could be prevented. The responses as obtained from respondents belonging ages/age groups 12, 15, 35-44 & 65-74 years olds are presented in Tables 5.5.2 to 5.5.5 and discussed as below:

5.5.2 12 year olds

6 per cent, across both sexes, more in rural had no knowledge of oral health problems. Those aware, 88 per cent & 29 per cent of them, across both sexes & more in urban reported dental decay & gum disease respectively. Other 58 per cent, across both sexes & more in rural cited bad smell and about 28 per cent, more males & more in rural told strained teeth.

As regard factors that cause oral health problems, 6 per cent of respondents, across both sexes & more in urban had no knowledge of such factors. Those aware of causative factors, 92 per cent and 86 per cent of them, across both sexes & places of residence told not brushing regularly and not rinsing respectively. About 54 per cent, more females & more in rural cited eating sweets/ice creams. A few more in rural told consuming tobacco, a factor that can cause oral health problems.

As regard knowledge of preventive measures, only 6 per cent had no knowledge of the preventive measures. 92 per cent of aware, irrespective of their sex & places of residence reported cleaning teeth regularly & some per cent, across both sexes & more in urban told visiting dentist regularly. Other 40 per cent, more females & more in urban talked of avoid sweet items. A few others told not consuming of tobacco. (Table 5.5.2).

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 : Chandigarh

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	**56**	**103**	**159**	**51**	**106**	**157**	**316**
	No knowledge		8.9	5.8	6.2	5.9	5.7	5.7	**6.0**
	Tooth decay		64.3	92.2	89.1	60.8	89.6	86.7	**87.9**
	Gum disease		32.1	30.1	30.3	25.5	28.3	28.0	**29.2**
	Bad smell		66.1	58.3	59.1	60.8	56.6	57.0	**58.1**
	Stained teeth		50.0	29.1	31.5	54.9	21.7	25.1	**28.3**
	Others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		69.6	47.6	50.1	74.5	56.6	58.4	**54.3**
	Not brushing regularly		92.9	91.3	91.4	94.1	91.5	91.8	**91.6**
	Not rinsing		69.6	88.3	86.2	68.6	87.7	85.8	**86.0**
	Consuming tobacco		8.9	4.9	5.3	11.8	4.7	5.4	**5.4**
	Do not know		3.6	6.8	6.4	3.9	5.7	5.5	**6.0**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		28.6	6.8	9.3	29.4	3.8	6.4	**7.85**
	Cleaning teeth regularly		83.9	91.3	90.4	88.2	93.4	92.9	**91.7**
	Visiting dentist regularly		83.9	93.2	92.2	80.4	91.5	90.4	**91.3**
	Using flouride paste / powder		30.4	28.2	28.4	27.5	29.2	29.1	**28.8**
	Avoid sweet items		17.9	36.9	34.7	25.5	48.1	45.8	**40.3**
	Do not know		8.9	5.8	6.2	11.8	5.7	6.3	**6.3**

5.5.3 15 year olds

Only 2 per cent of respondents, more males in rural & more female in urban, reported no knowledge of oral health problems. 99 per cent of aware of problems, across both sexes & more in urban, told tooth decay. This followed by other about 67 per cent & 44 per cent, more males, more in rural, reported bad smell & strained teeth respectively. Another 32 per cent, more males & more in rural told gum disease.

As regard awareness of factors that can cause oral health problems, only 2 per cent reported no knowledge. 96 per cent & 91 per cent across both sexes & more in urban cited not brushing regularly & not rinsing respectively. About 64 per cent of respondents, more females & more in rural told eating sweets/ice cream. Other about 18 per cent, more males & more in urban talked consuming tobacco, the factors that can cause oral health the problems.

As regard knowledge of preventive measures, only one per cent did not have the knowledge. 96 per cent & 95 per cent across both sexes & more in urban reported cleaning teeth regularly & visiting dentist regularly respectively, the measures to prevent oral health problems. Other 44 per cent & 10 per cent of respondents, more males & more in rural told such as using fluoride paste/ powder & not consuming tobacco respectively. Another 50 per cent more females & more in urban cited avoid sweet item another measure to prevent oral health problems, in the Union Territory. (Table 5.5.3).

5.5.4 35-44 year olds

Almost all respondents of this age group reported knowledge of oral health problems. 98 per cent, across both sexes & more in urban, told tooth decay. Other 76 per cent & 38 per cent more males & more in rural reported bad smell & strained teeth respectively. Another 64 per cent, more females, irrespective of places of residence cited gum disease a problem of oral health.

Almost all were aware of factors that can cause oral health problems. 91 per cent & 98 per cent irrespective of their sex & places of residence reported factors such as eating sweets/ice cream & not brushing regularly respectively. Other 93 per cent, more of them females & other 58 per cent, more of them males & in urban, reported factors such as not rinsing & consuming tobacco respectively.

Only about 2 per cent did not have knowledge of preventive measures. 95 per cent & other 96 per cent of those aware of measures, reported cleaning teeth regularly & visiting dentist regularly, the measures to prevent oral health problems. Other 58 per cent & 51 per cent, more males & more in urban cited measures such as not consuming tobacco & using fluoride tooth paste/powder. Another 80 per cent, across both sexes & more in urban told measures such as avoid sweet items. (Table 5.5.4).

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 : Chandigarh

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	**50**	**107**	**157**	**56**	**101**	**157**	**314**
	No knowledge		6.0	0.0	0.6	0.0	3.0	2.6	**1.6**
	Tooth decay		72.0	98.1	95.5	76.8	95.0	92.9	**94.2**
	Gum disease		44.0	32.7	33.8	44.6	27.7	29.7	**31.8**
	Bad smell		72.0	71.0	71.1	69.6	61.4	62.3	**66.7**
	Stained teeth		58.0	47.7	48.7	51.8	37.6	39.3	**44.0**
	Others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		78.0	56.1	58.2	80.4	67.3	68.8	**63.5**
	Not brushing regularly		84.0	99.1	97.6	94.6	95.0	95.0	**96.3**
	Not rinsing		82.0	93.5	92.3	76.8	91.1	89.4	**90.9**
	Consuming tobacco		12.0	22.4	21.4	10.7	15.8	15.3	**18.4**
	Do not know		8.0	0.0	0.8	1.8	3.0	2.8	**1.8**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		24.0	8.4	10.0	23.2	7.9	9.7	**9.9**
	Cleaning teeth regularly		92.0	98.1	97.5	91.1	95.0	94.6	**96.1**
	Visiting dentist regularly		86.0	97.2	96.1	83.9	96.0	94.6	**95.4**
	Using flouride paste / powder		46.0	50.5	50.0	41.1	36.6	37.1	**43.6**
	Avoid sweet items		30.0	47.7	45.9	35.7	56.4	54.1	**50.0**
	Do not know		6.0	0.0	0.6	3.6	2.0	2.2	**1.4**

Table 5. 5. 4 Percent 35-44 year olds by reported awareness of oral health problems, their causes & preventive measures, sex & geographical area.

AGE: 35-44 yrs STATE : Chandigarh

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	54	104	158	56	101	157	315
	No knowledge		0.0	0.0	0.0	1.8	1.0	1.1	**0.6**
	Tooth decay		85.2	100.0	98.4	91.1	99.0	98.1	**98.3**
	Gum disease		68.5	60.6	61.4	62.5	66.3	65.9	**63.7**
	Bad smell		88.9	77.9	79.1	87.5	71.3	73.2	**76.2**
	Stained teeth		48.1	43.3	43.8	46.4	30.7	32.5	**38.2**
	Others		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		90.7	90.4	90.4	76.8	94.1	92.1	**91.3**
	Not brushing regularly		98.1	98.1	98.1	96.4	98.0	97.8	**98.0**
	Not rinsing		83.3	91.3	90.5	85.7	97.0	95.7	**93.1**
	Consuming tobacco		59.3	66.3	65.6	25.0	52.5	49.3	**57.5**
	Do not know		1.9	1.0	1.1	3.6	1.0	1.3	**1.2**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		57.4	64.4	63.7	42.9	53.5	52.2	**58.0**
	Cleaning teeth regularly		90.7	95.2	94.7	85.7	97.0	95.7	**95.2**
	Visiting dentist regularly		88.9	97.1	96.2	85.7	96.0	94.9	**95.6**
	Using flouride paste / powder		46.3	56.7	55.6	37.5	46.5	45.5	**50.6**
	Avoid sweet items		46.3	83.7	79.6	42.9	85.1	80.3	**80.0**
	Do not know		5.6	1.9	2.3	12.5	1.0	2.3	**2.3**

5.5.5 65-74 year olds

Almost all respondents of this age group were aware of the oral helath problems. 82 per cent & 60 per cent, across both sexes & more in urban reported tooth decay & gum disease respectively. Other 70 per cent & 39 per cent more males & more in rural told bad smell & strained teeth.

Only 2 per cent more in rural were not aware of factors that can cause oral health problems. 76 per cent & 85 per cent, more females, across places of residence reported factors such as eating sweet/ice cream & not brushing regularly. Other 83 per cent, across both sexes & more in urban told not rinsing. Another 59 per cent, more males & more in rural cited consuming tobacco.

As regard awareness of preventive measures, only 3 per cent were not aware. Other 47 per cent & 60 per cent, more males & more in urban reported measures such as using fluoride tooth paste/ powder & avoid sweet item respectively. Other 82 per cent, across both sexes & more in urban told measures such as cleaning teeth regularly & visiting dentist regularly. Another 56 per cent, more males & more in rural reported not consuming tobacco. (Table 5.5.5).

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

About 95 per cent of respondents irrespective their ages, sex and places of residence reported knowledge of oral health problems, factors responsible for oral health problems & measures to prevent the problems.

More than two third of respondents from each age group more males & more in rural, told oral health problems such as dental decay & gum disease. Another about 40-50 per cent from each age group, more females & more in rural cited strained, teeth, bad smell etc.

As regard knowledge of factors that can cause oral health problems, more than 90 per cent from each age group, across both sexes & places of residence, reported "factors such as not brushing regularly & not rinsing. Other factors comparatively reported by small percents, were consuming tobacco, eating sweet/ice creams etc.

As regard knowledge of preventive measures, about 95 per cent of respondents from each group, more males & more in urban reported measures such as cleaning of teeth regularly, visiting dentist regularly. Besides these nearly 40-50 per cent from each age group told avoid sweet items, not consuming tobacco & use of fluoridated tooth paste etc.

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 : Chandigarh

	Awareness of Oral Health Problems, Causes and Preventive Measures		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Awareness of Oral Health Problems**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	No knowledge		0.0	1.0	0.9	1.9	0.0	0.2	**0.6**
	Tooth decay		75.5	80.8	80.2	78.8	84.8	84.1	**82.2**
	Gum disease		58.5	59.6	59.5	51.9	61.0	60.0	**59.8**
	Bad smell		84.9	71.2	72.6	73.1	65.7	66.5	**69.6**
	Stained teeth		56.6	42.3	43.8	48.1	32.4	34.0	**38.9**
	Others		5.7	12.5	11.8	3.8	11.4	10.6	**11.2**
2	**Factors that cause Oral Health Problems**								
	Eating sweets/ice cream		77.4	73.1	73.5	73.1	80.0	79.3	**76.4**
	Not brushing regularly		84.9	82.7	82.9	82.7	86.7	86.3	**84.6**
	Not rinsing		79.2	82.7	82.3	75.0	84.8	83.7	**83.0**
	Consuming tobacco		77.4	67.3	68.4	65.4	48.6	50.3	**59.4**
	Do not know		5.7	2.9	3.2	5.8	0.0	0.6	**1.9**
3	**Reported Preventive Measures**								
	Not consuming Tobacco		66.0	69.2	68.9	57.7	41.0	42.7	**55.8**
	Cleaning teeth regularly		79.2	82.7	82.3	69.2	83.8	82.3	**82.3**
	Visiting dentist regularly		71.7	82.7	81.5	65.4	84.8	82.7	**82.1**
	Using flouride paste / powder		47.2	54.8	54.0	40.4	40.0	40.0	**47.0**
	Avoid sweet items		56.6	65.4	64.4	44.2	57.1	55.8	**60.1**
	Do not know		9.4	2.9	3.6	15.4	1.0	2.5	**3.1**

5.6 TOBACCO SMOKING AND CHEWING HABITS

As smoking habits & chewing tobacco have special effect an oral health, a set of questions on these aspects were asked. These questions related to smoking habits, chewing pan with tobacco & drinking alcohol. The responses that were obtained from respondents belonging to age groups, 35-44 & 65-74 year olds are presented in Tables 5.6.4 & 5.6.5 and discussed as below: (Since a very small per cent of persons of age 5, 12, 15, have such habits, hence not included.

5.6.4 35-44 year olds

About 22 per cent of respondents, more males & more in rural reported the habit of smoking tobacco in the Union Territory.

As regard nature of smoking, 96 per cent of smokers, mostly all males reported smoking cigarette, in urban & rest smoking Bidis in the rural areas. Almost all smokers were smoking less than ten times in a day.

As regard chewing pan or pan masala with tobacco, 5 per cent of respondents, more males & more in rural, reported chewing pan or pan malala with tobacco. 86 per cent of them were chewing pan or pan masala with tobacco for last 5-10 years & other 14 per cent were chewing pan or pan masala with tobacco for last less than 5 years.

Three fourth of them, all males & more in rural, reported chewing tobacco 5-10 times in a day. The rest all males & more in urban, were chewing less than 5 times in a day.

One third of respondents, mostly males, across places of residence reported consuming alcohol. 84 per cent of these, more males & more in rural, reported consuming alcohol occasionally. 2 per cent & 14 per cent all males & more in urban were consuming alcohol daily & 3 times a week respectively in the Union Territory. (Table 5.6.4).

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 : Chandigarh

	Tobacco Smoking or Chewing with Pan Masala and Alcohol taking habits		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Smoking Habits**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	Subjects smoking tobacco		46.3	42.3	42.7	1.8	0.0	0.2	**21.5**
2	**Nature of Smoking**	n=	**25**	**44**	**69**	**1**	**0**	**1**	**70**
	Chillum		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Hookah		8.0	0.0	0.9	0.0	0.0	0.0	**0.5**
	Cigars		4.0	4.5	4.5	0.0	0.0	0.0	**2.3**
	Cigarettes		68.0	95.5	92.2	100.0	0.0	100.0	**96.1**
	Bidis		20.0	0.0	2.4	0.0	0.0	0.0	**1.2**
3	**Number of times Smoking in a day**								
	< 10 times		80.0	100.0	97.6	100.0	0.0	100.0	**98.8**
	10-20 times		20.0	0.0	2.4	0.0	0.0	0.0	**1.2**
	20 + times		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
4	**Chewing pan/pan masala habits**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	Chew pan or pan masala with tobacco		29.6	7.7	10.1	1.8	0.0	0.2	**5.2**
5	**Number of years of chewing pan or**								
	pan masala with Tobacco	n=	**16**	**8**	**24**	**1**	**0**	**1**	**25**
	Less than 5 years		12.5	37.5	29.5	0.0	0.0	0.0	**14.8**
	5 - 10 years		87.5	62.5	70.5	100.0	0.0	100.0	**85.3**
	> 10 years		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
6	**Number of times of chewing tobacco**								
	in a day								
	Less than 5 times		12.5	75.0	55.0	0.0	0.0	0.0	**27.5**
	5 - 10 times		87.5	25.0	45.0	100.0	0.0	100.0	**72.5**
	> 10 times		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
7	**Alcohol consumption habits**	n=	**54**	**104**	**158**	**56**	**101**	**157**	**315**
	Consuming alcohol		63.0	65.4	65.1	1.8	1.0	1.1	**33.1**
8	**Frequency of alcohol consumption**	n=	**34**	**68**	**102**	**1**	**1**	**2**	**104**
	Daily		0.0	4.4	3.9	0.0	0.0	0.0	**2.0**
	3 times a week		11.8	29.4	27.6	0.0	0.0	0.0	**13.8**
	Occasionally		88.2	66.2	68.5	100.0	100.0	100.0	**84.3**

5.6.5 65-74 year olds

About 18 per cent, more males, & more in rural reported the habit of smoking in the Union Territory.

As regard nature of smoking, 71 per cent, more males & more in urban, reported smoking cigarettes. Other about 26 per cent, more females & more rural had the habit of smoking Bidis.

89 per cent, across both sexes & more in urban, had the habit of smoking less than ten times in a day.

As regard chewing pan or pan masala with tobacco, about 5 per cent, more males & more in rural, reported chewing pan or pan masala with tobacco. About 74 per cent, of them (all females & 47 per cent males) & more in rural were chewing tobacco for the last 5-10 years. Other 24 per cent all males & all in urban, were chewing pan or pan masala with tobacco for the last less than 5 years.

68 per cent of these, mostly all males & more in urban reported chewing tobacco. 5-10 times in a day. Other 30 per cent, all males & more in urban, reported chewing tobacco, less than 5 times in a day.

About 29 per cent, more males & more in rural reported consuming alcohol in Union Territory.

About 52 per cent, of them, more females & more in rural, reported consuming 3 times a week. Other 47 per cent, more males & more in urban reported consuming alcohol occasionally only 2 per cent were consuming alcohol daily in the Union Territory. (Table 5.6.5).

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 : Chandigarh

	Tobacco Smoking or Chewing with Pan Masala and Alcohol taking habits		MALE			FEMALE			STATE TOTAL
			R	U	T	R	U	T	
1	**Smoking Habits**	n=	**53**	**104**	157	**52**	**105**	157	**314**
	Subjects smoking tobacco		30.2	33.7	33.3	7.7	1.0	1.7	**17.5**
2	**Nature of Smoking**	n=	**16**	**35**	**51**	**4**	**1**	**5**	**56**
	Chillum		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Hookah		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
	Cigars		0.0	8.6	7.7	0.0	0.0	0.0	**3.9**
	Cigarettes		56.3	80.0	77.7	25.0	100.0	63.7	**70.7**
	Bidis		43.8	11.4	14.6	75.0	0.0	36.3	**25.5**
3	**Number of times Smoking in a day**								
	< 10 times		43.8	94.3	89.4	75.0	100.0	87.9	**88.7**
	10-20 times		56.3	5.7	10.6	25.0	0.0	12.1	**11.4**
	20 + times		0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
4	**Chewing pan/pan masala habits**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	Chew pan or pan masala with tobacco		18.9	7.7	8.9	3.8	0.0	0.4	**4.7**
5	**Number of years of chewing pan or**								
	pan masala with Tobacco	n=	**10**	**8**	**18**	**2**	**0**	**2**	**20**
	Less than 5 years		0.0	62.5	48.3	0.0	0.0	0.0	**24.2**
	5 - 10 years		80.0	37.5	47.1	100.0	0.0	100.0	**73.6**
	> 10 years		20.0	0.0	4.5	0.0	0.0	0.0	**2.3**
6	**Number of times of chewing tobacco**								
	in a day								
	Less than 5 times		10.0	75.0	60.3	0.0	0.0	0.0	**30.2**
	5 - 10 times		70.0	25.0	35.2	100.0	0.0	100.0	**67.6**
	> 10 times		20.0	0.0	4.5	0.0	0.0	0.0	**2.3**
7	**Alcohol consumption habits**	n=	**53**	**104**	**157**	**52**	**105**	**157**	**314**
	Consuming alcohol		43.4	54.8	53.6	7.7	2.9	3.4	**28.5**
8	**Frequency of alcohol consumption**	n=	**23**	**57**	**80**	**4**	**3**	**7**	**87**
	Daily		0.0	3.5	3.2	0.0	0.0	0.0	**1.6**
	3 times a week		39.1	28.1	29.0	100.0	66.7	74.6	**51.8**
	Occasionally		60.9	68.4	67.8	0.0	33.3	25.4	**46.6**

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

(i) 22 per cent & 18 per cent of respondents, aged 35-44 & 65-74 year olds, more males & more in rural, had habit of smoking tobacco.

(ii) Three fourth & more smokers, more males & more in urban reported smoking cigarettes. The rest, more males & more in rural were smoking Bidis.

About 90 per cent of smokers reported smoking less than ten times in a day.

(iii) Only 5 per cent of respondents, irrespective of their age, more males & more in rural, reported chewing pan or pan masala with tobacco.

About 85 per cent of these were chewing pan or pan masala with tobacco for the last 5-10 years & mostly were chewing 5-10 times in a day.

(iv) Nearly one third of respondents, irrespective of their ages, more males reported consuming alcohol. A few of them, were consuming alcohol daily.

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.

6.1.1 Coronal caries

Table 6.01 presents the percentage of subjects by age and gender who were caries-free and those who had experienced caries (dmft/DMFT>0).

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 table also gives the mean number of teeth present in the mouth and the per cent subjects who were edentulous.

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

The results of the present survey reveal that the prevalence of dental caries in Chandigarh is unusually and consistently high in all age groups in the state (Table 6.01).

The overall percentage of subjects with caries experience in 5 year old subjects (primary teeth) was about 85.4 per cent. The majority of the subjects with caries (70.2 per cent) had a low dmft value of 1-3 teeth. This shows that although the prevalence of caries was high, the number of teeth affected per person or per mouth were low. A frequency distribution of the dmft values by the percentage of subjects who had experienced caries further showed that 14.3 per cent subjects had a dmft value of 4-5, followed by only about 1% subjects who had a dmft value higher than 5. (Table 6.01 and Figure 6.01)

Fig 6.01. Percent subjects with caries experience in Chandigarh

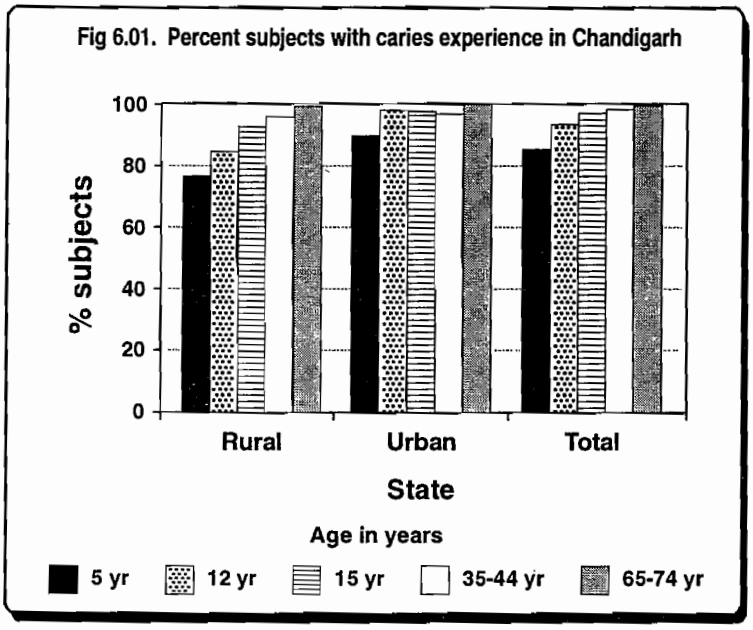


Table 6.01. Percent subjects with caries experience and with dmft/ DMFT values by age, sex and geographical area. State : Chandigarh

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=	55	52	*107*	**State Rural**	n=	56	50	*106*	50	56	*106*	54	56	*110*	53	52	*105*
With caries experience		76.4	78.8	*77.6*	With caries experience		82.1	84.3	*83.2*	96.0	89.3	*92.7*	94.4	96.4	*95.4*	98.1	100.0	*99.1*
dmft value 1-3		58.2	71.2	*64.7*	DMFT value 1-3		17.9	31.4	*24.7*	20.0	14.3	*17.2*	5.6	3.6	*4.6*	0.0	3.8	*1.9*
dmft value 4-5		14.5	7.7	*11.1*	DMFT value 4-7; 4-8		57.1	45.1	*51.1*	44.0	58.9	*51.5*	50.0	53.6	*51.8*	18.9	21.2	*20.1*
dmft value 6-10		3.6	0.0	*1.8*	DMFT value 8-14; 9-16		7.1	7.8	*7.5*	32.0	16.1	*24.1*	38.9	39.3	*39.1*	17.0	19.2	*18.1*
dmft value 11-15		0.0	0.0	*0.0*	DMFT value 15-21; 17-24		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	9.4	11.5	*10.5*
dmft value 16 or more		0.0	0.0	*0.0*	DMFT value 22-28; 25-28		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.9	1.9	*1.9*
					DMFT value 29 or more		0.0	0.0	NA	0.0	0.0	NA	0.0	0.0	*0.0*	50.9	42.3	*46.6*
State Urban	n=	102	106	*208*	**State Urban**	n=	103	106	*209*	107	101	*208*	104	101	*205*	104	105	*209*
With caries experience		91.2	87.7	*89.5*	With caries experience		99.0	98.1	*98.6*	98.1	99.0	*98.6*	99.0	98.0	*98.5*	100.0	100.0	*100.0*
dmft value 1-3		74.5	71.7	*73.1*	DMFT value 1-3		34.0	36.8	*35.4*	20.6	19.8	*20.2*	5.8	3.0	*4.4*	1.0	1.0	*1.0*
dmft value 4-5		15.7	16.0	*15.9*	DMFT value 4-7; 4-8		51.5	52.8	*52.2*	63.6	69.3	*66.5*	26.9	29.7	*28.3*	7.7	6.7	*7.2*
dmft value 6-10		1.0	0.0	*0.5*	DMFT value 8-14; 9-16		13.6	8.5	*11.1*	14.0	9.9	*12.0*	64.4	64.4	*64.4*	25.0	17.1	*21.1*
dmft value 11-15		0.0	0.0	*0.0*	DMFT value 15-21; 17-24		0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.9	1.0	*1.5*	23.1	21.9	*22.5*
dmft value 16 or more		0.0	0.0	*0.0*	DMFT value 22-28; 25-28		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
					DMFT value 29 or more		0.0	0.0	NA	0.0	0.0	NA	0.0	0.0	*0.0*	43.3	53.3	*48.3*
State Total	n=	157	158	*315*	**State Total**	n=	159	156	*315*	157	157	*314*	158	157	*315*	157	157	*314*
With caries experience		86.0	84.8	*85.4*	With caries experience		93.1	93.6	*93.4*	97.5	95.5	*96.5*	97.5	97.5	*97.5*	99.4	100.0	*99.7*
dmft value 1-3		68.8	71.5	*70.2*	DMFT value 1-3		28.3	35.0	*31.7*	20.4	17.8	*19.1*	5.7	3.2	*4.5*	0.6	1.9	*1.3*
dmft value 4-5		15.3	13.3	*14.3*	DMFT value 4-7; 4-8		53.5	50.3	*51.9*	57.3	65.6	*61.5*	34.8	38.2	*36.5*	11.5	11.5	*11.5*
dmft value 6-10		1.9	0.0	*1.0*	DMFT value 8-14; 9-16		11.3	8.3	*9.8*	19.7	12.1	*15.9*	55.7	55.4	*55.6*	22.3	17.8	*20.1*
dmft value 11-15		0.0	0.0	*0.0*	DMFT value 15-21; 17-24		0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.3	0.6	*1.0*	18.5	18.5	*18.5*
dmft value 16 or more		0.0	0.0	*0.0*	DMFT value 22-28; 25-28		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.6	0.6	*0.6*
					DMFT value 29 or more		0.0	0.0	NA	0.0	0.0	NA	0.0	0.0	*0.0*	45.9	49.7	*47.8*

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

The mean dmft in children aged 5 years in the state was 2.3 (Table 6.02), which is consistent with the findings above, where the majority had a low dmft value of 1-3 teeth. The decayed teeth (dt) component largely contributed to the dmft value in this age group although there was a small contribution of 0.6 teeth by the filled teeth (ft) component. Since there were no missing teeth in this age group, the mean number of teeth present in the mouth was the expected value of 20. The SIC Index was more than one and a half times the mean dmft value and stood at about 3.7 for the state. This indicates that there was about one third of the surveyed population which had a much higher caries (decayed teeth) than what is indicated by the figure for mean number of teeth decayed (dt).

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

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=	55	52	*107*	56	50	*106*	50	56	*106*	54	56	*110*	52	52	*104*
Mean no. of teeth present (mnt/MNT)		20.0	20.0	*20.0*	28.0	28.0	*28.0*	28.0	28.0	*28.0*	30.9	30.7	*30.8*	12.9	13.9	*13.4*
Mean dmft and Mean DMFT		2.1	1.8	*2.0*	4.2	3.9	*4.1*	5.5	4.8	*5.2*	7.4	7.8	*7.6*	21.8	20.5	*21.2*
Mean no. of Decayed teeth (dt/DT)		2.0	1.8	*1.9*	4.1	3.9	*4.0*	5.4	4.7	*5.1*	6.0	6.2	*6.1*	2.6	2.4	*2.5*
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*	1.1	1.3	*1.2*	19.1	18.1	*18.6*
Mean no. of Filled teeth (ft/FT)		0.0	0.0	*0.0*	0.0	0.1	*0.1*	0.1	0.1	*0.1*	0.3	0.3	*0.3*	0.1	0.0	*0.1*
SIC Index		4.1	3.0	*3.6*	7.1	6.9	*7.0*	8.7	7.8	*8.3*	10.4	11.3	*11*	32.0	32.0	*32.0*
No. of subjects edentulous		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	27	22	*49*
State Urban	n=	102	106	*208*	103	106	*209*	107	101	*208*	104	101	*205*	104	105	*209*
Mean no. of teeth present (mnt/MNT)		20.0	20.0	*20.0*	28.0	28.0	*28.0*	28.0	28.0	*28.0*	30.9	31.1	*31.0*	15.5	12.6	*14.1*
Mean dmft and Mean DMFT		2.3	2.3	*2.3*	4.7	4.3	*4.5*	5.1	4.8	*5.0*	9.9	9.5	*9.7*	22.1	23.9	*23.0*
Mean no. of Decayed teeth (dt/DT)		1.6	1.8	*1.7*	3.6	3.2	*3.4*	3.8	3.4	*3.6*	5.2	5.3	*5.3*	4.3	3.0	*3.7*
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*	1.1	0.9	*1.0*	16.5	19.4	*18.0*
Mean no. of Filled teeth (ft/FT)		0.7	0.6	*0.7*	1.1	1.2	*1.2*	1.3	1.4	*1.4*	3.5	3.3	*3.4*	1.3	1.4	*1.4*
SIC Index		3.6	3.5	*3.6*	7.3	6.6	*7.0*	7.5	6.9	*7.2*	13.7	13.1	*13.4*	32.0	32.0	*32.0*
No. of subjects edentulous		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	43	53	*96*
State Total	n=	157	158	*315*	159	156	*315*	157	157	*314*	158	157	*315*	156	157	*313*
Mean no. of teeth present (mnt/MNT)		20.0	20.0	*20.0*	28.0	28.0	*28.0*	28.0	28.0	*28.0*	30.9	31.0	*31.0*	15.2	12.7	*14.0*
Mean dmft and Mean DMFT		2.3	2.3	*2.3*	4.6	4.3	*4.5*	5.1	4.8	*5.0*	9.6	9.3	*9.5*	22.1	23.5	*22.8*
Mean no. of Decayed teeth (dt/DT)		1.7	1.8	*1.8*	3.6	3.2	*3.4*	4.0	3.5	*3.8*	5.3	5.4	*5.4*	4.1	2.9	*3.5*
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*	1.1	1.0	*1.1*	16.8	19.3	*18.1*
Mean no. of Filled teeth (ft/FT)		0.6	0.5	*0.6*	1.0	1.1	*1.1*	1.2	1.3	*1.3*	3.2	2.9	*3.1*	1.2	1.3	*1.3*
SIC Index		3.8	3.5	*3.7*	7.2	6.7	*7.0*	7.9	7.3	*7.6*	12.9	12.6	*12.8*	32.0	32.0	*32.0*
No. of subjects edentulous		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	70	75	*145*

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

There was no clearly marked pattern of severity between male and female subjects. The overall caries experience appeared to be higher in urban than in rural areas.

The caries experience in permanent teeth (DMFT>0), was unusually high in all age groups and remained above the 93 per cent mark (Fig 6.01). The prevalence was approximately 93.4 per cent (12 years); 96.5 per cent (15 years); 97.5 per cent (35-44 years; and 99.7 per cent (65-74 years).

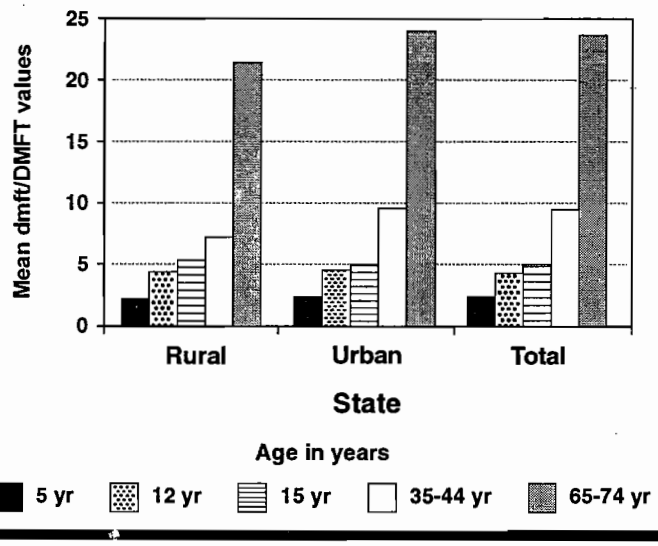
About 31.7 per cent subjects (12 years) and 19.1 per cent subjects (15 years) had experienced caries in more than one and upto 3 teeth at that age. Another 52 per cent and 61.5 per cent had experienced caries in upto a half (50%) of their teeth respectively at 12 years and 15 years of age. In subjects aged 65-74 years, there were a much higher percentage of subjects (47.8 per cent) who had experienced caries in 29 to all 32 of their teeth (Table 6.01).

The mean DMFT appeared to rise steadily as age advanced (Fig 6.02) and was highest (22.8) for the age group of 65-74 years (Table 6.02). The decayed teeth (DT) component contributed most to the DMFT in subjects aged 12, 15 and 35-44 years followed by filled teeth (FT). In the 65-74 yr age group in both male and female subjects, the missing teeth component (MT) was 18.1 and contributed the most (more than five times higher than the decayed teeth component). Almost all cases of missing teeth were reported to be due to caries (Table 6.03). There was a small component of filled teeth present in all age groups ranging from 1.1 in 12 year olds to a maximum of 3.1 in the 35-44 year age group.

The significant Caries (SIC) Index, which gives the mean of the one third of the subjects with highest DMFT levels, was applied to all age groups. The corresponding figures for SIC index were almost twice (or slightly lesser) the DMFT figures in all age groups.

The prevalence and pattern of distribution of the components of DMFT was similar in rural and urban areas. There were no marked differentials in between regions or between male and female subjects.

Fig 6.02. Mean dmft/DMFT in Chandigarh



About 46 per cent subjects across both sexes in the age group of 65-74 yr age group were edentulous or without natural teeth. Overall, the number of teeth present decreased as age advanced (Table 6.02). These findings suggest the cumulative high tooth mortality which could be due to caries, but could also be related to periodontal disease, orthodontic reasons or other causes.

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

Missing Teeth		12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	56	50	*106*	50	56	*106*	54	56	*110*	52	52	*104*
Mean no. of teeth missing due to caries		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.7	1.0	***0.9***	18.9	17.8	***18.4***
Mean no. of teeth missing due to other reasons		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.4	0.4	***0.4***	0.2	0.3	***0.3***
State Urban	n=	103	106	*209*	107	101	*208*	104	101	*205*	104	105	*209*
Mean no. of teeth missing due to caries		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.8	0.9	***0.9***	16.5	19.4	***18.0***
Mean no. of teeth missing due to other reasons		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.3	0.0	***0.2***	0.0	0.0	***0.0***
State Total	n=	159	156	*315*	157	157	*314*	158	157	*315*	156	157	*313*
Mean no. of teeth missing due to caries		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.8	0.9	***0.9***	16.7	19.2	***18.0***
Mean no. of teeth missing due to other reasons		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.3	0.1	***0.2***	0.1	0.1	***0.1***

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 per cent subjects with root caries and fillings, if any, and the mean number of teeth with root caries and fillings, if any.

Unlike coronal caries, root caries does not normally appear in children and young adults. Therefore the data on root caries is presented only for the two age groups of 35-44 yrs and 65-74 yr.

The prevalence proportion of subjects with root caries was approximately 15.6 and 25 per cent respectively in the age groups 35-44 yr and 65-74 yr. There were no subjects in the state with root fillings.

The mean number of teeth with root fillings was less than one tooth (0.7) in both age groups. There were no subjects with root fillings in the state in both age groups.

There were no distinct patterns emerging in the state in relation to the prevalence of root caries in rural and urban areas, in between regions and between male and female subjects.

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

Root Caries		35-44 years			65-74 years		
		M	F	T	M	F	T
State Rural	n=	**54**	**56**	***110***	**53**	**52**	***105***
% Subjects with Root caries		31.5	37.5	***34.5***	15.1	11.5	***13.3***
Mean nos of teeth with Root Caries		1.1	1.4	***1.3***	0.8	0.5	***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=	**104**	**101**	***205***	**104**	**105**	***209***
% Subjects with Root caries		14.4	11.9	***13.2***	29.8	22.9	***26.4***
Mean nos of teeth with Root Caries		0.3	0.3	***0.3***	0.9	0.5	***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 Total	n=	**158**	**157**	***315***	**157**	**157**	***314***
% Subjects with Root caries		16.3	14.8	***15.6***	28.2	21.7	***25.0***
Mean nos of teeth with Root Caries		0.6	0.7	***0.7***	0.8	0.5	***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***

6.1.3 Treatment need

Table 6.05 presents the per cent 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 clinically assessed for their need for both preventive and treatment care, based on their caries experience and dentition status. Preventive care need included caries arresting care and fissure sealing. Treatment need included the need for one, two or more surface fillings, extractions of teeth, pulp care, crowns and veneers..

The treatment need in the surveyed population was unusually high (more than about 63 per cent) in all age groups. Upto about 97 per cent (15 year olds) needed some treatment.

In the 5 year olds, about 85.8 per cent subjects had need for treatment and in all these cases, the treatment need was that of fillings in teeth (one or more surfaces). The mean number of teeth which needed treatment was 1.9.

Fig 6.05. Percent subjects with treatment need in Chandigarh

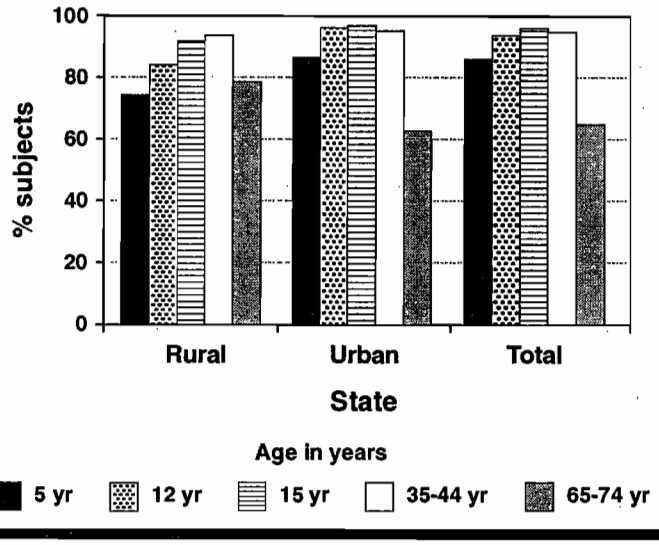
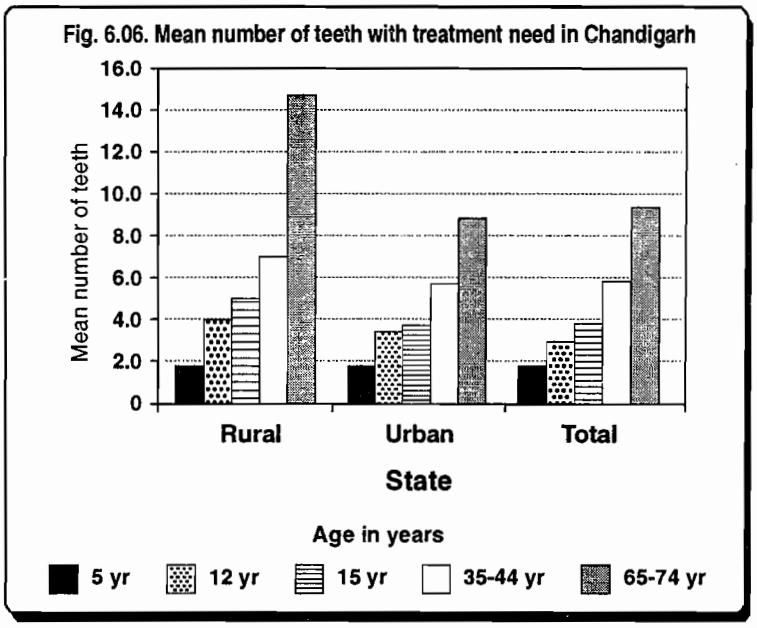


Table 6.05 Percent subjects with treatment need by age, sex and geographical area. **State : Chandigarh**

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=	55	52	*107*	56	50	*106*	50	56	*106*	54	56	*110*	53	52	*105*
Treatment needed		76.4	75.0	***75.7***	82.1	86.0	***84.1***	96.0	89.3	***92.7***	94.4	94.6	***94.5***	79.2	76.9	***78.1***
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		76.4	75.0	***75.7***	82.1	86.0	***84.1***	96.0	89.3	***92.7***	90.7	92.9	***91.8***	32.1	36.5	***34.3***
Crown & Veneer		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	1.8	***0.9***	1.9	1.8	***1.9***	0.0	1.9	***1.0***
Pulp care		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.9	0.0	***1.0***	0.0	0.0	***0.0***
Extraction		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	3.6	***1.8***	31.5	37.5	***34.5***	15.1	11.5	***13.3***
Need for other care		0.0	0.0	***0.0***	0.0	0.0	***0.0***	2.0	0.0	***1.0***	29.6	39.3	***34.5***	67.9	61.5	***64.7***
State Urban	n=	102	106	*208*	103	106	*209*	107	101	*208*	104	101	*205*	104	105	*209*
Treatment needed		90.2	84.0	***87.1***	98.1	96.2	***97.2***	97.2	98.0	***97.6***	99.0	95.0	***97.0***	66.3	58.1	***62.2***
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		90.2	84.0	***87.1***	97.1	95.3	***96.2***	93.5	95.0	***94.3***	97.1	93.1	***95.1***	53.8	41.9	***47.9***
Crown & Veneer		0.0	0.0	***0.0***	1.0	1.9	***1.5***	0.9	2.0	***1.5***	5.8	8.9	***7.4***	3.8	1.0	***2.4***
Pulp care		0.0	0.0	***0.0***	3.9	2.8	***3.4***	40.2	40.6	***40.4***	12.5	15.8	***14.2***	17.3	10.5	***13.9***
Extraction		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	9.6	7.9	***8.8***	22.1	21.0	***21.6***
Need for other care		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.9	1.0	***1.0***	18.3	7.9	***13.1***	29.8	29.5	***29.7***
State Total	n=	157	158	*315*	159	156	*315*	157	157	*314*	158	157	*315*	157	157	*314*
Treatment needed		88.6	83.0	***85.8***	96.3	95.2	***95.8***	97.1	97.0	***97.1***	98.5	95.0	***96.8***	67.7	60.1	***63.9***
Preventive care & fissure sealant		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Filling one or more surfaces		88.6	83.0	***85.8***	95.4	94.4	***94.9***	93.7	94.4	***94.1***	96.4	93.0	***94.7***	51.5	41.3	***46.4***
Crown & Veneer		0.0	0.0	***0.0***	0.9	1.7	***1.3***	0.8	2.0	***1.4***	5.3	8.1	***6.7***	3.4	1.1	***2.3***
Pulp care		0.0	0.0	***0.0***	3.4	2.5	***3.0***	36.2	35.9	***36.1***	11.3	14.0	***12.7***	15.5	9.4	***12.5***
Extraction		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.4	***0.2***	12.0	11.3	***11.7***	21.4	20.0	***20.7***
Need for other care		0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.0	0.9	***1.0***	19.5	11.5	***15.5***	33.9	32.9	***33.4***

Generally speaking, the male subjects needed more treatment than their female counterparts and the need was greater in urban than rural areas.



At the state level, the treatment need ranged from about 64 per cent in 65-74 year old subjects to a maximum of 95.8 per cent in 12 year olds. Invariably, across age groups and across sexes, the most prevalent need was that of fillings (one or more surface fillings), followed by pulp care except in the 65-4 year old subjects where the second most prevalent need was that of extractions. A high percentage of subjects in both 35-44 (15.5%) and 65-74 year (33.4%) age groups needed other but unspecified treatment care. The mean number of teeth requiring treatment was lowest in the subjects aged 12 years (3.5) and highest in the age group of 65-74 years (9.5). The pattern was similar for rural and urban areas although the mean number of teeth needing treatment was higher in rural area compared with urban areas (Fig 6.06).

The type of treatment varied with age. The mean number of teeth needing fillings ranged from 3 (65-74 years) to 4.8 (35-44 years). The mean number of teeth indicated for extraction was 0.4 (35-44 years) to 0.6 (65-74 years).

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

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=**	**55**	**52**	***107***	**56**	**50**	***106***	**50**	**56**	***106***	**54**	**56**	***110***	**52**	**52**	***104***
Treatment needed		2.0	1.7	***1.9***	4.1	3.8	***4.0***	5.5	4.8	***5.2***	7.0	7.3	***7.2***	16.1	13.3	***14.7***
Preventive care/ fissure sealant		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Filling one or more surfaces		2.0	1.7	***1.9***	4.1	3.8	***4.0***	5.5	4.7	***5.1***	5.0	4.7	***4.9***	1.9	2.0	***2.0***
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	0.6	***0.3***
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	0.0	***0.0***
Extraction		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.0	1.4	***1.2***	0.7	0.5	***0.6***
Need for other care		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.0	1.2	***1.1***	13.5	10.2	***11.9***
State Urban	**n=**	**102**	**106**	***208***	**103**	**106**	***209***	**107**	**101**	***208***	**104**	**101**	***205***	**104**	**105**	***209***
Treatment needed		1.9	1.9	***1.9***	3.6	3.1	***3.4***	3.9	3.6	***3.8***	6.0	5.5	***5.8***	9.2	8.6	***8.9***
Preventive care/ fissure sealant		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
Filling one or more surfaces		1.9	1.9	***1.9***	3.6	3.1	***3.4***	3.3	3.1	***3.2***	4.8	4.9	***4.9***	3.5	2.5	***3.0***
Crown/ Veneer		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***
Pulp care		0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.5	0.5	***0.5***	0.1	0.2	***0.2***	0.2	0.1	***0.2***
Extraction		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.3	0.2	***0.3***	0.7	0.4	***0.6***
Need for other care		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.7	0.1	***0.4***	4.8	5.6	***5.2***
State Total	**n=**	**157**	**158**	***315***	**159**	**156**	***315***	**157**	**157**	***314***	**158**	**157**	***315***	**156**	**157**	***313***
Treatment needed		1.9	1.9	***1.9***	3.7	3.2	***3.5***	4.1	3.7	***3.9***	6.1	5.7	***5.9***	9.9	9.1	***9.5***
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		1.9	1.9	***1.9***	3.6	3.1	***3.4***	3.5	3.3	***3.4***	4.8	4.8	***4.8***	3.3	2.5	***2.9***
Crown/ Veneer		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	0.1	***0.1***
Pulp care		0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.4	0.4	***0.4***	0.1	0.2	***0.2***	0.2	0.1	***0.2***
Extraction		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.4	0.4	***0.4***	0.7	0.4	***0.6***
Need for other care		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.1	0.0	***0.1***	0.7	0.3	***0.5***	5.7	6.1	***5.9***

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

Periodontal disease was not recorded in subjects aged 5 years. The prevalence of periodontal disease was high in the state. It ranged from a peak level of about 93.4 per cent in subjects aged 35-44 years to the lowest level of about 55.9 per cent in subjects aged 65-74 years.

The severity of periodontal disease is measured by the components of bleeding, calculus and pockets (4-5 mm and 6 mm). The component of bleeding emerged as the most prevalent condition in 12 and 15 year olds while calculus was most prevalent in the 65-74 year age group. Thus, bleeding was a more prevalent condition in the lower age groups, while accumulated calculus became an increasingly high problem as age advanced. The periodontal pockets were detected in about 39.2 per cent subjects in the 35-44 year olds and about 42.7 per cent in 65-74 year olds. Of these, the prevalence of shallow pockets (4-5 mm) was higher in 35-44 year old subjects while deep pockets (6 mm) were more prevalent in the 65-74 year old subjects.

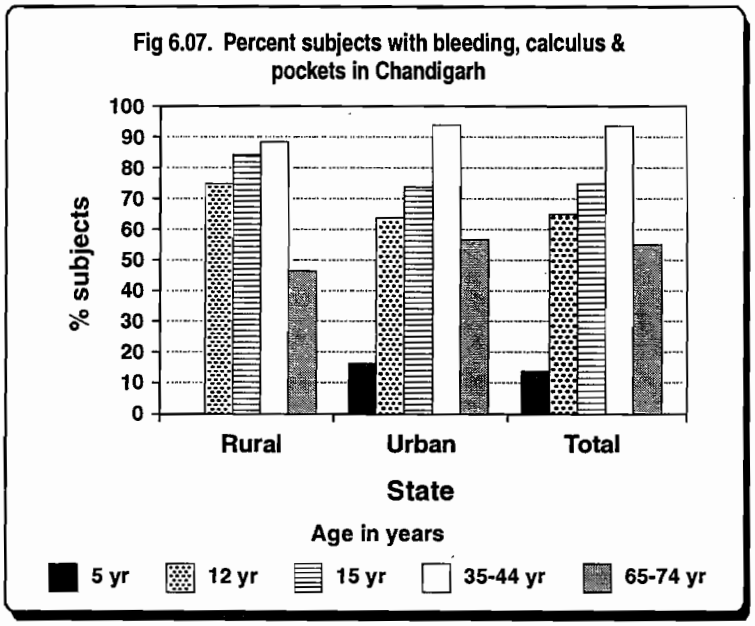


Table: 6.07 Percent subjects with bleeding, calculus and/ or pockets by age, sex, and geographical area. State : Chandigarh

Malocclusion (DAI Score)		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=	**55**	**47**	***102***	**50**	**56**	***106***	**54**	**56**	***110***	**49**	**45**	***94***
With bleeding,calculus, or pockets		78.2	72.3	***75.3***	88.0	82.1	***85.1***	85.2	91.1	***88.2***	42.9	51.1	***47***
with bleeding		56.4	53.2	***54.8***	62.0	51.8	***56.9***	53.7	35.7	***44.7***	12.2	22.2	***17.2***
with calculus		54.5	53.2	***53.9***	82.0	76.8	***79.4***	85.2	89.3	***87.3***	36.7	46.7	***41.7***
with pockets 4-5 mm		0.0	0.0	***0.0***	2.0	1.8	***1.9***	24.1	25.0	***24.6***	10.2	15.6	***12.9***
with pockets 6 mm		0.0	0.0	***0.0***	0.0	3.6	***1.8***	31.5	37.5	***34.5***	16.3	13.3	***14.8***
with bleeding or higher		56.4	53.2	***54.8***	62.0	51.8	***56.9***	53.7	35.7	***44.7***	12.2	22.2	***17.2***
with calculus or higher		21.8	19.1	***20.5***	26.0	28.6	***27.3***	31.5	53.6	***42.6***	24.5	24.4	***24.5***
with pockets 4-5 mm or higher		0.0	0.0	***0.0***	0.0	1.8	***0.9***	0.0	1.8	***0.9***	2.0	2.2	***2.1***
with pockets 6mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	4.1	2.2	***3.2***
State Urban	n=	**102**	**103**	***205***	**107**	**101**	***208***	**103**	**99**	***202***	**88**	**87**	***175***
With bleeding,calculus, or pockets		64.7	63.1	***63.9***	76.6	70.3	***73.5***	93.2	94.9	***94.1***	63.6	50.6	***57.1***
with bleeding		49.0	51.5	***50.3***	57.9	53.5	***55.7***	62.1	68.7	***65.4***	43.2	32.2	***37.7***
with calculus		37.3	40.8	***39.1***	53.3	51.5	***52.4***	82.5	82.8	***82.7***	55.7	47.1	***51.4***
with pockets 4-5 mm		0.0	1.0	***0.5***	3.7	1.0	***2.4***	32.0	29.3	***30.7***	26.1	13.8	***20.0***
with pockets 6 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	5.8	6.1	***6.0***	25.0	24.1	***24.6***
with bleeding or higher		49.0	51.5	***50.3***	57.9	53.5	***55.7***	62.1	68.7	***65.4***	43.2	32.2	***37.7***
with calculus or higher		15.7	11.7	***13.7***	18.7	16.8	***17.8***	26.2	24.2	***25.2***	14.8	16.1	***15.5***
with pockets 4-5 mm or higher		0.0	0.0	***0.0***	0.0	0.0	***0.0***	3.9	1.0	***2.5***	4.5	1.1	***2.8***
with pockets 6mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.0	1.0	***1.0***	1.1	1.1	***1.1***
State Total	n=	**157**	**150**	***307***	**157**	**157**	***314***	**157**	**155**	***312***	**137**	**132**	***269***
With bleeding,calculus, or pockets		66.2	64.0	***65.1***	77.8	71.7	***74.8***	92.3	94.5	***93.4***	61.2	50.6	***55.9***
with bleeding		49.8	51.6	***50.7***	58.3	53.3	***55.8***	61.2	64.8	***63.0***	39.6	31.1	***35.4***
with calculus		39.2	42.0	***40.6***	56.1	54.4	***55.3***	82.8	83.6	***83.2***	53.5	47.1	***50.3***
with pockets 4-5 mm		0.0	0.9	***0.5***	3.6	1.1	***2.4***	31.2	28.8	***30.0***	24.3	14.0	***19.2***
with pockets 6 mm		0.0	0.0	***0.0***	0.0	0.4	***0.2***	8.6	9.7	***9.2***	24.0	23.0	***23.5***
with bleeding or higher		49.8	51.6	***50.7***	58.3	53.3	***55.8***	61.2	64.8	***63.0***	39.6	31.1	***35.4***
with calculus or higher		16.4	12.4	***14.4***	19.4	18.2	***18.8***	26.8	27.7	***27.3***	15.9	17.0	***16.5***
with pockets 4-5 mm or higher		0.0	0.0	***0.0***	0.0	0.2	***0.1***	3.5	1.1	***2.3***	4.3	1.3	***2.8***
with pockets 6mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.9	0.9	***0.9***	1.5	1.3	***1.4***

The dentition is divided into six sextants, three upper and three lower, for assessment of the periodontal status.

The mean number of sextants with periodontal disease (i.e., those sextants in the mouth with bleeding, calculus or pockets) increased as age advanced from 12 years (2.4) to 35-44 years (4.6). It was 2.6 in subjects aged 65-74 years. Fig. 6.08 depicts the rural urban and the state's total distribution of the mean number of sextants with the disease by age group.

The prevalence of periodontal disease appeared higher in rural areas compared with urban areas. There were no marked differentials between male and female subjects and between regions.

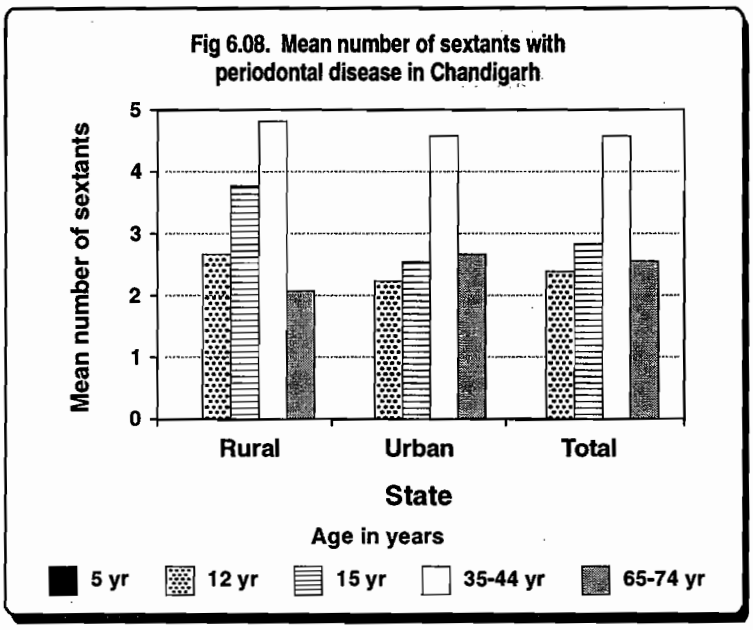


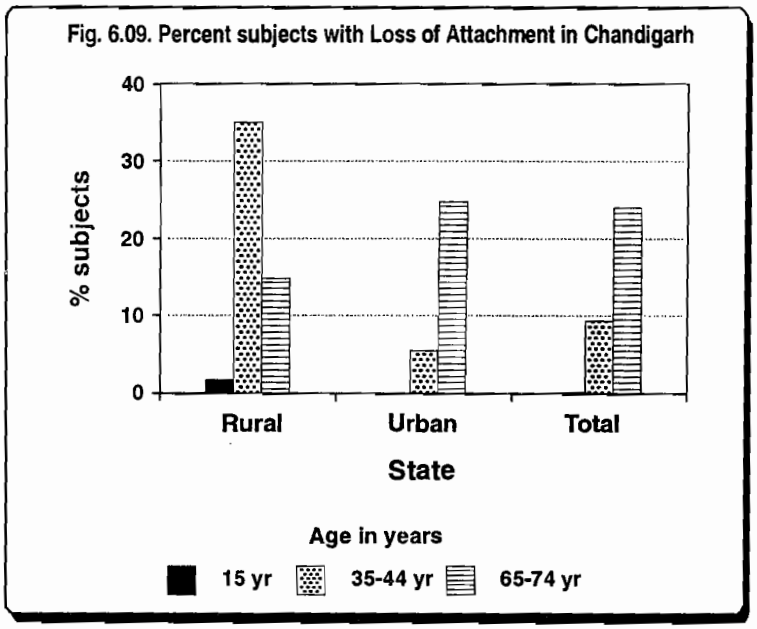
Fig 6.08. Mean number of sextants with periodontal disease in Chandigarh

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

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=	55	52	*107*	56	50	*106*	50	56	*106*	54	56	*110*	53	52	*105*
Mean no. of healthy sextants		0.3	0.5	*0.4*	2.9	3.3	*3.1*	2.1	2.5	*2.3*	1.3	1.2	*1.3*	0.5	0.4	*0.5*
With bleeding, calculus, pockets		0.0	0.0	*0.0*	2.9	2.4	*2.7*	3.9	3.5	*3.7*	4.6	4.8	*4.7*	1.9	2.3	*2.1*
with bleeding		0.0	0.0	*0.0*	1.5	1.4	*1.5*	1.7	1.4	*1.6*	1.0	0.6	*0.8*	0.2	0.5	*0.4*
with calculus		0.0	0.0	*0.0*	1.4	1.0	*1.2*	2.2	2.1	*2.2*	2.5	2.8	*2.7*	0.9	1.3	*1.1*
with pockets(4-5 mm)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.5	0.4	*0.5*	0.3	0.2	*0.3*
with pockets (6mm or more)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.7	1.0	*0.9*	0.5	0.3	*0.4*
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*	3.1	2.5	*2.8*
Not recorded		5.7	5.5	*5.6*	0.1	0.4	*0.3*	0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.5	0.9	*0.7*
State Urban	n=	102	106	*208*	103	106	*209*	107	101	*208*	104	101	*205*	104	105	*209*
Mean no. of healthy sextants		0.1	0.2	*0.2*	3.6	3.6	*3.6*	3.4	3.4	*3.4*	1.4	1.3	*1.4*	0.3	0.3	*0.3*
With bleeding, calculus, pockets		0.0	0.0	*0.0*	2.4	2.2	*2.3*	2.6	2.6	*2.6*	4.5	4.6	*4.6*	2.9	2.4	*2.7*
with bleeding		0.0	0.0	*0.0*	1.7	1.3	*1.5*	1.5	1.4	*1.5*	1.5	1.6	*1.6*	0.7	0.5	*0.6*
with calculus		0.0	0.0	*0.0*	0.7	0.9	*0.8*	1.1	1.2	*1.2*	2.1	2.3	*2.2*	1.3	1.4	*1.4*
with pockets(4-5 mm)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.7	0.6	*0.7*	0.5	0.3	*0.4*
with pockets (6mm or more)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.1	*0.1*	0.4	0.3	*0.4*
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*	1.8	2.2	*2.0*
Not recorded		5.9	5.8	*5.9*	0.1	0.2	*0.2*	0.0	0.0	*0.0*	0.1	0.1	*0.1*	0.9	1.0	*1.0*
State Total	n=	157	158	*315*	159	156	*315*	157	157	*314*	158	157	*315*	157	157	*314*
Mean no. of healthy sextants		0.1	0.3	*0.2*	3.5	3.6	*3.6*	3.2	3.3	*3.3*	1.4	1.3	*1.4*	0.4	0.3	*0.4*
With bleeding, calculus, pockets		0.0	0.0	*0.0*	2.5	2.2	*2.4*	2.8	2.7	*2.8*	4.5	4.6	*4.6*	2.8	2.4	*2.6*
with bleeding		0.0	0.0	*0.0*	1.7	1.3	*1.5*	1.5	1.4	*1.5*	1.5	1.5	*1.5*	0.7	0.5	*0.6*
with calculus		0.0	0.0	*0.0*	0.8	0.9	*0.9*	1.2	1.3	*1.3*	2.2	2.4	*2.3*	1.3	1.3	*1.3*
with pockets(4-5 mm)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.1	0.0	*0.1*	0.7	0.6	*0.7*	0.5	0.3	*0.4*
with pockets (6mm or more)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.2	0.2	*0.2*	0.4	0.3	*0.4*
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*	1.9	2.3	*2.1*
Not recorded		5.9	5.7	*5.8*	0.1	0.2	*0.2*	0.0	0.0	*0.0*	0.1	0.1	*0.1*	0.9	1.0	*1.0*

6.2.2 Loss of attachment

Tables 6.09 presents the per cent subjects with loss of epithelial 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.

Overall, the prevalence proportion of subjects with loss of attachment in one or more sextants was 9.3 per cent in subjects aged 35-44 years but much higher (23.5 per cent) in subjects aged 65-74 years (Fig 6.10). The least severe form of loss of attachment (4-5 mm) was the most prevalent followed by the more severe form of 6-8 mm (Table 6.09).

The mouth is divided into sextants for recording and measuring loss of attachment. The mean number of sextants with loss of attachment in subjects aged 35-44 years was only 0.2 while it was 0.4 in subjects aged 65-74 years (Table 6.10).

The proportion of urban residents with loss of attachment was lower than rural residents (Fig 6.10) but the pattern of distribution of severity of the loss of attachment remained similar in rural and urban areas. There were no major differentials in the distribution pattern by severity or between male and female subjects.

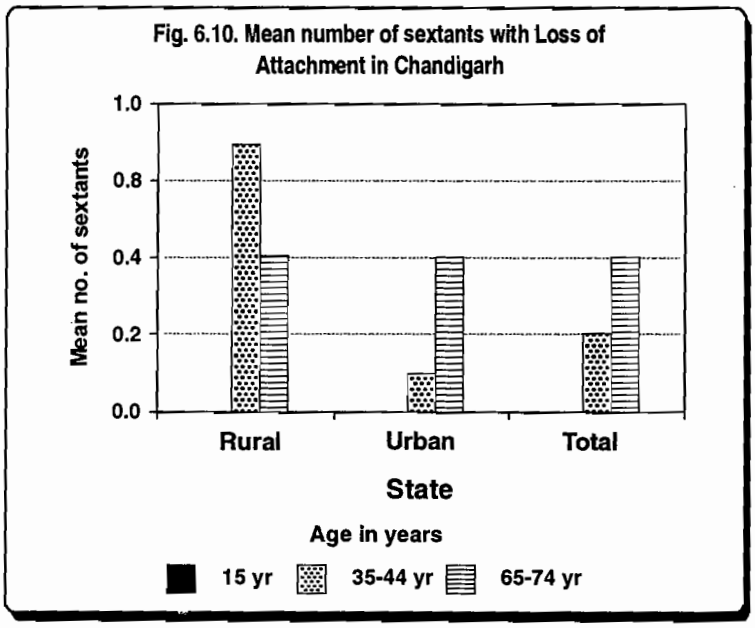


Table 6.09 Percent distribution of subjects with highest scores of loss of attachment by age, sex, and geographical area. State : Chandigarh

Loss of Attachment (LOA)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	**49**	**56**	***105***	**54**	**56**	***110***	**49**	**45**	***94***
With no loss of attachment (0-3 mm)		100.0	96.4	***98.2***	68.5	58.9	***63.7***	26.5	35.6	***31.1***
With loss of attachment		0.0	3.6	***1.8***	31.5	39.3	***35.4***	16.3	13.3	***14.8***
with LOA 4-5 mm only		0.0	3.6	***1.8***	29.6	33.9	***31.8***	14.3	8.9	***11.6***
with LOA 4-5 mm & 6-8 mm		0.0	0.0	***0.0***	1.9	3.6	***2.8***	2.0	4.4	***3.2***
with LOA 4-5 mm & 6-8 mm & 9-11 mm		0.0	0.0	***0.0***	0.0	1.8	***0.9***	0.0	0.0	***0.0***
with LOA 4-5 mm & 6-8 mm & 9-11 mm & 12 mm or higher		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Urban	n=	**107**	**100**	***207***	**103**	**98**	***201***	**88**	**87**	***175***
With no loss of attachment (0-3 mm)		100.0	100.0	***100.0***	94.2	93.9	***94.1***	39.8	29.9	***34.9***
With loss of attachment		0.0	0.0	***0.0***	5.8	6.1	***6.0***	25.0	24.1	***24.6***
with LOA 4-5 mm only		0.0	0.0	***0.0***	5.8	6.1	***6.0***	25.0	24.1	***24.6***
with LOA 4-5 mm & 6-8 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with LOA 4-5 mm & 6-8 mm & 9-11 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with LOA 4-5 mm & 6-8 mm & 9-11 mm & 12 mm or higher		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
State Total	n=	**156**	**156**	***312***	**157**	**154**	***311***	**137**	**132**	***269***
With no loss of attachment (0-3 mm)		100.0	99.6	***99.8***	91.4	89.7	***90.6***	38.2	30.5	***34.4***
With loss of attachment		0.0	0.4	***0.2***	8.6	10.0	***9.3***	24.0	23.0	***23.5***
with LOA 4-5 mm only		0.0	0.4	***0.2***	8.4	9.4	***8.9***	23.8	22.5	***23.2***
with LOA 4-5 mm & 6-8 mm		0.0	0.0	***0.0***	0.2	0.4	***0.3***	0.2	0.5	***0.4***
with LOA 4-5 mm & 6-8 mm & 9-11 mm		0.0	0.0	***0.0***	0.0	0.2	***0.1***	0.0	0.0	***0.0***
with LOA 4-5 mm & 6-8 mm & 9-11 mm & 12 mm or higher		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 : Chandigarh**

Loss of Attachment (LOA)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	**n=**	**50**	**56**	***106***	**54**	**56**	***110***	**53**	**52**	***105***
With no loss of attachment (0-3 mm)		5.9	6.0	***6.0***	5.3	4.9	***5.1***	2.0	2.3	***2.2***
With loss of attachment		0.0	0.0	***0.0***	0.7	1.1	***0.9***	0.5	0.3	***0.4***
with loss of attachment 4-5 mm		0.0	0.0	***0.0***	0.6	1.0	***0.8***	0.5	0.3	***0.4***
with loss of attachment 6-8 mm		0.0	0.0	***0.0***	0.1	0.1	***0.1***	0.0	0.1	***0.1***
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***	3.1	2.5	***2.8***
Not recorded		0.1	0.0	***0.1***	0.0	0.0	***0.0***	0.5	0.8	***0.7***
State Urban	**n=**	**107**	**101**	***208***	**104**	**101**	***205***	**104**	**105**	***209***
With no loss of attachment (0-3 mm)		6.0	5.9	***6.0***	5.8	5.7	***5.8***	2.9	2.4	***2.7***
With loss of attachment		0.0	0.0	***0.0***	0.1	0.1	***0.1***	0.4	0.3	***0.4***
with loss of attachment 4-5 mm		0.0	0.0	***0.0***	0.1	0.1	***0.1***	0.4	0.3	***0.4***
with loss of attachment 6-8 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
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***	1.8	2.2	***2.0***
Not recorded		0.0	0.1	***0.1***	0.1	0.2	***0.2***	0.9	1.0	***1.0***
State Total	**n=**	**157**	**157**	***314***	**158**	**157**	***315***	**157**	**157**	***314***
With no loss of attachment (0-3 mm)		6.0	5.9	***6.0***	5.8	5.6	***5.7***	2.8	2.4	***2.6***
With loss of attachment		0.0	0.0	***0.0***	0.2	0.2	***0.2***	0.4	0.3	***0.4***
with loss of attachment 4-5 mm		0.0	0.0	***0.0***	0.2	0.2	***0.2***	0.4	0.3	***0.4***
with loss of attachment 6-8 mm		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
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***	1.9	2.3	***2.1***
Not recorded		0.0	0.1	***0.1***	0.1	0.2	***0.2***	0.9	1.0	***1.0***

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 per cent 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, 12 and 15 years.

Fig. 6.11. Percent subjects with malocclusion in Chandigarh

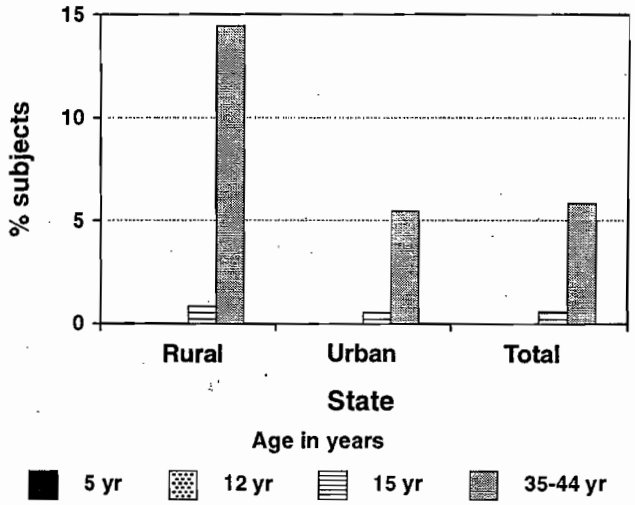


Table 6.11 Percent subjects with malocclusion by age, sex and geographical areas. **State : Chandigarh**

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=	55	52	*107*	56	51	*107*	50	56	*106*	54	56	*110*
None or minor malocclusion (<25)		100.0	100.0	*100.0*	100.0	100.0	*100.0*	100.0	98.2	*99.1*	90.7	80.4	*85.6*
Malocclusion present		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.8	*0.9*	9.3	19.6	*14.5*
Definite malocclusion (26 -30)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	3.7	14.3	*9.0*
Severe malocclusion (31 - 35)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.9	1.8	*1.9*
V Severe malocclusion (36 or more)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.8	*0.9*	3.7	3.6	*3.7*
State Urban	n=	102	106	*208*	103	106	*209*	107	101	*208*	104	101	*205*
None or minor malocclusion (<25)		100.0	100.0	*100.0*	100.0	100.0	*100.0*	100.0	99.0	*99.5*	94.2	95.0	*94.6*
Malocclusion present		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.0	*0.5*	5.8	5.0	*5.4*
Definite malocclusion (26 -30)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.0	*0.5*	2.9	4.0	*3.5*
Severe malocclusion (31 - 35)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.9	0.0	*1.0*
V Severe malocclusion (36 or more)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.0	1.0	*1.0*
State Total	n=	157	158	*315*	159	157	*316*	157	157	*314*	158	157	*315*
None or minor malocclusion (<25)		100.0	100.0	*100.0*	100.0	100.0	*100.0*	100.0	98.9	*99.5*	93.9	93.4	*93.7*
Malocclusion present		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	1.1	*0.5*	6.1	6.6	*6.3*
Definite malocclusion (26 -30)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.9	*0.5*	3.0	5.1	*4.1*
Severe malocclusion (31 - 35)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.9	0.2	*1.1*
V Severe malocclusion (36 or more)		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.2	*0.1*	1.3	1.3	*1.3*

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

In subjects aged 35-44 years, malocclusion was recorded in about 6.4 per cent subjects (Fig 6.11). Of these, about 4 per cent had 'definite malocclusion', about 1.1 per cent 'severe malocclusion', and the rest 'very severe malocclusion' (Table 6.11).

There were no marked male and female differentials and the distribution was similar in rural and urban areas although rural residents appeared to have marginally more malocclusion than their urban counterparts.

6.4 ORAL CANCER & 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. Table 6.13 presents the distribution of lesions by location in the mouth of subjects.

The prevalence of oral mucosal lesions was quite low in the state (Fig 6.12). One to two cases of oral cancers were detected in subjects aged 15 years and above, with no apparent gender based predilection, all in urban areas. There were notably higher figures for pre-cancerous conditions (leukoplakia and lichen planus) in both 35-44 years and 65-74 years. Leukoplakia appeared more in males than females while lichen planus appeared more in females in both age groups. The figures were higher in urban than rural subjects.

Ulceration was more prevalent than any other condition in subjects aged 15 years and above, more in males than in female subjects, more in urban than rural areas. Abscesses commonly occurred in all but 5 year olds, more in urban than rural subjects, almost equally distributed by sex.

A broad analysis of the lesions by location in the oral mucosa (Table 6.13) showed that Ulceration was distributed mainly on the alveolar ridges/ gingiva, buccal mucosa, lips, sulci and floor of mouth, in that order.

Fig 6.12 Number of subjects with oral mucosal conditions in Chandigarh

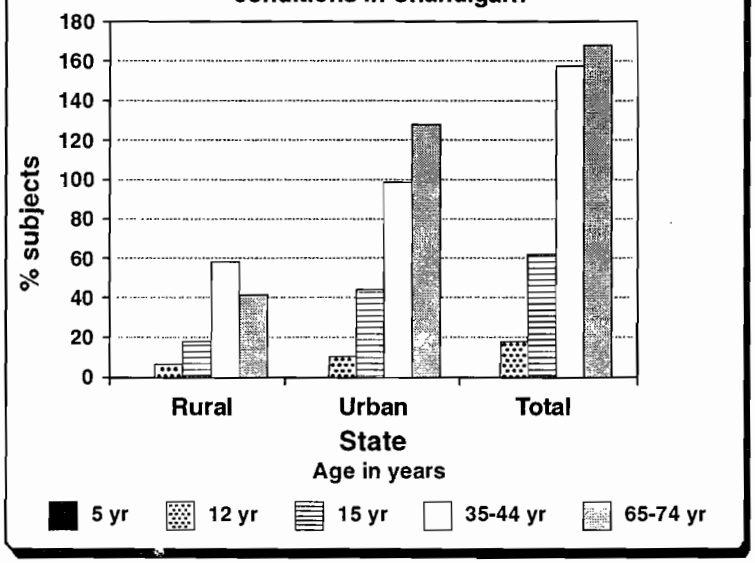


Table 6.12 Numbers of subjects with oral mucosal lesions and type of lesions by age, sex and geographical area. State : Chandigarh

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=	55	52	*107*	56	50	*106*	50	56	*106*	54	56	*110*	53	52	*105*
Oral mucosal lesions present		0	0	*0*	4	3	*7*	9	9	*18*	30	29	*59*	22	19	*41*
Oral Cancer		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*
Leukoplakia		0	0	*0*	0	0	*0*	0	0	*0*	7	3	*10*	1	1	*2*
Lichen Planus		0	0	*0*	0	0	*0*	2	2	*4*	6	10	*16*	4	3	*7*
Ulceration		0	0	*0*	2	0	*2*	7	5	*12*	16	13	*29*	9	10	*19*
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*	2	3	*5*	0	2	*2*	1	3	*4*	8	5	*13*
Any other condition		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*
State Urban	n=	102	106	*208*	103	106	*209*	107	101	*208*	104	101	*205*	104	105	*209*
Oral mucosal lesions present		0	0	*0*	6	5	*11*	25	18	*43*	56	43	*99*	63	64	*127*
Oral Cancer		0	0	*0*	0	0	*0*	1	0	*1*	1	1	*2*	1	2	*3*
Leukoplakia		0	0	*0*	0	0	*0*	1	0	*1*	4	4	*8*	10	6	*16*
Lichen Planus		0	0	*0*	0	0	*0*	0	4	*4*	10	7	*17*	10	20	*30*
Ulceration		0	0	*0*	4	4	*8*	16	6	*22*	32	26	*58*	36	30	*66*
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*	1	0	*1*
Abscess		0	0	*0*	2	1	*3*	7	8	*15*	9	5	*14*	5	7	*12*
Any other condition		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*
State Total	n=	157	158	*315*	159	156	*315*	157	157	*314*	158	157	*315*	157	157	*314*
Oral mucosal lesions present		0	0	*0*	10	8	*18*	34	27	*61*	86	72	*158*	85	83	*168*
Oral Cancer		0	0	*0*	0	0	*0*	1	0	*1*	1	1	*2*	1	2	*3*
Leukoplakia		0	0	*0*	0	0	*0*	1	0	*1*	11	7	*18*	11	7	*18*
Lichen Planus		0	0	*0*	0	0	*0*	2	6	*8*	16	17	*33*	14	23	*37*
Ulceration		0	0	*0*	6	4	*10*	23	11	*34*	48	39	*87*	45	40	*85*
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*	1	0	*1*
Abscess		0	0	*0*	4	4	*8*	7	10	*17*	10	8	*18*	13	12	*25*
Any other condition		0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*	0	0	*0*

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

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	1	0	0	0	0	0	0	0	0	**0**	**1**
Commissures	0	0	0	0	0	0	5	6	0	0	0	0	0	0	0	0	**5**	**6**
Lips	0	0	0	0	0	0	20	14	0	0	0	0	0	0	0	0	**20**	**14**
Sulci	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	0	**4**	**2**
Buccal mucosa	0	0	0	0	12	13	1	1	0	0	0	0	0	0	0	0	**13**	**14**
Floor of mouth	0	0	8	4	0	1	0	0	0	0	0	0	0	0	0	0	**8**	**5**
Tongue	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	**1**	**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	0	0	0	0	3	3	0	0	0	0	11	12	0	0	**14**	**15**
Rural Total	**0**	**0**	**8**	**4**	**12**	**14**	**34**	**27**	**0**	**0**	**0**	**0**	**11**	**12**	**0**	**0**	**65**	**57**
State Urban																		
Vermilion Border	0	1	0	0	0	0	5	1	0	0	0	0	0	0	0	0	**5**	**2**
Commissures	1	1	0	0	0	0	16	11	0	0	0	0	0	0	0	0	**17**	**12**
Lips	0	1	0	0	0	0	18	16	0	0	0	0	0	0	0	0	**18**	**17**
Sulci	0	0	0	0	2	1	20	15	0	0	0	0	0	0	0	0	**22**	**16**
Buccal mucosa	0	0	0	0	18	28	5	5	0	0	0	0	1	1	0	0	**24**	**34**
Floor of mouth	0	0	15	10	0	0	0	0	0	0	1	0	0	0	0	0	**16**	**10**
Tongue	1	0	0	0	0	0	14	9	0	0	0	0	1	0	0	0	**16**	**9**
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	0	0	0	0	10	8	0	0	0	0	21	20	0	0	**31**	**28**
Urban Total	**2**	**3**	**15**	**10**	**20**	**29**	**88**	**65**	**0**	**0**	**1**	**0**	**23**	**21**	**0**	**0**	**149**	**128**
State Total																		
Vermilion Border	0	1	0	0	0	0	5	2	0	0	0	0	0	0	0	0	**5**	**3**
Commissures	1	1	0	0	0	0	21	17	0	0	0	0	0	0	0	0	**22**	**18**
Lips	0	1	0	0	0	0	38	30	0	0	0	0	0	0	0	0	**38**	**31**
Sulci	0	0	0	0	2	1	24	17	0	0	0	0	0	0	0	0	**26**	**18**
Buccal mucosa	0	0	0	0	30	41	6	6	0	0	0	0	1	1	0	0	**37**	**48**
Floor of mouth	0	0	23	14	0	1	0	0	0	0	1	0	0	0	0	0	**24**	**15**
Tongue	1	0	0	0	0	0	15	9	0	0	0	0	1	0	0	0	**17**	**9**
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	0	0	0	0	13	11	0	0	0	0	32	32	0	0	**45**	**43**
State Total	**2**	**3**	**23**	**14**	**32**	**43**	**122**	**92**	**0**	**0**	**1**	**0**	**34**	**33**	**0**	**0**	**214**	**185**

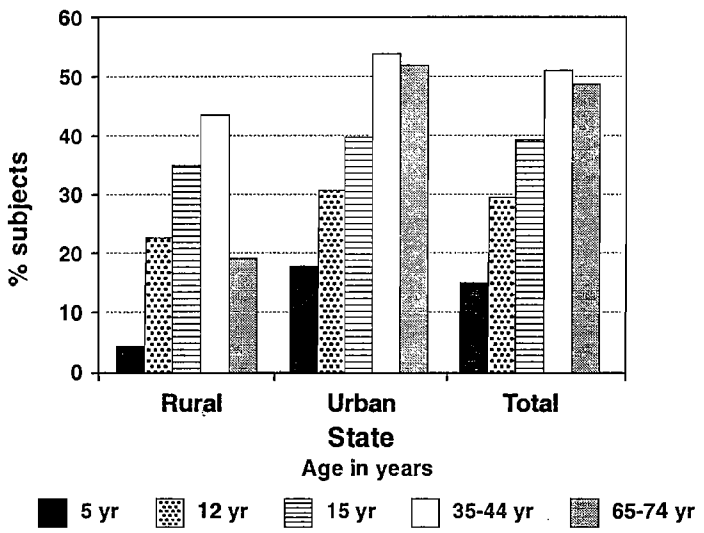
6.5 DENTAL FLUOROSIS STATUS

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

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

The prevalence of fluorosis ranged from about 15.6 per cent in 5 year olds to a maximum of about 52 per cent in 35-44 year olds. However, a vast majority of fluorosis was of the 'questionable' type, followed by the 'very mild' to 'mild' type. Moderate and severe type of fluorosis was not detected in the survey population.

Fig. 6.14. Percent subjects with fluorosis in Chandigarh



The male subjects appeared to have more fluorosis compared with their female counterparts except in 35-44 years where the opposite was true. It was higher in urban than in rural areas. The distribution pattern by type of fluorosis was similar in rural and urban areas.

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

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	52	*107*	56	50	*106*	50	56	*106*	54	56	*110*	23	26	*49*
With Fluorosis		7.3	1.9	*4.6*	23.2	22.0	*22.6*	40.0	30.4	*35.2*	46.3	41.1	*43.7*	21.7	15.4	*18.6*
Questionable		7.3	1.9	*4.6*	19.6	18.0	*18.8*	32.0	26.8	*29.4*	29.6	23.2	*26.4*	13.0	11.5	*12.3*
V Mild & Mild		0.0	0.0	*0.0*	3.6	4.0	*3.8*	8.0	3.6	*5.8*	16.7	17.9	*17.3*	8.7	3.8	*6.3*
Moderate		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Severe		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
State Urban	n=	102	106	*208*	103	105	*208*	107	101	*208*	103	99	*202*	58	48	*106*
With Fluorosis		20.6	13.2	*16.9*	31.1	29.5	*30.3*	41.1	38.6	*39.9*	49.5	56.6	*53.1*	51.7	52.1	*51.9*
Questionable		20.6	13.2	*16.9*	31.1	27.6	*29.4*	38.3	36.6	*37.5*	41.7	43.4	*42.6*	39.7	47.9	*43.8*
V Mild & Mild		0.0	0.0	*0.0*	0.0	1.9	*1.0*	2.8	2.0	*2.4*	7.8	13.1	*10.5*	12.1	4.2	*8.2*
Moderate		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Severe		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
State Total	n=	157	158	*315*	159	155	*314*	157	157	*314*	157	155	*312*	81	74	*155*
With Fluorosis		19.1	12.0	*15.6*	30.2	28.8	*29.5*	41.0	37.7	*39.4*	49.2	54.8	*52.0*	49.2	47.9	*48.6*
Questionable		19.1	12.0	*15.6*	29.8	26.7	*28.3*	37.7	35.5	*36.6*	40.4	41.1	*40.8*	37.4	43.8	*40.6*
V Mild & Mild		0.0	0.0	*0.0*	0.4	2.1	*1.3*	3.3	2.2	*2.8*	8.7	13.7	*11.2*	11.8	4.1	*8.0*
Moderate		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*
Severe		0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*	0.0	0.0	*0.0*

6.6 OTHER LESIONS

6.6.1 Extra oral lesions

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

The number of subjects in which extra oral lesions were successfully diagnosed and recorded was extremely low. In the majority of subjects examined, the lesions were either not diagnosable because of sufficient light in the field situation or these were incorrectly recorded and were rejected by the computer during data entry. The results must therefore be seen and interpreted with caution.

The lesions seemed to increase in prevalence as age advanced from 12 (12.5 per cent) to 65-74 years (60.6 per cent). Almost all of these were ulcerations, sores, erosions and fissures. The lesions appeared more prevalent in urban than in rural areas. No marked gender related differentials were apparent.

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

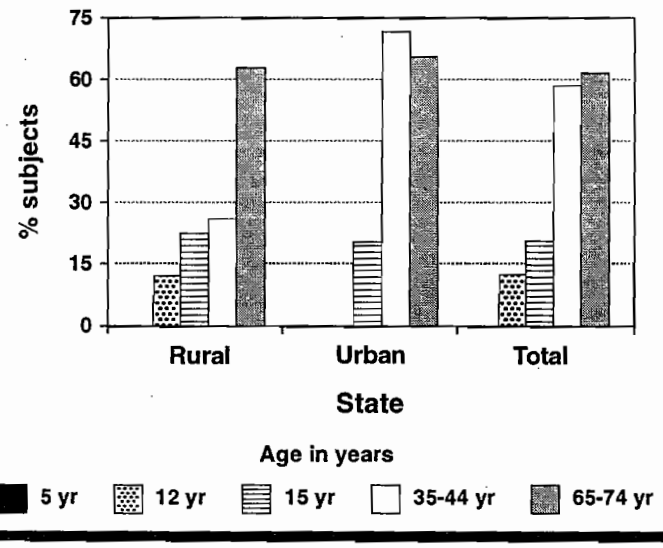


Table 6.15 Percent distribution of subjects with extra oral lesions by age, sex and geographical area. **State : Chandigarh**

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=	3	4	7	2	4	6	4	6	10	2	4	6	2	4	6
With extra oral lesions		0.0	0.0	**0.0**	0.0	25.0	**13.0**	25.0	16.7	**21.0**	0.0	50.0	**25.0**	100.0	25.0	**63.0**
Ulceration,sores,erosions,fissures		0.0	0.0	**0.0**	0.0	25.0	**13.0**	25.0	16.7	**21.0**	0.0	50.0	**25.0**	100.0	25.0	**63.0**
head, neck, limbs		0.0	0.0	**0.0**	0.0	25.0	**13.0**	25.0	0.0	**13.0**	0.0	0.0	**0.0**	50.0	25.0	**38.0**
nose, cheeks, chin		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	25.0	**13.0**	0.0	0.0	**0.0**
commissures		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	16.7	**8.4**	0.0	25.0	**13.0**	50.0	0.0	**25.0**
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	0.0	**0.0**	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=	3	3	6	6	0	6	5	5	10	7	1	8	7	5	12
With extra oral lesions		0.0	0.0	**0.0**	0.0	0.0	**0.0**	20.0	20.0	**20.0**	42.9	100.0	**71.0**	28.6	100.0	**64.0**
Ulceration,sores,erosions,fissures		0.0	0.0	**0.0**	0.0	0.0	**0.0**	20.0	20.0	**20.0**	42.9	100.0	**71.0**	28.6	80.0	**54.0**
head, neck, limbs		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	20.0	**10.0**	28.6	0.0	**14.0**	14.3	20.0	**17.0**
nose, cheeks, chin		0.0	0.0	**0.0**	0.0	0.0	**0.0**	20.0	0.0	**10.0**	0.0	0.0	**0.0**	0.0	40.0	**20.0**
commissures		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	100.0	**50.0**	14.3	20.0	**17.0**
vermilion border		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	14.3	0.0	**7.2**	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	20.0	**10.0**
Enlarged lymph nodes(head & neck)		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**
State Total	n=	6	7	**13**	8	4	**12**	9	11	**20**	9	5	**14**	9	9	**18**
With extra oral lesions		0.0	0.0	**0.0**	0.0	25.0	**13.0**	20.8	19.3	**20.0**	40.2	75.8	**58.0**	33.1	88.1	**61.0**
Ulceration,sores,erosions,fissures		0.0	0.0	**0.0**	0.0	25.0	**13.0**	20.8	19.3	**20.0**	40.2	75.8	**58.0**	33.1	71.3	**52.0**
head, neck, limbs		0.0	0.0	**0.0**	0.0	25.0	**13.0**	4.0	15.6	**9.8**	26.8	0.0	**13.0**	16.5	20.8	**19.0**
nose, cheeks, chin		0.0	0.0	**0.0**	0.0	0.0	**0.0**	16.8	0.0	**8.4**	0.0	12.1	**6.1**	0.0	33.7	**17.0**
commissures		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	3.7	**1.9**	0.0	63.7	**32.0**	16.5	16.8	**17.0**
vermilion border		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	13.4	0.0	**6.7**	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	16.8	**8.4**
Enlarged lymph nodes(head & neck)		0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**	0.0	0.0	**0.0**

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.

No TM Joint symptoms or signs were reported in subjects aged 5, 12 and 15 years. It is possible that these were not recorded by the examiners for these age groups. Symptoms were present in about 19 per cent and 25.3 per cent subjects respectively in the age groups 35-44 and 65-74 years. Signs were present in approximately the same percentage of subjects in both age groups. The signs present were clicking and tenderness, in order of their prevalence in both age groups. Reduced jaw mobility was reported in in about 1.3 per cent subjects in 65-74 years.

Clearly, the prevalence of TM Joint symptoms and signs was much higher in urban subjects but the distribution pattern by type of signs present were similar in both rural and urban areas. There were three times more females than males in the 35-44 year olds who had symptoms and signs but these were equally distributed between male and female subjects in 65-74 years.

Fig. 6.16. Percent subjects with signs in T M Joint in Chandigarh

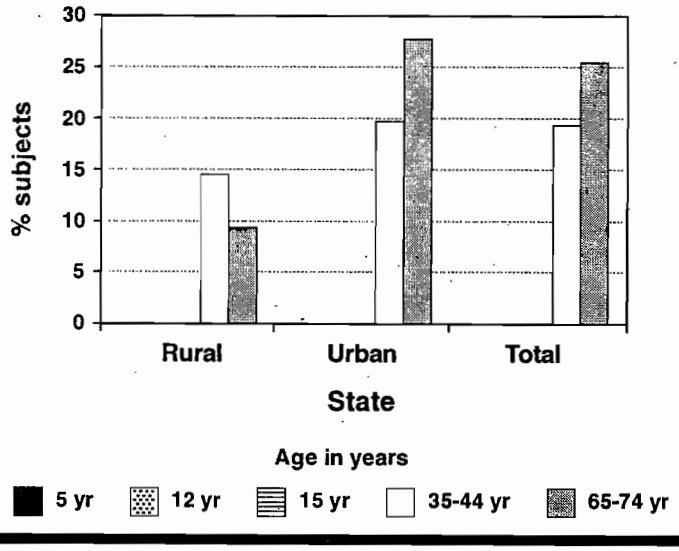
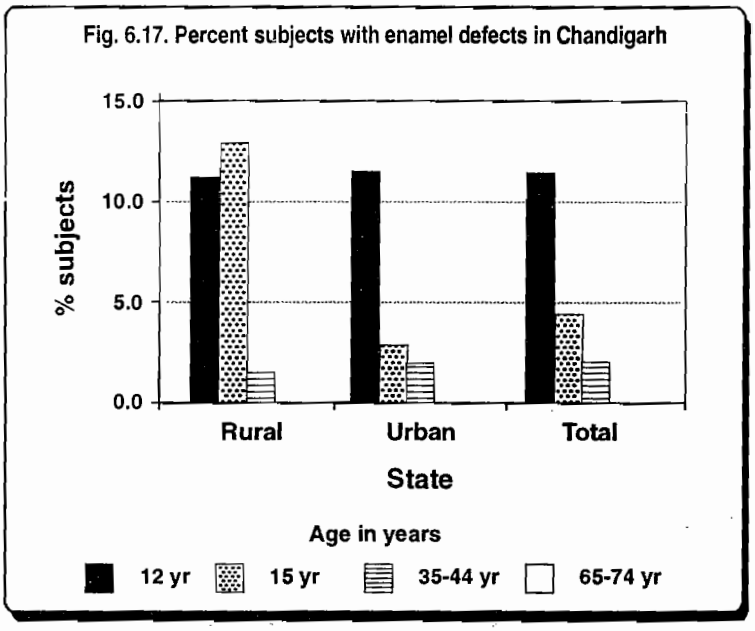


Table 6.16 Percent subjects with symptoms and signs in the tempromandibular joints by age, sex and geographical area State : Chandigarh

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=***	**55**	**52**	***107***	**56**	**50**	***106***	**50**	**55**	***105***	**54**	**56**	***110***	**53**	**52**	***105***
Symptoms present		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	14.8	14.3	***14.6***	5.7	11.5	***8.6***
Signs present		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	14.8	14.3	***14.6***	9.4	13.5	***11.5***
Clicking		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	14.8	10.7	***12.8***	9.4	13.5	***11.5***
Tenderness		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	3.7	5.4	***4.6***	5.7	9.6	***7.7***
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	0.0	***0.0***
State Urban	***n=***	**102**	**106**	***208***	**103**	**106**	***209***	**107**	**101**	***208***	**104**	**101**	***205***	**104**	**105**	***209***
Symptoms present		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	8.7	30.7	***19.7***	27.9	26.7	***27.3***
Signs present		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	8.7	29.7	***19.2***	27.9	28.6	***28.3***
Clicking		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	7.7	20.8	***14.3***	26.9	28.6	***27.8***
Tenderness		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	5.8	10.9	***8.4***	25.0	24.8	***24.9***
Reduced jaw mobility		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	1.0	1.9	***1.5***
State Total	***n=***	**157**	**158**	***315***	**159**	**156**	***315***	**157**	**156**	***313***	**158**	**157**	***315***	**157**	**157**	***314***
Symptoms present		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	9.3	28.8	***19.1***	25.5	25.1	***25.3***
Signs present		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	9.3	27.9	***18.6***	25.9	27.0	***26.5***
Clicking		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	8.5	19.6	***14.1***	25.1	27.0	***26.1***
Tenderness		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	5.5	10.3	***7.9***	22.9	23.2	***23.1***
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***	0.9	1.7	***1.3***

6.6.3 Enamel defects (opacities, hypoplasia)

Table 6.17 presents the per cent 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 very low prevalence of enamel defects in the state. About 11.5 per cent subjects had enamel defects in 12 years; 3.9 per cent in 15 years and only 2 per cent in 3544 years. No enamel defects were reported (or recorded) in the 65-74 year old subjects. Almost all of the defects recorded were demarcated opacities of the enamel. The mean number of teeth affected was extremely low in the state (0.1 to 0.2).

The defects were evenly distributed in urban and rural areas in 12 and 35-44 year olds but the prevalence was higher in rural areas in 15 year olds. The distribution pattern by type of defects remained the same in urban and rural areas in both age groups. There were no clearly marked male and female differentials.

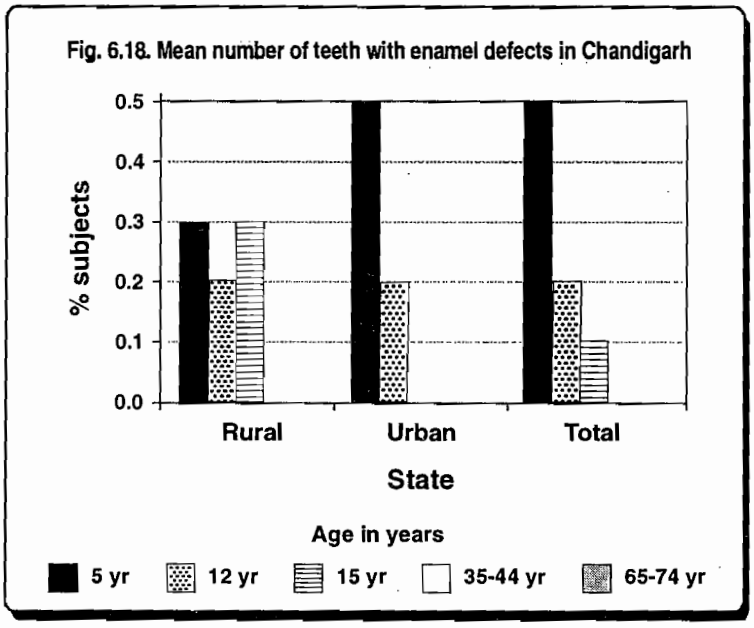


Table 6.17 Percent distribution of subjects with enamel defects (opacities/ hypoplasia) by age, sex & geographical area. State : Chandigarh

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=	**56**	**50**	***106***	**50**	**56**	***106***	**54**	**56**	***110***	**22**	**25**	***47***
With enamel defects		12.5	10.0	***11.3***	14.0	10.7	***12.4***	0.0	3.6	***1.8***	0.0	0.0	***0.0***
with demarcated opacity		12.5	10.0	***11.3***	14.0	10.7	***12.4***	0.0	3.6	***1.8***	0.0	0.0	***0.0***
with diffuse opacity		0.0	0.0	***0.0***	0.0	1.8	***0.9***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with hypoplasia		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with other defects		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with combinations of opacities and hypoplasia		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 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=	**103**	**106**	***209***	**107**	**101**	***208***	**103**	**99**	***202***	**58**	**50**	***108***
With enamel defects		15.5	7.5	***11.5***	2.8	3.0	***2.9***	1.0	3.0	***2.0***	0.0	0.0	***0.0***
with demarcated opacity		14.6	7.5	***11.1***	2.8	3.0	***2.9***	1.0	3.0	***2.0***	0.0	0.0	***0.0***
with diffuse opacity		1.0	0.0	***0.5***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with hypoplasia		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with other defects		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with combinations of opacities and hypoplasia		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 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=	**159**	**156**	***315***	**157**	**157**	***314***	**157**	**155**	***312***	**80**	**75**	***155***
With enamel defects		15.2	7.8	***11.5***	3.9	3.9	***3.9***	0.9	3.1	***2.0***	0.0	0.0	***0.0***
with demarcated opacity		14.3	7.8	***11.1***	3.9	3.9	***3.9***	0.9	3.1	***2.0***	0.0	0.0	***0.0***
with diffuse opacity		0.9	0.0	***0.5***	0.0	0.2	***0.1***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with hypoplasia		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with other defects		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***
with combinations of opacities and hypoplasia		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 all three conditions		0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***	0.0	0.0	***0.0***

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

Enamel opacities/Hypoplasia		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
State Rural	n=	55	52	107	56	50	106	50	56	106	54	56	110	53	52	105
Mean no. of teeth with enamel defects		0.4	0.2	0.3	0.2	0.1	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0
wiith demarcated opacity		0.4	0.2	0.3	0.2	0.1	0.2	0.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0
with diffuse opacity		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with hypoplasia		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with other defects		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with combinations of opacities and hypoplasia		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
wiith all three conditions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Urban	n=	102	106	208	103	106	209	107	101	208	104	101	205	104	105	209
Mean no. of teeth with enamel defects		0.5	0.4	0.5	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
wiith demarcated opacity		0.4	0.3	0.4	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with diffuse opacity		0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with hypoplasia		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with other defects		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with combinations of opacities and hypoplasia		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
wiith all three conditions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
State Total	n=	157	158	315	159	156	315	157	157	314	158	157	315	157	157	314
Mean no. of teeth with enamel defects		0.5	0.4	0.5	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
wiith demarcated opacity		0.4	0.3	0.4	0.2	0.1	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
with diffuse opacity		0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with hypoplasia		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with other defects		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
with combinations of opacities and hypoplasia		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
wiith all three conditions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

6.6.4 Prosthetic status (upper & lower)

The prosthetic status was recorded for subjects aged 15 years 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 any prostheses in the upper or lower arches. The 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 per cent subjects wearing prostheses increased as age advanced, from 35-44 to 65-74 years (Table 6.19 and 6.20).

The per cent subjects aged 35-44 years wearing prostheses (upper and/or lower arch) was about 6.4 per cent while it was about 64.3 per cent in subjects aged 65-74 years. Prostheses were worn marginally more in lower jaw in 35-44 year olds while the opposite was true for subjects aged 65-74 years.

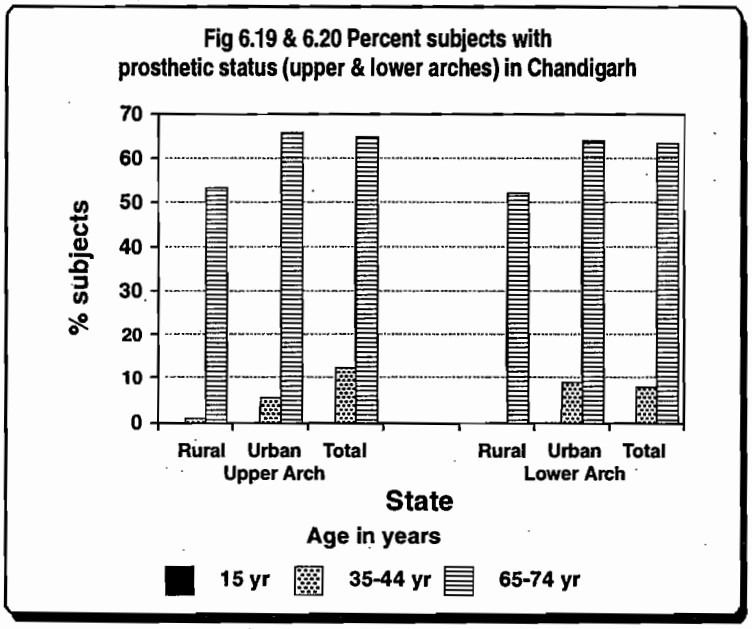


Table 6.19 Percent distribution of subjects with their prosthetic status (upper arch) by age, sex, and geographical area. State : Chandigarh

Prosthetic Status (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	50	56	106	54	56	110	53	52	105
With Prostheses present		0.0	0.0	0.0	0.0	1.8	0.9	54.7	51.9	53.3
Bridge or more than one bridge		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Partial denture		0.0	0.0	0.0	0.0	1.8	0.9	3.8	0.0	1.9
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	50.9	51.9	51.4
State Urban	n=	107	101	208	104	101	205	104	105	209
With Prostheses present		0.0	0.0	0.0	4.8	6.9	5.9	62.5	71.4	67.0
Bridge or more than one bridge		0.0	0.0	0.0	3.8	5.0	4.4	1.0	1.9	1.5
Partial denture		0.0	0.0	0.0	1.0	2.0	1.5	17.3	18.1	17.7
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	44.2	51.4	47.8
State Total	n=	157	157	314	158	157	315	157	157	314
With Prostheses present		0.0	0.0	0.0	4.3	6.3	5.3	61.7	69.4	65.6
Bridge or more than one bridge		0.0	0.0	0.0	3.4	4.4	3.9	0.9	1.7	1.3
Partial denture		0.0	0.0	0.0	0.9	2.0	1.5	15.9	16.2	16.1
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	44.9	51.5	48.2

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

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

Prosthetic Status (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	50	56	106	54	56	110	53	52	105
Prostheses present		0.0	0.0	0.0	0.0	0.0	0.0	52.8	51.9	52.4
Bridge or more than one bridge		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Partial denture		0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	1.0
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	50.9	51.9	51.4
State Urban	n=	107	101	208	104	101	205	104	105	209
Prostheses present		0.0	0.0	0.0	9.6	6.9	8.3	60.6	67.6	64.1
Bridge or more than one bridge		0.0	0.0	0.0	8.7	6.9	7.8	0.0	1.9	1.0
Partial denture		0.0	0.0	0.0	1.0	0.0	0.5	16.3	14.3	15.3
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	44.2	50.5	47.4
State Total	n=	157	157	314	158	157	315	157	157	314
Prostheses present		0.0	0.0	0.0	8.6	6.1	7.4	59.7	66.0	62.9
Bridge or more than one bridge		0.0	0.0	0.0	7.7	6.1	6.9	0.0	1.7	0.9
Partial denture		0.0	0.0	0.0	0.9	0.0	0.5	14.8	12.8	13.8
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5
Full removable denture		0.0	0.0	0.0	0.0	0.0	0.0	44.9	50.6	47.8

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

The full denture in either arch was the most prevalent prostheses amongst the 65-74 yrs age group followed by a much lower prevalence of partial dentures. In the age group 35-44 years, the most prevalent prostheses were the bridge (one or more units) followed by partial dentures.

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

Full mouth removable dentures (upper and lower arches) were being worn only by subjects aged 65-74 years with a prevalence of about 47.8 per cent, distributed marginally more in rural than urban areas, in the state (Table 6.21).

The high proportion of subjects wearing prostheses is consistent with the fact that Chandigarh is a small union territory as well as state capital for Punjab. It has well equipped and affordable facilities offering high quality public and private funded services.

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

Prosthetic status of full denture (upper & lower arch)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	50	56	*106*	54	56	*110*	53	52	*105*
Percent subjects with full mouth removable denture		0.0	0.0	*0.0*	0.0	0.0	*0.0*	50.9	51.9	*51.4*
State Urban	n=	106	100	*206*	104	101	*205*	104	105	*209*
Percent subjects with full mouth removable denture		0.0	0.0	*0.0*	0.0	0.0	*0.0*	44.2	50.5	*47.4*
State Total	n=	156	156	*312*	158	157	*315*	157	157	*314*
Percent subjects with full mouth removable denture		0.0	0.0	*0.0*	0.0	0.0	*0.0*	44.9	50.6	*47.8*

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 about 15.4 per cent (upper arch) and 16.9 per cent (lower arch) in 35-44 year old subjects but increased rapidly to about 35.1 (upper arch) and 35.8 per cent (lower arch) in 65-74 years. (Tables 6.22 and 6.23).

In the age group 35-44 years, the most prevalent need was for one- or multi-unit prostheses. In the 65-74 yr old subjects, the most prevalent need was for multi-unit prostheses followed by the need for full dentures and then by the need for one-unit prostheses.

In the highest age group of 65-74 years, the needs, in order of prevalence in both upper and lower arches, were multi-unit prostheses, full prostheses and one-unit prostheses.

The pattern and distribution of need by type of prostheses was similar in both rural and urban areas although the prevalence appeared higher in rural compared with urban areas. There were no marked gender related differentials. This may be because of a comparative lack or accessibility to dental care facilities in rural areas.

A need for full mouth removable dentures was recorded in subjects aged 65-74 years. About 16.2 per cent subjects in the state, more females than males, more in rural than urban areas, needed prostheses.

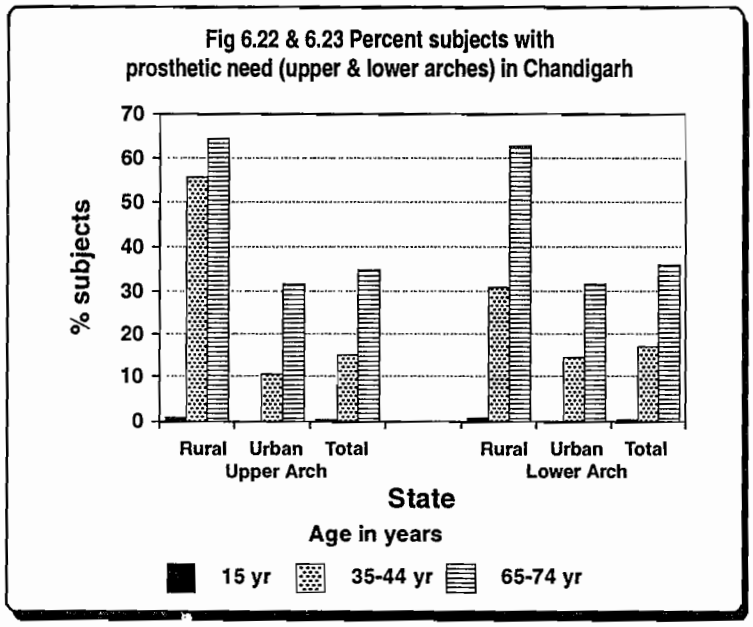


Table 6.22 Percent distribution of subjects with their prosthetic need status (upper arch) by age, sex, and geographical area. State : Chandigarh

Prosthetic Need (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	50	56	*106*	54	56	*110*	53	52	*105*
With Prosthetic need		2.0	0.0	*1.0*	50.0	62.5	*56.3*	71.7	57.7	*64.7*
Need for one unit prosthesis		2.0	0.0	*1.0*	24.1	35.7	*29.9*	13.2	5.8	*9.5*
Need for multi unit prosthesis		0.0	0.0	*0.0*	25.9	21.4	*23.7*	17.0	19.2	*18.1*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	5.4	*2.7*	0.0	3.8	*1.9*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	0.0	*0.0*	41.5	28.8	*35.2*
State Urban	n=	107	101	*208*	104	101	*205*	104	105	*209*
With Prosthetic need		0.0	0.0	*0.0*	14.4	5.9	*10.2*	32.7	30.5	*31.6*
Need for one unit prosthesis		0.0	0.0	*0.0*	6.7	2.0	*4.4*	2.9	6.7	*4.8*
Need for multi unit prosthesis		0.0	0.0	*0.0*	7.7	4.0	*5.9*	17.3	7.6	*12.5*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.0	*0.0*	1.0	0.0	*0.5*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	0.0	*0.0*	11.5	16.2	*13.9*
State Total	n=	157	157	*314*	158	157	*315*	157	157	*314*
With Prosthetic need		0.2	0.0	*0.1*	18.3	12.4	*15.4*	36.9	33.3	*35.1*
Need for one unit prosthesis		0.2	0.0	*0.1*	8.6	5.9	*7.3*	4.0	6.6	*5.3*
Need for multi unit prosthesis		0.0	0.0	*0.0*	9.7	6.0	*7.9*	17.3	8.8	*13.1*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.6	*0.3*	0.9	0.4	*0.7*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	0.0	*0.0*	14.7	17.5	*16.1*

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

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

Prosthetic Need (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	50.0	56.0	*106*	54.0	56.0	*110*	53.0	52.0	*105*
With Prosthetic need		0.0	1.8	*0.9*	27.8	33.9	*30.9*	66.0	59.6	*62.8*
Need for one unit prosthesis		0.0	1.8	*0.9*	13.0	17.9	*15.5*	0.0	1.9	*1.0*
Need for multi unit prosthesis		0.0	0.0	*0.0*	14.8	12.5	*13.7*	20.8	19.2	*20.0*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	3.6	*1.8*	3.8	9.6	*6.7*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	0.0	*0.0*	41.5	28.8	*35.2*
State Urban	n=	107.0	101.0	*208*	104.0	101.0	*205*	104.0	105.0	*209*
With Prosthetic need		0.0	0.0	*0.0*	20.2	9.9	*15.1*	31.7	33.3	*32.5*
Need for one unit prosthesis		0.0	0.0	*0.0*	12.5	7.9	*10.2*	4.8	4.8	*4.8*
Need for multi unit prosthesis		0.0	0.0	*0.0*	7.7	2.0	*4.9*	12.5	11.4	*12.0*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.0	*0.0*	2.9	1.0	*2.0*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	0.0	*0.0*	11.5	16.2	*13.9*
State Total	n=	157.0	157.0	*314*	158.0	157.0	*315*	157.0	157.0	*314*
With Prosthetic need		0.0	0.2	*0.1*	21.0	12.7	*16.9*	35.4	36.1	*35.8*
Need for one unit prosthesis		0.0	0.2	*0.1*	12.6	9.1	*10.9*	4.3	4.5	*4.4*
Need for multi unit prosthesis		0.0	0.0	*0.0*	8.5	3.2	*5.9*	13.4	12.2	*12.8*
Need for combination of one and/or MUP		0.0	0.0	*0.0*	0.0	0.4	*0.2*	3.0	1.9	*2.5*
Need for full prosthesis		0.0	0.0	*0.0*	0.0	0.0	*0.0*	14.7	17.5	*16.1*

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

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

Prosthetic need for full denture (upper & lower arch)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
State Rural	n=	50	56	106	54	56	110	53	51	104
Percent subjects needing full mouth removable denture		0.0	0.0	0.0	0.0	0.0	0.0	41.5	29.4	35.5
State Urban	n=	106	100	206	104	101	205	104	104	208
Percent subjects needing full mouth removable denture		0.0	0.0	0.0	0.0	0.0	0.0	11.5	16.3	13.9
State Total	n=	156	156	312	158	157	315	157	155	312
Percent subjects needing full mouth removable denture		0.0	0.0	0.0	0.0	0.0	0.0	14.7	17.7	16.2

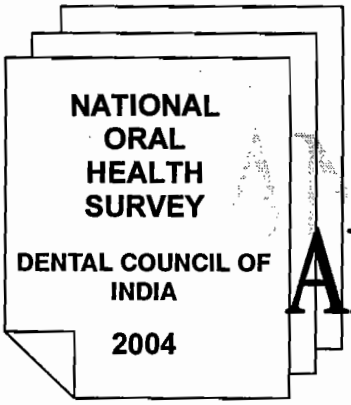
6.6.6 Community need for immediate care and referrals

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

No life threatening or painful conditions were recorded in any of the age groups in the state. Cosequently, no referrals were made.

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

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=	55	52	107	56	50	106	50	56	106	54	56	110	51	49	100
Life threatening condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	0.0	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=	102	106	208	103	105	208	107	101	208	104	101	205	104	103	207
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	0.0	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	0.0	0.0	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=	157	158	315	159	155	314	157	157	314	158	157	315	155	152	307
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	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



ANNEXURES

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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

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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

ANNEXURE - 6

TEAM MEMBERS (CHANDIGARH)

S. No.	Name	Designation
1.	Dr. N.C. Rao	Regional Coordinator
2.	Dr. C.L. Dileep	Supervisor
3.	Dr. Amitabh Sharma	Dental Surgeon
4.	Dr. Deepak Negi	Dental Surgeon
5.	Dr. Jyoti Saini	Dental Surgeon
6.	Dr. Deepak Aggarwal	Dental Surgeon
7.	Dr. Vivek Raina	Dental Surgeon
8.	Dr. Vivek Guleria	Dental Surgeon
9.	Mr. Ashok Guleria	Dental Hygienist
10.	Mr. Ravi Kumar	Dental Hygienist
11.	Mr. Shyam Sunder	Driver
12.	Mr. Hem Raj	Driver
13.	Mr. Narain Singh	Assistant
14.	Mr. Devinder Kumar	Assistant
15.	Mr. Sadhu Ram	Assistant

List of participating Dental Colleges

1. H.P. Dental College & Hospital, Shimla (H.P)
2. Himachal Dental College, Sunder Nagar, Dist. Mandi (H.P.)

ANNEXURE - 7

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

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

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

FORM NO. फार्म संख्या | 1 | 0 | (1-2)

STATE / राज्य | | | (6-7)

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

ZONE / क्षेत्र (ज़ोन) | | | (8-9)

DISTRICT / जिला | | (10)

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

VILLAGE CODE **R / U /** आर/यू **R = 1 U = 2** | 1 | 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/सामिस्र है? *(Tick One)/* (एक पर चिन्ह लगायें)	***Veg.*** / शाकाहारी ..... ***1*** ***Non-Veg.*** / सामिस्र ***2***	(44)

FORM NO. फार्म संख्या | 1 | 2 |

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

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड		5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35–44 वर्ष	65-74 Yrs./ 65–74 वर्ष	
24.	Your occupation or Profession ? / आपका रोजगार या व्यवसाय?	Farmer ..... 1 कृषक Agriculture Labour ..... 2 कृषि श्रमिक Business ..... 3 व्यापार Professional ..... 4 व्यवसाय White Collar Worker ..... 5 व्हाईट–कालर कार्य Skilled Worker ..... 6 सीखा हुआ कर्मचारी Unskilled Worker ..... 7 बिना सीखा हुआ कर्मचारी Other (Specify) ..... 8 अन्य			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			T O	T 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			N O T	N O 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								(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*** ट्रेण्ड 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	1							
		Hypertension हाईपरटेन्शन	2							
		Diabetes डाईबिटीज़	3							
		Epilepsy एपिलेप्सी	4							(230-249)
		Jaundice जोन्डिस	5							
		Asthma अस्थमा	6							
		Others (Specify) अन्य	7							
		Can't Say/ कह नहीं सकता	8							
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	1							
		Govt. Hosp./ Dispensary सरकारी हस्पताल / डिस्पेन्सरी	2							
		Private Hospitals निजी हस्पताल	3							(250-269)
		Private Practitioner प्राइवेट प्रेक्टिशनर	4							
		Don't Know नहीं जानते	5							
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	1							
		½ to 1 hour आधा से 1 घण्टा	2							(270-274)
		> 1 hour 1 घण्टा से अधिक	3							
		Can't Say कह नहीं सकता	4							

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		SKIPPED					(315-334)
		Regular cleaning of teeth with brush ब्रुश द्वारा दांतों की नियमित सफाई	2							
		Visiting dentist regularly दंत–चिकित्सक द्वारा नियमित जांच	3							
		Using Fluoride Toothpaste फ्लोराइड टूथ–पेस्ट का इस्तेमाल	4							
		Avoiding sweets icecreams/chocolates मिठाई, आइसक्रीम व चाकलेट छोड़कर	5							
		Others (Specify) अन्य तरीके	6							
		Don't Know नहीं जानता	7							

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

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

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

DENTAL COUNCIL OF INDIA, NEW DELHI

NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING

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

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

FORM NO. 2 0 (1-2)

STATE (6-7)

ZONE (8-9)

TEAM NO. (3-5)

DISTRICT (10)

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

CODE

RURAL / URBAN 1 (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

(32)

EXTRA-ORAL EXAMINATION

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

TEMPOROMANDIBULAR JOINT ASSESSSMENT

SYMPTOMS
0 = NO
1 = Yes
9 = Not recorded

(33)

SIGNS
0 = No
1 = Yes
9 = Not recorded

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

ORAL MUCOSA

CONDITION

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

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

LOCATION

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

ENAMEL OPACITIES/HYPOPLASIA

Permanent teeth

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

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

LOSS OF ATTACHMENT*

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

(53)

COMMUNITY PERIODONTAL INDEX (CPI)

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

*Not recorded under 15 years of age

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

LOSS OF ATTACHMENT*

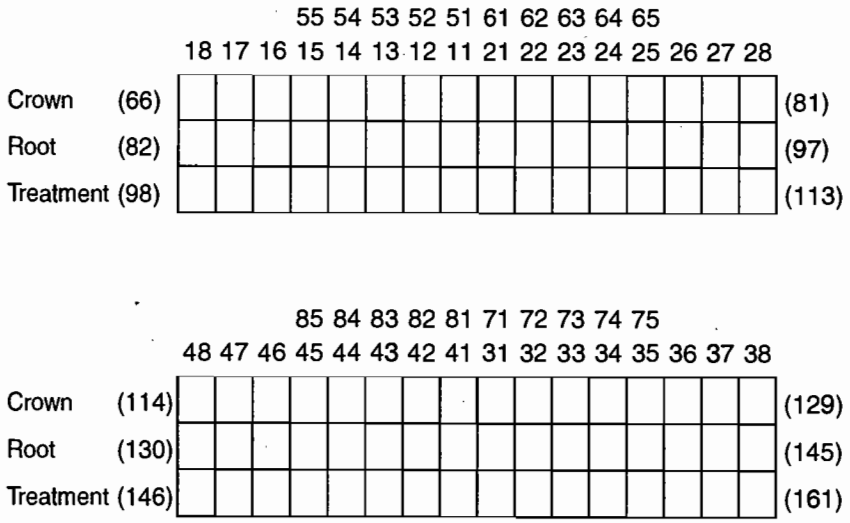
0 = Healthy
1 = 4-5 mm (cementoenamel junction (CEJ) within black band)
2 = 6-8 mm (CEJ between upper limit of black band and 8.5 mm ring)
3 = 9-11 mm (CEJ between 8.5 mm and 11.5 mm rings)
4 = 12 mm or more (CEJ beyond 11.5 mm ring)
X = Excluded sextant
9 = Not recorded

*Not recorded under 15 years of age

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

DENTITION STATUS AND TREATMENT NEED

Identification Number



Primary teeth Crown	Permanent teeh Crown/Root		STATUS	TREATMENT
A	0	0	Sound	0 = None
B	1	1	Decayed	P = Preventive, caries arresting care
C	2	2	Filled, with decay	
D	3	3	Filled, no decay	F = Fissure sealant
E	4	-	Missing, as a result of caries	1 = One surface filling
				2 = Two or more surface fillings
-	5	-	Missing, any other reason	3 = Crown for any reason
F	6	-	Fissure sealant	4 = Veneer or laminate
G	7	7	Bridge abutment special crown or veneer/implant	5 = Pulp care and restoration
				6 = Extraction
-	8	8	Unerupted tooth, (Crown) / unexposed root	7 = Need for other care (specify).....
				8 = Need for other care (specify).....
T	T	-	Trauma (fracture)	
-	9	9	Not recorded	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