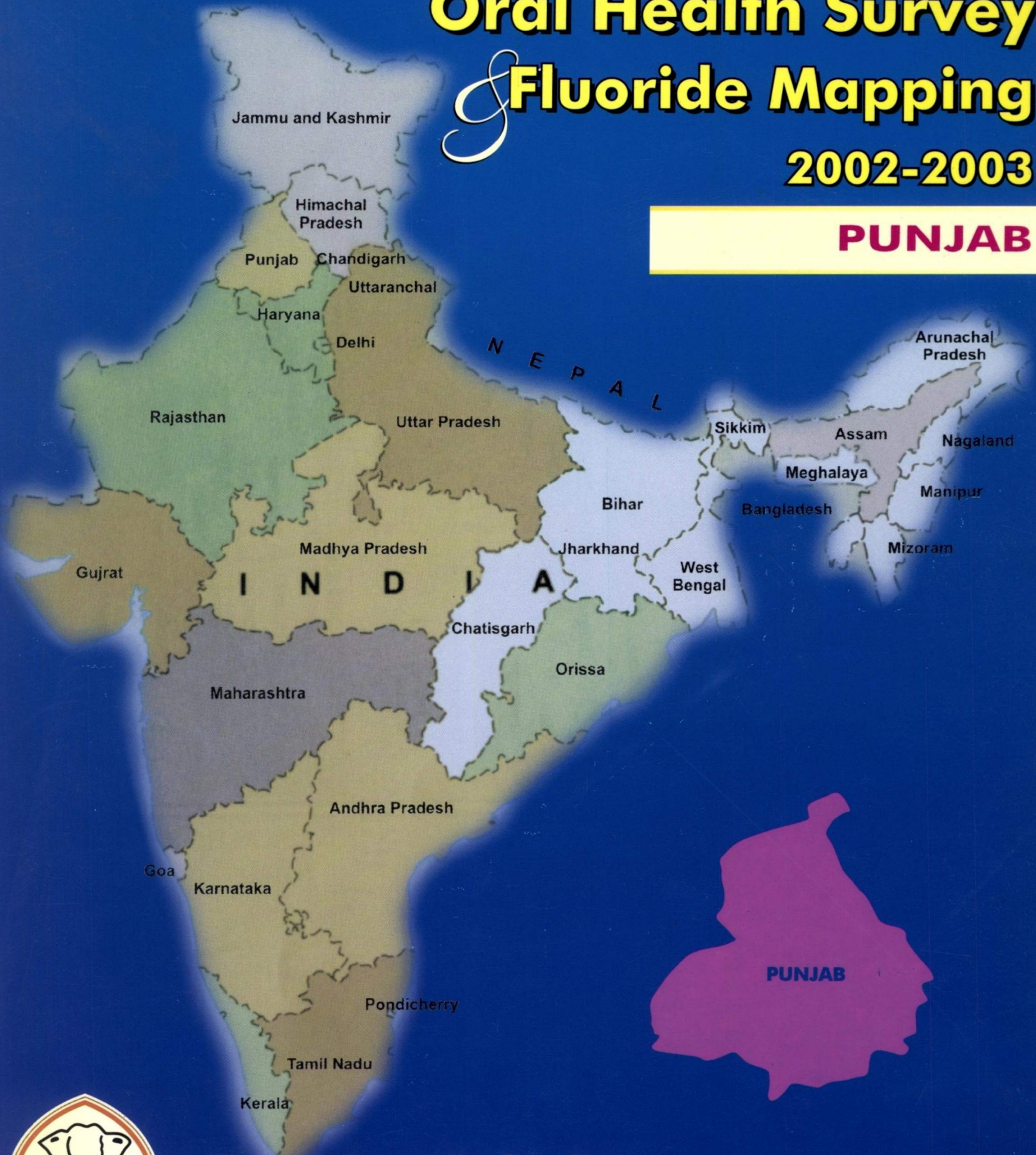


# National Oral Health Survey & Fluoride Mapping 2002-2003

**PUNJAB**



Dental Council of India  
New Delhi  
2004

# **NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING**

**2002-2003**

**PUNJAB**

**Authors**

Dr. R. K. Bali  
Dr. N.C. Rao  
Dr. C.L. Dileep

**Co-authors**

Dr. V.B.Mathur  
Prof. P.P. Talwar  
H.B. Chanana



**DENTAL COUNCIL OF INDIA**

**NEW DELHI**

**2004**

**DENTAL COUNCIL OF INDIA**  
Aiwane - Ghalib Marg  
Kotla Lane  
New Delhi - 110002  
Phones : 23220204, 23236740, 23238542  
Fax : 23231252

**MINISTRY OF HEALTH &  
FAMILY WELFARE**  
Government of India,  
Nirman Bhawan,  
New Delhi

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**Colgate**

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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 liaise 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 Arundeeep 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.

**July 2004.**

**Dr. R. K. Bali**

**Dr. V. B. Mathur**

**Prof. P. P. Talwar**

**H.B. Chanana**

## ACKNOWLEDGEMENTS

We are extremely grateful to Dr. R. K. Bali, Hon. President Dental Council of India, Dr. V. B. Mathur, 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. At the outset, I am indebted to Padmashri, 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 Coordinator for the northern region, comprising of three states viz. Himachal Pradesh, Punjab and Haryana, and one union Territory, i.e. 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, and Prof. P.P. Talwar, Consultant and Mr. H.B.Chanana who were helped in designing the protocol Calibration Training at Manipal, and statistical analysis.

The help offered 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 of the survey.

I am grateful to Shri Anoop Garg, Chairman of the B.R.S. Dental College & Hospital, Kotbilla, Panchkulla (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 villages and urban blocks selected in Punjab.

I would like to express my sincere thanks to the managements, Principal 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. Baba Jaswant Singh Dental College Hospital & Research Institute, Ludhiana (Punjab)

A special word of thanks to the team members for their dedication and co-operation during the field work, in spite of the sweltering conditions in the state. I wish to record my appreciation of the invaluable assistance rendered by Dr. Vimal Kalia, Supervisor, who very diligently carried out the survey in Patiala district and Dr. C.L. Dileep Supervisor (H.P. and Chandigarh), who under my guidance and supervision co-ordination with the Central Survey Team, completed the field work in the districts of Sangrur and Roopnagar.

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, Amarjit Singh, Additional Advocate General, Punjab, Dr. O.P. Verma, senior Dental Surgeon, Chandigarh and Dr. O.P. Nar, Principal, Baba Jaswant Singh Singh Dental College Hospital & Research Institute, Ludhiana (Punjab), for their extraordinary generosity and help during the fieldwork. I also thank Shri Amarjeet Singh Saini, President, District Congress Committee (I), Roopnagar, and Industrialist, for individual contribution and help during the entire survey in Roopnagar district.

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  
(HP, Punjab, Haryana & Chandigarh)

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

#### **3.2 Sample selection**

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

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

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

#### **4. STUDY TOOLS**

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

#### **5. DATA COLLECTION**

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

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

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

#### **6. CALIBRATION AND TRAINING WORKSHOPS**

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

## 7. AREA COVERAGE IN SURVEY

The National Oral Health Survey, was designed to cover all Agro-Climatic regions of the state. This state has been divided into three Agro-Climatic regions and all are covered in the survey.

## 8. FINDINGS (ORAL HEALTH KNOWLEDGE AND PRACTICES)

### 8.1 Characteristics of households surveyed

- 63 percent of households, 55 percent in rural & 82 percent in urban, live in pucca houses in the state. More households in Region 1 & 2 had pucca houses than in Region-3
- 41 percent of households in rural & 56 percent in urban had monthly Expenditures of Rs 2501-5500 and 5501 & above respectively in the state.
- 51 percent of households was of Sikh followed by 44 percent belonged to Hindus with state.
- 46 percent of households was getting piped/tap water for drinking.
- Wheat is the staple food of almost all and two third reported vegetarian?

### 8.2 Profile population across age groups

- Almost all in younger age groups i.e. below 35-44 year age & 73 percent in 65-74 year age group were literate.
- Only 20 percent across age groups, more in urban & more males reported reading newspaper daily.
- Only 12 percent across age groups, across both sexes & more in urban were listening to radio daily.
- About 81 percent, across age group, & across both sexes & more in urban had watched TV daily.
- Watching of Cinema was very low across age groups. Only 5 percent across age groups had watched Cinema once in three months or less often.
- In general exposure to TV was more pronounced across age groups.

### 8.3 Abnormal oral habits across age groups

It may be seen that the prevalence of oral habits was generally low. But habits of “sucking or biting fingers/thumbs” and “biting nails, lips or objects like pencil”, among the 5 and 12 year olds were slightly higher.

Three other observations which came out were :

- The habit of “grinding/gritting teeth” was more prevalent in rural areas for the 5, 35-44 and 65-74 year olds and vice-versa for the other two age groups.
- Urban children aged 5 year had higher prevalence of oral habits like “breathing from mouth”, “sucking or biting fingers/thumb” and “biting nails, lips or objects like pencil”, than their rural counterparts.

- Overall, males among 5, 15, and 35-44 year age groups and females among the 12 and 65-74 year age groups reported a higher prevalence of abnormal oral health habits.

#### **8.4 Sweet/sugar-taking habits across age groups**

- There were not such differences in sugar-taking habits across both sexes.
- The maximum number of subject across all age groups except age group 65-74 year olds had consumed sugar two times in the last one day. The consumption of sugar was consistently high. About 90-93 percent of the subjects 15 years old & below and 47-75 percent 35 years olds & above had consumed sugar two and more than two times in last one day.
- Almost all aged 15 years & below reported taken sugar in last one day. While 17 percent of subjects aged 35-44 & below & 43 percent 65-74 year olds did not take sugar in last one day.

#### **8.5 Oral hygiene practices across age groups**

- The practice of cleaning the teeth was universal.
- Around 94 percent in the 5, 12, 15, 35-44-year olds and 43 percent in 65-74 year olds more males and more in urban reported the use of the tooth brush to clean teeth in the state as well as across the three regions.
- About 94 percent subjects across all age/age groups, both sexes more in rural than in urban areas, had cleaned their teeth once a day. While more subjects in urban areas reported cleaning their teeth twice a day.
- About 96 percent subjects across both sexes, all ages/age groups more in urban areas reported the use of toothpaste and the usage was similar across the three regions.
- About 50 percent of the subjects across all ages/age groups and both sexes, more in urban areas reported the use of fluoridated tooth paste/powder. There were considerable variations among the three regions.
- About 56 percent of the subjects across all ages/age groups, significantly higher in urban areas, had changed their toothbrushes once in 4-6 months. The replacement was less frequent in rural areas. About 22 percent of the subjects reported change of tooth brushes after a period of 6 months. About 22 percent of the subjects had replaced their tooth brushes once in 1-3 months and they were significantly higher in urban areas.
- Overall, the practice of rinsing the mouth sometimes after eating was higher in urban areas; But the practice of rinsing the mouth always after eating was evenly distributed between urban and rural areas. There were huge regional differences this practice.

#### **8.6 Dental problems and treatment practices across age groups**

- About 8 percent of the subjects 12 years and below and about 24 percent. 15 years and above, across both sexes and more in urban than in rural, reported oral health problems in the last one year.

- Almost all those who had oral health problems, across the ages, mostly reported the problem of dental decay, followed by gum disease. About 17 percent of the subjects in the 65-74 year age group reported the problem of foul breath in last one year.
- About 58-65 percent subjects across all ages, consulted trained dentist. They were more in urban than in rural areas, with large differentials across the three regions.
- More respondents across all age groups & more in urban reported less than half an hour time to reach the dental care facility. While in rural areas more subjects (19 percent) reported half to more than one hour to reach the dental care facility.
- Hypertension was the most commonly found amongst (12-34) percent subjects aged 35 years and followed by diabetes in (3-10) percent and asthma in (1-6) percent of these subjects.

### **8.7 Awareness of dental health problems across age groups**

- About 93 percent subjects across all ages, both sexes, and more in urban areas, were aware of oral health problems.
- About 93 percent subjects across all ages, both sexes, more in rural areas, were aware of the factors that can cause oral health problems. Most of them reported factor such as not brushing regularly (72 percent) followed by eating sweets/ice creams or chocolate (63 percent) and not rinsing the mouth (50 percent). Consuming tobacco as a factor was reported by 31 percent.
- About 91 percent, across all ages, both sexes & more in rural, were aware of preventive measures. Percent of those aware reported measures such as cleaning teeth regularly (75 percent), not consuming tobacco (35 percent), visiting dentist regularly (43 percent) avoid sweet items 30 percent and using fluoridated paste/powder.

### **8.8 Tobacco smoking and chewing habits across age groups**

- About 10 percent subject across age groups, more in rural than in urban area had the habit of smoking tobacco. There were more smoking Bidis and more in rural areas. While more smoking cigarettes and more in urban.
- About 93 percent of the smokers across both sexes & places of residence were smoking less than ten times in a day.
- About two percent subjects, across age groups, and more in rural reported chewing pan/pan masala with tobacco. About 50 percent, across age and more in rural were chewing pan or pan masala with tobacco for less than five years. There was more among 65-74 year old chewing for more than 10 years.
- About 14 percent of the subjects across age groups, more males & more in rural, reported consuming alcohol. About 74 percent reported consuming it occasionally.

## 9. FINDINGS (ORAL HEALTH ASSESSMENT)

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

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

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

### 9.1 Dental caries

- Overall, the mean number of teeth present in the mouth increased as age advanced, except for the 65-74 year age group. While almost the full complement of teeth were present in the younger age group, 1.6 teeth were missing on an average among the 35-44 year age group. In the 65-74 year age group the mean number of teeth present apparently dropped to 10 teeth, indicating a loss of almost two-thirds of that normally present teeth in an average mouth.
- Caries prevalence among 5 year olds was 72 percent. A dmft value of 1-3 was most prevalent (41 percent) while the values of 4-5 DMFT was seen among 23 percent of the subjects.
- Among the 12 and 15 year olds, caries experience was 82 and 91 percent, respectively. DMFT values of 9-16 was predominant (48 percent) in the 35-44 year age group and DMFT values of 29 or more was seen predominantly in the 65-74 year age group (63 percent).
- The DT Component contributed the most (2-7 teeth) to DMFT scores for all age groups, except for the 65-74 year age group where the MT component contributed the most (22 teeth) to DMFT scores.
- The Significant Caries Index (SIC), which provides a measure of the mean DMFT of the one-third subjects with the highest mean scores of DMFT, was consistently high across all age groups and was highest for the age group of 65-74 years (32 teeth).
- The mean numbers of missing teeth was 22 teeth among the 65-74 year age group, about 16.5 teeth missing due to caries and 5.5 teeth missing due to other reasons.
- About 23 percent males and 22 percent females in the 35-44 year age group, and 13 percent males and 15 percent females, among the 65-74 year age group, had root caires. There were not subjects 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 was 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 resided (47 percent).

## 9.2 Treatment need

- Overall, a direct correlation existed between age and treatment need, except for the 65-74 year age group. The 5 year olds had the least treatment need (68 percent) and the need was highest among the 35-44 year age group (93 percent). The need for treatment was more in rural than urban areas for all ages, except for the 65-74 year age group.
- The need for one or more surface filling was the highest for all age groups (80 percent), except for the 65-74 year age group, where the need for other but unspecified care was highest (72 percent).
- The need for extraction was directly related to age. The younger age groups required the least extractions (1 percent) and the older age groups required the most (20 percent).
- The need for pulp care was seen more in the 15 and 35-44 year age groups (5 percent) than the other age groups (3 percent).
- There was a significant proportion of subjects (53 percent) among the older age groups who were indicated for other, but unspecified treatment care, which rose gradually across the age groups from 0.6 to 72 percent.

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

- The prevalence of periodontal disease was highest in the 35-44 year age group (91 percent) and was lowest among the 5 year olds (28 percent).
- Invariably, across all age groups, except among the 65-74 year age group, bleeding and calculus emerged as the most prevalent condition.
- The mean number of healthy sextants was highest for the 15 year olds (3.3 sextants) and lowest for the 65-74 year age group (0.5 sextant).
- Gingival bleeding was more prevalent condition among the lower age groups and accumulated calculus was increasingly a problem as age advanced.
- Overall, the prevalence proportion of subjects with loss of attachment in one or more sextants was lowest among the 15 year olds (11 percent) and highest among the 35-44 year age group (46 percent). The most prevalent form of loss of attachment was 4-5 mm in depth, among the 15 year olds (11 percent), 35-44 year age (40 percent) and 65-74 year age group (16 percent). A loss of attachment of 6-8 mm in depth was seen to increase as age advanced, from 0.1 percent among the 15 year olds to 5.3 percent among the 65-74 year age group.

- Overall, for the older age groups, rural residents had higher levels of loss of attachment than urbanites, and Region-2 had a higher prevalence of the condition than the other regions 1 & 3. The pattern of severity of the condition remained similar in urban and rural areas.

### **9.3 Malocclusion status**

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

- No form of malocclusion was reported among the 5 year olds. The proportion of subjects with malocclusion increased as age advanced, from 39 percent among 12 year olds to 45 percent among the 35-44 year age group, with a slight dip among the 15 year olds (39 percent).
- Cent percent children among the 5 year olds had none or minor malocclusion and 56 percent among the 35-44 year age group had none or minor malocclusion.
- 16 percent among the 12 and 15 year olds and 17 percent among the 35-44 year age group had definite malocclusion (DAI Scores 26-30).
- Very severe (handicapping) form of malocclusion was seen among 18 percent subjects in the 35-44 year age group.

### **9.4 Oral cancer and oral mucosal lesions**

- The prevalence of oral mucosal lesions was quite low and ulceration was the most common lesion.
- Only 2 cases of oral cancer were detected from rural residents among the subjects.
- Leukoplakia was detected in the older age groups seen predominantly on the buccal mucosa.

### **9.5 Dental fluorosis status**

- The prevalence of fluorosis was high and was observed across all age groups. It was 12 percent among the 65-74 year age group and 32-45 percent among the other age groups.
- A high proportion of subjects across all age groups had questionable fluorosis (11-35 percent) followed by very mild and mild fluorosis (1-11 percent). Severe forms of dental fluorosis was virtually absent among the subjects.
- Dental fluorosis was consistently high in Region-1 (69 percent) compared to in Region-3 (59 percent) followed by in Region-2 (6 percent).

### **9.6 Other lesions**

#### **9.6.1 Extra oral lesions**

- The prevalence of extra oral lesions was low (0.6-10) percent across the ages. The lesions were predominantly ulceration, sores, erosions and fissures located predominantly on the nose, cheek and chin, across the ages.

- The prevalence of extra oral lesions was higher in Region-1 (11 percent) compared to Region-2 (2 percent) and Region-3 (1 percent).

#### 9.6.2 T.M. Joint Symptoms and Signs

- T.M. Joint symptoms were reported by less than 1 percent subjects among the 5 and 15 year olds, 7 percent among 35-44 year age group and 20 percent among the 65-74 year age group.
- T.M. Joint signs were elicited among (0.2 – 0.5) percent of subjects belonging to younger age groups, 6.7 percent in 35-44 year age group and 23 percent in 65-74 year age group. Clicking of the T.M. Joint was the most common sign seen among 7 and 23 percent subjects aged 35-44 and 65-74 years, respectively.
- Overall, the rural areas had a higher prevalence of symptoms (6 percent) compared to urban areas (4 percent), except for the 15 year olds.
- Region-1 had a higher prevalence of signs (14 percent) compared to Region-3 (6 percent) followed by Region-2 (2 percent).

#### 9.6.3 Enamel defects (opacities and hypoplasia)

- The enamel defects were seen among all the age groups (18-52 percent)
- The most prevalent enamel defect was demarcated opacity (41 percent) followed by diffuse opacity (7 percent), across all the age groups.
- The prevalence of enamel defects was higher among rural residents (42 percent) compared to urbanites (37 percent).

### 9.7 Prosthetic status & need

- The dental prosthetic status and need for both upper and lower dental arches was recorded for subjects 15 yrs and above. The information was collected to assess the extent to which subjects were wearing or needing dental prostheses including bridge, partial dentures and full dentures.
- The proportion of subjects wearing one or the other type of prostheses in the upper arch increased as age advanced.
- In the 35-44 and 65-74 year age groups, 4 and 24 percent subjects, respectively, were wearing upper prosthesis. The most prevalent prosthesis among the 65-74 year age group was full removable dentures (21 percent) followed by partial dentures (2 percent).
- Among the 35-44 and 65-74 year age groups, 4 and 25 percent subjects, respectively, were wearing some type of lower prosthesis.
- 21 percent subjects among the 65-74 year age groups were wearing full mouth dentures.
- Prosthetic need among the 35-44 year age group was 29 percent for the upper arch. The need was high for the 65-74 year age group (72 percent).

- There was a greater need for lower prosthesis than upper prosthesis. Around 32 percent subjects in the 35-44 year age group needed lower prosthesis and the most prevalent need was that for multi-unit prosthesis (16 percent). About 71 percent subjects in the 65-74 year age groups needed lower prosthesis and the most prevalent need was that for full denture prosthesis (48 percent) followed by a need for multi-unit prosthesis (18 percent).
- About 49 percent subjects among the 65-74 year age group, required full mouth dentures slightly more females (49 percent) than males (48 percent).

#### **9.8 Community need for immediate care and referrals**

- Overall, life threatening and painful or infective conditions were extremely rare. 0.2 percent among the younger age groups reported the problems.
- Pain or infection was recorded in about 9 percent subjects across the age groups.

Referrals were made for almost all the conditions recorded for the subjects.

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

	Findings	Age in years				
		5	12	15	35-44	65-74
<b>1.</b>	<b>Oral disease conditions</b>					
1.1	Dental Caries					
	% Prevalence	71.5	81.9	90.7	96.0	92.3
	Mean DMFT	2.4	2.9	4.2	8.2	23.8
	SiC Index	5.0	5.2	6.8	13.5	32.0
1.2	Periodontal disease					
	Bleeding, calculus or pockets					
	% Prevalence	28.3	67.4	64.3	90.8	31.1
	Mean no of Sextants affected	0.0	2.8	3.3	1.9	0.5
1.3	Loss of attachment					
	% Prevalence	NA	NA	11.0	46.3	25.2
	Mean no of Sextants affected	NA	NA	0.2	1.1	0.7
1.4	Malocclusion (%)	0.0	39.0	38.8	44.5	NA
1.5	Dental Fluorosis (%)	31.9	43.9	45.3	43.1	11.7
1.6	Oral mucosal conditions (No.)	1	5	5	47	1.8
1.7	Oral Cancer (Nos.)	1	0	0	0	1
1.8	Edentulousness (%)	NA	NA	0.0	0.2	48.8
<b>2</b>	<b>Oral Health Practices</b>					
2.1	Sugar Intake in last 24 hours					
	Once	10.4	8.1	6.3	8.2	10.8
	Two & more times	89.7	91.9	93.1	75.4	46.8
2.2	Clean teeth with					
	Tooth Brush	94.7	95.6	95.7	89.1	36.2
	Fingers	3.7	2.5	2.3	3.7	12.0
2.3	Rinsing mouth					
	Always	10.7	18.3	49.8	63.3	78.2
	Sometimes	45.5	70.5	44.0	32.7	19.6
2.4	Tobacco smoking	NA	NA	NA	7.3	11.8
2.5	Frequency of tobacco smoking					
	Less than 10 times	NA	NA	NA	91.7	94.9
	10 or more times	NA	NA	NA	8.4	5.2

# CHAPTER I

## INTRODUCTION

### 1.1 BACKGROUND OF THE STATE

#### 1.1.1 Geographical location

Situated in the north-west of India, Punjab shares its border with Pakistan on the west, Jammu and Kashmir on the north, Himachal Pradesh on the north-east, and Haryana and Rajasthan on the south. Punjab has an area of 50,362 square kilometers. Chandigarh is the capital of Punjab and the state is divided into 17 district.

#### 1.1.2 Population and demographic profile

The total population of the state was 13.6 million in 1971, 16.8 million in 1981, 20.3 million in 1991, and 24.3 million in 2001. The decadal growth rate increased from 21.7 percent in 1961-71 to 23.9 percent in 1971-81 and then decreased to 20.8 percent in 1981-91 and further to 19.8 percent during 1991-2001 (1.8 percent) is slightly lower than the rate during 1981-91 (1.9 percent), yet the percentage contribution of Punjab to total population growth in the country has increased from 2.1 percent during 1981-91 to 2.2 percent during 1991-2001.

Population density per square kilometer increased from 269 in 1971 to 403 in 1991 and to 482 in 2001. The population density in Punjab is much higher than the density for the country as a whole (324) indicating an increasing pressure on land and other resources. Punjab with 30 percent of its population in urban areas is somewhat more urbanized than India as a whole (26 percent). Punjab continues to rank 15<sup>th</sup> in terms of population size among all the states and Union Territories in India, even though its share in the total population of India (2.4 percent) has increased marginally in 2001 from its share in 1991 (2.37 percent).

According to the 2001 Census of India, the sex ration in Punjab, at 874 females per 1,000 males, is lower than it was in 1991 (882), and is more unfavourable to females than the sex ratio for the country as a whole (933). The decline in the sex ratio in the last decade is largely due to a drastic decline in the sex ratio of the population age 0-6 from 875 in 1991 to 793 in 2001. The declining sex ratio of the child population is a serious concern for the state.

According to the Sample Registration System, the crude death rate declined from 10.4 per 1,000 population in 1971 to 7.7 in 1998. The crude death rate in urban areas (6.3) is lower than the rate in the rural areas (8.2). The infant mortality rate (IMR) in Punjab in the same year is estimated at 54 per 1,000 live births, which is much lower than the rate of 72 for India as a whole. The rural IMR (58) is 45 percent higher than the urban IMR (40). The infant mortality rate declined by almost 50 percent between 1971 and 1998 from 102 to 54 deaths per 1,000 live births (Office of the Registrar General 2000; 1999b). For the period 1996-2001, life expectancy was projected to be 68.4 years for males and 71.4 years for females (Ministry of Health and Family Welfare, 1999a).

Between 1971 and 1998, fertility declined substantially in the state. The crude birth rate declined from 34.2 per 1,000 populations in 1971 to 22.4 in 1998. The urban birth rate in Punjab (18.5) is lower than the corresponding rural rate (23.7). The total fertility rate has also declined from 5.2

children per woman in 1971 to 2.7 children per woman in 1997, a decline of 2.5 children per woman in the period of 26 years. Rural women (TFR=3.0) in Punjab, on average, give birth to about 0.7 more children than urban women (TFR=2.3) (Office of the Registrar General, 2000; 1999b).

The couple protection rate (defined as the percentage of eligible couples effectively protected against pregnancy by various methods of contraception) in Punjab was 69 percent in 1998, up from 24 percent in 1980. In comparison, the couple protection rate for India as a whole was 22 percent in 1980 and 45 percent in 1998 (Ministry of Health and Family Welfare, 1999a).

### **1.1.3 Composition of population**

According to with 1991 Census, Sikhs are the predominant religious community in Punjab and account for 63 percent of the state's total population. Moreover, four-fifths of all Sikhs in India reside in Punjab. Hindus are the second largest community in the state (with a share in the population of 35 percent), followed by Muslims and Christians (with a share of 1 percent each) (Directorate of Census Operations, Punjab1996).

According to the 1991 Census, the scheduled-caste population comprised 28 percent of the total population in Punjab compared with 17 percent for India as a whole. There are almost no scheduled tribes in the state (Office of the Registrar General and Census Commissioner, 1995).

### **1.1.4 Socio-economic characteristics**

The literacy rate in Punjab for the population age seven and above is 70 percent according to the 2001 Census, up from 59 percent in 1991. Seventy-six percent of males and 64 percent of females age 7 and above are literate. By comparison, the literacy rate in India is 65 percent for the country as a whole, 76 percent for males, and 54 percent for females. Between 1991 and 2001, the absolute increase in the literacy rate in Punjab has been greater for females than for males (Office of the Registrar General and Census Commissioner, 2001).

Punjab is one of the most prosperous states in India. In 1996-97, Punjab had a per capita net state domestic product of Rs. 18,213 at current prices, second only to Goa, and had a per capita net state domestic product at constant (1980-81) prices of Rs. 4,371, third only to Goa and Maharashtra. The corresponding figures for India as a whole are Rs. 10,919 and Rs.2,814, respectively (EPW Research Foundation 1998). According to the estimates given by the planning Commission for 1993-94, only 12 percent of the total population in Punjab (12 percent of the rural population and 11 percent of the urban population) were below the poverty line, much less than the 36 percent for India as a whole (Central Statistical Organisation, 1999).

The state has played a major and critical role in the success of the green revolution in India. In Punjab, nearly 84 percent of the total geographical area is under cultivation and Punjab alone accounts for a substantial proportion of the country's wheat and rice production. Several agricultural products including mushrooms, honey, chilies, and tomato paste are exported from Punjab (Ministry of Information and Broadcasting, 2001). Other crops grown in Punjab include maize, gram, sugarcane, and pulses. At the time of the 1991 Census, the agricultural sector provided a livelihood for 55 percent of the working population in the state (Office of the Registrar General and Census Commissioner, 1992).

Although Punjab continues to be predominantly agricultural, the share of the agricultural sector in the state domestic product has declined from 48 percent in 1980-81 to 45 percent in 1996-97. In the same period, the share of the manufacturing sector has doubled from 11 percent to 22 percent (EPW research Foundation, 1998). About two hundred thousand small-scale units employing about nine hundred thousand persons produce a variety of products from nuts and bolts and electronic items to surgical and leather goods. There are also over six hundred large and medium-scale units providing employment to over two hundred thousand persons. Information technology and software development companies are recent additions to the industrial base of the state. Major hydroelectric projects including the Bhakra Nangal complex have played a significant role in considerably enhancing the irrigation and power potential of the state.

## **1.2 NEED FOR ORAL HEALTH SURVEY**

### **1.2.1 Oral health problems**

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

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

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

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

### **1.2.2 Lack of data for policies and manpower development**

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

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

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

### **1.3 INITIATIVE OF THE DENTAL COUNCIL OF INDIA**

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

### **1.4 NATIONAL ORAL HEALTH SURVEY**

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

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

#### **1.4.1 Support of Government of India**

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

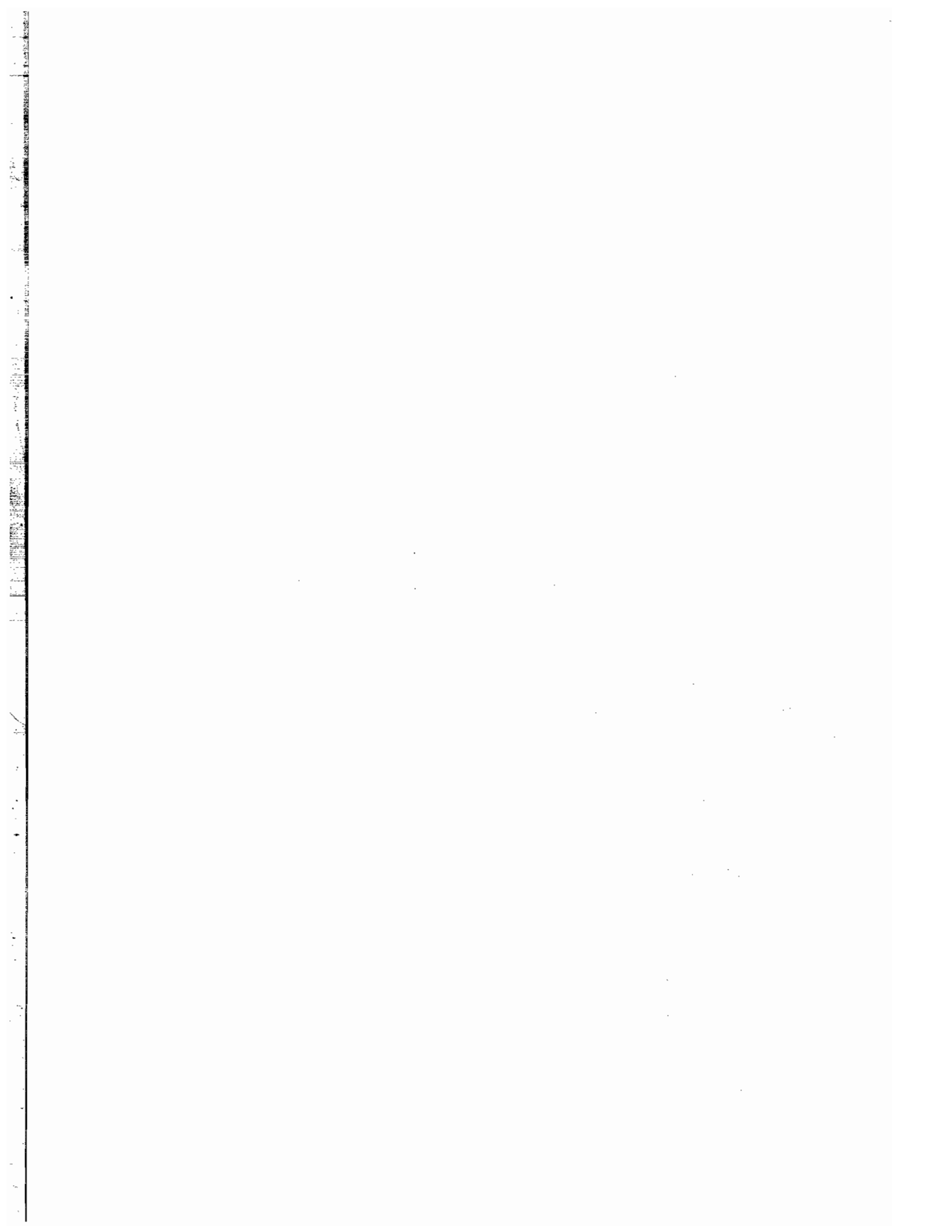
**1.6.4 To determine treatment seeking behaviour of people for their oral health problems.**

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 (Not included)
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  $5 \times 315 = 1575$  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
	<b>Total</b>	<b>91</b>	<b>18690</b>	<b>9975</b>	<b>28665</b>	<b>63</b>	<b>12810</b>	<b>7035</b>	<b>19845</b>

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 Punjab

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

Code	Region	Districts	Sampled District	Coverage as per design No. of Households			Actual Coverage No. of Households		
				Rural	Urban	Total	Rural	Urban	Total
1	Northern Punjab	i) Gurdaspur							
		ii) Hoshiarpur							
		iii) Ropar	Roppas (Ropar)	210	105	315	210	105	315
		iv) Fatehgarh Sahiti							
2	Central Punjab	i) Amritsar							
		ii) Jalandhar							
		iii) Ludhiana							
		iv) Patiala	Patiala	210	105	315	210	105	315
		v) Kapurthala							
		vi) Nawarshahr							
3	Southern Punjab	i) Bhatinda							
		ii) Ferozpur							
		iii) Faridkot							
		iv) Sangrur	Sangrur	210	105	315	210	105	315
		v) Moga							
		vi) Muktsar							
		vii) Mansa							
<b>Total</b>	<b>3</b>	<b>17</b>	<b>3</b>	<b>630</b>	<b>315</b>	<b>945</b>	<b>630</b>	<b>315</b>	<b>945</b>

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", 4<sup>th</sup> 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:

$$\begin{aligned} & (\text{missing visible teeth} \times 6) + (\text{crowding}) + (\text{spacing}) + (\text{diastema} \times 3) + (\text{largest anterior} \\ & \text{maxillary irregularity}) + (\text{largest anterior mandibular irregularity}) + (\text{anterior maxillary} \\ & \text{overjet} \times 2) + (\text{anterior mandibular overjet} \times 4) + (\text{vertical anterior openbite} \times 4) + \\ & (\text{antero-posterior molar relation} \times 3) + 13 \end{aligned}$$

## 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 samples of households.

### **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 scientist 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 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 and dental college training, the teams were taken to the field to make sure that they had understood the method of selection of the households, interview the individuals to fill the questionnaires and clinical examination of the dental problems. Once it was found that the teams had understood all the issues related to field work and were in a situation 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 completed forms before the team returned from the field. It was his/ her responsibility to scrutinise the forms, if they could not be checked in the field. This scrutiny was necessary before they were submitted to the state Coordinator and then to the Central Survey Unit. The Coordinator was also responsible of scrutinising the forms, fully in the initial stages and then on sample basis before sending them to the Central Survey Unit in New Delhi.

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

## **2.10 DATA ANALYSIS**

In the absence of any resources for data analysis at the Dental Council of India, all the work relating to data entry, validity checks and production of desired tables (as per analysis plan) was contracted out to TNS MODE, an organisation with research experience in studies related to health. All efforts were also made to monitor work quality at this stage. The Central Survey Unit had worked out the type of tables needed, and the level (Zone or Region/ State/ Country) for which such the analysis was needed. The necessary weights were also worked out to ensure that the estimates were valid for the level to which they related. These blank tables were given to the agency (TNS MODE) to complete. In order to ensure that the values given in each cell were right, the software package developed by TNS MODE was tested in a limited number of schedules by manually checking the results.

## 2.11 REPORT WRITING

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

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



## CHAPTER III

### BACKGROUND CHARACTERISTICS OF SURVEYED POPULATION

#### 3.1 CHARACTERISTICS OF HOUSEHOLDS

The data were collected from three regions, namely : Region 1 (Roopnagar/Ropar), Region-2 (Patiala) and Region -3 (Sangrur). The household characteristics are shown in Table 3.1. It may be noted that about 63 percent of the households. 55 percent in rural and 82 percent in urban live in pucca houses. A large difference was seen in the type of houses among Regions. The percentage households having pucca houses in Region-3 was only 38 percent as compared to 78 percent and 73 percent in Regions 1 & 2, respectively. Semi-pucca houses were more in Region -3 (58 percent) than in Region-1 (22 percent) and Region-2 (24 percent).

Only 4 percent, across places of residence had monthly expenditure, (proxy for household income) of Rs. 2500/- & below in the state.

Another 41 percent more in rural, reported monthly expenditure of Rs 2501-5500. While 56 percent, more in urban had monthly expenditure of Rs. 5501 & above.

As regard regions the percentage of households in Regions 1 & 2, having monthly expenditure of Rs. 5501 & above were twice than in Region-3.

About 51 percent of the household in the state belonged to Sikh, followed by Hindus (44 percent). Beside this 3 percent of households was of Muslims, followed by other less than one percent owned by Christian in the state. There were more Sikh resident in Region-1 (81 percent) than in Region-3 (44 percent) and Region-2 (42 percent). While there was more Hindus in Region-3 (52 percent) and Region-2 (52 percent) than in Region-1 (17 percent).

About 91 percent of the households in the state were of other than that of scheduled castes, Scheduled Tribes and other backward castes (OBCs). Only 9 percent of households were of schedule caste/Schedule Tribes and other Backward classes in the state.

About 53 percent of the households reported using tubewell/ hand pumps as a sources of drinking water. This was more in rural (66 percent) than in urban areas (14 percent). 46 percent of the households reported getting piped/tap water for drinking The supply of piped/tap water was significantly higher in urabn areas (84 percent) than in rural areas (32 percent) of the state. There was a higher usag of tube well/handpump in Region-3 (72 percent) and Region-1 (66 percent) than in Region-2 (32 percent). About 40 percent of households were dependent on other sources of drinking water like pond, canal, river or open well, Region 2 had a higher supply of drinking water through the pipe/tap (66 percent) than Region-1 (33 percent) and Region-3 (28 percent).

As expected, almost all subjects across places of residence & Regions reported wheat as their staple food. Almost two-thirds of the households (69 percent) across places of residence reported vegetarians. However, there were more vegetarian in Region-2 (87 percent) than in Region-3 (57 percent) and Region-1 (44 percent). The rest of the households (31 percent) reported non-vegetarian. They were more in Region-1 (56 percent) and Region-3 (43 percent) than Region-2 (13 percent). There was observed not much urban/rural differentials among the non-vegetarian.

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

STATE : Punjab

	Household Characteristics	n=	REGIONS			STATE		
			1	2	3	R	U	T
<b>1</b>	<b>Type of household</b>		<b>392</b>	<b>484</b>	<b>383</b>	<b>867</b>	<b>392</b>	<b>1259</b>
	Kuccha		0.8	3.7	4.0	2.9	4.0	2.9
	Semi Pucca		21.7	23.7	58.1	42.0	14.3	34.0
	Pucca		77.5	72.5	37.8	55.1	81.7	63.1
<b>2</b>	<b>Monthly expenditure (in Rs.)</b>							
	<= 2500		0.2	5.2	4.3	3.7	4.5	3.6
	2,501 - 5,500		30.2	31.9	63.1	49.9	20.4	40.6
	5,501 - 10,000		69.5	45.2	32.3	41.3	57.0	46.4
	10,000 +		0.2	17.6	0.3	5.0	18.1	9.3
<b>3</b>	<b>Religion</b>							
	Hindus		16.7	51.8	52.3	41.3	53.3	44.4
	Muslims		0.6	4.5	1.4	3.4	1.8	2.7
	Sikhs		80.8	42.5	44.1	53.5	43.9	51.3
	Christians		0.3	0.6	0.4	0.4	0.8	0.5
<b>4</b>	<b>Caste</b>							
	Scheduled Caste		1.1	5.6	2.4	3.1	5.2	3.7
	Scheduled Tribe		0.0	1.3	1.5	1.1	1.2	0.9
	Other Backward Classes		0.6	8.2	0.9	5.2	3.3	4.0
	Others		98.3	85.0	95.1	90.6	90.4	91.4
<b>5</b>	<b>Sources of drinking water</b>							
	Pipe/tap		32.5	66.4	27.6	32.1	84.2	45.5
	Tubewell/handpump		65.5	31.7	72.4	66.5	14.4	53.1
	Others		2.0	1.9	0.0	1.4	1.3	1.4
<b>6</b>	<b>Staple food</b>							
	Wheat		99.0	91.7	99.1	97.7	99.9	98.6
	Rice		1.0	2.0	0.6	2.1	0.1	1.3
<b>7</b>	<b>Nature of food</b>							
	Vegetarian		44.4	86.7	57.1	68.9	71.6	68.7
	Non-vegetarian		55.6	13.3	42.9	31.1	28.4	31.3

## CHARACTERISTICS OF HOUSEHOLDS SURVEYED (SUMMING UP)

1. 63 percent of households, 55 percent in rural & 82 percent in urban, live in pucca houses in the state. More households in Region 1 & 2 had pucca houses than in Region-3
2. 41 percent of households in rural & 56 percent in urban had monthly Expenditures of Rs 2501-5500 and 5501 & above respectively in the state.
3. 51 percent of households was of Sikh followed by 44 percent belonged to Hindus with state.
4. 46 percent of households were getting piped/tap water for drinking.
5. Wheat is the staple food of almost all and two third reported vegetarian?

### 3.2 PROFILE OF POPULATION

#### 3.2.2 12 year olds

##### 3.2.2.1 Educational levels

About 99 percent of subjects of this age group across both sexes and little more in urban was literate and almost all had education up to middle school level in the state. As regard literacy in Regions the percent literate in each Region was more or less equal and similar to that in the state.  
Table 3.2.2

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

AGE: 12 yrs

STATE : Punjab

Educational level & Media Exposure		MALE						FEMALE						STATE TOTAL	
		REGIONS			STATE			REGIONS			STATE				
		1	2	3	R	U	T	1	2	3	R	U	T		
<b>1</b>	<b>Educational level</b>	n=	160	177	160	343	154	497	156	195	156	352	155	507	1004
	Illiterate		0.0	0.0	0.7	0.3	0.0	0.2	0.0	0.9	2.1	1.6	0.0	1.1	0.7
	Upto middle		98.6	99.0	99.3	98.6	100.0	99.0	100.0	98.2	97.2	97.5	100.0	98.2	98.6
	High school & above		1.4	1.0	0.0	1.1	0.0	0.8	0.0	0.9	0.7	1.0	0.0	0.7	0.8
<b>2</b>	<b>Newspaper reading habits</b>							NOT	ASKED						
<b>3</b>	<b>Radio listening habits</b>							NOT	ASKED						
<b>4</b>	<b>TV watching habits</b>							NOT	ASKED						
	Daily														
	Sometimes														
	Not at all														
<b>5</b>	<b>Cinema watching habits</b>							NOT	ASKED						
	Once in 3 months														
	Less often														
	Not at all														

### 3.2.3 15 year olds

#### 3.2.3.1 Educational levels

Almost all across both sexes & place of residence were literate in this age group. About 30 percent of them had education up to middle school level and about 69 percent of subjects were high school and above. The picture was almost similar for both sexes. As regard literacy level in Regions almost all in each Region, were literate. Table 3.2.3

#### 3.2.3.2 Exposure to media

About 19 percent subjects in this age group, more females & more in urban areas, reported reading newspapers daily. Other 62 percent subjects more males & more in urban area reported reading newspapers sometimes. About 19 percent did not read newspapers at all. These were more in rural areas (22 percent) than in urban areas (12 percent).

As regard the use of other media, 56 percent of the respondents more males & more in rural area reported listening to radio sometimes. While about 12 percent more females & more in urban reported listening to radio daily. Other about 33 percent, more females & more in urban, did not listen to radio at all.

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

AGE: 15 yrs

STATE : Punjab

Educational level & Media Exposure		MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1 Educational level</b>	n=	159	179	163	348	153	501	155	192	156	351	152	503	1004
Illiterate		0.0	0.5	0.0	0.3	0.0	0.2	0.0	1.4	5.6	3.4	0.0	2.4	1.3
Upto middle		3.1	54.8	9.0	32.2	24.1	29.9	0.7	54.8	4.4	30.8	25.3	29.2	29.6
High school & above		96.9	44.7	91.0	67.4	75.9	69.9	99.3	43.9	90.0	65.8	74.7	68.4	69.2
<b>2 Newspaper reading habits</b>														
Daily		6.8	25.1	11.8	13.4	26.0	17.1	11.3	27.8	14.8	15.0	34.3	20.6	18.9
Sometimes		74.3	49.6	82.8	66.2	62.5	65.2	71.8	41.8	78.8	60.9	53.4	58.8	62.0
Not at all		18.9	25.3	5.4	20.4	11.5	17.8	16.9	30.4	6.4	24.0	12.4	20.7	19.3
<b>3 Radio listening habits</b>														
Daily		1.7	10.9	13.8	8.1	14.2	9.9	1.2	19.5	11.5	9.4	23.3	13.4	11.7
Sometimes		91.5	31.8	80.0	66.5	42.2	59.4	91.7	18.8	81.3	57.8	37.1	51.9	55.7
Not at all		6.8	57.3	6.3	25.5	43.6	30.8	7.1	61.7	7.2	32.8	39.5	34.7	32.8
<b>4 TV watching habits</b>														
Daily		86.1	87.8	60.0	72.6	92.9	78.5	85.8	84.0	61.4	74.2	85.7	77.5	78.0
Sometimes		7.5	10.2	38.0	24.1	5.1	18.6	7.1	10.9	37.6	22.1	8.6	18.2	18.4
Not at all		6.4	2.0	2.0	3.3	2.0	2.9	7.1	5.1	1.0	3.7	5.7	4.3	3.6
<b>5 Cinema watching habits</b>														
Once in 3 months		1.4	14.1	0.0	4.5	13.2	7.0	0.5	15.1	0.0	7.3	8.7	7.7	7.4
Less often		3.6	38.5	9.4	16.1	36.3	22.0	4.1	31.1	9.3	12.2	36.1	19.1	20.6
Not at all		95.1	47.4	90.6	79.4	50.5	71.0	95.4	53.8	90.7	80.4	55.3	73.2	72.1

As regard Regions there were more listening to radio sometimes in Regions 1 & 3 & more not listening to radio at all in Regions 2. Nearly 2 percent least among Regions were listening to radio daily in Region-1.

About 78 percent of the respondents across both sexes & more in urban reported watching television daily. While only 4 percent of the respondents did not watch TV at all. Watching of TV daily, particularly in the urban areas was high (89 percent) compared to in rural areas (73 percent).

Exposure to the cinema was limited. About 3 percent subjects across both sexes & more in urban reported the habit of watching cinema less often & once in three months. Other 72 percent, across both sexes & more in rural did not watch cinema at all in the state.

As regard regions 91-95 percent in regions, 1&3 did not watch cinema at all while about 86 percent in Region-2 had watched cinema less often & once in 3 months.

### 3.2.4 35-44 year olds

#### 3.2.4.1 Educational level

About 4 percent of the respondents in this age group were illiterate. While 22 percent more females and more in rural had education up to middle. Other about 73 percent of the subjects more males & more in urban were high school and above. Table 3.2.4

As regard Regions except 94 percent in Region-2 about 98 percent in each of remaining regions were literate.

#### 3.2.4.2 Exposure to media

About 27 percent of the respondents in this age group, 31 percent males and 24 percent females, more in urban 43 percent than in rural areas (21 percent), reported reading newspapers daily. Other about 53 percent subjects reported reading newspapers sometimes. While 19 percent of the subjects more females & more in rural did not read newspaper at all in the state. Except 74 percent in Region-2, about 85 percent in each of remaining regions, reported reading newspaper daily & sometimes.

About one third more females & more in urban, did not listen radio to at all. Only 13 percent subjects across both sexes & more in urban listened to radio daily. More than one-half of the subjects (56 percent) reported listening to radio sometimes, higher in rural (63 percent) than in urban areas (39 percent). There was more listening to radio daily & sometimes in Regions 1 & 3 and more not listening to radio at all in Regions-2.

Exposure to the television was high in the state as well as in each region. About 97 percent of subjects across both sexes & places of residence had the habit of watching TV daily & sometimes in the state. About 72 percent of the respondents more females & more in rural reported that they had never been to cinema. Only about 5 percent of the subjects more in urban, had watched cinema once in three months. Around one-fourth of the subjects across both sexes & more in urban reported the habit of watching cinema less often in the state.

**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 : Punjab**

Educational level & Media Exposure		MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1 Educational level</b>	n=	159	196	155	352	158	510	155	201	160	360	156	516	1026
Illiterate		2.6	3.2	0.0	2.9	0.3	2.2	1.9	9.7	3.2	7.7	3.0	6.3	4.3
Upto middle		14.9	22.0	11.8	19.6	13.0	17.7	11.3	36.9	19.7	32.3	14.8	27.1	22.4
High school & above		82.5	74.8	88.2	77.4	86.7	80.2	86.8	53.4	77.1	59.9	82.2	66.6	73.4
<b>2 Newspaper reading habits</b>														
Daily		12.3	50.1	11.9	27.1	41.6	31.4	13.3	31.4	17.0	14.6	44.6	23.5	27.5
Sometimes		75.6	32.4	77.5	58.3	44.6	54.2	69.8	33.6	72.4	55.4	44.2	52.0	53.1
Not at all		12.1	17.5	10.6	14.6	13.8	14.4	16.9	34.9	10.6	30.1	11.2	24.5	19.5
<b>3 Radio listening habits</b>														
Daily		3.1	17.0	14.0	11.0	18.8	13.3	2.6	11.6	18.6	8.4	20.1	11.9	12.6
Sometimes		93.3	37.4	78.2	67.5	43.9	60.5	90.4	22.9	74.9	58.8	33.4	51.2	55.9
Not at all		3.6	45.6	7.8	21.5	37.2	26.2	7.0	65.5	6.4	32.8	46.5	36.9	31.6
<b>4 TV watching habits</b>														
Daily		82.4	78.0	67.2	69.8	89.3	75.6	87.7	82.6	65.4	73.9	89.1	78.4	77.0
Sometimes		11.9	19.7	31.8	27.8	7.8	21.8	7.0	11.9	33.2	21.2	8.3	17.3	19.6
Not at all		5.7	2.3	1.0	2.5	2.9	2.6	5.3	5.5	1.4	4.9	2.7	4.3	3.5
<b>5 Cinema watching habits</b>														
Once in 3 months		0.0	11.1	0.0	3.7	10.3	5.6	0.7	7.7	0.0	2.5	7.8	4.1	4.9
Less often		4.0	40.8	10.8	20.5	34.7	24.7	3.1	32.7	17.1	15.4	38.8	22.3	23.5
Not at all		96.0	48.1	89.2	75.9	55.0	69.7	96.1	59.6	82.9	82.2	53.4	73.6	71.7

### 3.2.5 65-74 year olds

#### 3.2.5.1 Educational level

Due to late start of universal education programme, as expected the level of illiteracy was high (41 percent) in this age group. About 49 percent of females and 32 percent of males reported illiterate. They were more in rural (47 percent) than in urban areas (25 percent). About 44 percent of the subjects more males & more in urban had education up to middle school. While 15 percent subjects more males & more in urban, were high school and above. The literacy levels for females as well as for males were higher in urban, than in rural areas. Region-3 had higher literacy levels (67 percent) compared to Region-1 (61 percent), and Region-2 (54 percent). Table 3.2.5

#### 3.2.5.2 Exposure to media

Educational levels clearly reflect the habit of reading newspapers. About 60 percent of the subjects did not have the habit of reading newspapers at all. They were more females than males and more in rural than urban areas. Other about 14 percent, more males & more in urban had the habit of reading newspaper daily. There was more reading newspaper daily in Region-2 & more not reading at all in Region-3.

Exposure to radio was low among the subjects. About 33 percent of the respondents did not listen to radio at all. 11 percent of the respondents, more in urban and evenly distributed by sex had the habit of listening to the radio daily. Marked differentials were observed across the regions. There were more listening to radio daily & sometimes in Region -1 (94 percent) followed by Region-3 (84 percent) and Region-2 (32 percent).

Exposure to the television was higher than to radio. About 67 percent of the subjects across both sexes & more in urban had the habit of watching TV daily. About one-fourth of the subjects (26 percent) across both sexes & more in rural reported viewing television sometimes. While about 7 percent of subjects more in rural reported no habit of watching television in the state.

About 92-95 percent reported watching TV daily & sometimes in each region.

Exposure to cinema was very low. Only about 8 percent of the subjects more in urban had watched cinema once in 3 months & less often in the state.

Overall, males had a higher exposure to the various media than females, with slight differentials observed across the three regions.

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 : Punjab

	Educational level & Media Exposure	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Educational level</b>		159	186	163	346	162	508	156	181	152	343	146	489	997
	Illiterate		30.3	40.0	20.5	38.3	18.5	32.2	47.7	52.6	44.6	56.5	31.7	49.4	40.8
	Upto middle		66.2	26.7	63.8	46.9	44.1	46.0	47.5	37.8	45.3	37.3	53.4	41.9	44.0
	High school & above		3.6	33.3	15.7	14.8	37.4	21.8	4.8	9.6	10.1	6.2	14.9	8.7	15.3
<b>2</b>	<b>Newspaper reading habits</b>														
	Daily		2.6	34.5	4.8	10.8	36.8	18.8	1.9	15.7	4.4	5.5	19.0	9.4	14.1
	Sometimes		43.2	17.5	33.4	29.0	24.3	27.5	34.5	13.5	31.5	21.6	27.0	23.2	25.4
	Not at all		54.3	48.0	61.8	60.3	38.9	53.6	63.6	70.8	64.1	72.8	54.0	67.4	60.5
<b>3</b>	<b>Radio listening habits</b>														
	Daily		5.2	16.5	8.1	7.9	19.7	11.6	4.1	14.0	11.0	9.8	14.0	11.0	11.3
	Sometimes		88.6	36.6	76.5	66.6	43.5	59.5	89.4	26.0	71.4	58.0	39.8	52.8	56.2
	Not at all		6.2	46.8	15.5	25.5	36.8	29.0	6.5	60.0	17.7	32.2	46.2	36.2	32.6
<b>4</b>	<b>TV watching habits</b>														
	Daily		76.1	72.6	52.3	62.7	76.3	66.9	82.4	68.6	51.9	60.9	79.6	66.2	66.6
	Sometimes		17.3	19.9	43.1	29.8	19.5	26.6	12.6	20.4	44.9	30.0	17.1	26.3	26.5
	Not at all		6.6	7.6	4.6	7.5	4.2	6.5	5.0	11.1	3.2	9.2	3.3	7.5	7.0
<b>5</b>	<b>Cinema watching habits</b>														
	Once in 3 months		0.0	3.8	0.0	0.7	4.4	1.8	0.0	2.9	0.0	1.0	2.5	1.4	1.6
	Less often		0.0	12.1	5.8	3.7	16.4	7.6	0.0	8.4	5.4	3.1	12.3	5.7	6.7
	Not at all		100.0	84.2	94.2	95.6	79.1	90.5	100.0	88.7	94.6	95.9	85.3	92.9	91.7

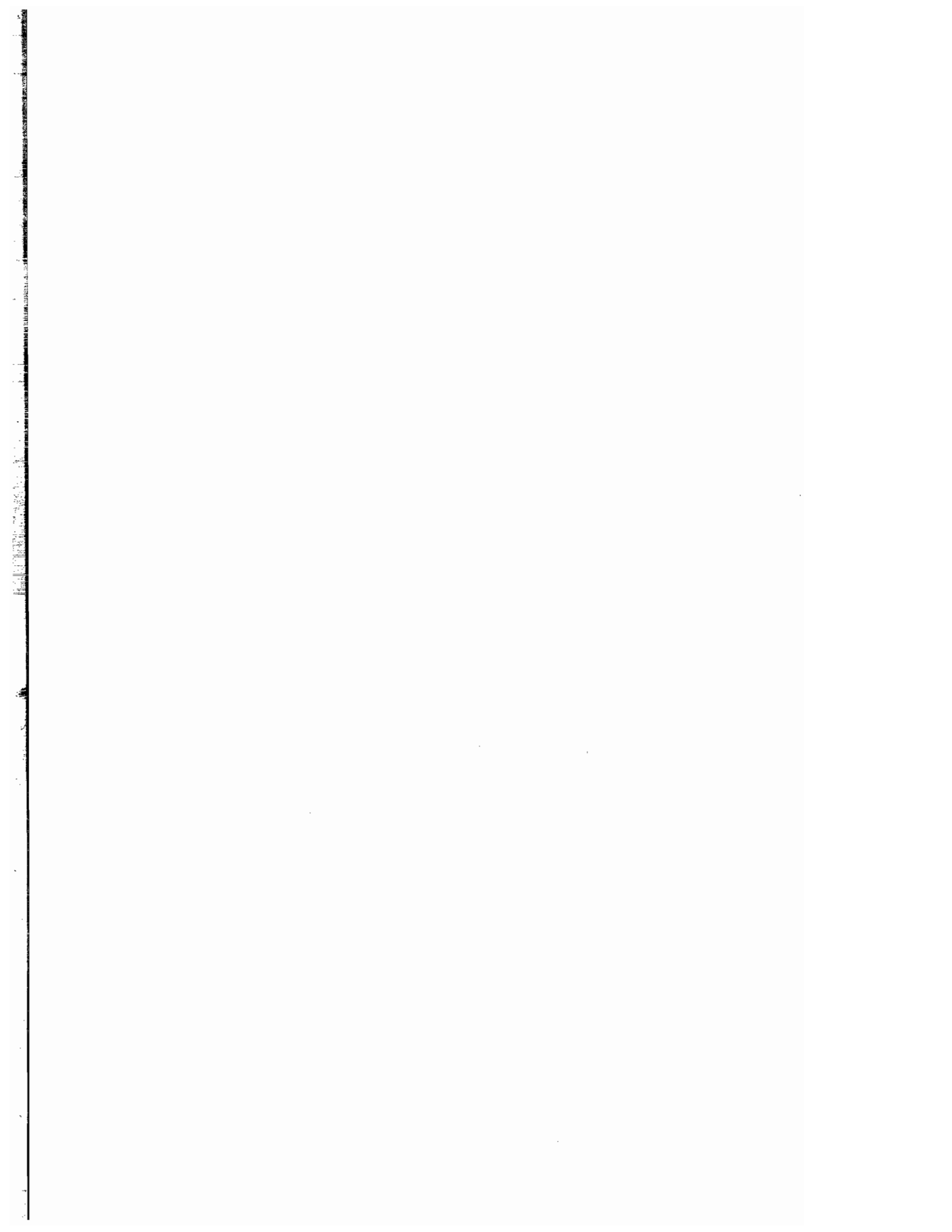
## PROFILE POPULATION ACROSS AGE GROUPS (SUMMING UP)

1. Almost all in younger age groups i.e. below 35-44 year age & 73 percent in 65-74 year age group were literate.
2. Only 20 percent across age groups, more in urban & more males reported reading newspaper daily.
3. Only 12 percent across age groups, across both sexes & more in urban were listening to radio daily.
4. About 81 percent, across age group, & across both sexes & more in urban had watched TV daily.
5. Watching of Cinema was very low across age groups. Only 5 percent across age groups had watched Cinema once in three months or less often.
6. In general exposure to TV was more pronounced across age groups.

## CHAPTER IV

### MAPPING OF FLUORIDE LEVELS

Since data on fluoride levels could not be collected due to certain administrative problems in the state. Hence no writeup could be done for inclusion in this Chapter-IV.



## CHAPTER V

### ORAL HEALTH KNOWLEDGE AND PRACTICES

A series of questions were asked on food habits and other habits/practices that could affect oral health. Prevalence of each of these practices for different ages/ age groups, males and females, rural and urban areas and for each region will be discussed in this chapter. These figures may be suggestive of the oral health risk practices, and may help in initiating appropriate health educational activities to promote and improve practices related to oral health and thus improve oral health of the population.

#### 5.1 ABNORMAL ORAL HABITS

Five questions on abnormal habits, “breathing from mouth” “sucking or biting fingers thumb” “thrusting tongue on the teeth” “biting nails, lips or objects like pencil”, and “grinding/gritting teeth”, were enquired from each respondents (his/her caretaker in case of 5 year olds). The responses as obtained from 5, 12, 15 35-44 & 65-74 year olds by their sex & places of residence are presented in Table 5.1 and are discussed in this section.

##### 5.1.1 5 year olds

Except the prevalence of abnormal habits such as “sucking or biting fingers/thumbs” and “biting nails/lips/object like pencil” in 9 percent & 7 percent of subjects of this age respectively. The prevalence of remaining each of abnormal habit was low and 4 percent of the subjects more females & more in urban areas had each of these habits.

As regard Regions the prevalence of each of abnormal habit was comparatively more in Region-2, followed by in Region-3 & Region-1.

##### 5.1.2 12 year olds

Like the previous age group there was comparatively more belonging to this age groups across both sexes & places reported having the habits of “sucking or biting fingers/thumbs” and “biting nails/lips/object like pencil”. Further the prevalence of each of the remaining habits was lower than that in respect of earlier age group. But the occurrence of each abnormal habit was more in females subjects.

##### 5.1.3 15 year olds

Except the prevalence of abnormal habits such as “biting nails/lips/object like pencil” & “breathing from mouth” in about 5 percent & 3 percent of subjects respectively, the occurrence of each of other abnormal habits was very low & lower than that in subjects belonging to earlier age groups.

##### 5.1.4 35-44 year olds

Except the habit of “grinding/gritting teeth” in 4 percent of subjects across both sexes & places of residence, only one or below percent of subjects had each of the remaining habits in the state.

Table : 5.1 Percent respondents by habits affecting oral health age, sex & geographical area.  
**AGE: 5 yrs** **STATE : Punjab**

Habits affecting Oral Health	MALE							FEMALE							STATE TOTAL
	REGIONS			STATE				REGIONS			STATE				
	1	2	3	R	U	T	1	2	3	R	U	T			
	n=	161	198	165	357	167	524	154	172	151	333	144	477	1001	
1 Breathing from mouth		0.0	9.5	0.5	4.6	5.7	5.0	0.0	6.7	1.3	2.8	5.6	3.6	4.3	
2 Sucking or biting fingers/thumb		0.0	12.0	9.2	8.8	8.9	8.8	3.7	11.6	9.4	8.1	12.1	9.2	9.0	
3 Thrusting tongue on teeth		2.3	4.2	4.2	4.2	3.0	3.8	3.2	4.6	8.0	3.6	9.6	5.3	4.6	
4 Biting nails/lips/objects like pencil		7.0	7.1	5.8	5.4	9.5	6.6	6.4	11.1	4.2	7.8	8.3	8.0	7.3	
5 Grinding / gritting teeth		1.7	5.3	3.5	5.0	1.9	4.1	1.2	7.2	1.3	3.4	6.0	4.1	4.1	

**AGE: 12 yrs** **STATE : Punjab**

Habits affecting Oral Health	MALE							FEMALE							STATE TOTAL
	REGIONS			STATE				REGIONS			STATE				
	1	2	3	R	U	T	1	2	3	R	U	T			
	n=	160	177	160	343	154	497	156	195	156	352	155	507	1004	
1 Breathing from mouth		1.9	6.8	0.7	2.8	6.3	3.8	1.9	7.5	3.8	6.6	2.4	5.4	4.6	
2 Sucking or biting fingers/thumb		7.0	5.5	14.7	8.8	8.5	8.7	11.3	3.2	17.0	9.6	6.9	8.8	8.8	
3 Thrusting tongue on teeth		3.8	1.5	3.9	2.5	3.2	2.7	5.1	1.6	3.8	1.6	5.9	2.9	2.8	
4 Biting nails/lips/objects like pencil		7.3	7.5	7.5	7.0	8.5	7.5	9.1	7.0	8.3	7.5	8.5	7.8	7.7	
5 Grinding / gritting teeth		1.9	3.5	0.0	1.8	2.7	2.1	4.1	2.3	0.0	2.3	1.2	2.0	2.1	

**AGE: 15 yrs** **STATE : Punjab**

Habits affecting Oral Health	MALE							FEMALE							STATE TOTAL
	REGIONS			STATE				REGIONS			STATE				
	1	2	3	R	U	T	1	2	3	R	U	T			
	n=	159	179	163	348	153	501	155	192	156	351	152	503	1004	
1 Breathing from mouth		0.0	6.5	0.0	3.4	2.4	3.1	1.2	3.9	0.0	1.5	3.9	2.2	2.7	
2 Sucking or biting fingers/thumb		0.7	1.7	0.7	1.2	1.2	1.2	1.9	1.2	1.4	1.3	1.5	1.4	1.3	
3 Thrusting tongue on teeth		1.7	0.0	0.0	0.2	0.7	0.3	1.9	0.5	0.7	1.0	0.3	0.8	0.6	
4 Biting nails/lips/objects like pencil		10.1	5.0	1.7	4.9	5.1	5.0	9.0	3.9	1.9	3.3	6.7	4.3	4.7	
5 Grinding / gritting teeth		2.9	3.7	0.5	2.4	2.7	2.5	2.2	0.9	0.5	1.3	0.5	1.0	1.8	

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

Habits affecting Oral Health	MALE							FEMALE							STATE TOTAL
	REGIONS			STATE				REGIONS			STATE				
	1	2	3	R	U	T	1	2	3	R	U	T			
	n=	159	196	155	352	158	510	155	201	160	360	156	516	1026	
1 Breathing from mouth		0.0	2.3	0.0	1.7	0.0	1.2	0.0	2.0	0.0	1.0	1.1	1.0	1.1	
2 Sucking or biting fingers/thumb		0.0	0.0	0.7	0.3	0.0	0.2	0.0	0.0	0.7	0.3	0.0	0.2	0.2	
3 Thrusting tongue on teeth		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4 Biting nails/lips/objects like pencil		3.1	0.7	0.0	0.6	1.8	0.9	3.6	0.4	0.0	0.9	0.9	0.9	0.9	
5 Grinding / gritting teeth		2.6	7.7	0.0	5.3	2.6	4.5	1.4	6.6	0.0	3.3	4.5	3.7	4.1	

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

Habits affecting Oral Health	MALE							FEMALE							STATE TOTAL
	REGIONS			STATE				REGIONS			STATE				
	1	2	3	R	U	T	1	2	3	R	U	T			
	n=	159	186	163	346	162	508	156	181	152	343	146	489	997	
1 Breathing from mouth		0.0	1.9	0.0	0.3	2.2	0.9	0.0	4.2	0.0	2.4	1.2	2.1	1.5	
2 Sucking or biting fingers/thumb		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3	0.0	0.2	0.1	
3 Thrusting tongue on teeth		0.0	0.5	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
4 Biting nails/lips/objects like pencil		0.0	0.9	0.0	0.7	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	
5 Grinding / gritting teeth		0.0	5.2	0.0	2.7	2.2	2.6	0.0	8.4	0.0	2.8	7.4	4.1	3.4	

As regard regions, except less than one percent reported the habit of "sucking or biting fingers/thumbs" none of the subject in Regions-3 reported any other abnormal habits. While a small percent of subjects in Region 1 & 2 reported abnormal habits such as "grinding/gritting teeth" & "biting nails/lips/objects like pencil.

### **5.1.5 65-74 year olds**

Except the habit of "grinding/gritting teeth in about 3 percent of subjects, more females & more in urban, there was one & below percent of subject had each of the remaining abnormal habits in the state.

As regard Regions, none of the subjects in Regions 1 & 3 reported any of the abnormal habits. However in Regions-2 except the habits of "sucking or biting fingers/thumb" reported by a small percent of subjects, none reported each of the remaining abnormal habits.

### **ABNORMAL ORAL HABITS ACROSS AGE GROUPS (SUMMING UP)**

It may be seen that the prevalence of oral habits was, generally low. But the habits of "sucking or biting fingers/thumbs" and "biting nails, lips or objects like pencil", among the 5 and 12 year olds were slightly higher.

Three other observations which came out were:

- (1) The habit of "grinding/gritting teeth" was more prevalent in rural areas for the 5, 35-44 and 65-74 year olds and vice-versa for the other two age groups.
- (2) Urban children aged 5 year had higher prevalence of oral habits like "breathing from mouth", "sucking or biting fingers/thumb" and "biting nails, lips or objects like pencil", than their rural counterparts.
- (3) Overall, males among 5, 15, and 35-44 year age groups and females among the 12 and 65-74 year age groups reported a higher prevalence of abnormal oral health habits.

## **5.2 SWEET/SUGAR TAKING**

Since Sweets/sugar-taking habits affect the oral health, the respondents were asked about the frequency with which they had consumed sweets/sugar during the last one day. The responses obtained are presented in Table 5.2 and Fig. 5.1

### **5.2.1 5 year olds**

The respondents were asked about the frequency with which they had consumed sugar during the last one day. All belonging to this age group, reported to have taken sugar in the last one day. As regard frequency more females & more in rural had taken sugar or sweets two times in the last one day, followed by other 32 percent, more males & more in urban had taken sugar more than two times in last one day. Only about 10 percent of the subjects across both sexes & more in rural had consumed sugar/sweet once in the last one day.

About 97 percent in Regions -3 & about 85 percent in region 1 & 2 reported to have taken sugar two & more times in last one day.

### 5.2.2 12 year olds

Like in the previous age group, all reported to have consumed sugar atleast once in last one day. While about 57 percent, more males & more in rural had taken sugar or sweet two times in last one day and other 35 percent across both sexes & had consumed it more than two times in last one day.

About 88 percent in Region-3, and 95-97 percent in Region 1 & 2 had taken sugar two & more times in last one day. More males reported taking sugar two times in contrast to this more females had taken sugar more than two times in last one day in each Region.

### 5.2.3 15 year olds

Like the previous age groups, almost all reported to have consumed sugar atleast once in last one day. About 60 percent of the subjects across both sexes & more in rural had consumed sugar two times in last one day and other 33 percent more males & more in urban had taken sugar more than two times, in the last one day. No major difference in the pattern of sugar consumption was reported across the three regions.

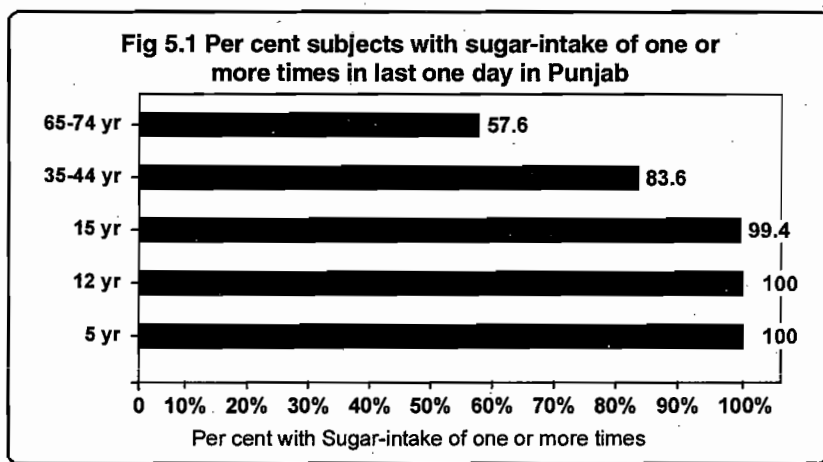
### 5.2.4 35-44 year olds

About 16 percent of the subjects in this age groups, across both sexes & more in rural did not take sugar in the last one day. 39 percent of the subjects across both sexes & more in rural reported taken sugar two times in a last one day and other about 36 percent more females & more in rural had taken sugar more than two times in last one day.

As regard regions it is surprising to find that about half of the subjects did not take sugar in Region 3. While 75-80 percent in Regions - 1 & 2 had taken sugar two & more times in last one day.

### 5.2.5 65-74 year olds

About 43 percent respondents more males & more in rural reported no intake of sugar in the last one day. While about 27 percent of the subjects across by sexes & more in urban reported taken sugar more than two times in last one day. Other 20 percent subjects more females & more in rural had taken sugar two times in last one.



There were minor differentials with regard to the genders and place of residence but marked differentials in regard to frequency of consuming sugar across the three regions.

**Table : 5.2 Percent distribution of Males and Females in different Regions / State by Pattern of Sugar intake**  
**AGE: 5 yrs** **STATE : Punjab**

Pattern of sugar intake in last one day	MALE						FEMALE						STATE	
	REGIONS			STATE			REGIONS			STATE			TOTAL	
	1	2	3	R	U	T	1	2	3	R	U	T		
	n=	161	198	165	357	167	524	154	172	151	333	144	477	1001
1 Not taken		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 Taken one time		10.7	14.4	3.2	11.4	8.0	10.4	11.0	14.4	3.4	12.5	5.2	10.4	10.4
3 Taken two times		77.9	30.8	82.5	60.4	44.9	55.6	76.8	39.7	78.2	63.6	49.0	59.4	57.5
4 Taken 2+ times		11.4	54.8	14.3	28.2	47.0	34.1	12.2	45.9	18.3	23.9	45.9	30.3	32.2

**AGE: 12 yrs** **STATE : Punjab**

Pattern of sugar intake in last one day	MALE						FEMALE						STATE	
	REGIONS			STATE			REGIONS			STATE			TOTAL	
	1	2	3	R	U	T	1	2	3	R	U	T		
	n=	160	177	160	343	154	497	156	195	156	352	155	507	1004
1 Not taken		0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.1	0.1
2 Taken one time		7.8	9.5	2.6	7.9	4.9	7.0	6.3	13.8	3.3	9.1	9.7	9.2	8.1
3 Taken two times		75.8	40.4	77.5	62.3	52.5	59.4	75.3	36.9	73.0	59.8	44.1	55.1	57.3
4 Taken 2+ times		16.4	50.1	19.9	29.8	42.6	33.6	17.7	49.3	23.7	30.9	46.2	35.5	34.6

**AGE: 15 yrs** **STATE : Punjab**

Pattern of sugar intake in last one day	MALE						FEMALE						STATE	
	REGIONS			STATE			REGIONS			STATE			TOTAL	
	1	2	3	R	U	T	1	2	3	R	U	T		
	n=	159	179	163	348	153	501	155	192	156	351	152	503	1004
1 Not taken		4.9	0.0	0.0	1.0	1.0	1.0	2.4	0.0	0.0	0.4	0.7	0.5	0.8
2 Taken one time		0.0	6.5	2.0	5.3	0.0	3.8	3.4	13.5	4.0	9.0	8.0	8.7	6.3
3 Taken two times		77.7	39.2	76.5	60.7	54.4	58.9	77.9	41.8	79.9	63.8	51.5	60.3	59.6
4 Taken 2+ times		17.3	54.3	21.5	32.9	44.7	36.3	16.3	44.8	16.1	26.8	39.8	30.6	33.5

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

Pattern of sugar intake in last one day	MALE						FEMALE						STATE	
	REGIONS			STATE			REGIONS			STATE			TOTAL	
	1	2	3	R	U	T	1	2	3	R	U	T		
	n=	159	196	155	352	158	510	155	201	160	360	156	516	1026
1 Not taken		16.1	0.0	50.2	21.0	10.6	17.9	11.8	0.0	43.2	16.9	10.7	15.0	16.5
2 Taken one time		9.5	12.9	3.4	8.8	11.0	9.5	5.3	9.2	3.7	7.2	6.0	6.9	8.2
3 Taken two times		54.2	33.6	37.4	40.0	35.9	38.8	64.4	28.8	41.0	41.7	33.2	39.2	39.0
4 Taken 2+ times		20.1	53.5	9.0	30.2	42.5	33.9	18.6	62.0	12.1	34.2	50.1	38.9	36.4

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

Pattern of sugar intake in last one day	MALE						FEMALE						STATE	
	REGIONS			STATE			REGIONS			STATE			TOTAL	
	1	2	3	R	U	T	1	2	3	R	U	T		
	n=	159	186	163	346	162	508	156	181	152	343	146	489	997
1 Not taken		78.2	1.2	90.1	46.9	37.5	44.0	78.4	1.0	80.9	44.1	33.1	41.0	42.5
2 Taken one time		6.4	16.3	3.2	9.4	12.3	10.3	6.7	15.7	6.8	10.6	12.7	11.2	10.8
3 Taken two times		13.0	23.1	3.5	18.2	16.0	17.6	12.7	33.7	9.3	22.7	20.3	22.0	19.8
4 Taken 2+ times		2.4	54.4	3.2	25.5	34.2	28.2	2.1	49.6	3.0	22.6	33.9	25.8	27.0

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

- (1) There were not such differences in sugar-taking habits across both sexes.
- (2) The maximum number of subject across all age groups except age group 65-74 year olds had consumed sugar two times in the last one day. The consumption of sugar was consistently high. About 90-93 percent of the subjects 15 years old & below and 47-75 percent 35 years olds & above had consumed sugar two and more than two times in last one day.
- (3) Almost all aged 15 years & below reported taken sugar in last one day. While 17 percent of subjects aged 35-44 & below & 43 percent 65-74 year olds did not take sugar in last one day.

### 5.3 ORAL HYGIENE PRACTICES

A series of questions were asked about oral hygiene practices covering aspects like how the teeth were cleaned, what material was used to clean, whether it was fluoridated, how often teeth were cleaned and whether and how often mouth was rinsed after meals. The responses to these questions are shown in Tables 5.3.1 to 5.3.5 and are discussed in this section.

#### 5.3.1 5 year olds

About 95 percent of the children across both sexes & places of residence reported using toothbrush for cleaning their teeth in the state as well as in each Region.

About 96 percent reported cleaning their teeth once a day and about 4 percent more in urban reported cleaning teeth twice a day.

Almost all irrespective of sex & places of living reported the use of toothpaste for cleaning teeth in the state as well as in each Region.

51 percent of the subjects more females & more in urban (54 percent) than in rural areas (50 percent) reported the use of fluoridated tooth paste/powder. While 48 percent of subjects more males and more in rural, had used non-fluoridated toothpaste/powder. Only 1 percent of the subjects were not aware whether the tooth paste/powder using was fluoridated or not.

About 58 percent of the children more males & more in urban reported change of their toothbrushes once in 4-6 months. While about 19 percent were changing their toothbrushes once after 6 months. This practice was more in rural than in urban areas. Another 23 percent more females & more in rural were changing toothbrushes once in 1-3 months in the state. There was more changing tooth brushes once in 4-6 months in each Region. This was followed by those changing tooth brushes once in 1-3 months in each Region.

When enquired about mouth rinsing practices, about 45 percent across both sexes & more in rural reported rinsing their mouth sometimes after eating, while about 11 percent were rinsing their mouth always after eating in the state. There was more rinsing mouth sometimes than always in Region-2 than in Region 1 & 3. Table 5.3.1

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

AGE: 5 yrs

STATE : Punjab

	Oral Hygiene Practices	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Clean teeth with</b>		161	198	165	357	167	524	154	172	151	333	144	477	1001
	finger		2.1	8.0	1.8	5.1	4.7	5.0	1.4	3.1	2.0	2.1	3.1	2.4	3.7
	brush		97.9	90.0	95.7	93.0	93.8	93.2	98.6	95.4	95.8	95.8	96.9	96.2	94.7
	datun		0.0	1.3	0.0	1.0	0.0	0.7	0.0	1.5	0.0	1.1	0.0	0.8	0.8
	others		0.0	0.7	2.5	0.9	1.5	1.1	0.0	0.0	2.2	1.0	0.0	0.7	0.9
<b>2</b>	<b>Frequency of cleaning teeth</b>		161	194	161	351	165	516	154	169	148	327	144	471	987
	Once a day		98.6	93.2	100.0	97.6	93.6	96.3	99.3	93.2	99.3	96.9	94.9	96.3	96.3
	Twice a day		1.4	6.1	0.0	2.4	5.3	3.3	0.7	6.8	0.7	3.1	5.1	3.7	3.5
	After every meal		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>3</b>	<b>Material used for cleaning teeth</b>														
	Tooth paste		96.8	98.6	99.3	97.9	99.7	98.5	98.6	99.5	100.0	99.2	100.0	99.4	99.0
	Tooth powder		3.2	1.4	0.7	2.1	0.3	1.5	1.4	0.5	0.0	0.8	0.0	0.6	1.1
<b>4</b>	<b>Type of toothpaste/ powder</b>		161	194	161	351	165	516	154	169	148	327	144	471	987
	Flouridated		31.6	44.3	67.3	49.2	47.6	48.7	27.6	55.8	67.1	50.8	59.2	53.3	51.0
	Non flouridated		67.7	54.3	31.5	49.3	52.0	50.2	71.9	43.2	31.1	48.1	39.4	45.6	47.9
<b>5</b>	<b>Change of toothbrush once in</b>		158	178	158	334	160	494	152	164	145	320	141	461	955
	1-3 months		11.9	11.6	44.1	25.5	13.6	21.7	7.2	16.5	47.5	24.7	22.6	24.1	22.9
	4-6 months		83.2	52.2	55.2	50.4	78.6	59.2	88.6	45.7	51.8	52.4	66.6	56.5	57.9
	6 + months		4.9	35.7	0.7	23.8	7.8	18.8	4.2	37.8	0.8	22.9	10.8	19.4	19.1
<b>6</b>	<b>Rinse mouth after eating</b>		161	198	165	357	167	524	154	172	151	333	144	477	1001
	Sometimes		11.9	57.9	46.7	41.5	54.3	45.5	9.8	61.6	44.2	41.5	55.0	45.4	45.5
	Always		0.7	20.6	1.3	9.7	13.7	10.9	0.5	19.8	2.2	10.9	9.2	10.4	10.7

### **5.3.2 12 year olds**

About 96 percent of the subjects, more males & more in urban reported the use of tooth brush to clean teeth in the state as well as in each Region.

About 95 percent reported cleaning teeth once a day followed by 4 percent subjects more in urban had cleaned teeth twice a day. Almost all subject irrespective of sex & places of living reported the use of toothpaste to clean teeth. About 51 percent of subjects more females & more in urban had used fluoridated toothpaste/powder. While about 48 percent of the respondents reported the use of non-fluoridated toothpaste/powder, slightly more in rural than in urban areas.

About 58 percent of the subjects were replacing their toothbrushes once in 4-6 months. These were more in urban (73 percent) than in rural areas (52 percent). While 22 percent subjects had changed tooth brushes once in 1-3 months. They were more in rural (25 percent) than in urban areas (17 percent). About 19 percent of the subjects reported change of tooth brushes once after six months & more. These were more in rural (23 percent) than in urban areas (10 percent).

When asked about mouth rinsing habits, about 70 percent of the subjects reported rinsing mouth sometimes after eating. They were more in rural (73 percent) than in urban areas (65 percent). On the contrary, about 18 percent subjects had rinsed their mouth always after eating. They were more in urban (23 percent) than in rural areas (16 percent) in the state.

As regard Regions about 92 percent in Region-3 and 60-65 percent in Regions 1 & 3 reported rinsing mouth sometimes. Table 5.3.2

### **5.3.3 15 year olds**

About 96 percent subjects, across both sexes & places of residence reported the use of toothbrush for cleaning their teeth in the state as well as in each Region. About 96 percent of the subjects across both sexes & more in rural had cleaned their teeth once a day in the state as well as in each Region. About 3 percent subjects more in urban reported cleaning their teeth twice a day in the state.

Almost all subjects were using tooth paste as the material for cleaning their teeth in the state. About 51 percent of the subjects irrespective of sex & places of residence were using fluoridated toothpaste/powder. While other about 48 percent more in rural reported the use of non-fluoridated one.

More reported the use of fluoridated tooth paste/powder in Region-3. While more reported the use of non-fluoridated tooth paste/powder in Region-1.

About 58 percent of the subjects across both sexes & more in urban had replaced their tooth brushes once in 4-6 months. While about 19 percent of subjects had changed tooth brushes once after six months. They were more in rural (23 percent) than in urban areas (10 percent). Other about 23 percent reported change of their tooth brushes once in 1-3 months, were more in rural (26 percent) than in urban areas (17 percent) in the state.

As regard Regions, more reported change of tooth brushes once in 4-6 months, followed by those who changed tooth brushes once in 1-3 months in each Region. About 50 percent of the subjects, more in rural, were rinsing mouth always. While about 44 percent of the subjects more in urban had rinsed their mouth sometimes after eating in the state.

As regard Region, more reported rinsing of mouth always in Region-3 while more were rinsing mouth sometimes in Region 1 & 2. Table 5.3.3

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

AGE: 12 yrs

STATE : Punjab

	Oral Hygiene Practices	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
1	<b>Clean teeth with</b>		160	177	160	343	154	497	156	195	156	352	155	507	1004
	finger		1.4	1.5	0.7	1.8	0.0	1.2	2.1	4.5	3.4	3.5	4.2	3.7	2.5
	brush		98.1	97.0	97.9	96.6	99.7	97.5	97.9	92.1	93.7	93.3	94.7	93.7	95.6
	datun		0.0	1.5	0.0	1.0	0.0	0.7	0.0	3.4	0.0	2.0	1.1	1.7	1.2
	others		0.5	0.0	1.4	0.6	0.3	0.5	0.0	0.0	2.8	1.2	0.0	0.8	0.7
2	<b>Frequency of cleaning teeth</b>		159	174	158	338	153	491	156	188	152	342	154	496	987
	Once a day		99.3	92.6	99.3	97.0	94.0	96.1	99.3	90.2	99.3	96.4	90.8	94.7	95.4
	Twice a day		0.7	6.6	0.7	3.0	4.8	3.5	0.7	9.8	0.7	3.6	9.2	5.3	4.4
	After every meal		0.0	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	<b>Material used for cleaning teeth</b>														
	Tooth paste		99.3	98.5	100.0	98.7	100.0	99.1	94.5	99.1	99.3	97.6	99.7	98.2	98.7
	Tooth powder		0.7	1.5	0.0	1.3	0.0	0.9	5.5	0.9	0.7	2.4	0.3	1.8	1.4
4	<b>Type of toothpaste/ powder</b>		159	174	158	338	153	491	156	188	152	342	154	496	987
	Flouridated		23.3	52.9	62.7	46.4	57.6	49.8	26.2	52.2	69.5	52.4	51.6	52.1	51.0
	Non flouridated		75.5	45.5	35.0	52.0	40.6	48.6	73.8	47.3	28.2	47.0	46.9	47.0	47.8
5	<b>Change of toothbrush once in</b>		157	171	157	332	153	485	153	179	146	330	148	478	963
	1-3 months		7.7	12.7	40.7	22.4	15.9	20.5	7.4	14.7	50.7	26.8	17.3	23.9	22.2
	4-6 months		88.3	46.5	58.6	53.3	71.7	58.9	89.0	51.6	48.6	51.1	74.4	58.1	58.5
	6 + months		4.0	40.8	0.7	24.2	12.3	20.6	3.6	32.7	0.8	21.4	8.4	17.5	19.1
6	<b>Rinse mouth after eating</b>		160	177	160	343	154	497	156	195	156	352	155	507	1004
	Sometimes		59.1	56.1	91.2	69.8	62.8	67.8	67.5	65.2	90.7	75.9	66.9	73.2	70.5
	Always		18.0	31.8	6.3	19.7	23.9	20.9	17.8	19.7	7.6	13.1	21.7	15.7	18.3

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

AGE: 15 yrs

STATE : Punjab

Oral Hygiene Practices	n=	MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1 Clean teeth with</b>		<b>159</b>	<b>179</b>	<b>163</b>	<b>348</b>	<b>153</b>	<b>501</b>	<b>155</b>	<b>192</b>	<b>156</b>	<b>351</b>	<b>152</b>	<b>503</b>	<b>1004</b>
finger		0.7	3.0	0.5	1.2	2.9	1.7	2.9	3.0	2.2	2.8	2.7	2.8	<b>2.3</b>
brush		98.6	94.3	98.2	96.6	95.9	96.4	97.1	94.7	94.2	94.1	97.3	95.0	<b>95.7</b>
datun		0.0	2.7	0.0	1.4	1.2	1.3	0.0	2.3	0.0	1.7	0.0	1.2	<b>1.3</b>
others		0.7	0.0	1.4	0.8	0.0	0.6	0.0	0.0	3.5	1.5	0.0	1.1	<b>0.9</b>
<b>2 Frequency of cleaning teeth</b>		<b>158</b>	<b>174</b>	<b>161</b>	<b>341</b>	<b>152</b>	<b>493</b>	<b>155</b>	<b>187</b>	<b>151</b>	<b>341</b>	<b>152</b>	<b>493</b>	<b>986</b>
Once a day		98.6	94.1	100.0	97.2	96.4	96.9	99.3	91.7	100.0	97.4	91.7	95.7	<b>96.3</b>
Twice a day		1.4	5.4	0.0	2.5	3.6	2.8	0.7	7.6	0.0	2.6	7.1	4.0	<b>3.4</b>
After every meal		0.0	0.5	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	<b>0.1</b>
<b>3 Material used for cleaning teeth</b>														
Tooth paste		99.3	98.5	100.0	98.8	100.0	99.1	96.4	99.5	99.3	98.3	100.0	98.8	<b>99.0</b>
Tooth powder		0.7	1.5	0.0	1.2	0.0	0.9	3.6	0.5	0.7	1.7	0.0	1.2	<b>1.1</b>
<b>4 Type of toothpaste/ powder</b>		<b>158</b>	<b>174</b>	<b>161</b>	<b>341</b>	<b>152</b>	<b>493</b>	<b>155</b>	<b>187</b>	<b>151</b>	<b>341</b>	<b>152</b>	<b>493</b>	<b>986</b>
Flouridated		31.3	52.0	65.1	51.8	52.2	51.9	24.7	48.5	68.5	48.5	52.3	49.6	<b>50.8</b>
Non flouridated		68.7	48.0	32.2	47.9	45.7	47.3	75.3	51.1	29.7	50.9	46.7	49.6	<b>48.5</b>
<b>5 Change of toothbrush once in</b>		<b>157</b>	<b>169</b>	<b>160</b>	<b>337</b>	<b>149</b>	<b>486</b>	<b>151</b>	<b>181</b>	<b>147</b>	<b>331</b>	<b>148</b>	<b>479</b>	<b>965</b>
1-3 months		7.4	13.4	47.7	24.9	19.1	23.2	5.3	16.4	45.7	26.1	15.4	23.0	<b>23.1</b>
4-6 months		88.4	51.3	49.6	52.2	73.4	58.3	88.7	47.5	53.6	51.0	72.6	57.4	<b>57.9</b>
6 + months		4.3	35.3	2.8	22.9	7.5	18.4	6.0	35.0	0.7	22.2	12.0	19.2	<b>18.8</b>
<b>6 Rinse mouth after eating</b>		<b>159</b>	<b>179</b>	<b>163</b>	<b>348</b>	<b>153</b>	<b>501</b>	<b>155</b>	<b>192</b>	<b>156</b>	<b>351</b>	<b>152</b>	<b>503</b>	<b>1004</b>
Sometimes		21.7	62.8	32.2	41.8	51.6	44.7	27.3	55.5	33.3	39.9	51.5	43.2	<b>44.0</b>
Always		70.7	27.3	67.8	51.2	43.7	49.0	65.9	35.5	65.3	54.3	40.9	50.5	<b>49.8</b>

#### 5.3.4 35-44 year olds

About 89 percent of the respondents across both sexes & more in urban reported the use of tooth brush to clean their teeth in the state as well as in each Region.

About 95 percent of the respondents reported cleaning their teeth once a day, slightly more in rural (96 percent) than in urban areas (92 percent) and about 5 percent of the subjects had cleaned their teeth twice a day. They were more in urban (8 percent) than in rural areas (4 percent).

Almost 98 percent of the subjects across both sexes and places of residence had used toothpaste as the material for cleaning their teeth in the state and each Region.

About one-half of the subjects across both sexes & little more in urban had used fluoridated toothpaste/powder and about 49 percent subjects more males & more in rural reported the use of non-fluoridated one.

About 57 percent of subjects more males had replaced tooth brushes once in 4-6 months. These were more in urban (69 percent) than in rural areas (51 percent). The frequency of change of toothbrushes once in 1-3 months, was found among 25 percent of the respondents. They were more in rural (27 percent) than in urban areas (20 percent). Another 19 percent across both sexes & more in rural had changed tooth brushes once after six months. Males in Region-1 tended to change tooth brushes less often (90 percent) than in Region-3 (53 percent). Similarly, females in Region-1 tended to change tooth brushes less often (94 percent) than in Region -3 (50 percent).

The practice of rinsing mouth always after eating was reported by about 63 percent of the respondents, slightly more females (66 percent) than males (60 percent), slightly more in rural (64 percent) than in urban areas (60 percent). Comparatively more reported rinsing mouth always in Region 1 & 3 & more were rinsing sometimes in Region-2. 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 : Punjab

Oral Hygiene Practices	n=	MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Clean teeth with</b>	<b>159</b>	<b>196</b>	<b>155</b>	<b>352</b>	<b>158</b>	<b>510</b>	<b>155</b>	<b>201</b>	<b>160</b>	<b>360</b>	<b>156</b>	<b>516</b>	<b>1026</b>
	finger	0.0	3.6	1.6	2.7	1.5	2.3	3.6	8.4	0.5	3.3	9.4	5.1	3.7
	brush	97.2	90.9	83.4	87.7	95.1	89.9	92.8	84.8	91.5	89.3	86.2	88.3	89.1
	datun	2.1	5.4	11.1	8.2	2.5	6.5	2.9	5.9	3.7	5.5	3.0	4.7	5.6
	others	0.7	0.0	3.9	1.4	1.0	1.3	0.7	0.9	4.2	2.0	1.4	1.8	1.6
<b>2</b>	<b>Frequency of cleaning teeth</b>	<b>155</b>	<b>184</b>	<b>132</b>	<b>320</b>	<b>151</b>	<b>471</b>	<b>149</b>	<b>186</b>	<b>147</b>	<b>335</b>	<b>147</b>	<b>482</b>	<b>953</b>
	Once a day	99.3	89.7	100.0	95.7	91.7	94.5	98.5	90.8	99.3	96.1	91.8	94.8	94.7
	Twice a day	0.7	9.1	0.0	3.9	7.1	4.9	1.5	8.7	0.0	3.2	8.2	4.7	4.8
	After every meal	0.0	0.5	0.0	0.4	0.0	0.3	0.0	0.0	0.7	0.3	0.0	0.2	0.3
<b>3</b>	<b>Material used for cleaning teeth</b>													
	Tooth paste	99.3	98.6	100.0	98.7	100.0	99.1	95.8	96.2	100.0	97.2	97.3	97.2	98.2
	Tooth powder	0.7	1.4	0.0	1.3	0.0	0.9	4.2	3.8	0.0	2.8	2.7	2.8	1.9
<b>4</b>	<b>Type of toothpaste/ powder</b>	<b>155</b>	<b>184</b>	<b>132</b>	<b>320</b>	<b>151</b>	<b>471</b>	<b>149</b>	<b>186</b>	<b>147</b>	<b>335</b>	<b>147</b>	<b>482</b>	<b>953</b>
	Flouridated	31.4	47.2	62.2	46.2	51.7	47.9	27.5	49.8	73.0	51.9	52.8	52.2	50.1
	Non flouridated	67.4	52.3	36.6	53.2	47.0	51.3	72.5	49.1	25.7	47.4	45.5	46.9	49.1
<b>5</b>	<b>Change of toothbrush once in</b>	<b>155</b>	<b>176</b>	<b>129</b>	<b>312</b>	<b>148</b>	<b>460</b>	<b>144</b>	<b>171</b>	<b>146</b>	<b>323</b>	<b>138</b>	<b>461</b>	<b>921</b>
	1-3 months	9.7	13.7	47.0	24.8	15.8	22.0	5.7	21.8	49.7	28.4	24.1	27.2	24.6
	4-6 months	83.2	51.4	52.1	52.4	70.9	58.2	86.8	46.4	48.8	50.3	66.5	55.0	56.6
	6 + months	7.1	34.9	0.9	22.8	13.4	19.8	7.5	31.3	1.5	20.9	9.4	17.5	18.7
<b>6</b>	<b>Rinse mouth after eating</b>	<b>159</b>	<b>196</b>	<b>155</b>	<b>352</b>	<b>158</b>	<b>510</b>	<b>155</b>	<b>201</b>	<b>160</b>	<b>360</b>	<b>156</b>	<b>516</b>	<b>1026</b>
	Sometimes	22.9	56.0	9.6	33.7	41.0	35.9	20.3	45.9	6.3	29.3	29.5	29.4	32.7
	Always	75.5	38.3	88.6	63.1	54.0	60.4	78.9	45.9	93.2	65.9	66.7	66.2	63.3

### 5.3.5 65-74 year olds

The use of toothbrush in this age group was relatively low (36 percent). Its use was more in urban (41 percent) than in rural areas (34 percent). The use of other unspecified aids for cleaning the teeth was reported quite high (43 percent). About 12 percent of the subjects across both sexes and places of residence reported the use of fingers to clean teeth in the state.

Comparatively more (75 percent & more) reported the use of other unspecified aids to clean teeth in Regions 1 & 3 than in Region-2.

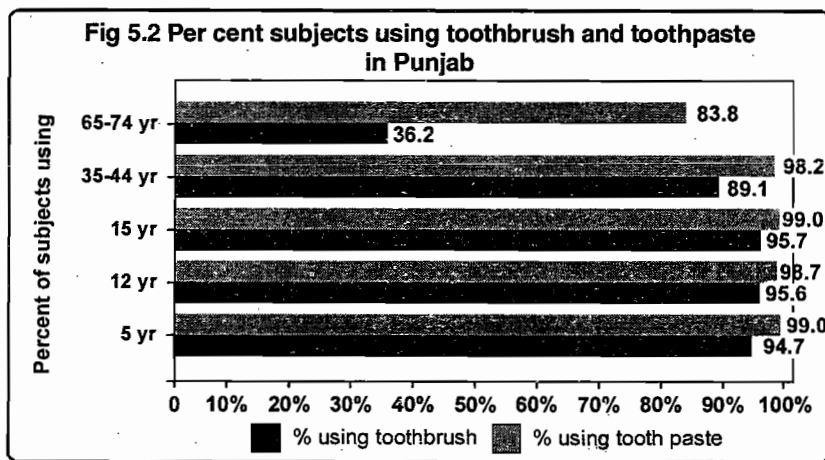
About 89 percent was cleaning teeth once a day followed by 7 percent of subjects more in urban had cleaned teeth twice a day. About 84 percent of the subjects across both sexes & more in urban had used toothpaste. While tooth powder was used by 12 percent of the subjects more in rural (14 percent) than in urban areas (8 percent).

About 45 percent of the subjects more females & more in urban had used fluoridated toothpaste/powder. While 49 percent of the subjects more males & more in rural reported the use of non-fluoridated tooth paste/powder in the state. The percent of using fluoridated & non fluoridated tooth paste/powder in each Region was more or less similar to that in the state.

About one-half of the subjects (47 percent) more females and more in urban (69 percent) than in rural areas (36 percent) had replaced their tooth brushes once in 4-6 months,

While about 19 percent of the subjects more males & more in rural had changed their tooth brushes once in 1-3 months. Other about 32 percent more males & more in rural reported the change of tooth brushes after six months of use. As regard regions more changed tooth brushes once in 4-6 months in Region-1 & Region 2 than in Region-3. And more changed tooth brushes once in 1-3 months in Region-3 than in Region-1 & Region-2.

About 78 percent of the subjects irrespective of sex & places of residence reported rinsing mouth always followed by 20 percent of the subjects had rinsed their mouth sometimes after eating. Like in the state there was more rinsing mouth always, followed by sometimes in each region.  
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 : Punjab

Oral Hygiene Practices	n=	MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Clean teeth with</b>	<b>159</b>	<b>186</b>	<b>163</b>	<b>346</b>	<b>162</b>	<b>508</b>	<b>156</b>	<b>181</b>	<b>152</b>	<b>343</b>	<b>146</b>	<b>489</b>	<b>997</b>
	finger	0.0	22.0	0.5	12.3	8.2	11.0	0.0	26.3	0.0	11.7	16.1	13.0	12.0
	brush	23.0	57.2	10.9	32.4	44.1	36.0	27.3	50.4	19.3	35.6	38.1	36.3	36.2
	datun	2.6	13.7	3.5	9.4	6.2	8.4	2.9	17.2	3.2	11.3	7.1	10.1	9.3
	others	74.4	7.1	85.1	45.9	41.6	44.6	69.8	6.1	77.4	41.4	38.7	40.6	42.6
<b>2</b>	<b>Frequency of cleaning teeth</b>	<b>37</b>	<b>146</b>	<b>17</b>	<b>142</b>	<b>58</b>	<b>200</b>	<b>42</b>	<b>136</b>	<b>27</b>	<b>152</b>	<b>53</b>	<b>205</b>	<b>405</b>
	Once a day	96.9	86.0	95.7	89.6	84.3	87.8	100.0	86.9	96.3	89.9	88.6	89.5	88.7
	Twice a day	0.0	11.6	4.3	6.9	15.7	9.9	0.0	5.1	3.7	4.3	4.6	4.4	7.2
	After every meal	0.0	2.4	0.0	3.0	0.0	2.0	0.0	7.1	0.0	5.8	4.6	5.4	3.7
<b>3</b>	<b>Material used for cleaning teeth</b>													
	Tooth paste	91.8	81.8	100.0	79.3	93.1	84.0	100.0	78.5	100.0	83.3	84.0	83.5	83.8
	Tooth powder	8.2	13.4	0.0	14.6	6.9	12.0	0.0	16.0	0.0	13.8	9.1	12.3	12.2
<b>4</b>	<b>Type of toothpaste/ powder</b>	<b>37</b>	<b>138</b>	<b>17</b>	<b>134</b>	<b>58</b>	<b>192</b>	<b>42</b>	<b>129</b>	<b>27</b>	<b>148</b>	<b>50</b>	<b>198</b>	<b>390</b>
	Flouridated	33.9	38.9	64.1	37.7	45.0	40.3	28.1	50.8	66.3	44.3	62.7	49.9	45.1
	Non flouridated	61.0	54.5	35.9	57.0	48.1	53.8	71.9	41.4	29.9	49.8	30.0	43.7	48.8
<b>5</b>	<b>Change of toothbrush once in</b>	<b>37</b>	<b>103</b>	<b>16</b>	<b>106</b>	<b>50</b>	<b>156</b>	<b>42</b>	<b>89</b>	<b>27</b>	<b>118</b>	<b>40</b>	<b>158</b>	<b>314</b>
	1-3 months	27.8	14.5	75.0	23.1	19.6	21.8	6.2	10.2	56.1	22.3	5.0	17.1	19.5
	4-6 months	61.0	42.1	18.8	29.9	62.1	42.1	85.9	49.8	32.6	42.4	75.4	52.3	47.2
	6 + months	11.3	40.9	6.3	47.0	13.2	34.2	7.8	40.0	11.2	35.3	19.5	30.5	32.4
<b>6</b>	<b>Rinse mouth after eating</b>	<b>159</b>	<b>186</b>	<b>163</b>	<b>346</b>	<b>162</b>	<b>508</b>	<b>156</b>	<b>181</b>	<b>152</b>	<b>343</b>	<b>146</b>	<b>489</b>	<b>997</b>
	Sometimes	9.5	31.9	2.6	19.3	16.5	18.5	7.0	35.6	5.3	20.6	20.7	20.6	19.6
	Always	90.5	63.4	97.4	78.3	81.3	79.2	91.8	60.4	94.7	77.5	76.5	77.2	78.2

## ORAL HYGIENE PRACTICES ACROSS AGE GROUPS (SUMMING UP)

- (1) The practice of cleaning the teeth was universal.
- (2) Around 94 percent in the 5, 12, 15, 35-44 year olds and 43 percent in 65-74 year olds more males and more in urban reported the use of the tooth brush to clean teeth in the state as well as across the three regions.
- (3) About 94 percent subjects across all age/age groups, both sexes more in rural than in urban areas, had cleaned their teeth once a day. While more subjects in urban areas reported cleaning their teeth twice a day.
- (4) About 96 percent subjects across both sexes, all ages/age groups more in urban areas reported the use of toothpaste and the usage was similar across the three regions.
- (5) About 50 percent of the subjects across all ages/age groups and both sexes, more in urban areas reported the use of fluoridated tooth paste/powder. There were considerable variations among the three regions.
- (6) About 56 percent of the subjects across all ages/age groups, significantly higher in urban areas, had changed their toothbrushes once in 4-6 months. The replacement was less frequent in rural areas. About 22 percent of the subjects reported change of tooth brushes after a period of 6 months. About 22 percent of the subjects had replaced their tooth brushes once in 1-3 months and they were significantly higher in urban areas.
- (7) Overall, the practice of rinsing the mouth sometimes after eating was higher in urban areas; But the practice of rinsing the mouth always after eating was evenly distributed between urban and rural areas. There were huge regional differences this practice.

### 5.4 DENTAL PROBLEMS AND TREATMENT PRACTICES

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

#### 5.4.1 5 year olds

It was surprising to note that about 6 percent of the children across both sexes & more in urban reported (through their guardians) oral health problems during the last one year. About 11 percent, across both sexes, in Region-2 the highest among Regions reported oral health problems in last one year.

98 percent reported dental decay problem in the state as well as in each Region. There was other about 2 percent who had gum disease that only among rural males.

About 22 percent out of those suffered did not consult anybody for their dental problems. While 61 percent of the subjects more males & more in urban consulted trained dentist. It was surprising to note that except 62 percent of subjects in Region-2, none from other two Regions consulted trained dentist.

About half of the subjects (48 percent) did not know about the availability of dental facility in their areas. While 22 percent across both sexes & more in urban was aware of Govt. dental facility in their areas.

When asked of time needed to reach dental care facility, a majority of the respondents (84 percent) across both sexes & more in urban reported less than half an hour. While other 14 percent across both sexes & more in rural told half to more than one hour to reach the facility. 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 : Punjab**

	Nature of Dental Problems and Treatment related aspects	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Suffered from oral health problems in last one year</b>		161	198	165	357	167	524	154	172	151	333	144	477	1001
			0.0	11.5	0.7	3.9	10.5	6.0	0.0	11.1	0.0	3.9	8.9	5.3	5.7
<b>2</b>	<b>Type of oral health problems</b>		0	21	1	12	10	22	0	18	0	11	7	18	40
	Dental decay		0.0	100.0	0.0	92.4	100.0	96.6	0.0	100.0	0.0	100.0	100.0	100.0	98.3
	Gum disease		0.0	0.0	100.0	7.6	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	1.7
	Foul breath		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Bleeding gums		0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
<b>3</b>	<b>Consulted (out of those suffered)</b>														
	None		0.0	26.9	100.0	41.2	20.0	29.5	0.0	14.0	0.0	27.3	0.0	14.2	21.9
	Trained dentist		0.0	69.2	0.0	50.4	80.0	66.7	0.0	55.8	0.0	27.3	85.7	55.3	61.0
<b>4</b>	<b>Availability of dental facility</b>		161	198	165	357	167	524	154	172	151	333	144	477	1001
	None		89.0	10.6	79.0	58.9	19.9	46.7	87.4	10.6	81.7	60.7	19.4	48.8	47.8
	Govt. facility		8.6	29.9	19.7	9.2	51.3	22.4	10.6	30.4	17.0	11.7	47.0	21.9	22.2
	Pvt. facility		2.4	69.8	6.8	30.7	53.0	37.7	2.0	70.4	6.8	30.9	50.2	36.5	37.1
	Do not know		0.0	6.9	1.3	4.2	3.2	3.9	0.0	8.2	1.3	3.9	5.6	4.4	4.2
<b>5</b>	<b>Time taken to reach the facility</b>		23	161	40	112	112	224	25	138	32	100	95	195	419
	Less than 1/2 hr.		100.0	83.1	96.6	75.1	95.9	85.2	100.0	81.0	95.7	78.1	89.9	83.5	84.4
	1/2 - 1 hr.		0.0	12.9	0.0	18.8	2.7	11.0	0.0	13.0	0.0	16.0	5.1	11.0	11.0
	> 1 hr.		0.0	2.2	3.4	4.4	0.0	2.2	0.0	3.2	4.3	5.9	0.0	3.2	2.7
	Cannot say		0.0	1.9	0.0	1.8	1.4	1.6	0.0	2.9	0.0	0.0	5.1	2.3	2.0
<b>6</b>	<b>Ever suffered from</b>		161	198	165	357	167	524	154	172	151	333	144	477	1001
	Hypertension		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.4	0.0	0.3	0.2
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	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	0.5	0.0	0.4	0.0	0.3	0.2
	Jaundice		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	1.3	0.4	0.2
	Asthma		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

#### **5.4.2 12 year olds**

About 10 percent of the children across both sexes and places of residence reported one or the other dental problem in the last one year in the state. Comparatively more had dental problems in Region-2 than in other two Regions.

About 87 percent had the problem of dental decay, followed by gum disease (13 percent). Bleeding gums was reported by 4 percent of subjects. As regard Regions, more had dental decay problems in Region-2 & Region-3. While more had gum disease in Region-1 & Region-3. About 19 percent of the children those had problems, did not consult anybody for their oral health problems. While about 64 percent subjects more in urban & more females consulted trained dentist.

Almost one-half of the subjects (47 percent) was not aware of availability of any dental care facility in their area and about 40 percent & 24 percent across both sexes & more in urban reported the availability of a Private & Govt. dental facility respectively in their areas.

About 82 percent subjects across both sexes & more in urban reported less than half an hour time to reach these dental facilities. Table 5.4.2

#### **5.4.3 15 year olds**

About 17 percent of subjects, irrespective of sex and places of residence reported oral health problems in the last one year. About 82 percent more females & more in urban reported the problem of dental decay and 18 percent across both sexes & more in rural had gum disease. About 7 percent reported the problem of bleeding gums followed by foul breath by 4 percent of the subjects in last one year in the state.

As regard Regions, more reported oral health problems in last one year in Region-2 than in other two Regions. Comparatively more reported problem of dental decay in Region-2. While more in Region-3 reported gum disease in the last one year.

About 19 percent of those reported oral health problems more females & more in rural did not consult anybody for their dental problems. While about 65 percent, subject across both sexes & more in urban consulted trained dentist.

About one-half of the subjects (47 percent) reported non availability of dental facilities in their area. The availability of Government or Private dental care facilities were reported by 24 percent and 40 percent subjects, respectively.

About 79 percent subjects across both sexes & more in urban reported less than half an hour time to reach the dental facilities. While about 11 percent reported half to one hour time to reach the same.

A small percent of the subjects reported ever suffered from asthma, jaundice and surprisingly, hypertension at this young age and epilepsy. Table 5.4.3

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 : Punjab

	Nature of Dental Problems and Treatment related aspects	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Suffered from oral health problems in last one year</b>		160	177	160	343	154	497	156	195	156	352	155	507	1004
			1.2	16.0	2.1	8.0	9.9	8.6	1.4	19.9	0.7	10.4	11.3	10.7	9.7
<b>2</b>	<b>Type of oral health problems</b>		2	28	3	24	9	33	2	39	1	32	10	42	75
	Dental decay		0.0	92.2	100.0	93.1	84.6	90.2	0.0	86.4	100.0	86.5	80.0	84.4	87.3
	Gum disease		41.0	3.1	100.0	15.9	3.3	11.6	50.0	11.4	100.0	11.3	20.0	14.0	12.8
	Foul breath		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Bleeding gums		0.0	3.1	0.0	4.3	0.0	2.8	0.0	4.5	0.0	6.4	0.0	4.4	3.6
	Others		0.0	4.7	0.0	0.0	12.1	4.1	50.0	0.0	0.0	1.9	0.0	1.3	2.7
<b>3</b>	<b>Consulted (out of those suffered)</b>														
	None		41.0	18.8	0.0	25.8	3.3	18.1	50.0	18.2	0.0	27.7	0.0	18.9	18.5
	Trained dentist		0.0	64.1	0.0	42.9	84.6	57.1	0.0	75.0	0.0	57.9	100.0	71.3	64.2
<b>4</b>	<b>Availability of dental facility</b>		160	177	160	343	154	497	156	195	156	352	155	507	1004
	None		87.4	7.5	80.9	58.7	20.1	47.3	89.1	11.5	78.8	58.1	20.1	46.7	47.0
	Govt. facility		9.7	32.3	18.4	12.0	49.2	23.0	8.9	33.0	19.8	11.9	52.6	24.1	23.6
	Pvt. facility		2.9	76.2	6.7	33.1	53.6	39.1	2.0	72.6	8.9	34.3	53.2	40.0	39.6
	Do not know		0.0	0.5	0.0	0.3	0.0	0.2	0.0	3.4	0.7	2.3	1.1	2.0	1.1
<b>5</b>	<b>Time taken to reach the facility</b>		26	161	37	119	105	224	22	165	39	119	107	226	450
	Less than 1/2 hr.		100.0	79.3	89.1	73.3	91.0	81.3	100.0	80.5	89.7	71.6	94.3	82.1	81.7
	1/2 - 1 hr.		0.0	12.8	0.0	16.0	4.5	10.8	0.0	10.8	0.0	16.0	1.4	9.3	10.1
	> 1 hr.		0.0	1.6	7.2	4.0	0.0	2.2	0.0	2.6	6.9	5.7	0.0	3.1	2.7
	Cannot say		0.0	6.3	3.6	6.7	4.5	5.7	0.0	6.1	3.4	6.7	4.3	5.5	5.6
<b>6</b>	<b>Ever suffered from</b>		160	177	160	343	154	497	156	195	156	352	155	507	1004
	Hypertension		0.0	0.5	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Epilepsy		0.0	0.5	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Jaundice		0.5	0.5	0.0	0.3	0.3	0.3	0.7	0.0	0.0	0.2	0.0	0.1	0.2
	Asthma		0.0	0.5	0.0	0.3	0.0	0.2	0.0	0.5	0.0	0.3	0.0	0.2	0.2

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 : Punjab

	Nature of Dental Problems and Treatment related aspects	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
1	<b>Suffered from oral health problems in last one year</b>		159	179	163	348	153	501	155	192	156	351	152	503	1004
			1.4	30.8	2.0	16.3	14.4	15.7	1.4	33.6	0.7	16.4	20.2	17.5	16.6
2	<b>Type of oral health problems</b>		2	56	3	49	12	61	2	64	1	50	17	67	128
	Dental decay		0.0	81.5	33.3	72.9	91.7	77.9	0.0	86.9	100.0	87.4	82.4	85.7	81.8
	Gum disease		0.0	16.9	66.7	22.5	8.3	18.8	0.0	18.6	0.0	18.3	17.6	18.1	18.5
	Foul breath		100.0	3.2	0.0	6.7	0.0	4.9	50.0	1.4	0.0	3.3	0.0	2.2	3.6
	Bleeding gums		100.0	4.8	100.0	14.4	0.0	10.6	0.0	1.4	100.0	3.9	0.0	2.6	6.6
	Others		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	2.0	0.0	1.4	0.7
3	<b>Consulted (out of those suffered)</b>														
	None		0.0	18.5	0.0	20.9	8.3	17.5	0.0	21.4	0.0	28.5	5.9	20.9	19.2
	Trained dentist		0.0	71.0	0.0	60.5	83.3	66.6	0.0	66.2	0.0	55.0	82.4	64.1	65.4
4	<b>Availability of dental facility</b>		159	179	163	348	153	501	155	192	156	351	152	503	1004
	None		88.3	9.2	80.4	58.7	22.3	48.1	88.5	9.7	78.3	57.4	17.5	45.9	47.0
	Govt. facility		8.7	32.5	18.2	12.5	48.1	22.9	9.5	32.7	21.0	11.9	55.0	24.4	23.7
	Pvt. facility		2.9	75.9	7.2	34.2	51.3	39.2	2.0	75.9	8.9	35.3	55.9	41.3	40.3
	Do not know		0.0	1.7	0.0	0.7	1.2	0.8	0.0	2.3	0.0	1.7	0.0	1.2	1.0
5	<b>Time taken to reach the facility</b>		24	159	38	120	101	221	23	166	41	123	107	230	451
	Less than 1/2 hr.		100.0	78.5	82.7	71.1	90.7	79.8	100.0	76.0	87.0	68.5	89.9	78.1	79.0
	1/2 - 1 hr.		0.0	12.7	0.0	16.7	3.1	10.7	0.0	12.7	9.7	19.3	2.9	11.9	11.3
	> 1 hr.		0.0	3.0	17.3	7.1	1.5	4.7	0.0	4.0	3.2	5.6	1.4	3.7	4.2
	Cannot say		0.0	5.8	0.0	5.0	4.6	4.8	0.0	7.4	0.0	6.5	5.8	6.2	5.5
6	<b>Ever suffered from</b>		159	179	163	348	153	501	155	192	156	351	152	503	1004
	Hypertension		0.0	1.0	0.0	0.7	0.0	0.5	0.0	0.7	0.0	0.0	1.2	0.3	0.4
	Diabetes		0.0	0.0	0.0	0.0	0.0	0.0	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	0.9	0.0	0.7	0.0	0.5	0.3
	Jaundice		0.7	0.5	0.0	0.5	0.0	0.4	0.5	0.7	0.0	0.0	1.5	0.4	0.4
	Asthma		0.0	1.0	0.0	0.7	0.0	0.5	0.0	0.5	0.0	0.3	0.0	0.2	0.4

#### 5.4.4 35-44 year olds

About 28 percent of the respondents in this age group more males, across places of residence reported oral health problems in the last one year. Most of the subjects reported the problem of dental decay (68 percent) followed by gum disease (36 percent). Other about 14 percent & 20 percent more males & more in rural area had problems of foul breath & bleeding gums respectively in the state.

As regard regions, more reported oral health problems in Region-2 than in other two Regions in the last one year. More in Region-2 reported problem of dental decay while more reported gum disease in Region-1. Further more reported problems of foul breath & bleeding gums in Regions-3 than in other two Regions.

The practice of consultation was more or less similar to that of the earlier ages. About 58 percent subjects (out of those suffered) consulted trained dentist. They were more in urban (73 percent) than in rural areas (52 percent).

About 46 percent of the subjects were unaware of availability of any dental facility in their area. The availability of a Government and Private facilities were reported by 24 percent and 42 percent of the subjects, respectively. They were more in urban areas in the state.

About 87 percent of the subjects across both sexes & more in urban reported less than half an hour time to reach the nearest dental facility. About 10 percent of the subjects more in rural reported half to one hour time to reach the dental facility.

Around 12 percent of the subjects reported hypertension, followed by diabetes in 3 percent subjects. The reporting of these conditions/disease was comparatively higher in Region-2, followed by Region-1 and Region-3. Table 5.4.4

#### 5.4.5 65-74 year olds

About 26 percent of the subjects more males & more in urban had oral health problems in the last one year. About 56 percent of the subjects reported the problem of dental decay, slightly in more males (60 percent) than females (53 percent), more in rural (61 percent) than in urban areas. (46 percent). About 40 percent more females & more in urban reported the problem of gum disease. While 20 percent and 17 percent of the subjects, had problems of bleedings gums & foul breath respectively in the state.

As regard Regions, more reported oral health problems in Region-2 than in other two Regions in last one year. More of the subjects in Region 2 had dental decay & gum disease than in other two Region. While more had foul breath & bleeding gums problems in Region-1 & Region-2 respectively.

About 59 percent of the subjects (out of those suffered) consulted trained dentist. They were more females & more in urban areas. More consulted trained dentist in Regions 2 & 3 than in Region-1.

About 48 percent of the subjects across both sexes & more in rural was unaware of availability of a dental facility in their area. The availability of Governmental and private dental facilities were reported by 23 percent and 39 percent of the subjects, respectively.

A majority of the subjects (82 percent) reported less than half an hour time to reach the dental facility and 12 percent subjects reported half to one hour time for reaching the same. 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 : Punjab

	Nature of Dental Problems and Treatment related aspects	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Suffered from oral health problems in last one year</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
			10.2	53.3	6.0	31.5	29.8	31.0	8.7	42.9	4.9	26.5	22.3	25.2	28.1
<b>2</b>	<b>Type of oral health problems</b>		17	106	9	99	33	132	14	89	8	85	26	111	243
	Dental decay		0.0	75.3	20.4	67.5	66.9	67.3	8.2	74.4	44.2	70.7	61.6	68.3	67.8
	Gum disease		60.3	31.5	23.7	35.3	27.2	33.0	72.1	38.5	13.9	38.7	40.6	39.2	36.1
	Foul breath		51.3	8.5	79.6	18.8	6.9	15.4	50.0	8.2	27.9	15.0	4.1	12.2	13.8
	Bleeding gums		34.9	19.6	67.8	24.6	20.2	23.3	50.0	11.8	58.2	17.5	15.6	17.0	20.2
	Others		0.0	0.9	0.0	1.1	0.0	0.8	0.0	1.5	0.0	0.0	5.0	1.3	1.1
<b>3</b>	<b>Consulted (out of those suffered)</b>														
	None		0.0	20.0	0.0	20.1	11.5	17.6	0.0	24.1	0.0	27.1	5.0	21.3	19.5
	Trained dentist		0.0	66.8	17.1	56.0	68.5	59.5	0.0	61.5	30.3	48.0	76.7	55.5	57.5
<b>4</b>	<b>Availability of dental facility</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
	None		86.8	8.2	82.5	56.4	20.2	45.7	89.6	9.7	78.5	57.1	17.9	45.5	45.6
	Govt. facility		10.7	31.1	16.7	10.6	50.8	22.6	8.0	36.5	19.8	13.9	54.0	25.8	24.2
	Pvt. facility		2.4	75.1	5.9	35.9	51.1	40.4	2.5	76.0	10.6	35.1	60.2	42.6	41.5
	Do not know		0.0	2.5	0.0	1.3	1.1	1.3	0.0	2.6	0.0	2.0	0.0	1.4	1.4
<b>5</b>	<b>Time taken to reach the facility</b>		27	174	33	127	107	234	21	174	42	126	111	237	471
	Less than 1/2 hr.		100.0	84.4	91.8	78.9	94.3	85.7	100.0	86.7	90.4	80.4	95.9	87.5	86.6
	1/2 - 1 hr.		0.0	11.8	0.0	15.0	4.3	10.2	0.0	10.3	0.0	12.7	4.1	8.8	9.5
	> 1 hr.		0.0	3.3	8.2	5.4	1.4	3.6	0.0	2.5	9.6	6.1	0.0	3.3	3.5
	Cannot say		0.0	0.5	0.0	0.8	0.0	0.4	0.0	0.5	0.0	0.8	0.0	0.4	0.4
<b>6</b>	<b>Ever suffered from</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
	Hypertension		10.0	19.5	4.2	13.2	13.0	13.2	6.6	15.8	1.9	10.3	9.0	10.0	11.6
	Diabetes		0.0	3.6	1.0	1.7	3.3	2.1	0.0	7.7	1.2	3.5	6.1	4.3	3.2
	Epilepsy		0.7	0.5	0.0	0.5	0.0	0.4	0.5	0.0	0.0	0.0	0.3	0.1	0.3
	Jaundice		1.9	0.5	1.2	1.0	0.8	1.0	0.5	0.7	1.2	0.3	1.9	0.8	0.9
	Asthma		0.7	0.0	0.5	0.2	0.5	0.3	0.0	1.1	2.2	0.6	2.6	1.2	0.8

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 : Punjab

	Nature of Dental Problems and Treatment related aspects	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Suffered from oral health problems in last one year</b>		159	186	163	346	162	508	156	181	152	343	146	489	997
			13.8	45.9	10.3	26.8	32.1	28.5	8.9	37.3	10.9	24.9	20.3	23.6	26.1
<b>2</b>	<b>Type of oral health problems</b>		23	87	19	84	45	129	14	70	17	77	24	101	230
	Dental decay		17.3	72.7	0.0	66.3	46.6	59.5	35.2	63.8	0.0	55.0	46.1	52.8	56.2
	Gum disease		29.4	39.7	27.6	40.2	32.3	37.4	37.6	47.4	22.9	39.0	55.7	43.1	40.3
	Foul breath		34.5	11.3	14.4	17.0	8.2	14.0	56.8	16.4	13.3	21.8	11.1	19.2	16.6
	Bleeding gums		17.3	18.0	27.6	16.5	23.5	19.0	19.2	18.4	29.5	19.8	20.8	20.0	19.5
	Others		0.0	3.6	0.0	2.5	3.4	2.9	0.0	3.9	0.0	4.1	0.0	3.1	3.0
<b>3</b>	<b>Consulted (out of those suffered)</b>														
	None		0.0	19.6	0.0	16.5	13.8	15.6	0.0	15.8	0.0	16.6	0.0	12.5	14.1
	Trained dentist		8.6	59.3	67.7	48.7	67.4	55.2	13.6	67.1	68.6	58.0	78.4	63.1	59.2
<b>4</b>	<b>Availability of dental facility</b>		159	186	163	346	162	508	156	181	152	343	146	489	997
	None		87.8	10.2	79.8	58.9	21.7	47.4	88.1	12.0	77.8	59.3	19.0	47.7	47.6
	Govt. facility		9.8	31.9	18.4	12.6	46.5	23.0	8.9	30.2	21.4	10.8	52.9	22.9	23.0
	Pvt. facility		2.4	71.2	8.2	32.0	51.3	37.9	2.5	73.7	8.1	33.3	53.8	39.2	38.6
	Do not know		0.0	3.1	0.0	1.7	1.1	1.5	0.5	3.2	0.0	1.7	1.6	1.7	1.6
<b>5</b>	<b>Time taken to reach the facility</b>		25	161	40	116	110	226	23	152	40	114	101	215	441
	Less than 1/2 hr.		100.0	81.4	87.5	76.9	89.5	82.8	100.0	81.3	80.4	70.5	95.4	81.8	82.3
	1/2 - 1 hr.		0.0	13.2	3.4	15.5	7.1	11.5	0.0	14.9	3.3	21.1	3.1	12.9	12.2
	> 1 hr.		0.0	4.9	9.1	6.7	3.4	5.2	0.0	2.9	16.3	8.4	0.0	4.6	4.9
	Cannot say		0.0	0.5	0.0	0.9	0.0	0.5	0.0	0.9	0.0	0.0	1.5	0.7	0.6
<b>6</b>	<b>Ever suffered from</b>		159	186	163	346	162	508	156	181	152	343	146	489	997
	Hypertension		21.6	50.8	20.6	31.6	44.4	35.6	23.7	43.2	21.6	27.9	44.4	32.6	34.1
	Diabetes		10.7	10.9	9.6	10.4	10.5	10.4	5.3	12.8	10.3	10.3	11.0	10.5	10.5
	Epilepsy		0.0	0.7	2.8	0.6	2.5	1.2	1.2	1.7	0.0	0.9	1.6	1.1	1.2
	Jaundice		1.0	0.0	1.4	0.6	0.6	0.6	1.9	0.0	2.2	1.3	0.3	1.1	0.9
	Asthma		3.6	1.7	17.5	7.4	5.8	6.9	6.0	2.2	12.2	5.5	7.2	6.0	6.5

As high as 34 percent of the subjects had hypertension, were more in urban (44 percent) than rural areas (30 percent), followed by diabetes and asthma among 10 percent and 6 percent of the subjects, respectively.

#### DENTAL PROBLEMS AND TREATMENT PRACTICES (SUMMING UP)

- (1) About 8 percent of the subjects 12 years and below and about 24 percent. 15 years and above, across both sexes and more in urban than in rural, reported oral health problems in the last one year.
- (2) Almost all those who had oral health problems, across the ages, mostly reported the problem of dental decay, followed by gum disease. About 17 percent of the subjects in the 65-74 year age group reported the problem of foul breath in last one year.
- (3) About 58-65 percent subjects across all ages, consulted trained dentist. They were more in urban than in rural areas, with large differentials across the three regions.
- (4) More respondents across all age groups & more in urban reported less than half an hour time to reach the dental care facility. While in rural areas more subjects (19 percent) reported half to more than one hour to reach the dental facility.
- (5) Hypertension was the most commonly found amongst (12-34) percent subjects aged 35 years and above, followed by diabetes in (3-10) percent and asthma in (1-6) percent of these subjects.

### 5.5 AWARENESS OF DENTAL HEALTH PROBLEMS

Three questions were asked about the awareness of 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 for these questions are shown in Tables 5.5.2 to 5.5.5 and are discussed below.

#### 5.5.2 12 year olds

It was encouraging to note that almost 92 percent of the children across both sexes & more in rural reported knowledge of dental health problems. About 83 percent cited tooth decay and 56 percent described gum disease followed by 45 percent of the children who told bad smell oral health problems. They were more males & more in rural areas.

About 7 percent of the respondents reported lack of knowledge of factors that can cause oral health problems. Surprisingly, the lack of awareness was more in urban than in rural areas.

Those had knowledge of the factors responsible for oral health problems, reported not brushing regularly (75 percent), eating sweets, ice creams or chocolates (77 percent), and not rinsing mouth (46 percent). Surprisingly, the reportage was more in rural than in urban areas but were evenly divided by sex.

As regard Regions more had knowledge of each of the factor causing oral health problems in Region-1 than in Regions 2 & 3.

**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 : Punjab

Awareness of Oral Health Problems, Causes and Preventive Measures	n=	MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1 Awareness of Oral Health Problems</b>		<b>160</b>	<b>177</b>	<b>160</b>	<b>343</b>	<b>154</b>	<b>497</b>	<b>156</b>	<b>195</b>	<b>156</b>	<b>352</b>	<b>155</b>	<b>507</b>	<b>1004</b>
No knowledge		0.0	14.8	0.0	5.5	10.8	7.1	0.0	16.5	0.0	6.7	12.5	8.4	7.8
Tooth decay		87.7	81.7	81.6	85.5	77.0	83.0	87.7	80.3	83.4	85.2	76.9	82.7	82.9
Gum disease		96.5	17.8	93.4	60.6	51.0	57.8	99.3	15.6	94.6	57.0	50.8	55.2	56.5
Bad smell		81.6	6.0	83.5	48.8	39.3	46.0	87.0	4.5	82.2	46.8	35.7	43.5	44.8
Stained teeth		9.7	0.0	10.1	3.7	8.5	5.1	9.9	0.5	12.2	6.0	5.1	5.8	5.5
Others		0.0	0.8	0.7	0.3	1.2	0.6	0.0	1.4	0.7	1.3	0.0	0.9	0.8
<b>2 Factors that cause Oral Health Problems</b>		<b>160</b>	<b>177</b>	<b>160</b>	<b>343</b>	<b>154</b>	<b>497</b>	<b>156</b>	<b>195</b>	<b>156</b>	<b>352</b>	<b>155</b>	<b>507</b>	<b>1004</b>
Eating sweets/ice cream		85.7	65.9	84.7	79.0	68.6	76.0	89.0	65.6	89.1	79.5	71.7	77.1	76.6
Not brushing regularly		84.6	58.1	92.9	73.4	77.0	74.4	90.7	57.9	95.8	75.9	74.5	75.5	75.0
Not rinsing		82.6	14.8	71.2	47.6	43.8	46.5	88.4	14.7	72.1	49.2	38.4	46.0	46.3
Consuming tobacco		42.4	0.0	41.1	22.5	19.5	21.7	30.1	0.5	35.0	16.4	16.2	16.4	19.1
Do not know		1.2	13.3	1.2	5.0	11.6	6.9	0.0	14.0	0.5	5.3	11.8	7.3	7.1
<b>3 Reported Preventive Measures</b>		<b>160</b>	<b>177</b>	<b>160</b>	<b>343</b>	<b>154</b>	<b>497</b>	<b>156</b>	<b>195</b>	<b>156</b>	<b>352</b>	<b>155</b>	<b>507</b>	<b>1004</b>
Not consuming Tobacco		87.5	3.8	83.0	49.3	37.9	46.0	86.7	8.1	81.7	49.7	34.6	45.2	45.6
Cleaning teeth regularly		93.7	70.9	95.0	84.2	80.7	83.2	91.6	73.3	90.3	82.1	81.3	81.9	82.6
Visiting dentist regularly		71.8	8.3	71.5	44.8	33.0	41.3	80.7	5.0	74.1	44.5	30.1	40.2	40.8
Using flouride paste / powder		16.9	0.0	22.8	11.5	8.6	10.6	21.2	0.0	21.6	11.0	9.3	10.5	10.6
Avoid sweet items		25.6	33.1	23.5	23.6	40.0	28.4	22.0	31.2	25.9	24.2	36.1	27.8	28.1
Do not know		0.0	17.0	0.0	6.5	12.0	8.1	0.0	17.4	0.0	8.3	10.2	8.9	8.5

About 9 percent of the subjects reported no knowledge of preventive measures. Those reported knowledge reported preventive measures such as cleaning teeth regularly (83 percent), not consuming tobacco (46 percent), visiting dentist regularly (41 percent) and avoid sweet items (28 percent). More subjects in rural were aware of the preventive measures compared to in urban areas. There was more aware of each preventive measures in Region-1 than in Regions 2 & 3. Table 5.5.2

### **5.5.3 15 year olds**

About 95 percent of the subjects across both sexes, little more in rural were aware of oral health problems in the state. The subjects who reported knowledge of oral health problems, cited problems such as dental decay (63 percent) and gum disease (58 percent). While other 44 percent & 10 percent described bad smell & strained teeth an oral health problems.

About 5 percent of the subjects did not know about the factors that can cause oral health problems. They were more in urban (8 percent) than in rural areas (5 percent). The factors causing oral health problems reported were-not brushing regularly (75 percent), eating sweets/ice creams or chocolates (63 percent) and not rinsing the mouth (51 percent). More identified each of these factors in rural than in urban. More reported knowledge of factors causing oral health problems in Regions 1 & 3 than in Region-2.

About 7 percent of the subjects across both sexes & places of residence reported lack of knowledge of the preventive measures in the state. Those who had knowledge reported preventive measures such as cleaning teeth regularly (80 percent), visiting dentist regularly (41 percent), avoid sweet items (31 percent) and not consuming tobacco (28 percent). Those reported each of these factors were evenly distributed by sex, were more in rural areas of the state.

As regard Regions more reported each of these measures in Region 1 & 3 than in Region-2. Table 5.5.3

### **5.5.4 35-44 year olds**

Only about 5 percent of the subjects in this age group more females & more in rural reported lack of awareness of oral health problems in the state. Most of those aware reported problems such as dental decay (67 percent), gum disease (53 percent), bad smell (46 percent) and stained teeth, (17 percent). They were evenly distributed by sex & places of residence. As regard Regions almost all in Regions 1 & 3 and about 97 percent in Region -2 were aware of most of oral health problems.

About 6 percent of the subjects, across places of residence had no knowledge of the factors that can cause oral health problems. The percent of those had knowledge reported factors such as not brushing regularly (74 percent), eating sweets/ice cream or chocolates (58 percent) and not rinsing the mouth (53 percent). These were evenly distributed by sex & places of residence.

As regard Regions, more reported knowledge of factors causing oral health problems in Regions 1 & 3 than in Region-2

About 8 percent subjects more females & more in rural reported lack of knowledge of the preventive measures. The percent of those had knowledge of preventive measures reported measures such as cleaning teeth regularly (73 percent), visiting dentist regularly (46 percent), avoid sweet items (31 percent) and not consuming tobacco (31 percent). These were evenly distributed by sex and were more in rural areas. As regard Regions, more had knowledge of preventive measures in Regions 1 & 2 than in Regions-3. 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 : Punjab

Awareness of Oral Health Problems, Causes and Preventive Measures	n=	MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1 Awareness of Oral Health Problems</b>		<b>159</b>	<b>179</b>	<b>163</b>	<b>348</b>	<b>153</b>	<b>501</b>	<b>155</b>	<b>192</b>	<b>156</b>	<b>351</b>	<b>152</b>	<b>503</b>	<b>1004</b>
No knowledge		0.0	9.9	0.7	4.0	7.2	5.0	0.0	10.4	0.0	5.0	5.9	5.3	5.2
Tooth decay		34.4	85.1	45.2	59.5	68.5	62.1	41.8	81.2	46.3	62.1	65.6	63.1	62.6
Gum disease		88.7	22.8	84.6	58.4	49.6	55.8	88.9	28.8	92.3	60.5	57.0	59.5	57.7
Bad smell		82.0	9.9	77.7	49.3	38.5	46.1	72.8	5.1	82.0	42.4	38.6	41.3	43.7
Stained teeth		18.2	0.7	21.0	9.0	14.8	10.7	20.9	1.4	14.0	9.2	8.4	9.0	9.9
Others		0.0	1.0	4.1	2.5	0.0	1.8	0.0	1.6	1.4	1.3	1.2	1.2	1.5
<b>2 Factors that cause Oral Health Problems</b>		<b>159</b>	<b>179</b>	<b>163</b>	<b>348</b>	<b>153</b>	<b>501</b>	<b>155</b>	<b>192</b>	<b>156</b>	<b>351</b>	<b>152</b>	<b>503</b>	<b>1004</b>
Eating sweets/ice cream		54.8	61.5	62.5	61.9	57.1	60.5	59.1	71.9	62.4	61.6	78.4	66.4	63.5
Not brushing regularly		82.7	62.8	90.8	75.0	77.3	75.7	84.9	63.8	86.9	74.6	75.4	74.8	75.3
Not rinsing		88.2	19.1	82.4	56.6	45.3	53.3	82.9	13.9	82.1	49.0	44.7	47.8	50.6
Consuming tobacco		68.6	0.0	54.1	31.7	29.7	31.1	69.2	0.7	56.7	30.7	31.0	30.8	31.0
Do not know		0.0	12.2	0.5	3.7	11.3	5.9	0.0	9.5	0.0	5.3	3.6	4.8	5.4
<b>3 Reported Preventive Measures</b>		<b>159</b>	<b>179</b>	<b>163</b>	<b>348</b>	<b>153</b>	<b>501</b>	<b>155</b>	<b>192</b>	<b>156</b>	<b>351</b>	<b>152</b>	<b>503</b>	<b>1004</b>
Not consuming Tobacco		38.6	4.2	56.9	30.2	22.4	27.9	46.2	6.0	54.4	29.9	24.7	28.4	28.2
Cleaning teeth regularly		85.8	74.9	87.0	81.8	79.0	81.0	82.7	74.7	82.3	79.3	76.8	78.6	79.8
Visiting dentist regularly		79.0	5.7	71.3	45.0	33.0	41.5	76.1	8.1	71.1	43.1	33.5	40.3	40.9
Using flouride paste / powder		67.8	0.7	45.8	27.8	30.6	28.6	71.0	0.0	52.5	30.1	28.1	29.5	29.1
Avoid sweet items		26.9	36.0	23.4	26.9	37.9	30.1	29.0	36.2	29.1	26.3	47.8	32.5	31.3
Do not know		0.0	16.4	1.2	7.4	10.1	8.2	0.0	12.3	0.0	7.3	3.6	6.2	7.2

**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 : Punjab

Awareness of Oral Health Problems, Causes and Preventive Measures		MALE						FEMALE						STATE TOTAL	
		REGIONS			STATE			REGIONS			STATE				
		1	2	3	R	U	T	1	2	3	R	U	T		
<b>1</b>	<b>Awareness of Oral Health Problems</b>	n=	159	196	155	352	158	510	155	201	160	360	156	516	1026
	No knowledge		0.0	3.2	0.0	2.3	0.0	1.6	0.0	15.8	0.0	7.8	8.9	8.1	4.9
	Tooth decay		54.0	85.3	52.0	66.5	76.0	69.3	48.9	78.2	53.2	63.1	70.2	65.2	67.3
	Gum disease		48.9	49.0	60.5	54.3	47.8	52.4	63.4	41.8	65.2	50.8	57.3	52.7	52.6
	Bad smell		74.3	22.2	80.6	52.5	42.8	49.6	71.1	11.2	78.8	46.0	34.6	42.6	46.1
	Stained teeth		23.3	5.4	35.2	16.1	21.1	17.6	28.2	3.5	29.2	14.6	18.4	15.7	16.7
	Others		0.0	1.6	0.7	1.0	1.1	1.0	0.0	1.3	2.1	1.9	0.0	1.3	1.2
<b>2</b>	<b>Factors that cause Oral Health Problems</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
	Eating sweets/ice cream		60.4	59.0	62.3	57.5	66.5	60.2	59.1	51.0	61.1	55.0	56.6	55.5	57.9
	Not brushing regularly		67.4	81.2	75.5	76.9	76.6	76.8	69.2	71.6	74.5	71.7	72.8	72.0	74.4
	Not rinsing		82.7	27.7	88.1	54.7	59.6	56.1	82.9	15.8	88.1	54.4	39.7	50.0	53.1
	Consuming tobacco		73.4	4.5	65.4	37.0	33.3	35.9	77.1	1.3	65.9	37.2	29.2	34.8	35.4
	Do not know		0.0	4.8	0.0	3.0	1.1	2.4	0.0	17.6	0.0	8.1	11.2	9.0	5.7
<b>3</b>	<b>Reported Preventive Measures</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
	Not consuming Tobacco		51.8	8.6	64.9	35.8	28.4	33.6	42.2	7.3	54.1	28.1	26.8	27.7	30.7
	Cleaning teeth regularly		58.2	77.3	78.0	71.9	78.1	73.7	62.9	71.6	78.7	72.7	70.7	72.1	72.9
	Visiting dentist regularly		73.3	14.5	83.8	47.7	43.1	46.3	77.8	8.1	88.3	47.6	39.1	45.1	45.7
	Using flouride paste / powder		68.7	0.5	46.4	25.5	31.4	27.3	82.4	0.0	50.0	31.7	27.4	30.4	28.9
	Avoid sweet items		41.7	39.7	19.0	31.8	39.2	34.0	31.4	30.5	20.0	27.1	28.7	27.6	30.8
	Do not know		0.0	10.4	0.7	7.0	2.3	5.6	0.0	19.1	0.7	10.1	10.0	10.1	7.9

### 5.5.5 65-74 year olds

About 98 percent of the respondents across both sexes & more in rural reported knowledge of oral health problems. The percent of those had knowledge of oral health problems, reported problems such as dental decay (65 percent). These were evenly distributed by sex & places of residence. As regard Regions more had knowledge of oral health problems in Regions 1 & 3 than in Region 2.

About 11 percent of the subjects more females & more in urban areas reported lack of knowledge of the factors responsible for oral health problems. The percent of those had knowledge was evenly divided by sex & places of residence reported factors such as not brushing regularly (65 percent), eating sweets/ice cream or chocolates (54 percent), not rinsing mouth (50 percent) and consuming tobacco (38 percent) in the state.

As regard Regions, there were more aware of factors responsible for oral health problems in Regions 1 & 3 than in Region-2.

About 13 percent of the subjects (12 percent males and 15 percent females) across places of residence reported lack of knowledge. Those had knowledge reported measures such as cleaning teeth regularly (65 percent), visiting the dentist regularly (45 percent), not consuming tobacco (37 percent) and avoid sweet items (29 percent). As regard Regions, more were aware of preventive measures in Regions 1 & 2 than in Regions-3. Table 5.5.5

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

- (1) About 93 percent subjects across all ages, both sexes, and more in urban areas, were aware of oral health problems.
- (2) About 93 percent subjects across all ages, both sexes, more in rural areas, were aware of the factors that can cause oral health problems. Most of them reported factor such as not brushing regularly (72 percent) followed by eating sweets/ice creams or chocolate (63 percent) and not rinsing the mouth (50 percent). Consuming tobacco as a factor was reported by 31 percent.
- (3) About 91 percent across all ages, both sexes & more in rural, were aware of preventive measures. Percent of those aware reported measures such as cleaning teeth regularly (75 percent), not consuming tobacco (35 percent), visiting dentist regularly (43 percent) avoid sweet items 30 percent and using fluoridated paste/powder.

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 : Punjab

Awareness of Oral Health Problems, Causes and Preventive Measures	n=	MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1 Awareness of Oral Health Problems</b>		<b>159</b>	<b>186</b>	<b>163</b>	<b>346</b>	<b>162</b>	<b>508</b>	<b>156</b>	<b>181</b>	<b>152</b>	<b>343</b>	<b>146</b>	<b>489</b>	<b>997</b>
No knowledge		0.0	19.1	0.7	9.5	9.9	9.6	0.5	23.1	0.0	10.0	15.2	11.5	10.6
Tooth decay		56.7	71.4	56.3	61.4	69.1	63.8	60.2	66.6	66.4	66.2	63.0	65.3	64.6
Gum disease		54.7	36.4	67.8	49.7	49.8	49.7	51.2	36.4	59.9	44.5	51.1	46.4	48.1
Bad smell		73.0	14.9	69.9	49.2	30.9	43.5	69.5	13.5	71.4	46.0	33.9	42.5	43.0
Stained teeth		27.5	2.6	25.9	12.8	18.8	14.7	31.2	2.7	29.6	15.7	18.8	16.6	15.7
Others		0.0	0.5	2.0	1.3	0.0	0.9	0.0	1.5	2.7	2.0	0.5	1.6	1.3
<b>2 Factors that cause Oral Health Problems</b>		<b>159</b>	<b>186</b>	<b>163</b>	<b>346</b>	<b>162</b>	<b>508</b>	<b>156</b>	<b>181</b>	<b>152</b>	<b>343</b>	<b>146</b>	<b>489</b>	<b>997</b>
Eating sweets/ice cream		73.8	42.1	63.1	54.3	56.2	54.9	72.4	42.8	59.1	53.9	53.5	53.8	54.4
Not brushing regularly		62.0	62.4	70.7	64.1	66.5	64.9	59.3	60.7	74.0	64.0	65.3	64.4	64.7
Not rinsing		81.2	18.4	82.3	51.2	49.3	50.6	77.3	11.8	89.4	49.8	45.5	48.6	49.6
Consuming tobacco		76.1	4.5	70.3	41.4	33.9	39.1	76.0	1.5	71.7	39.9	32.9	37.9	38.5
Do not know		0.0	19.6	0.0	8.5	12.2	9.6	0.0	24.6	0.0	11.0	14.9	12.1	10.9
<b>3 Reported Preventive Measures</b>		<b>159</b>	<b>186</b>	<b>163</b>	<b>346</b>	<b>162</b>	<b>508</b>	<b>156</b>	<b>181</b>	<b>152</b>	<b>343</b>	<b>146</b>	<b>489</b>	<b>997</b>
Not consuming Tobacco		56.0	7.3	71.0	40.4	28.7	36.7	62.1	5.2	74.0	39.8	32.0	37.6	37.2
Cleaning teeth regularly		64.3	64.3	70.4	64.1	70.6	66.1	56.6	58.0	78.2	64.5	62.1	63.8	65.0
Visiting dentist regularly		78.9	10.2	79.7	47.7	39.9	45.3	81.0	7.6	81.1	46.6	40.4	44.8	45.1
Using flouride paste / powder		56.8	0.5	50.9	27.8	25.8	27.2	60.4	0.0	35.4	23.8	21.0	23.0	25.1
Avoid sweet items		45.8	21.3	24.5	26.5	28.5	27.1	42.8	28.5	23.9	28.1	34.6	30.0	28.6
Do not know		0.0	24.1	0.0	12.3	11.1	11.9	0.0	29.2	1.4	14.4	16.1	14.9	13.4

## 5.6 TOBACCO SMOKING AND CHEWING HABITS

Since smoking habits and chewing tobacco have a great affect on oral health, a set of questions on these aspects were asked. These questions related to smoking habits, chewing pan with tobacco and drinking alcohol. This section summarizes the findings on these questions for the age groups 35-44 years and 65-74 years, since these age groups were considered relevant for the present study. Assuming that negligible fraction of people of young ages 5, 12, 15, have these habits. The responses that were obtained are shown in Tables 5.6.4 & 5.6.5 and are discussed here :

### 5.6.4 35-44 year olds

About 7 percent of the subjects 11 percent males and 4 percent females reported the habit of smoking tobacco. More males in rural areas (13 percent) had the habit of smoking than in urban areas (6 percent).

About 57 percent of the subject more males & more in rural reported smoking Bidis. While 38 percent across both sexes & more in urban smoked cigarettes. As regard Regions there was more smokers in Regions-3 than in Regions 1 & 2. While there was more smoking cigarette in Region-1 and were more smoking Bidis in Region 2 & 3.

When asked about the frequency of smoking, most of the respondents (92 percent) more males & more in urban reported smoking less than ten times in a day. Only 5 percent mostly in rural reported smoking 20 & more times in a day.

As regard Regions about 80 percent in each Region reported smoking less than 10 times in a day. The practice of chewing pan/pan masala with tobacco was low among the subjects (2 percent). Most of the respondents who chewed pan or pan masala with tobacco (62 percent) reported to be using it for less than five years. About 79 percent of the subjects reported chewing tobacco less than five times in a day, more in rural than in urban areas.

About 18 percent males and 6 percent females reported consuming alcohol. Alcohol consumption was more among urban males (19 percent) than their rural counterparts (17 percent). Most of them were taking it occasionally (64 percent), followed by those who consumed it for atleast three times a week (31 percent). There were large differentials in the pattern of alcohol consumption among both the genders and place of residence, and across the three regions. Table 5.6.4

#### **5.6.5 65-74 year olds**

About 12 percent of the respondents more in rural (13 percent) than in urban areas (10 percent) and more males (19 percent) than females (4 percent) reported the habit of smoking tobacco. 52 percent more males & more in rural reported smoking Bidis. This was followed by those smoking cigarettes (28 percent). Bidi smoking was more popular in rural areas and cigarette smoking in urban areas. Other about 17 percent subjects more males & more in rural were smoking the hookah,

It was surprising to note that more females (30 percent) were smoking cigarettes than males (26 percent). As regard Regions there were more smokers in Regions-3 than in Regions 1 & 2. There was more smokers of cigarette in Region-1. While were more smokers of Bidis in Regions 1 & 3.

About 95 percent of the subjects reported smoking less than ten times in a day, followed by 5 percent who smoked for 10-20 times in a day.

The habit of chewing pan/pan masala with tobacco was very low (2 percent) among the subjects. About 40 percent of the subjects reported chewing tobacco for less than five years followed by 17 percent was chewing it for the past 5-10 years. 43 percent reported chewing pan or pan masala with tobacco for the last more than 10 years. They were more males & more in rural. About 87 percent subjects reported chewing tobacco less than five times in a day.

About 27 percent of the males and 7 percent of the females reported consuming alcohol, in the state. These were more in Region-1 (33 percent) than in Region-3 (26 percent) and in Region-2 (5 percent). About 83 percent subjects reported consuming alcohol occasionally followed by 13 percent subjects who consumed it three times a week.

As regard Regions there was more consuming alcohol in Region-1 & 3 than in region -2 Majority in each Region were consuming alcohol occasionally. Table 5.6.5

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

AGE: 35-44 yrs

STATE : Punjab

Tobacco Smoking or Chewing with Pan masala and Alcohol taking habits	n=	MALE						FEMALE						STATE TOTAL
		REGIONS			STATE			REGIONS			STATE			
		1	2	3	R	U	T	1	2	3	R	U	T	
<b>1 Smoking Habits</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
Subjects smoking tobacco		5.9	9.3	17.5	13.1	6.2	11.1	1.9	2.2	6.6	3.8	2.7	3.5	7.3
<b>2 Nature of Smoking</b>		9	20	27	44	12	56	3	5	11	13	6	19	75
Chillum		0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0
Cigars		0.0	7.3	0.0	0.0	18.4	3.1	0.0	0.0	0.0	0.0	0.0	0.0	1.6
Cigarettes		76.2	29.3	36.3	36.5	41.9	37.4	74.2	0.0	53.8	33.6	53.2	38.2	37.8
Bidis		23.8	63.4	63.7	63.5	39.7	59.5	25.8	80.0	46.2	57.8	46.8	55.2	57.4
<b>3 Number of times Smoking in a day</b>														
< 10 times		100.0	90.2	95.9	92.6	100.0	93.9	62.9	80.0	100.0	86.2	100.0	89.4	91.7
10-20 times		0.0	0.0	4.1	2.3	0.0	1.9	37.1	0.0	0.0	5.2	0.0	4.0	3.0
20 + times		0.0	9.8	0.0	5.1	0.0	4.2	0.0	20.0	0.0	8.6	0.0	6.6	5.4
<b>4 Chewing pan/pan masala habits</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
Chew pan or pan masala with		1.9	5.4	1.4	4.0	2.6	3.6	0.0	0.4	0.7	0.6	0.0	0.4	2.0
<b>5 Number of years of chewing pan or pan masala with Tobacco</b>		3	11	2	13	3	16	0	1	1	2	0	2	18
Less than 5 years		37.1	16.7	50.0	29.2	0.0	22.9	0.0	100.0	0.0	100.0	0.0	100.0	61.5
5 - 10 years		62.9	58.3	50.0	45.8	100.0	57.5	0.0	0.0	0.0	0.0	0.0	0.0	28.8
> 10 years		0.0	25.0	0.0	25.0	0.0	19.6	0.0	0.0	0.0	0.0	0.0	0.0	9.8
<b>6 Number of times of chewing tobacco in a day</b>														
Less than 5 times		100.0	45.8	100.0	58.3	56.1	57.8	0.0	100.0	100.0	100.0	0.0	100.0	78.9
5 - 10 times		0.0	54.2	0.0	41.7	43.9	42.2	0.0	0.0	0.0	0.0	0.0	0.0	21.1
> 10 times		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>7 Alcohol consumption habits</b>		159	196	155	352	158	510	155	201	160	360	156	516	1026
Consumption of alcohol		29.8	8.6	26.0	17.3	19.2	17.9	11.6	2.0	10.0	5.3	8.2	6.1	12.0
<b>8 Frequency of alcohol consumption</b>		47	17	42	67	39	106	19	4	17	21	19	40	146
Daily		0.0	10.5	0.0	3.8	0.0	2.6	4.3	22.2	0.0	6.2	3.7	5.2	3.9
3 times a week		31.8	0.0	37.5	20.2	39.1	26.2	29.4	33.3	41.8	13.0	69.6	35.4	30.8
Occasionally		68.2	78.9	62.5	72.1	60.9	68.5	66.3	44.4	58.2	80.9	26.7	59.3	63.9

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

AGE: 65-74 yrs

STATE : Punjab

	Tobacco Smoking or Chewing with Pan masala and Alcohol taking habits	n=	MALE						FEMALE						STATE TOTAL
			REGIONS			STATE			REGIONS			STATE			
			1	2	3	R	U	T	1	2	3	R	U	T	
<b>1</b>	<b>Smoking Habits</b>		159	186	163	346	162	508	156	181	152	343	146	489	997
	Subjects smoking tobacco		13.7	14.9	30.0	21.9	13.7	19.4	4.4	2.2	7.5	3.3	6.5	4.2	11.8
<b>2</b>	<b>Nature of Smoking</b>		21	29	48	74	24	98	8	4	12	11	13	24	122
	Chillum		0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	10.4	0.0	5.8	2.9
	Hookah		15.4	31.7	10.7	19.3	19.6	19.4	0.0	22.2	16.7	19.8	8.2	14.7	17.1
	Cigars		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Cigarettes		39.5	33.3	17.3	21.5	43.8	26.4	22.5	55.6	21.0	10.4	54.3	29.8	28.1
	Bidis		45.1	34.9	72.0	59.2	36.7	54.3	77.5	0.0	62.3	59.4	37.5	49.7	52.0
<b>3</b>	<b>Number of times Smoking in a day</b>														
	< 10 times		94.9	87.3	100.0	92.8	100.0	94.4	77.5	100.0	100.0	100.0	89.5	95.3	94.9
	10-20 times		5.1	9.5	0.0	5.6	0.0	4.4	22.5	0.0	0.0	0.0	10.5	4.7	4.6
	20 + times		0.0	3.2	0.0	1.6	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6
<b>4</b>	<b>Chewing pan/pan masala habits</b>		159	186	163	346	162	508	156	181	152	343	146	489	997
	Chew pan or pan masala with		0.7	5.2	0.0	4.0	0.0	2.7	0.0	1.0	0.7	1.0	0.0	0.7	1.7
<b>5</b>	<b>Number of years of chewing pan or pan masala with Tobacco</b>														
	Less than 5 years		100.0	9.1	0.0	13.8	0.0	13.8	0.0	50.0	100.0	65.5	0.0	65.5	39.7
	5 - 10 years		0.0	36.4	0.0	34.5	0.0	34.5	0.0	0.0	0.0	0.0	0.0	0.0	17.3
	> 10 years		0.0	54.5	0.0	51.7	0.0	51.7	0.0	50.0	0.0	34.5	0.0	34.5	43.1
<b>6</b>	<b>Number of times of chewing tobacco in a day</b>														
	Less than 5 times		100.0	72.7	0.0	74.1	0.0	74.1	0.0	100.0	100.0	100.0	0.0	100.0	87.1
	5 - 10 times		0.0	27.3	0.0	25.9	0.0	25.9	0.0	0.0	0.0	0.0	0.0	0.0	13.0
	> 10 times		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>7</b>	<b>Alcohol consumption habits</b>		159	186	163	346	162	508	156	181	152	343	146	489	997
	Consumption of alcohol		51.4	8.0	40.5	28.8	22.1	26.7	13.6	2.0	11.2	4.8	12.8	7.1	16.9
<b>8</b>	<b>Frequency of alcohol consumption</b>		80	15	66	112	49	161	24	3	18	18	27	45	206
	Daily		0.0	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 times a week		4.1	11.8	21.9	13.0	15.1	13.5	16.1	0.0	11.1	10.8	12.2	11.5	12.5
	Occasionally		93.6	88.2	75.7	86.3	79.2	84.5	80.2	62.5	88.9	89.2	75.4	82.0	83.3

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

- (1) About 10 percent subject across age groups more in rural than in urban area had the habit of smoking tobacco. There were more smoking Bidis and more in rural areas. While more smoking cigarettes and more in urban.
- (2) About 93 percent of the smokers across both sexes & places of residence were smoking less than ten times in a day.
- (3) About two percent subjects, across age groups, and more in rural reported chewing pan/pan masala with tobacco. About 50 percent, across age and more in rural were chewing pan or pan masala with tobacco for less than five years. There was more among 65-74 year old chewing for more than 10 years.
- (4) About 14 percent of the subjects across age groups, more males & more in rural, reported consuming alcohol. About 74 percent reported consuming it occasionally.

## CHAPTER VI

### ORAL HEALTH STATUS

#### 6.0 CLINICAL FINDINGS

The clinical findings are presented under the following broad heads:

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

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

#### 6.1 DENTAL CARIES STATUS

This section presents a review of data for both coronal (crown) 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) which helps identify the one-third of the population with the highest caries (mean DMFT value) and the mean DMFT for this group. This identifies the group of population with the highest caries experience by number of teeth affected and therefore the high risk group.

The root caries develop in the higher age groups and is therefore assessed for the age groups of 35-44 and 65-74 year subjects only; its greatest significance lies in the ageing population in the 50-60 years or higher age groups.

##### 6.1.1 Coronal caries

Table 6.01 and Fig. 6.01 present the prevalence proportion of subjects by age and gender who were caries-free and those with caries experience, using a range of dmft (deft)/DMFT values. The range of values has been grouped in such a way as to provide some indication of the proportion of dentition affected with caries out of the normally present (28 or 32 teeth) in an average mouth. The dmft (deft)/and DMFT values indicate the number of teeth in a mouth which have had caries experience until the time of examination.

Table 6.02 and Fig. 6.02 present the mean number of teeth decayed, missing and filled (mean dmft and mean DMFT) in the surveyed population and includes the Significant Caries Index (SIC). The table also gives the mean number of teeth present in the mouth and the percent subjects who are edentulous.

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

Decayed, Missing, Filled Teeth	n=	5 years			Decayed, Missing, Filled Teeth	n=	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
<b>Region 1</b>	n=	161	154	315	<b>Region 1</b>	n=	160	156	316	159	155	314	159	155	314	159	156	315
With caries		85.1	89.6	87.4	With caries		96.9	96.8	96.9	96.9	98.7	97.8	100.0	100.0	100.0	100	100	100.0
dmft value 1-3		50.9	49.4	50.2	DMFT level 1-3		50.0	41.7	45.9	13.8	16.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0
dmft value 4-5		29.2	36.4	32.8	DMFT level 4-7; 4-8		46.9	55.1	51.0	81.8	81.9	81.9	20.8	18.1	19.5	0.0	0.0	0.0
dmft value 6-10		5.0	3.9	4.5	DMFT value 8-14; 9-16		0.0	0.0	0.0	1.3	0.6	1.0	74.2	77.4	75.8	0.0	1.9	1.0
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	5.0	4.5	4.8	20.1	22.4	21.3
dmft value 16 or more		0.0	0.0	0.0	DMFT value 22-28; 25-28		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6
					DMFT level 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.2	75.0	77.1
<b>Region 2</b>	n=	197	171	368	<b>Region 2</b>	n=	177	195	372	179	192	371	196	201	397	186	181	367
With caries		45.5	51.7	48.6	With caries		56.5	59.0	57.8	77.7	78.1	77.9	93.9	86.1	90.0	82.8	76.2	79.5
dmft value 1-3		23.2	27.3	25.3	DMFT level 1-3		33.9	34.9	34.4	34.6	38.0	36.3	15.8	16.9	16.4	0.5	0.6	0.6
dmft value 4-5		12.6	14.0	13.3	DMFT level 4-7; 4-8		21.5	21.0	21.3	35.8	30.2	33.0	57.1	45.3	51.2	16.1	11.6	13.9
dmft value 6-10		7.1	7.6	7.4	DMFT value 8-14; 9-16		0.6	2.6	1.6	7.3	9.9	8.6	20.4	21.4	20.9	19.4	17.1	18.3
dmft value 11-15		2.5	2.9	2.7	DMFT value 15-21; 17-24		0.6	0.5	0.6	0.0	0.0	0.0	0.5	2.0	1.3	5.9	7.2	6.6
dmft value 16 or more		0.0	0.0	0.0	DMFT value 22-28; 25-28		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	5.9	3.9	4.9
					DMFT level 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.9	35.9	35.4
<b>Region 3</b>	n=	162	151	313	<b>Region 3</b>	n=	160	156	316	163	156	319	155	160	315	163	152	315
With caries		83.6	80.8	82.2	With caries		96.9	93.6	95.3	98.8	98.1	98.5	99.4	99.4	99.4	98.8	100.0	99.4
dmft value 1-3		49.7	51.0	50.4	DMFT level 1-3		31.3	26.3	28.8	18.4	9.6	14.0	3.2	1.9	2.6	0.6	0.0	0.3
dmft value 4-5		23.6	23.8	23.7	DMFT level 4-7; 4-8		60.6	62.8	61.7	66.9	75.0	71.0	39.4	46.3	42.9	2.5	0.0	1.3
dmft value 6-10		9.1	6.0	7.6	DMFT value 8-14; 9-16		5.0	4.5	4.8	13.5	13.5	13.5	56.8	50.0	53.4	4.3	5.9	5.1
dmft value 11-15		1.2	0.0	0.6	DMFT value 15-21; 17-24		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.7	11.7	10.5	11.1
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	3.9	2.0
					DMFT level 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.8	79.6	79.7
<b>State Rural</b>	n=	356	332	688	<b>State Rural</b>	n=	343	352	695	348	351	699	352	360	712	346	343	689
With caries		70.3	71.5	70.9	With caries		82.2	82.7	82.5	92.0	90.6	91.3	98.0	94.7	96.4	92.8	89.8	91.3
dmft value 1-3		40.1	39.3	39.7	DMFT level 1-3		37.0	35.2	36.1	23.9	23.1	23.5	6.5	6.4	6.5	0.3	0.3	0.3
dmft value 4-5		21.8	24.9	23.4	DMFT level 4-7; 4-8		43.4	45.5	44.5	60.9	60.1	60.5	41.2	34.4	37.8	6.1	5.2	5.7
dmft value 6-10		7.6	6.3	7.0	DMFT value 8-14; 9-16		1.5	2.0	1.8	7.2	7.4	7.3	48.9	51.1	50.0	9.5	8.2	8.9
dmft value 11-15		0.8	0.9	0.9	DMFT value 15-21; 17-24		0.3	0.0	0.2	0.0	0.0	0.0	1.4	2.5	2.0	12.7	16.0	14.4
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	0.3	0.2	2.3	2.9	2.6
					DMFT level 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.8	57.1	59.5
<b>State Urban</b>	n=	164	144	308	<b>State Urban</b>	n=	154	155	309	153	152	305	158	156	314	162	146	308
With caries		68.3	77.1	72.7	With caries		83.1	78.1	80.6	87.6	90.8	89.2	96.2	93.6	94.9	94.4	94.5	94.5
dmft value 1-3		40.1	47.9	44.0	DMFT level 1-3		40.9	32.3	36.6	20.3	21.1	20.7	8.2	9.0	8.6	0.6	0.0	0.3
dmft value 4-5		19.8	22.9	21.4	DMFT level 4-7; 4-8		39.6	41.9	40.8	59.5	59.9	59.7	38.6	44.2	41.4	8.0	2.1	5.1
dmft value 6-10		6.0	4.9	5.5	DMFT value 8-14; 9-16		2.6	3.2	2.9	7.8	9.9	8.9	46.8	37.8	42.3	6.2	10.3	8.3
dmft value 11-15		2.4	1.4	1.9	DMFT value 15-21; 17-24		0.0	0.6	0.3	0.0	0.0	0.0	2.5	2.6	2.6	11.1	6.2	8.7
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	2.5	2.7	2.6
					DMFT level 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.0	73.3	69.7
<b>State Total</b>	n=	520	476	996	<b>State Total</b>	n=	497	507	1004	501	503	1004	510	516	1026	508	489	997
With caries		69.7	73.2	71.5	With caries		82.5	81.3	81.9	90.6	90.7	90.7	97.5	94.4	96.0	93.3	91.2	92.3
dmft value 1-3		40.1	41.9	41.0	DMFT level 1-3		38.2	34.3	36.3	22.8	22.5	22.7	7.1	7.2	7.2	0.4	0.2	0.3
dmft value 4-5		21.2	24.3	22.8	DMFT level 4-7; 4-8		42.3	44.4	43.4	60.5	60.0	60.3	40.4	37.4	38.9	6.7	4.3	5.5
dmft value 6-10		7.1	5.9	6.5	DMFT value 8-14; 9-16		1.8	2.4	2.1	7.4	8.2	7.8	48.2	47.1	47.7	8.5	8.8	8.7
dmft value 11-15		1.3	1.0	1.2	DMFT value 15-21; 17-24		0.2	0.2	0.2	0.0	0.0	0.0	1.8	2.5	2.2	12.2	13.1	12.7
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	0.2	0.1	2.4	2.9	2.7
					DMFT level 29 or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.2	62.0	62.6

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.

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

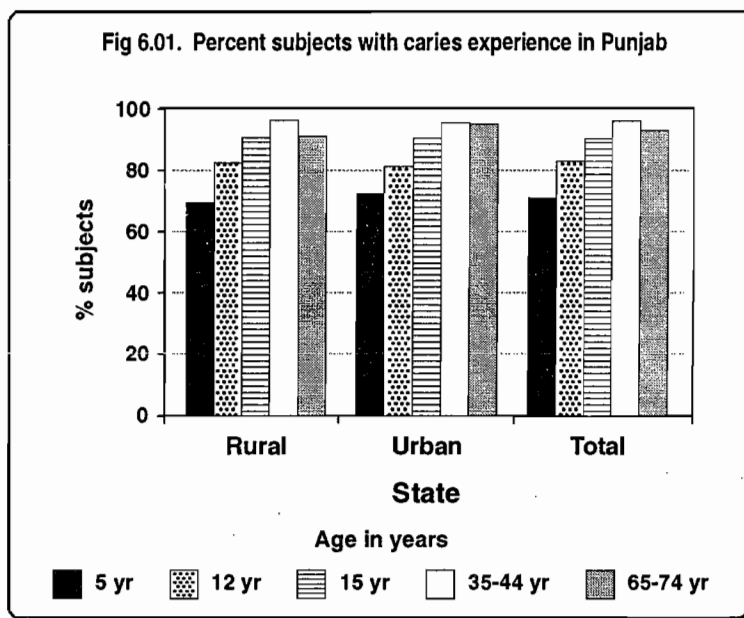
State : Punjab

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
<b>Region 1</b>	n=	161	154	315	160	156	316	159	155	314	159	155	314	159	156	315
Mean no. of teeth present (mnt/MNT)		19.9	20.0	20.0	28.0	28.0	28.0	28.0	28.0	28.0	29.0	29.5	29.3	5.4	6.2	5.8
Mean dmft and Mean DMFT		2.7	2.8	2.8	3.1	3.4	3.3	4.6	4.7	4.7	11.9	11.9	11.9	29.7	29.0	29.4
Mean no. of Decayed teeth (dt/DT)		2.7	2.8	2.8	3.1	3.3	3.2	4.6	4.7	4.7	8.9	9.4	9.2	3.0	3.3	3.2
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	3.0	2.5	2.8	26.6	25.8	26.2
Mean no. of Filled teeth (ft/FT)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIC Index		4.6	4.5	4.6	4.4	4.7	4.6	6.2	6.3	6.3	15.3	15.3	15.3	32.0	32.0	32.0
No. of subjects edentulous		0	0	0	0	0	0	0	0	0	0	0	0	117	112	229
<b>Region 2</b>	n=	197	171	368	174	193	367	179	186	365	195	198	393	166	147	313
Mean no. of teeth present (mnt/MNT)		20.0	20.0	20.0	25.3	25.4	25.4	27.9	28.0	28.0	30.6	30.4	30.5	16.4	16.3	16.4
Mean dmft and Mean DMFT		1.9	2.1	2.0	1.8	2.0	1.9	3.1	3.2	3.2	6.0	5.8	5.9	17.5	17.1	17.3
Mean no. of Decayed teeth (dt/DT)		1.8	2.0	1.9	1.7	2.0	1.9	3.0	3.1	3.1	4.4	4.1	4.3	1.9	1.3	1.6
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	1.4	1.6	1.5	15.6	15.7	15.7
Mean no. of Filled teeth (ft/FT)		0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.1	0.2	0.0	0.0	0.0
SIC Index		5.0	5.2	5.1	4.4	4.8	4.6	6.2	6.3	6.3	9.9	11.0	10.5	32.0	31.9	32.0
No. of subjects edentulous		0	0	0	0	0	0	0	0	0	0	0	0	63	56	119
<b>Region 3</b>	n=	162	151	313	160	153	313	162	154	316	154	159	313	161	152	313
Mean no. of teeth present (mnt/MNT)		20.0	19.9	20.0	28.0	28.0	28.0	28.0	28.0	28.0	31.1	31.0	31.1	4.6	4.2	4.4
Mean dmft and Mean DMFT		2.9	2.5	2.7	4.0	4.0	4.0	5.1	5.3	5.2	9.2	9.2	9.2	28.9	29.3	29.1
Mean no. of Decayed teeth (dt/DT)		2.9	2.5	2.7	4.0	4.0	4.0	5.1	5.3	5.2	8.3	8.2	8.3	1.5	1.5	1.5
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	0.9	1.0	1.0	27.4	27.8	27.6
Mean no. of Filled teeth (ft/FT)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIC Index		5.2	4.6	4.9	6.0	6.2	6.1	7.4	7.3	7.4	12.2	12.4	12.3	32.0	32.0	32.0
No. of subjects edentulous		0	0	0	0	0	0	0	0	0	0	0	0	130	120	250
<b>State Rural</b>	n=	356	332	688	340	348	688	347	344	691	351	357	708	331	317	648
Mean no. of teeth present (mnt/MNT)		20.0	20.0	20.0	27.1	27.2	27.2	28.0	28.0	28.0	30.5	30.4	30.5	10.5	11.3	10.9
Mean dmft and Mean DMFT		2.3	2.3	2.3	2.9	3.0	3.0	4.3	4.1	4.2	8.5	8.6	8.6	23.7	22.8	23.3
Mean no. of Decayed teeth (dt/DT)		2.2	2.3	2.3	2.8	2.9	2.9	4.2	4.1	4.2	6.9	6.9	6.9	2.2	2.1	2.2
Mean no. of Missing teeth (mt/MT)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.6	1.6	21.5	20.7	21.1
Mean no. of Filled teeth (ft/FT)		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0
SIC Index		5.0	4.9	5.0	4.9	5.2	5.1	6.8	6.6	6.7	13.3	13.8	13.6	32.0	32.0	32.0
No. of subjects edentulous		0	0	0	0	0	0	0	0	0	0	0	0	208	185	393
<b>State Urban</b>	n=	164	144	308	154	154	308	153	151	304	157	155	312	155	138	293
Mean no. of teeth present (mnt/MNT)		19.9	20.0	20.0	25.7	25.4	25.6	28.0	27.9	28.0	30.3	30.5	30.4	10.8	8.8	9.8
Mean dmft and Mean DMFT		2.5	2.3	2.4	2.5	2.6	2.6	3.5	4.1	3.8	7.1	6.4	6.8	22.8	24.2	23.5
Mean no. of Decayed teeth (dt/DT)		2.4	2.3	2.4	2.5	2.6	2.6	3.5	4.0	3.8	5.3	4.8	5.1	1.5	1.0	1.3
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	1.7	1.5	1.6	21.2	23.2	22.2
Mean no. of Filled teeth (ft/FT)		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
SIC Index		5.1	4.8	5.0	5.3	5.7	5.5	6.7	7.0	6.9	13.3	12.8	13.1	32.0	32.0	32.0
No. of subjects edentulous		0	0	0	0	0	0	0	0	0	0	0	0	102	103	205
<b>State Total</b>	n=	520	476	996	494	502	996	500	495	995	508	512	1020	486	455	941
Mean no. of teeth present (mnt/MNT)		20.0	20.0	20.0	26.7	26.6	26.7	28.0	28.0	28.0	30.4	30.4	30.4	10.1	10.1	10.1
Mean dmft and Mean DMFT		2.4	2.4	2.4	2.8	2.9	2.9	4.1	4.2	4.2	8.2	8.1	8.2	23.9	23.7	23.8
Mean no. of Decayed teeth (dt/DT)		2.4	2.3	2.4	2.8	2.9	2.9	4.0	4.1	4.1	6.5	6.4	6.5	2.0	1.8	1.9
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	1.6	1.6	1.6	21.9	21.9	21.9
Mean no. of Filled teeth (ft/FT)		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
SIC Index		5.0	4.9	5.0	5.1	5.3	5.2	6.8	6.8	6.8	13.3	13.6	13.5	32.0	32.0	32.0
No. of subjects edentulous		0	0	0	0	0	0	0	0	0	0	0	0	310	288	598

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.

Table 6.03 presents the data on mean number of teeth missing due to dental caries or other reasons for the two age groups of 35-44 and 65-74 years.

The prevalence proportion of caries experience among 5 year old subjects (primary teeth) was 71.5 percent. The dmft value of 1 to 3 was most prevalent (41 percent), while the prevalence of caries with higher dmft values of 4-5 was seen in 22.8 percent of the children (21.2 percent males and 24.3 percent females). About 7.1 percent males and 5.9 percent females had dmft values of 6-10. The caries experience was higher in Region-1 (87.4 percent) and Region-3 (82.2 percent) in comparison to Region-2 (48.6 percent), which was notably lower in the state.



The proportion of subjects with caries experience (permanent teeth) having one or more decayed, missing or filled teeth (dmft>0) was 81.9 percent and 90.7 percent among the 12 and 15 year olds, respectively, and DMFT values of 4-5, was maximum for these age groups (43.4 and 60.3 percent subjects, respectively). The proportion of subjects with caries experience in the age groups of 35-44 and 65-74 years was 96 percent and 92.3 percent, respectively.

The DMFT value of 9-16 was predominant (47.7 percent) in the 35-44 year age group. The highest DMFT values of 29 or more was seen predominantly (62.6 percent) in the 65-74 year age groups. There were no major differentials in the caries experience in urban/rural areas and among the genders, but notable differences were seen across the three regions.

Among the 5 year olds, the mean dmft was 2.4. The decayed teeth (dt) component contributed to the whole of dmft score in this age group.

The mean DMFT value for the 12 and 15 year olds was about 2.9 teeth and 4.2 teeth, respectively. The mean DMFT for the 35-44 and 65-74 year age groups was 8.2 teeth and 23.8 teeth, respectively. The DT component contributed the most to DMFT scores for all age groups, except for the 65-74 year age group where the MT component contributed the most (21.9 teeth) to DMFT scores.

It was seen that the Significant Caries Index (SiC) was consistently high across all age groups and was highest for the age group of 65-74 years (32). Overall, SiC index ranged from about one and a half to two times the value of DMFT/dmft.

The pattern of distribution of DMFT scores was almost similar between the genders and place of residence, with slight differentials seen across the three regions. The mean DMFT value appeared to rise steadily with age and was highest for the 65-74 year age group. This indicated a high cumulative level of caries experience as age advanced in the subjects surveyed. The figures were slightly higher in urban areas for the 5 and 65-74 year age groups and for the other age groups, the figures were slightly higher in rural than urban areas.

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

State : Punjab

Missing Teeth		35-44 years			65-74 years		
		M	F	T	M	F	T
<b>Region 1</b>	n=	159	155	314	159	156	315
Mean no. of teeth missing due to caries		2.7	2.3	2.5	26.6	25.8	26.2
Mean no. of teeth missing due to other reasons		0.3	0.2	0.3	0.0	0.0	0.0
<b>Region 2</b>	n=	195	198	393	166	147	313
Mean no. of teeth missing due to caries		0.8	0.9	0.9	4.5	4.1	4.3
Mean no. of teeth missing due to other reasons		0.6	0.7	0.7	11.0	11.6	11.3
<b>Region 3</b>	n=	154	159	313	161	152	313
Mean no. of teeth missing due to caries		0.7	0.8	0.8	27.2	27.5	27.4
Mean no. of teeth missing due to other reasons		0.2	0.2	0.2	0.3	0.3	0.3
<b>State Rural</b>	n=	351	357	708	331	317	648
Mean no. of teeth missing due to caries		1.2	1.2	1.2	17.0	16.0	16.5
Mean no. of teeth missing due to other reasons		0.3	0.4	0.4	4.5	4.7	4.6
<b>State Urban</b>	n=	157	155	312	155	138	293
Mean no. of teeth missing due to caries		1.1	0.9	1.0	13.5	14.5	14.0
Mean no. of teeth missing due to other reasons		0.7	0.6	0.7	7.7	8.7	8.2
<b>State Total</b>	n=	508	512	1020	486	455	941
Mean no. of teeth missing due to caries		1.2	1.1	1.2	16.6	16.3	16.5
Mean no. of teeth missing due to other reasons		0.4	0.5	0.5	5.3	5.6	5.5

**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.

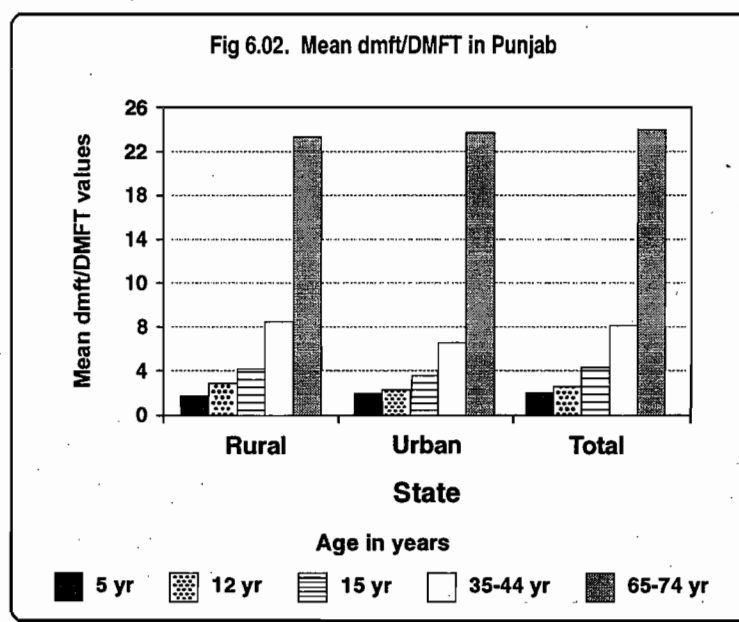
The number of teeth present in the mouth of individuals decreased as age advanced and was lowest for the 65-74 year age group. While almost the full complement of teeth were present in subjects 5, 12, and 15 years, 1.6 teeth were missing on an average among subjects of the 35-44 year age group. However, in the 65-74 year age group the mean number of teeth present apparently dropped to 10.1 teeth, indicating a loss of almost two-third of the normally present 32 teeth in an average mouth. These findings suggest a cumulative high tooth mortality due to dental caries, periodontal disease, orthodontic reasons or other causes.

The mean number of missing teeth was 1.6 teeth among the 35-44 year age group.

The mean number of missing teeth was 22 teeth among the 65-74 year age group, about 16.5 teeth among the 65-74 year age group, about 16.5 teeth missing due to dental caries and 5.5 teeth missing due to other reasons.

There was no difference in the mean number of missing teeth among the genders and place of residence, for the 35-44 year age group, with differentials observed across the three regions. Most of the missing teeth were due to dental caries (1.2 teeth) seen more in rural (1.2 teeth) than urban areas (1 tooth), and found more in Region -1 (2.5 teeth) than Region-2 (0.9 tooth) and Region-3 (0.8 tooth).

There was no difference in the mean number of teeth among the genders and place of residence, for the 65-74 year age group. Most of the missing teeth among the 65-74 year age group was due to dental caries (16.5 teeth), seen more in rural (16.5 teeth) than urban areas (14 teeth), and found more in Region-3 (27.4 teeth) than Region-1 (26.2 teeth) and Region-2 (4.3 teeth).



### 6.1.2 Root caries

The data on the percent subjects with root caries and fillings, if any, and the mean number of teeth with root caries and fillings, if any, are presented in Table 6.04. Since root caries does not appear in children and young adults, the data on root caries is presented only for the two age groups of 35-44 and 65-74 years.

The proportion of subjects with root caries was 22.2 (22.5 percent for males and 21.8 percent for females) in the 35-44 year age group and it was 14.2 (13 percent for males and 15.3 percent for females) in the 65-74 year age group.

Region-1 had a higher prevalence (55.5 percent) of root caries than Region 2 (6.8 percent) and Region-3 (5.3 percent), among the 35-44 year age group. For the 65-74 year age group Region-1 had a higher prevalence of root caries (27 percent) compared to Region-3 (12.5 percent) and Region-2 (2.8 percent). Rural residents had a higher prevalence of root caries (19.5 percent) than urbanites (15 percent).

There were no subjects with root fillings among the surveyed population. There were only slight differentials among the genders and place of residence and marked differentials across the three regions.

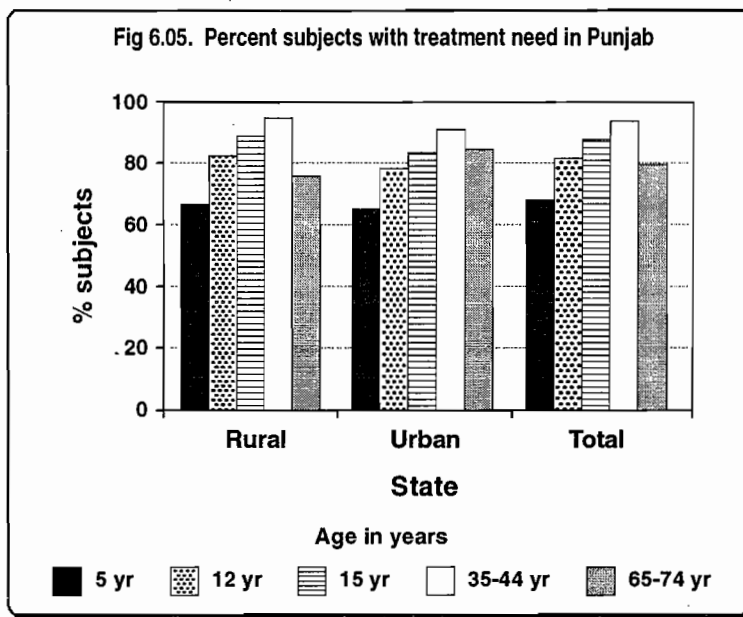
Table 6.04 Percent subjects and mean no. of teeth with root caries and fillings by age, sex and geographical area. State : Punjab

Root Caries		35-44 years			65-74 years		
		M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
% Subjects with Root caries		56.8	54.1	55.5	25.8	28.2	27.0
Mean nos of teeth with Root Caries		1.7	1.7	1.7	2.7	2.8	2.8
% Subjects with Root fillings		0.0	0.0	0.0	0.0	0.0	0.0
Mean nos of teeth with Root fillings		0.0	0.0	0.0	0.0	0.0	0.0
<b>Region 2</b>	<b>n=</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>183</b>	<b>180</b>	<b>363</b>
% Subjects with Root caries		6.6	7.0	6.8	3.1	2.5	2.8
Mean nos of teeth with Root Caries		0.3	0.2	0.3	0.2	0.1	0.2
% 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
<b>Region 3</b>	<b>n=</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
% Subjects with Root caries		4.3	6.2	5.3	10.1	14.8	12.5
Mean nos of teeth with Root Caries		0.1	0.1	0.1	0.9	1.1	1.0
% Subjects with Root fillings		0.0	0.0	0.0	0.0	0.0	0.0
Mean nos of teeth with Root fillings		0.0	0.0	0.0	0.0	0.0	0.0
<b>State Rural</b>	<b>n=</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>343</b>	<b>342</b>	<b>685</b>
% Subjects with Root caries		22.3	23.1	22.7	14.1	18.2	16.2
Mean nos of teeth with Root Caries		0.6	0.6	0.6	1.3	1.4	1.4
% 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
<b>State Urban</b>	<b>n=</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
% Subjects with Root caries		22.7	18.7	20.7	10.5	7.8	9.2
Mean nos of teeth with Root Caries		0.8	0.7	0.8	0.9	0.9	0.9
% Subjects with Root fillings		0.0	0.0	0.0	0.0	0.0	0.0
Mean nos of teeth with Root fillings		0.0	0.0	0.0	0.0	0.0	0.0
<b>State Total</b>	<b>n=</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>505</b>	<b>488</b>	<b>993</b>
% Subjects with Root caries		22.5	21.8	22.2	13.0	15.3	14.2
Mean nos of teeth with Root Caries		0.7	0.6	0.7	1.2	1.2	1.2
% 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 and Fig. 6.05 present the percent subjects requiring preventive and curative care by type of treatment needed and Table 6.06 and Fig. 6.06 present the mean number of teeth requiring treatment, by type of treatment.

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



Overall, a direct correlation existed between age and treatment need, except for the 65-74 year age group. The 5 year olds had the least treatment need (67.6 percent), while the need was highest for the 35-44 year age group (93.1 percent). The need for treatment was more in rural than urban areas for all ages, except for the 65-74 year age group. There was no significant difference in the pattern of need by type of need between male and female subjects.

The high levels of mean number of teeth – decayed and missing, together with negligible numbers of filled teeth indicated that either there was a scant priority for treatment of decayed teeth or it was not affordable for most people. Another possibility was the inaccessibility (difficult to reach dental facilities) or non-availability (47 percent) of dental services in the area where the subjects resided. Lack of priority on the part of subjects to avail the services appeared to be the primary cause for their neglect of dental health. Intensive motivational health education might, perhaps, help in raising the sense of priority for oral health care in the peoples mind.

For the 5 and 12 year olds, Region-1 had a higher need for treatment (92.3 percent) followed by Region-3 (89.2 percent) and Region-2 (56.8 percent). For the 15 years and above age groups the need for treatment was higher in Region-3 (94.9 percent) followed by Region-1 (91.5 percent) and Region-2 (79.1 percent).

The type of treatment needed varied with age. The need for one or more surface filling was the highest for all the age groups (79.6 percent), except for the 65-74 year age group, where the need for other, but unspecified care was highest (72.3 percent). The need for extractions was directly related to age, such that the lower age groups of 15 years and below required the least extractions (1.03 percent) while the need was highest in the age groups of 35 years and above (19.6 percent). Preventive care and fissure sealant was recommended by the examining dentists for only 1.56 percent subjects across the age groups. The need for crown and veneers (1.6 percent) and pulp care (3.3 percent) was the least for all the age groups. The need for pulp care was seen more in the 15 and 35-44 year age groups (4.5 percent) than any other age group (2.5 percent). There was a significant proportion of subjects (53.4 percent) among the 35 year and above age groups who

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

State : Punjab

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
<b>Region 1</b>	<b>n=</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
Treatment needed		87.1	87.8	87.5	96.5	97.6	97.1	97.1	98.8	98.0	100	100	100.0	73.3	79.9	76.6
Preventive care & fissure sealant		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filling one or more surfaces		87.1	87.8	87.5	96.5	97.6	97.1	97.1	98.8	98.0	100	100	100.0	15.6	20.3	18.0
Crown & Veneer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.3	0.5	0.7	0.6
Pulp care		0.0	0.0	0.0	5.6	4.9	5.3	2.9	5.3	4.1	0.7	0.7	0.7	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	63.1	63.9	63.5	26.3	26.2	27.3
Need for other care		0.0	0.0	0.0	1.7	2.6	2.2	0.0	0.0	0.0	64.1	61.8	63.0	69.3	76.3	72.8
<b>Region 2</b>	<b>n=</b>	<b>198</b>	<b>172</b>	<b>370</b>	<b>177</b>	<b>195</b>	<b>372</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
Treatment needed		43.5	50.0	46.8	66.7	66.7	66.7	74.7	75.9	75.3	89.8	82.4	86.1	77.1	74.4	75.8
Preventive care & fissure sealant		8.2	7.5	7.9	3.5	4.1	3.8	4.5	3.2	3.9	0.9	4.0	2.5	0.0	1.5	0.8
Filling one or more surfaces		36.8	44.6	40.7	61.9	62.9	62.4	70.5	69.8	70.2	81.6	72.3	77.0	27.4	23.8	25.6
Crown & Veneer		0.0	0.0	0.0	4.5	1.8	3.2	6.0	3.5	4.8	5.0	2.9	4.0	4.5	3.2	3.9
Pulp care		5.1	7.0	6.1	3.8	3.8	3.8	6.2	7.0	6.6	9.8	7.9	8.9	3.3	2.0	2.7
Extraction		4.2	1.5	2.9	1.8	2.7	2.3	0.5	1.2	0.9	12.9	13.0	13.0	13.9	12.0	13.0
Need for other care		2.2	0.0	1.1	1.5	2.5	2.0	3.2	7.4	5.3	28.8	36.9	32.9	61.9	62.2	62.1
<b>Region 3</b>	<b>n=</b>	<b>165</b>	<b>151</b>	<b>316</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
Treatment needed		85.0	82.3	83.7	96.7	92.4	94.6	98.8	98.3	98.6	99.5	99.3	99.4	84.8	88.5	86.7
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		85.0	82.3	83.7	96.7	92.4	94.6	98.8	98.3	98.6	98.8	98.6	98.7	12.6	11.9	12.3
Crown & Veneer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.7	0.0	0.4	0.7	0.7	0.7
Pulp care		0.7	0.7	0.7	0.0	0.0	0.0	1.4	2.1	1.8	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	0.7	0.0	0.4	8.7	10.3	9.5	11.5	15.5	13.5
Need for other care		0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.4	14.8	18.3	16.6	80.3	87.1	83.7
<b>State Rural</b>	<b>n=</b>	<b>357</b>	<b>333</b>	<b>690</b>	<b>343</b>	<b>352</b>	<b>695</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
Treatment needed		65.8	67.3	66.6	81.9	82.6	82.3	90.1	88.2	89.2	96.0	91.6	93.8	77.6	76.2	76.9
Preventive care & fissure sealant		5.6	4.6	5.1	2.4	2.0	2.2	3.1	2.3	2.7	0.7	2.9	1.8	0.0	1.0	0.5
Filling one or more surfaces		62.8	65.2	64.0	80.2	81.3	80.8	87.7	86.8	87.3	93.7	86.7	90.2	20.6	22.5	21.6
Crown & Veneer		0.0	0.0	0.0	2.1	0.3	1.2	3.1	2.3	2.7	3.0	1.6	2.3	3.0	1.2	2.1
Pulp care		1.6	2.4	2.0	2.3	2.7	2.5	3.7	5.1	4.4	3.9	5.1	4.5	1.4	1.4	1.4
Extraction		1.6	0.0	0.8	0.7	1.0	0.9	0.6	0.3	0.5	22.4	24.2	23.3	16.3	17.6	17.0
Need for other care		0.7	0.0	0.4	0.2	0.9	0.6	2.0	1.3	1.7	30.9	34.5	32.7	65.8	67.4	66.6
<b>State Urban</b>	<b>n=</b>	<b>167</b>	<b>144</b>	<b>311</b>	<b>154</b>	<b>155</b>	<b>309</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
Treatment needed		61.5	69.0	65.3	82.9	75.1	79.0	79.3	84.4	81.9	91.5	88.8	90.2	81.0	88.4	84.7
Preventive care & fissure sealant		1.1	1.3	1.2	0.0	2.3	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filling one or more surfaces		57.3	65.2	61.3	79.4	71.7	75.6	78.1	77.2	77.7	82.4	82.2	82.3	20.3	12.5	16.4
Crown & Veneer		0.0	0.0	0.0	2.4	2.3	2.4	2.4	1.2	1.8	2.3	1.4	1.9	1.4	3.7	2.6
Pulp care		5.3	6.3	5.8	4.6	3.3	4.0	4.6	5.4	5.0	8.0	2.2	5.1	2.2	0.0	1.1
Extraction		3.2	2.5	2.9	1.2	2.3	1.8	0.0	1.2	0.6	19.8	16.3	18.1	14.2	13.5	13.9
Need for other care		2.1	0.0	1.1	3.1	3.7	3.4	1.2	9.5	5.4	33.4	39.9	36.7	76.1	84.9	80.5
<b>State Total</b>	<b>n=</b>	<b>524</b>	<b>477</b>	<b>1001</b>	<b>497</b>	<b>507</b>	<b>1004</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>508</b>	<b>489</b>	<b>997</b>
Treatment needed		65.9	69.3	67.6	83.6	80.8	82.2	87.3	87.9	87.6	94.8	91.3	93.1	78.7	80.7	79.7
Preventive care & fissure sealant		3.4	3.0	3.2	1.3	1.9	1.6	1.7	1.3	1.5	0.4	1.6	1.0	0.0	0.6	0.3
Filling one or more surfaces		62.7	66.8	64.8	81.4	78.8	80.1	85.5	84.7	85.1	90.2	86.1	88.2	19.7	19.0	19.4
Crown & Veneer		0.0	0.0	0.0	2.0	1.0	1.5	2.5	1.8	2.2	2.5	1.4	2.0	2.2	2.1	2.2
Pulp care		2.9	3.6	3.3	3.1	2.6	2.9	3.8	5.2	4.5	5.1	3.7	4.4	1.6	0.8	1.2
Extraction		2.1	0.9	1.5	0.8	1.4	1.1	0.4	0.6	0.5	22.1	22.6	22.4	15.9	17.4	16.7
Need for other care		1.1	0.0	0.6	1.2	2.0	1.6	1.6	4.0	2.8	32.0	36.8	34.4	70.2	74.3	72.3

Note : Related Table 6.06

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

State : Punjab

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
<b>Region 1</b>	<b>n=</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
Treatment needed		2.8	2.8	2.8	2.0	2.3	2.2	3.0	3.1	3.1	11.5	11.7	11.6	21.2	22.7	22.0
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		2.8	2.8	2.8	1.9	2.2	2.1	3.0	3.0	3.0	7.0	7.6	7.3	0.4	0.5	0.5
Crown/ Veneer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
Pulp care		0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Extraction		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.9	2.0	2.8	2.9	2.9
Need for other care		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	2.3	2.4	18.0	19.3	18.7
<b>Region 2</b>	<b>n=</b>	<b>197</b>	<b>170</b>	<b>367</b>	<b>175</b>	<b>193</b>	<b>368</b>	<b>178</b>	<b>186</b>	<b>364</b>	<b>194</b>	<b>198</b>	<b>392</b>	<b>155</b>	<b>140</b>	<b>295</b>
Treatment needed		2.1	2.0	2.1	2.5	2.8	2.7	3.0	4.0	3.5	5.9	5.9	5.9	16.2	16.7	16.5
Preventive care/ fissure sealant		0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Filling one or more surfaces		1.4	1.5	1.5	2.0	1.9	2.0	2.6	2.5	2.6	3.9	3.3	3.6	1.3	1.0	1.2
Crown/ Veneer		0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.3	0.1	0.2
Pulp care		0.2	0.3	0.3	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.0	0.2
Extraction		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.7	0.5	0.6
Need for other care		0.2	0.0	0.1	0.2	0.6	0.4	0.1	1.2	0.7	1.4	1.9	1.7	13.5	15.0	14.3
<b>Region 3</b>	<b>n=</b>	<b>162</b>	<b>151</b>	<b>313</b>	<b>160</b>	<b>153</b>	<b>313</b>	<b>162</b>	<b>154</b>	<b>316</b>	<b>154</b>	<b>159</b>	<b>313</b>	<b>161</b>	<b>152</b>	<b>313</b>
Treatment needed		2.9	2.5	2.7	3.2	3.2	3.2	4.1	4.2	4.2	8.9	8.7	8.8	23.7	24.9	24.3
Preventive care/ fissure sealant		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filling one or more surfaces		2.9	2.5	2.7	3.2	3.2	3.2	4.0	4.1	4.1	8.1	7.9	8.0	0.6	0.3	0.5
Crown/ Veneer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pulp care		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Extraction		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	1.0	1.1	1.1
Need for other care		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	22.1	23.4	22.8
<b>State Rural</b>	<b>n=</b>	<b>356</b>	<b>331</b>	<b>687</b>	<b>341</b>	<b>348</b>	<b>689</b>	<b>347</b>	<b>345</b>	<b>692</b>	<b>350</b>	<b>357</b>	<b>707</b>	<b>325</b>	<b>308</b>	<b>633</b>
Treatment needed		2.3	2.3	2.3	2.9	3.1	3.0	4.3	4.4	4.4	8.0	8.3	8.2	19.4	18.7	19.1
Preventive care/ fissure sealant		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Filling one or more surfaces		2.1	2.1	2.1	2.8	2.9	2.9	4.0	3.9	4.0	6.1	5.9	6.0	1.0	0.8	0.9
Crown/ Veneer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.1
Pulp care		0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1
Extraction		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.7	0.7	1.3	1.3	1.3
Need for other care		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.2	1.2	1.5	1.4	16.7	16.6	16.7
<b>State Urban</b>	<b>n=</b>	<b>164</b>	<b>144</b>	<b>308</b>	<b>154</b>	<b>154</b>	<b>308</b>	<b>152</b>	<b>150</b>	<b>302</b>	<b>157</b>	<b>155</b>	<b>312</b>	<b>150</b>	<b>140</b>	<b>290</b>
Treatment needed		2.7	2.4	2.6	3.5	3.8	3.7	3.5	4.9	4.2	7.5	6.9	7.2	19.6	24.4	22.0
Preventive care/ fissure sealant		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
Filling one or more surfaces		2.1	2.0	2.1	3.0	2.6	2.8	3.4	3.4	3.4	4.9	4.5	4.7	0.7	0.5	0.6
Crown/ Veneer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
Pulp care		0.2	0.3	0.3	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.1	0.2	0.0	0.1
Extraction		0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.5	0.9	0.9	0.9
Need for other care		0.3	0.0	0.2	0.4	1.0	0.7	0.0	1.4	0.7	1.9	1.9	1.9	17.7	22.8	20.3
<b>State Total</b>	<b>n=</b>	<b>520</b>	<b>475</b>	<b>995</b>	<b>495</b>	<b>502</b>	<b>997</b>	<b>499</b>	<b>495</b>	<b>994</b>	<b>507</b>	<b>512</b>	<b>###</b>	<b>475</b>	<b>448</b>	<b>923</b>
Treatment needed		2.5	2.4	2.5	3.2	3.4	3.3	4.0	4.6	4.3	8.0	8.0	8.0	19.7	20.8	20.3
Preventive care/ fissure sealant		0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filling one or more surfaces		2.2	2.1	2.2	2.9	2.9	2.9	3.8	3.8	3.8	5.8	5.6	5.7	0.8	0.7	0.8
Crown/ Veneer		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Pulp care		0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1
Extraction		0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.7	1.3	1.3	1.3
Need for other care		0.1	0.0	0.1	0.1	0.3	0.2	0.1	0.6	0.4	1.4	1.6	1.5	17.3	18.8	18.1

Note : Related Table 6.05

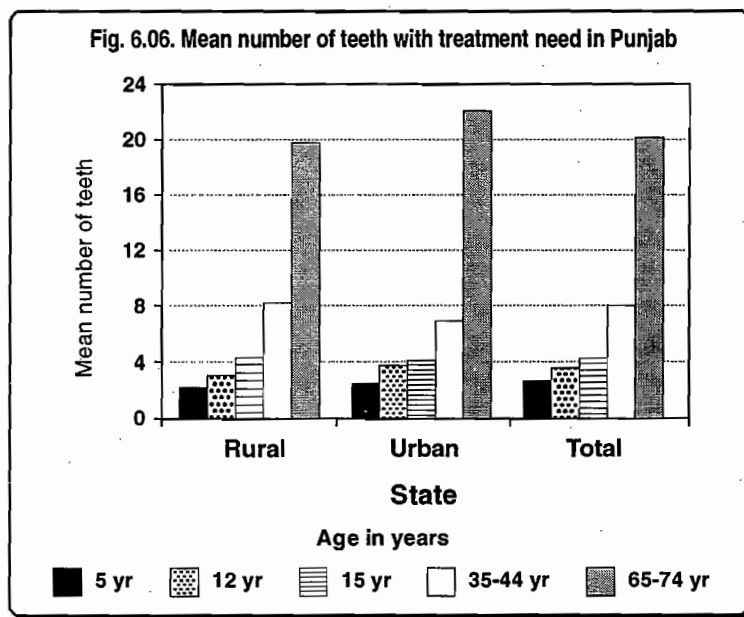
were indicated for other, but unspecified treatment care, which was predominantly a need for prosthesis (partial or full mouth dentures). The need for other care rose gradually across the age groups from 0.6 percent to 72.3 percent.

The mean number of teeth requiring treatment was lowest in subjects aged 5 years and was 2.5 teeth (2.5 teeth for males and 2.4 teeth for females). The mean number of teeth requiring treatment was highest in the 65-74 year age group and was 20.3 teeth (19.7 teeth for males and 20.8 teeth for females).

The type of treatment needed varied with age. The mean number of teeth requiring fillings ranged from 0.8 – 5.7 teeth and was highest (5.7 teeth) in the 35-44 year age group (5.8 teeth for males and 5.6 teeth for females).

Among the 65-74 year age group, the need for filling was low (0.8 tooth). The mean number of teeth indicated for extraction were 0.7 tooth and 1.3 teeth for the 35-44 and 65-74 year age groups, respectively.

The need for other, but unspecified care, which was mainly prosthetic need gradually rose from 0.1 tooth to 18.1 teeth across the age groups. The pattern was similar for the genders and place of residence. However, there were marked differentials across the three regions, especially in the older age groups of 35 years and above.

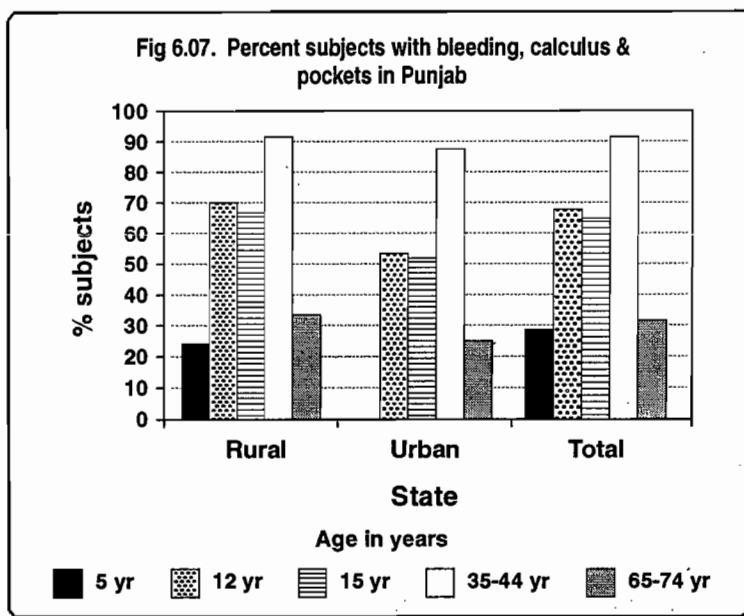


## 6.2 PERIODONTAL STATUS

### 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. In addition, the loss of epithelial attachment was also measured to provide an indication of the status of periodontal health.

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



The prevalence of periodontal disease was highest in the age group of 35-44 years (90.8 percent) and surprisingly was lowest among the 65-74 year olds (31.1 percent). It was almost the same among the 12 and 15 year olds, 67.4 percent and 64.3 percent, respectively.

Invariably, across age groups, except among the 65-74 year age group, bleeding and calculus emerged as the most dominant conditions to be followed by with bleeding or higher score, except among the 65-74 year age group where it was with calculus or higher score.

Among the 12 and 15 year olds, 'bleeding or higher' score emerged as the most prevalent condition.

In the 65-74 year age group, the percent subjects with calculus was around 18 percent, followed by 11.7 percent subjects with 'calculus or higher' scores. Pockets of depth 4-5mm was seen among 12 percent of the subjects followed by 8.9 percent subjects with pockets of depth 6mm or more. The prevalence of periodontal disease was consistently higher in rural areas (57.2 percent) than urban areas (43.7 percent).

There were slight differentials observed between the genders. The prevalence of periodontal disease was higher in Region-3 followed by Region-1 and Region-2. Periodontal disease increased across the 12 to 35-44 year age group from 28.3 percent to 90.8 percent, and dipped for the 65-74 year age group (31.1 percent).

The dentition is divided into six sextants, three upper and three lower, for assessment of the periodontal status. There was no indication of periodontal disease among the 12 year olds. The mean number of healthy sextants (those sextants with no bleeding, calculus or pockets) was highest for the 15 year olds (3.3 sextants) seen more in urban (4.1 sextants) than rural areas (3.2 sextants), and lowest for the 65-74 year age group (0.5 sextant) and it was nil sextant for the 5 year olds.

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

Periodontal Disease	n=	12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>159</b>	<b>156</b>	<b>315</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
With bleeding,calculus, or pockets		100	99.3	<b>99.7</b>	100	100	<b>100</b>	100	100	<b>100.0</b>	21.0	25.6	<b>23.3</b>
with bleeding		39.8	43.4	<b>41.6</b>	5.4	1.9	<b>3.7</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
with calculus		0.0	0.0	<b>0.0</b>	4.9	2.2	<b>3.55</b>	0.5	0.0	<b>0.3</b>	0.0	0.0	<b>0.0</b>
with pockets 4-5 mm		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.7	0.7	<b>0.7</b>
with pockets 6 mm		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	3.3	2.4	<b>2.9</b>
with bleeding or higher		100	99.3	<b>99.7</b>	95.1	97.8	<b>96.5</b>	71.3	79.1	<b>75.2</b>	2.8	1.9	<b>2.4</b>
with calculus or higher		0.0	0.0	<b>0.0</b>	4.9	2.2	<b>3.55</b>	26.1	17.6	<b>21.9</b>	2.6	5.0	<b>3.8</b>
with pockets 4-5 mm or higher		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	2.6	3.4	<b>3.0</b>	12.3	16.3	<b>14.3</b>
with pockets 6mm		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	3.3	2.4	<b>2.9</b>
<b>Region 2</b>	<b>n=</b>	<b>111</b>	<b>124</b>	<b>235</b>	<b>172</b>	<b>181</b>	<b>353</b>	<b>193</b>	<b>198</b>	<b>391</b>	<b>153</b>	<b>137</b>	<b>290</b>
With bleeding,calculus, or pockets		16.9	19.1	<b>18.0</b>	26.3	24.9	<b>25.6</b>	82.3	81.0	<b>81.7</b>	49.9	46.5	<b>48.2</b>
with bleeding		8.1	9.7	<b>8.9</b>	11.9	11.1	<b>11.5</b>	12.9	12.3	<b>12.6</b>	4.0	4.5	<b>4.3</b>
with calculus		3.2	3.6	<b>3.4</b>	7.0	8.4	<b>7.7</b>	38.6	40.8	<b>39.7</b>	23.9	21.6	<b>22.8</b>
with pockets 4-5 mm		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	1.4	0.4	<b>0.9</b>	1.4	2.3	<b>1.9</b>
with pockets 6 mm		NA	NA	<b>NA</b>	0.0	0.5	<b>0.3</b>	0.0	0.0	<b>0.0</b>	1.1	2.6	<b>1.9</b>
with bleeding or higher		13.7	15.5	<b>14.6</b>	18.8	15.5	<b>17.2</b>	40.7	35.7	<b>38.2</b>	17.1	17.4	<b>17.3</b>
with calculus or higher		3.2	3.6	<b>3.4</b>	7.5	8.9	<b>8.2</b>	40.2	44.4	<b>42.3</b>	27.4	23.2	<b>25.3</b>
with pockets 4-5 mm or higher		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	1.4	0.9	<b>1.2</b>	4.3	3.2	<b>3.8</b>
with pockets 6mm		NA	NA	<b>NA</b>	0.0	0.5	<b>0.3</b>	0.0	0.0	<b>0.0</b>	1.1	2.6	<b>1.9</b>
<b>Region 3</b>	<b>n=</b>	<b>140</b>	<b>125</b>	<b>265</b>	<b>162</b>	<b>154</b>	<b>316</b>	<b>151</b>	<b>158</b>	<b>309</b>	<b>159</b>	<b>151</b>	<b>310</b>
With bleeding,calculus, or pockets		94.0	95.1	<b>94.6</b>	92.9	94.0	<b>93.5</b>	100.0	97.2	<b>98.6</b>	14.8	19.3	<b>17.1</b>
with bleeding		90.8	94.2	<b>92.5</b>	76.0	76.6	<b>76.3</b>	49.0	56.6	<b>52.8</b>	4.8	3.6	<b>4.2</b>
with calculus		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.00</b>	0.5	0.0	<b>0.3</b>	0.0	0.0	<b>0.0</b>
with pockets 4-5 mm		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	2.1	5.8	<b>4.0</b>
with pockets 6 mm		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	1.4	0.7	<b>1.05</b>
with bleeding or higher		94.0	95.1	<b>94.6</b>	92.9	94.0	<b>93.5</b>	99.5	97.2	<b>98.4</b>	6.0	5.8	<b>5.9</b>
with calculus or higher		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.5	0.0	<b>0.3</b>	1.2	2.9	<b>2.1</b>
with pockets 4-5 mm or higher		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	6.2	9.8	<b>8.0</b>
with pockets 6mm		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	1.4	0.7	<b>1.05</b>
<b>State Rural</b>	<b>n=</b>	<b>282</b>	<b>285</b>	<b>567</b>	<b>341</b>	<b>342</b>	<b>683</b>	<b>346</b>	<b>356</b>	<b>702</b>	<b>318</b>	<b>307</b>	<b>625</b>
With bleeding,calculus, or pockets		70.7	69.2	<b>70.0</b>	69.3	64.4	<b>66.9</b>	91.5	90.2	<b>90.9</b>	32.1	36.8	<b>34.5</b>
with bleeding		69.0	67.0	<b>68.0</b>	63.7	58.3	<b>61.0</b>	67.6	65.6	<b>66.6</b>	10.5	10.4	<b>10.5</b>
with calculus		23.2	21.5	<b>22.4</b>	35.5	34.0	<b>34.8</b>	63.4	61.0	<b>62.2</b>	18.5	21.9	<b>20.2</b>
with pockets 4-5 mm		NA	NA	<b>NA</b>	2.0	1.5	<b>1.8</b>	23.4	21.1	<b>22.3</b>	10.9	13.2	<b>12.1</b>
with pockets 6 mm		NA	NA	<b>NA</b>	0.0	0.3	<b>0.2</b>	9.6	11.0	<b>10.3</b>	9.5	9.5	<b>9.50</b>
with bleeding or higher		69.0	67.0	<b>68.0</b>	63.7	58.3	<b>61.0</b>	67.6	65.6	<b>66.6</b>	10.5	10.4	<b>10.5</b>
with calculus or higher		1.7	2.1	<b>1.9</b>	5.6	5.8	<b>5.7</b>	23.3	23.2	<b>23.3</b>	12.3	14.8	<b>13.6</b>
with pockets 4-5 mm or higher		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	0.6	1.4	<b>1.00</b>	6.9	9.3	<b>8.1</b>
with pockets 6mm		NA	NA	<b>NA</b>	0.0	0.3	<b>0.2</b>	0.0	0.0	<b>0.0</b>	2.3	2.4	<b>2.35</b>
<b>State Urban</b>	<b>n=</b>	<b>128</b>	<b>120</b>	<b>248</b>	<b>152</b>	<b>148</b>	<b>300</b>	<b>157</b>	<b>155</b>	<b>312</b>	<b>153</b>	<b>137</b>	<b>290</b>
With bleeding,calculus, or pockets		54.3	49.9	<b>52.1</b>	48.4	53.4	<b>50.9</b>	89.7	87.6	<b>88.7</b>	31.7	21.8	<b>26.8</b>
with bleeding		54.3	49.9	<b>52.1</b>	46.2	50.9	<b>48.6</b>	55.0	54.3	<b>54.7</b>	9.8	8.8	<b>9.3</b>
with calculus		13.4	11.5	<b>12.5</b>	23.7	26.0	<b>24.9</b>	67.0	65.1	<b>66.1</b>	23.0	11.6	<b>17.3</b>
with pockets 4-5 mm		0.0	0.0	<b>0.0</b>	0.0	1.0	<b>0.50</b>	21.5	15.2	<b>18.4</b>	8.7	10.9	<b>9.8</b>
with pockets 6 mm		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	9.1	6.8	<b>8.0</b>	6.2	6.5	<b>6.4</b>
with bleeding or higher		54.3	49.9	<b>52.1</b>	46.2	50.9	<b>48.6</b>	55.0	54.3	<b>54.7</b>	9.8	8.8	<b>9.3</b>
with calculus or higher		0.0	0.0	<b>0.0</b>	2.2	2.5	<b>2.4</b>	32.0	33.0	<b>32.5</b>	15.3	5.6	<b>10.5</b>
with pockets 4-5 mm or higher		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	2.6	0.3	<b>1.5</b>	6.3	6.7	<b>6.5</b>
with pockets 6mm		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.3	0.8	<b>0.6</b>
<b>State Total</b>	<b>n=</b>	<b>410</b>	<b>405</b>	<b>815</b>	<b>493</b>	<b>490</b>	<b>983</b>	<b>503</b>	<b>511</b>	<b>1014</b>	<b>471</b>	<b>444</b>	<b>915</b>
With bleeding,calculus, or pockets		68.4	66.4	<b>67.4</b>	64.7	63.9	<b>64.3</b>	91.6	89.9	<b>90.8</b>	30.8	31.4	<b>31.1</b>
with bleeding		67.4	65.2	<b>66.3</b>	60.7	59.4	<b>60.1</b>	64.9	63.5	<b>64.2</b>	9.6	9.5	<b>9.6</b>
with calculus		21.1	19.2	<b>20.2</b>	32.8	33.1	<b>33.0</b>	64.2	61.8	<b>63.0</b>	18.8	17.2	<b>18.0</b>
with pockets 4-5 mm		NA	NA	<b>NA</b>	1.4	1.3	<b>1.4</b>	24.2	20.5	<b>22.4</b>	10.5	13.4	<b>12.0</b>
with pockets 6 mm		NA	NA	<b>NA</b>	0.0	0.2	<b>0.1</b>	10.3	10.6	<b>10.5</b>	8.8	9.0	<b>8.9</b>
with bleeding or higher		67.4	65.2	<b>66.3</b>	60.7	59.4	<b>60.1</b>	64.9	63.5	<b>64.2</b>	9.6	9.5	<b>9.6</b>
with calculus or higher		1.0	1.2	<b>1.1</b>	4.0	4.3	<b>4.2</b>	25.2	25.3	<b>25.3</b>	12.4	10.9	<b>11.7</b>
with pockets 4-5 mm or higher		NA	NA	<b>NA</b>	0.0	0.0	<b>0.0</b>	1.4	1.1	<b>1.3</b>	7.1	9.2	<b>8.2</b>
with pockets 6mm		NA	NA	<b>NA</b>	0.0	0.2	<b>0.1</b>	0.0	0.0	<b>0.0</b>	1.7	1.7	<b>1.7</b>

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

State : Punjab

Periodontal Disease	n=	12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
Mean no. of healthy sextants		1.6	1.7	1.7	1.0	0.7	0.9	0.1	0.1	0.1	0.0	0.0	0.0
With bleeding, calculus, pockets		4.4	4.2	4.3	5.0	5.2	5.1	5.9	5.9	5.9	0.5	0.7	0.6
with bleeding		2.9	2.9	2.9	2.6	2.6	2.6	1.0	1.3	1.2	0.0	0.0	0.0
with calculus		1.5	1.3	1.4	2.4	2.6	2.5	2.4	2.3	2.4	0.1	0.1	0.1
with pockets(4-5 mm)		NA	NA	NA	0.0	0.0	0.0	1.8	1.6	1.7	0.2	0.2	0.2
with pockets (6mm or more)		NA	NA	NA	0.0	0.0	0.0	0.6	0.7	0.7	0.2	0.3	0.3
excluded sextants		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	5.3	5.4
<b>Region 2</b>	<b>n=</b>	<b>177</b>	<b>195</b>	<b>372</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
Mean no. of healthy sextants		3.4	3.4	3.4	4.9	4.8	4.9	2.3	2.4	2.4	1.0	0.9	1.0
With bleeding, calculus, pockets		0.3	0.4	0.4	0.9	0.8	0.9	3.5	3.3	3.4	1.8	1.4	1.6
with bleeding		0.2	0.2	0.2	0.4	0.4	0.4	1.1	1.0	1.1	0.3	0.3	0.3
with calculus		0.1	0.1	0.1	0.4	0.4	0.4	2.2	2.1	2.2	1.2	0.9	1.1
with pockets(4-5 mm)		NA	NA	NA	0.0	0.0	0.0	0.2	0.1	0.2	0.2	0.1	0.2
with pockets (6mm or more)		NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
excluded sextants		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	2.0	2.2	2.1
<b>Region 3</b>	<b>n=</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
Mean no. of healthy sextants		2.9	2.6	2.8	2.8	2.8	2.8	2.1	2.3	2.2	0.2	0.1	0.2
With bleeding, calculus, pockets		2.3	2.3	2.3	3.2	3.1	3.2	3.7	3.7	3.7	0.4	0.5	0.5
with bleeding		2.3	2.2	2.3	3.0	2.9	3.0	2.8	3.0	2.9	0.2	0.2	0.2
with calculus		0.0	0.0	0.0	0.2	0.2	0.2	0.7	0.5	0.6	0.0	0.1	0.1
with pockets(4-5 mm)		NA	NA	NA	0.0	0.0	0.0	0.2	0.1	0.2	0.1	0.2	0.2
with pockets (6mm or more)		NA	NA	NA	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
excluded sextants		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	5.2
<b>State Rural</b>	<b>n=</b>	<b>343</b>	<b>352</b>	<b>695</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
Mean no. of healthy sextants		2.7	2.7	2.7	3.1	3.2	3.2	1.6	1.7	1.7	0.5	0.4	0.5
With bleeding, calculus, pockets		2.1	2.0	2.1	2.8	2.6	2.7	4.2	4.1	4.2	1.2	1.1	1.2
with bleeding		1.6	1.6	1.6	1.9	1.7	1.8	1.8	1.8	1.8	0.2	0.2	0.2
with calculus		0.4	0.4	0.4	0.8	0.8	0.8	1.8	1.6	1.7	0.6	0.6	0.6
with pockets(4-5 mm)		NA	NA	NA	0.0	0.0	0.0	0.5	0.4	0.5	0.2	0.2	0.2
with pockets (6mm or more)		NA	NA	NA	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1
excluded sextants		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	3.6	3.6	3.6
<b>State Urban</b>	<b>n=</b>	<b>154</b>	<b>155</b>	<b>309</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
Mean no. of healthy sextants		3.2	3.1	3.2	4.3	3.9	4.1	2.2	2.3	2.3	0.6	0.5	0.6
With bleeding, calculus, pockets		1.2	1.0	1.1	1.6	1.8	1.7	3.6	3.4	3.5	1.0	0.7	0.9
with bleeding		0.9	0.8	0.9	1.1	1.2	1.2	1.2	1.2	1.2	0.2	0.2	0.2
with calculus		0.3	0.2	0.3	0.5	0.6	0.6	1.8	1.8	1.8	0.6	0.3	0.5
with pockets(4-5 mm)		NA	NA	NA	0.0	0.0	0.0	0.5	0.3	0.4	0.2	0.1	0.2
with pockets (6mm or more)		NA	NA	NA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
excluded sextants		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	3.8	4.1	4.0
<b>State Total</b>	<b>n=</b>	<b>497</b>	<b>507</b>	<b>1004</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>508</b>	<b>489</b>	<b>997</b>
Mean no. of healthy sextants		2.8	2.8	2.8	3.3	3.3	3.3	1.8	1.9	1.9	0.5	0.4	0.5
With bleeding, calculus, pockets		1.9	1.8	1.9	2.6	2.5	2.6	4.1	3.9	4.0	1.1	0.9	1.0
with bleeding		1.5	1.4	1.5	1.8	1.7	1.8	1.6	1.7	1.7	0.2	0.2	0.2
with calculus		0.4	0.3	0.4	0.7	0.8	0.8	1.8	1.7	1.8	0.5	0.4	0.5
with pockets(4-5 mm)		NA	NA	NA	0.0	0.0	0.0	0.5	0.4	0.5	0.2	0.2	0.2
with pockets (6mm or more)		NA	NA	NA	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
excluded sextants		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	3.9	3.9	3.9

The mean number of sextants with bleeding calculus and pockets was highest for age group (4 sextants) with 4.1 sextants for males and 3.9 sextants for females. The mean number of sextants with bleeding, calculus and pockets was 2.6 sextants for males and 2.5 sextants for females among the 15 year olds.

The mean number of sextants with shallow or deep pockets was very low, 0.4 sextants and 0.1 sextant, respectively, among the age groups of 35 years and above.

Assessment of the sextants for signs of periodontal disease showed that while gingival bleeding was a more prevalent condition among the lower age groups, accumulated calculus became an increasingly high problem as the age advanced.

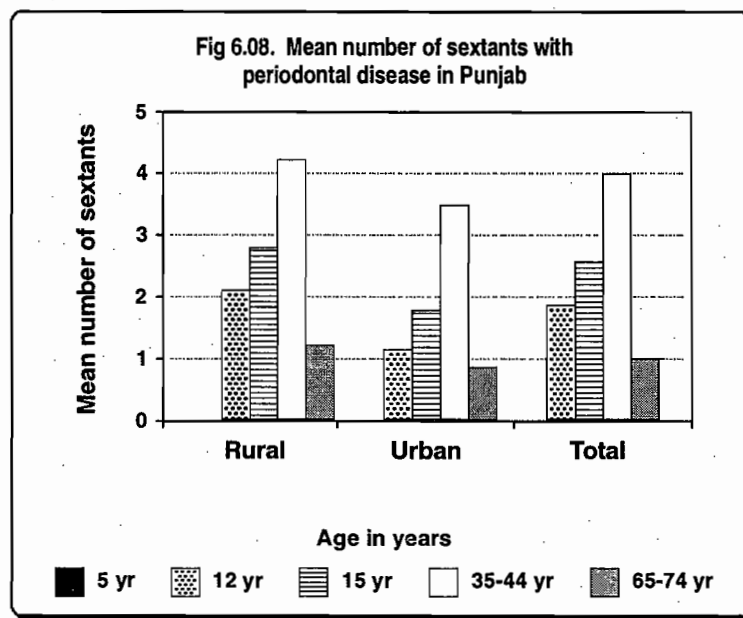


Table 6.10 Mean no. of sextants with loss of attachment by age, sex, and geographical area.

State : Punjab

Loss of Attachment (LOA)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
With no loss of attachment (0-3 mm)		6.0	6.0	6.0	5.2	5.2	5.2	0.2	0.2	0.2
With loss of attachment		0.0	0.0	0.0	0.7	0.8	0.8	0.3	0.4	0.4
with loss of attachment 4-5 mm		0.0	0.0	0.0	0.7	0.7	0.7	0.3	0.4	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	0.1	0.0	0.1	5.5	5.3	5.4
Not recorded		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Region 2</b>	<b>n=</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
With no loss of attachment (0-3 mm)		5.2	5.3	5.3	4.1	3.9	4.0	1.2	1.0	1.1
With loss of attachment		0.3	0.2	0.3	1.4	1.4	1.4	1.3	1.1	1.2
with loss of attachment 4-5 mm		0.3	0.1	0.2	1.1	1.0	1.1	0.7	0.6	0.7
with loss of attachment 6-8 mm		0.0	0.0	0.0	0.3	0.3	0.3	0.5	0.3	0.4
with loss of attachment 9-11 mm		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
with loss of attachment 12 mm or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Excluded sextants		0.5	0.6	0.6	0.4	0.5	0.5	1.5	1.7	1.6
Not recorded		0.0	0.0	0.0	0.1	0.2	0.2	2.1	2.2	2.2
<b>Region 3</b>	<b>n=</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
With no loss of attachment (0-3 mm)		5.6	5.6	5.6	5.0	5.0	5.0	0.3	0.3	0.3
With loss of attachment		0.3	0.3	0.3	0.9	0.9	0.9	0.2	0.3	0.3
with loss of attachment 4-5 mm		0.3	0.3	0.3	0.9	0.9	0.9	0.2	0.3	0.3
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	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.3
Not recorded		0.0	0.0	0.0	0.0	0.0	0.0	5.2	5.2	5.2
<b>State Rural</b>	<b>n=</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
With no loss of attachment (0-3 mm)		5.4	5.6	5.5	4.5	4.4	4.5	0.6	0.7	0.7
With loss of attachment		0.3	0.2	0.3	1.2	1.2	1.2	0.8	0.8	0.8
with loss of attachment 4-5 mm		0.3	0.2	0.3	1.0	1.0	1.0	0.5	0.5	0.5
with loss of attachment 6-8 mm		0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2
with loss of attachment 9-11 mm		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
with loss of attachment 12 mm or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Excluded sextants		0.0	0.0	0.0	0.1	0.1	0.1	3.7	3.6	3.7
Not recorded		0.3	0.3	0.3	0.3	0.3	0.3	0.9	0.9	0.9
<b>State Urban</b>	<b>n=</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
With no loss of attachment (0-3 mm)		5.7	5.4	5.6	4.8	4.6	4.7	0.8	0.6	0.7
With loss of attachment		0.1	0.2	0.2	1.0	1.0	1.0	0.7	0.5	0.6
with loss of attachment 4-5 mm		0.1	0.2	0.2	0.8	0.9	0.9	0.2	0.2	0.2
with loss of attachment 6-8 mm		0.0	0.0	0.0	0.2	0.1	0.2	0.3	0.2	0.3
with loss of attachment 9-11 mm		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
with loss of attachment 12 mm or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Excluded sextants		0.0	0.0	0.0	0.1	0.2	0.2	3.8	4.1	4.0
Not recorded		0.2	0.5	0.4	0.1	0.2	0.2	0.7	0.9	0.8
<b>State Total</b>	<b>n=</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>508</b>	<b>489</b>	<b>997</b>
With no loss of attachment (0-3 mm)		5.5	5.5	5.5	4.7	4.5	4.6	0.7	0.6	0.7
With loss of attachment		0.2	0.2	0.2	1.1	1.1	1.1	0.7	0.7	0.7
with loss of attachment 4-5 mm		0.2	0.2	0.2	0.9	0.9	0.9	0.4	0.4	0.4
with loss of attachment 6-8 mm		0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2
with loss of attachment 9-11 mm		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
with loss of attachment 12 mm or more		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Excluded sextants		0.0	0.0	0.0	0.1	0.1	0.1	3.9	3.9	3.9
Not recorded		0.2	0.3	0.3	0.2	0.3	0.3	0.7	0.8	0.8

### 6.3 MALOCCLUSION STATUS

Table 6.11 and Fig. 6.11 present the malocclusion status of the subjects as measured by the Dental Aesthetics Index scores. This index recommended by the WHO, was used to analyze the severity of malocclusion in the surveyed population. In calculating percent subjects with malocclusion, only those subjects with a DAI scores of 26 or higher were included.

No form of malocclusion was reported among the 5 year olds where only primary teeth are present. The proportion of subjects with malocclusion increased as age advanced, from 39 percent among 12 year olds to 44.5 percent among the 35-44 year age group, with a slight dip among the 15 year olds (38.8 percent).

No children among the 5 year olds had malocclusion while only 55.6 percent of the subjects in the 35 – 44 year olds group had none or minor malocclusion. The prevalence of 'definite' malocclusion as measured by the DAI scores was 16.4 percent each among the 12 and 15 year olds, and 17.2 percent among the 35-44 year age group. Severe forms of malocclusion (DAI score 31-35) were reported by 10.3 percent among the 12 year olds. And 9.1 percent each among the 12 year olds, and 9.1 percent each among the 15 and 35-44 year age groups.

The very severe (handicapping) form of malocclusion (DAI scores 36 or more) was observed in 12.3, 13.4 and 18.2 percent of the subjects among the 12, 15 and 35-44 year age groups.

There were no significant differentials in the prevalence of malocclusion among the gender. The urban areas reported a higher prevalence (46.8 percent) than the rural areas (40.9 percent). Region-2 had a higher prevalence of malocclusion (72.3 percent) than Region-1 (16.1 percent), followed by Region-3 (11 percent).

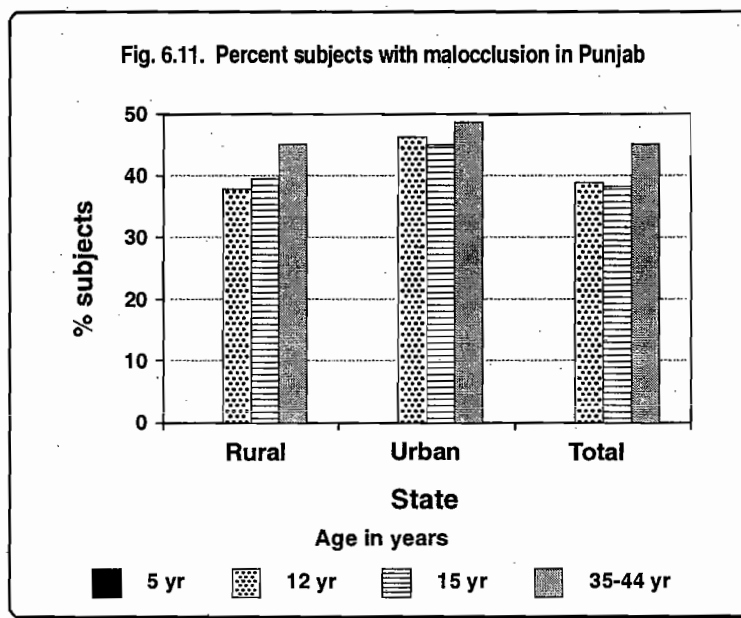


Table 6.11 Percent subjects with malocclusion by age, sex and geographical areas.

State : Punjab

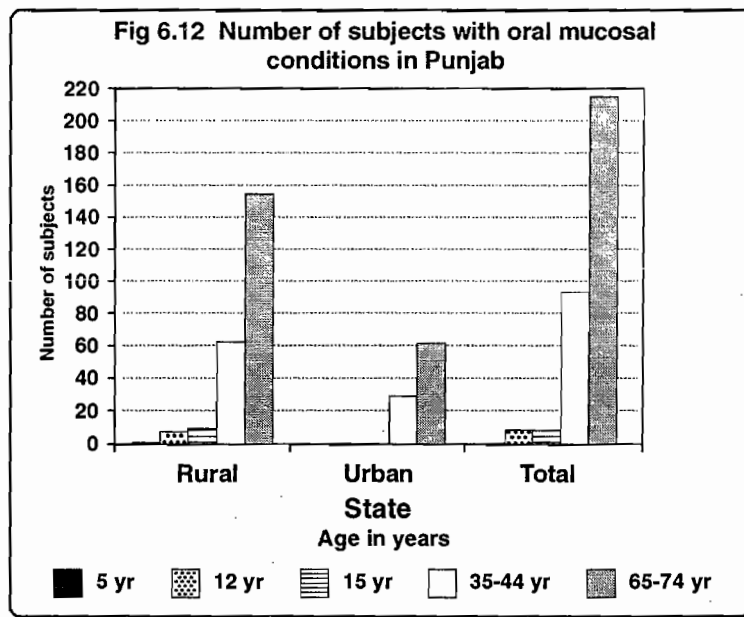
Malocclusion (DAI Score)		5 years			12 years			15 years			35-44 years		
		M	F	T	M	F	T	M	F	T	M	F	T
<b>Region 1</b>	n=	161	154	315	160	156	316	159	155	314	159	155	314
None or minor malocclusion (<25)		100	100	100.0	87.8	87	87.4	89.2	88.1	88.7	77.6	73.7	75.7
Malocclusion present		0.0	0.0	0.0	12.2	13	12.6	10.8	11.9	11.4	22.4	26.3	24.4
Definite (26 -30)		0.0	0.0	0.0	10.8	11.8	11.3	8.0	11.9	10.0	17.2	17.9	17.6
Severe (31 - 15)		0.0	0.0	0.0	1.4	1.2	1.3	2.8	0.0	1.4	3.8	6.3	5.1
V Severe (36 or more)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	2.1	1.8
<b>Region 2</b>	n=	198	172	370	177	195	372	179	192	371	196	201	397
None or minor malocclusion (<25)		100	100	100.0	28.3	30.5	29.4	29.8	29	29.4	27.9	20.9	24.4
Malocclusion present		0.0	0.0	0.0	71.7	69.5	70.6	70.2	71	70.6	72.1	79.1	75.6
Definite (26 -30)		0.0	0.0	0.0	22.8	22.9	22.9	18.9	25.8	22.4	21.5	21.5	21.5
Severe (31 - 15)		0.0	0.0	0.0	21.6	19.2	20.4	20.1	16.2	18.2	13.8	17.6	15.7
V Severe (36 or more)		0.0	0.0	0.0	27.3	27.4	27.4	31.3	29	30.2	36.7	40	38.4
<b>Region 3</b>	n=	165	151	316	160	156	316	163	156	319	155	160	315
None or minor malocclusion (<25)		100	100	100.0	89.3	90.8	90.1	87.3	86.7	87.0	86.7	93.1	89.9
Malocclusion present		0.0	0.0	0.0	10.7	9.2	10.0	12.7	13.3	13.0	13.3	6.9	10.1
Definite (26 -30)		0.0	0.0	0.0	8.6	7.8	8.2	12.1	12.8	12.5	11.9	5.5	8.7
Severe (31 - 15)		0.0	0.0	0.0	2.1	1.4	1.8	0.7	0.5	0.6	1.4	0.7	1.1
V Severe (36 or more)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4
<b>State Rural</b>	n=	357	333	690	343	352	695	348	351	699	352	360	712
None or minor malocclusion (<25)		100	100	100.0	62.5	61.6	62.1	62.3	58.9	60.6	55.1	54.1	54.6
Malocclusion present		0.0	0.0	0.0	37.5	38.4	38.0	37.7	41.1	39.4	44.9	45.9	45.4
Definite malocclusion (26 -30)		0.0	0.0	0.0	13.4	14.2	13.8	13.1	19.1	16.1	16.4	14.6	15.5
Severe malocclusion (31 - 15)		0.0	0.0	0.0	12.0	8.5	10.3	8.3	7.7	8.0	9.1	7.6	8.4
V Severe malocclusion (36 or more)		0.0	0.0	0.0	12.1	15.7	13.9	16.3	14.3	15.3	19.4	23.7	21.6
<b>State Urban</b>	n=	167	144	311	154	155	309	153	152	305	158	156	314
None or minor malocclusion (<25)		100	100	100.0	53.3	54	53.7	54.7	55.2	55.0	54.2	47.9	51.1
Malocclusion present		0.0	0.0	0.0	46.7	46	46.4	45.3	44.8	45.1	45.8	52.1	49.0
Definite (26 -30)		0.0	0.0	0.0	21.6	20.8	21.2	17.8	19.3	18.6	21.2	19.6	20.4
Severe (31 - 15)		0.0	0.0	0.0	9.6	15	12.3	15.6	10	12.8	6.3	16.8	11.6
V Severe (36 or more)		0.0	0.0	0.0	15.5	10.2	12.9	12	15.5	13.8	18.3	15.6	17.0
<b>State Total</b>	n=	524	477	1001	497	507	1004	501	503	1004	510	516	1026
None or minor malocclusion (<25)		100	100	100.0	61.3	60.8	61.1	62.1	60.4	61.3	56.5	54.6	55.6
Malocclusion present		0.0	0.0	0.0	38.7	39.2	39.0	37.9	39.6	38.8	43.5	45.4	44.5
Definite (26 -30)		0.0	0.0	0.0	16.1	16.6	16.4	14.3	18.4	16.4	18.4	16	17.2
Severe (31 - 15)		0.0	0.0	0.0	10.4	10.2	10.3	10.3	7.8	9.1	7.6	10.5	9.1
V Severe (36 or more)		0.0	0.0	0.0	12.2	12.3	12.3	13.3	13.5	13.4	17.5	18.9	18.2

Note: 'No malocclusion (&lt;25)' includes minor malocclusion.

## 6.4 ORAL CANCER AND ORAL MUCOSAL LESIONS

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

The prevalence of oral mucosal lesions was quite low. Among the 5 year olds only 2 subjects and among the 12 and 15 year olds, 9 subjects each, had oral mucosal lesions. These were distributed in the form of ulceration (18 subjects) and unspecified conditions (2 subjects). About 94 subjects in the 35-44 year age group had oral mucosal lesions and a majority of these were ulcerations (68 subjects), followed by leukoplakia (35 subjects), abscess (17 subjects), Lichen Planus (10 subjects) and a single case of Candidiasis.



About 215 subjects in the age group of 65-74 years had oral mucosal lesions, the most prevalent being ulceration (116 subjects) followed by leukoplakia (67 subjects), abscess (58 subjects) and candidiasis (21 subjects).

Only 2 cases of Oral Cancer were detected from rural residents among the subjects examined.

Leukoplakia is the most common pre-cancerous lesion while Lichen planus is categorized as a probable pre-cancerous condition (Mehta and Hammer, 1993). Leukoplakia was detected in the age groups of 35 years and above and the lesions were predominantly seen on the buccal mucosa.

The prevalence of oral mucosal lesions was evenly distributed among urban/rural areas (94 cases each) and seen higher in Region-1 (202 cases) than Region-3 (74 cases) followed by Region-2 (53 cases).

A broad analysis of the lesions by location on the oral mucosa showed that the most prevalent condition was ulceration, appearing on the lips (103 cases), buccal mucosa (75 cases), sulci (49 cases) and tongue (14 cases).

Leukoplakia was distributed predominantly on the buccal mucosa (86 cases) and sulci (17 cases). Abscess was seen predominantly on the alveolar ridges/gingival (65 cases) and sulci (19 cases). Lichen planus was distributed predominantly on the buccal mucosa (17 cases). The other more prevalent but still a very rare condition was candidiasis occurring predominantly on the hard/soft palate (16 cases).

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

State : Punjab

Oral Mucosal Lesions	n=	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
<b>Region 1</b>	<b>n=</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>158</b>	<b>156</b>	<b>314</b>
Oral mucosal lesions present		0	0	0	0	3	3	0	0	0	33	35	68	63	68	131
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	15	13	28	24	19	43
Lichen planus		0	0	0	0	0	0	0	0	0	3	6	9	1	4	5
Ulceration		0	0	0	0	3	3	0	0	0	26	26	52	39	41	80
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	3	11	14
Abscess		0	0	0	0	0	0	0	0	0	6	8	14	26	19	45
Any other condition		0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
<b>Region 2</b>	<b>n=</b>	<b>182</b>	<b>156</b>	<b>338</b>	<b>171</b>	<b>189</b>	<b>360</b>	<b>173</b>	<b>186</b>	<b>359</b>	<b>187</b>	<b>195</b>	<b>382</b>	<b>178</b>	<b>172</b>	<b>350</b>
Oral mucosal lesions present		1	1	2	4	2	6	5	4	9	11	7	18	13	5	18
Oral Cancer		1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
Leukoplakia		0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Lichen planus		0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Ulceration		0	1	1	4	2	6	5	3	8	10	6	16	9	4	13
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	1	1	0	1	1
Abscess		0	0	0	0	0	0	0	0	0	1	1	2	1	1	2
Any other condition		0	0	0	0	1	1	0	1	1	0	0	0	1	0	1
<b>Region 3</b>	<b>n=</b>	<b>162</b>	<b>151</b>	<b>313</b>	<b>160</b>	<b>153</b>	<b>313</b>	<b>159</b>	<b>153</b>	<b>312</b>	<b>153</b>	<b>159</b>	<b>312</b>	<b>160</b>	<b>152</b>	<b>312</b>
Oral mucosal lesions present		0	0	0	0	0	0	0	0	0	6	2	8	35	31	66
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	5	2	7	12	10	22
Lichen planus		0	0	0	0	0	0	0	0	0	0	0	0	5	1	6
Ulceration		0	0	0	0	0	0	0	0	0	0	0	0	12	11	23
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	3	3	6
Abscess		0	0	0	0	0	0	0	0	0	1	0	1	4	7	11
Any other condition		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>State Rural</b>	<b>n=</b>	<b>350</b>	<b>322</b>	<b>672</b>	<b>337</b>	<b>344</b>	<b>681</b>	<b>340</b>	<b>344</b>	<b>684</b>	<b>342</b>	<b>355</b>	<b>697</b>	<b>337</b>	<b>337</b>	<b>674</b>
Oral mucosal lesions present		1	1	2	4	4	8	5	4	9	35	27	62	82	72	154
Oral Cancer		1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
Leukoplakia		0	0	0	0	0	0	0	0	0	15	10	25	28	18	46
Lichen planus		0	0	0	0	0	0	0	0	0	3	3	6	6	3	9
Ulceration		0	1	1	4	4	8	5	3	8	23	20	43	43	33	76
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	3	14	17
Abscess		0	0	0	0	0	0	0	0	0	6	5	11	22	20	42
Any other condition		0	0	0	0	1	1	0	1	1	0	0	0	0	1	1
<b>State Urban</b>	<b>n=</b>	<b>155</b>	<b>139</b>	<b>294</b>	<b>154</b>	<b>154</b>	<b>308</b>	<b>151</b>	<b>150</b>	<b>301</b>	<b>157</b>	<b>154</b>	<b>311</b>	<b>159</b>	<b>143</b>	<b>302</b>
Oral mucosal lesions present		0	0	0	0	1	1	0	0	0	15	17	32	29	32	61
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	5	5	10	10	11	21
Lichen planus		0	0	0	0	0	0	0	0	0	1	3	4	0	2	2
Ulceration		0	0	0	0	1	1	0	0	0	13	12	25	17	23	40
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	1	1	3	1	4
Abscess		0	0	0	0	0	0	0	0	0	2	4	6	9	7	16
Any other condition		0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
<b>State Total</b>	<b>n=</b>	<b>505</b>	<b>461</b>	<b>966</b>	<b>491</b>	<b>498</b>	<b>989</b>	<b>491</b>	<b>494</b>	<b>985</b>	<b>499</b>	<b>509</b>	<b>1008</b>	<b>496</b>	<b>480</b>	<b>976</b>
Oral mucosal lesions present		1	1	2	4	5	9	5	4	9	50	44	94	111	104	215
Oral Cancer		1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
Leukoplakia		0	0	0	0	0	0	0	0	0	20	15	35	38	29	67
Lichen planus		0	0	0	0	0	0	0	0	0	4	6	10	6	5	11
Ulceration		0	1	1	4	5	9	5	3	8	36	32	68	60	56	116
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	1	1	6	15	21
Abscess		0	0	0	0	0	0	0	0	0	8	9	17	31	27	58
Any other condition		0	0	0	0	1	1	0	1	1	0	0	0	1	1	2

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

Location	Oral Mucosal Condition																	
	Oral Cancer		Leuko-plakia		Lichen Planus		Ulceration		ANUG		Candi-diasis		Abscess		Others		Total over Locations	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
<b>State Rural</b>																		
Vermilion Border	0	0	0	0	0	0	5	2	0	0	0	0	1	0	0	0	6	2
Commissures	0	0	0	2	0	0	6	6	0	0	0	0	0	0	0	0	6	8
Lips	0	0	5	1	1	1	34	35	0	0	0	0	1	1	0	0	41	38
Sulci	0	0	5	5	0	0	14	15	0	0	0	0	8	6	0	0	27	26
Buccal mucosa	0	0	41	30	7	5	34	21	0	0	0	2	0	0	0	1	82	59
Floor of mouth	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1
Tongue	0	0	5	1	0	0	8	3	0	0	0	0	0	2	0	1	13	7
Hard/Soft palate	0	0	0	0	0	0	1	2	0	0	3	11	0	2	0	0	4	15
Alv ridges/ Gingiva	0	0	0	0	0	0	3	2	0	0	2	3	23	22	0	0	28	27
<b>Rural Total</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>39</b>	<b>8</b>	<b>6</b>	<b>106</b>	<b>86</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>16</b>	<b>33</b>	<b>33</b>	<b>0</b>	<b>3</b>	<b>208</b>	<b>183</b>
<b>State Urban</b>																		
Vermilion Border	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	1	3
Commissures	0	0	0	0	0	0	3	6	0	0	0	0	0	0	0	0	3	6
Lips	0	0	2	2	0	1	14	20	0	0	0	0	0	0	0	0	16	23
Sulci	0	0	4	3	0	0	8	12	0	0	0	0	3	2	0	0	15	17
Buccal mucosa	0	0	6	9	1	4	9	11	0	0	1	1	0	0	1	0	18	25
Floor of mouth	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	2
Tongue	0	0	3	2	0	0	3	0	0	0	0	0	0	0	0	0	6	2
Hard/Soft palate	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	3	0
Alv ridges/ Gingiva	0	0	0	0	0	0	2	1	0	0	0	0	10	10	0	0	12	11
<b>Urban Total</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>16</b>	<b>1</b>	<b>5</b>	<b>41</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>13</b>	<b>13</b>	<b>1</b>	<b>0</b>	<b>74</b>	<b>89</b>
<b>State Total</b>																		
Vermilion Border	0	0	0	0	0	0	6	5	0	0	0	0	1	0	0	0	7	5
Commissures	0	0	0	2	0	0	9	12	0	0	0	0	0	0	0	0	9	14
Lips	0	0	7	3	1	2	48	55	0	0	0	0	1	1	0	0	57	61
Sulci	0	0	9	8	0	0	22	27	0	0	0	0	11	8	0	0	42	43
Buccal mucosa	0	0	47	39	8	9	43	32	0	0	1	3	0	0	1	1	100	84
Floor of mouth	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	1	3
Tongue	0	0	8	3	0	0	11	3	0	0	0	0	0	2	0	1	19	9
Hard/Soft palate	0	0	0	0	0	0	2	2	0	0	5	11	0	2	0	0	7	15
Alv ridges/ Gingiva	0	0	0	0	0	0	5	3	0	0	2	3	33	32	0	0	40	38
<b>State Total</b>	<b>0</b>	<b>0</b>	<b>71</b>	<b>55</b>	<b>9</b>	<b>11</b>	<b>147</b>	<b>140</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>17</b>	<b>46</b>	<b>46</b>	<b>1</b>	<b>3</b>	<b>282</b>	<b>272</b>

## 6.5 DENTAL FLUOROSIS STATUS

Table 6.14 and Fig. 6.14 present the percent subjects with dental fluorosis by level of severity.

The prevalence of fluorosis (although most of it 'questionable') was high and was observed across all age groups. It was slightly less in the 65-74 year age group (11.7 percent) compared to other age groups, where it was seen among 32-45 percent of the subjects with slight differentials observed among the genders, especially among the younger age groups.

Mild, moderate or severe fluorosis was low.

A high proportion of subjects across all age groups had questionable fluorosis (11-35 percent) followed by subjects with very mild and mild fluorosis (1-11 percent). A small preproportion of subjects with moderate fluorosis (0.3 to 0.4 percent) was seen among the 12 and 35-44 year age groups. Severe forms of dental fluorosis was virtually absent among the subjects.

The prevalence of dental fluorosis was relatively higher in rural areas (12-45 percent) compared to urban areas (8-40 percent). Overall, there were only slight differentials in the prevalence of dental fluorosis among the genders, especially among the younger age groups.

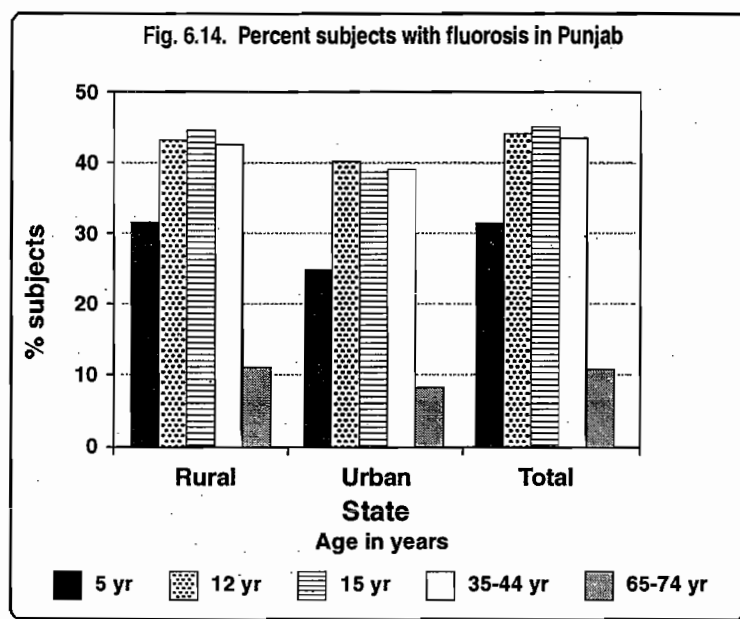


Table 6.14 Percent distribution of subjects with severity of dental fluorosis by age, sex and geographical area.

State : Punjab

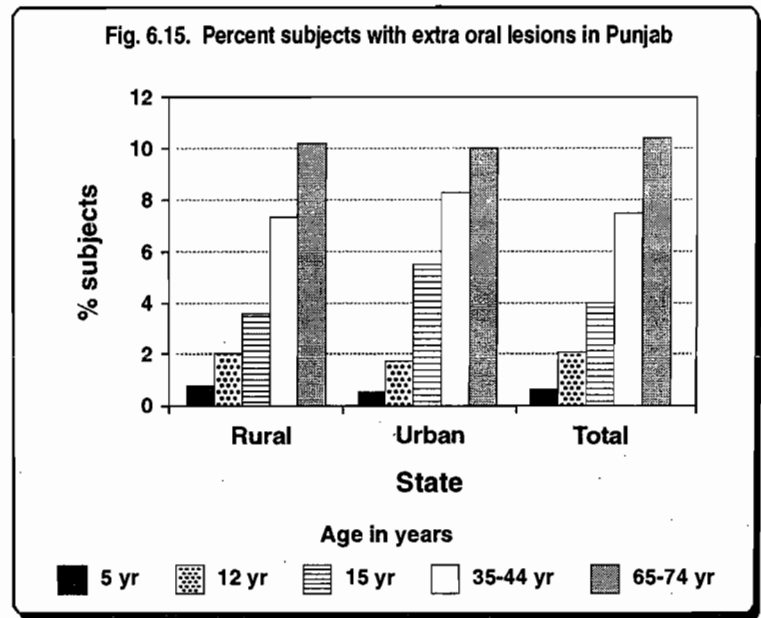
Dental Fluorosis		5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>158</b>	<b>155</b>	<b>313</b>	<b>33</b>	<b>39</b>	<b>72</b>
With Fluorosis		72.6	75.4	74.0	77.0	74.2	75.6	77.8	78.4	78.1	73.9	76.6	75.3	46.0	35.5	40.8
Questionable		49.3	55.1	52.2	46.7	51.4	49.1	48.9	47.3	48.1	59.2	56.4	57.8	46.0	30.8	38.4
V Mild & Mild		23.3	20.2	21.8	30.3	22.8	26.6	28.9	31.1	30.0	14.8	20.2	17.5	0.0	4.7	2.4
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
<b>Region 2</b>	<b>n=</b>	<b>191</b>	<b>168</b>	<b>359</b>	<b>173</b>	<b>188</b>	<b>361</b>	<b>175</b>	<b>182</b>	<b>357</b>	<b>193</b>	<b>197</b>	<b>390</b>	<b>114</b>	<b>103</b>	<b>217</b>
With Fluorosis		0.9	3.2	2.1	11.8	7.7	9.8	7.6	7.6	7.6	11.1	7.2	9.2	3.1	2.2	2.7
Questionable		0.9	0.5	0.7	10.0	5.8	7.9	4.6	4.6	4.6	7.4	4.3	5.9	1.5	2.2	1.9
V Mild & Mild		0.0	2.6	1.3	1.0	1.4	1.2	3.0	2.9	3.0	3.7	1.3	2.5	1.5	0.0	0.8
Moderate		0.0	0.0	0.0	0.8	0.5	0.7	0.0	0.0	0.0	0.0	1.6	0.8	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
<b>Region 3</b>	<b>n=</b>	<b>160</b>	<b>150</b>	<b>310</b>	<b>159</b>	<b>150</b>	<b>309</b>	<b>160</b>	<b>152</b>	<b>312</b>	<b>150</b>	<b>158</b>	<b>308</b>	<b>25</b>	<b>26</b>	<b>51</b>
With Fluorosis		42.7	46.7	44.7	68.5	76.4	72.5	73.8	75.2	74.5	71.2	76.9	74.1	37.4	23.6	30.5
Questionable		42.0	45.4	43.7	64.6	67.0	65.8	66.5	63.5	65.0	55.1	57.0	56.1	34.2	23.6	28.9
V Mild & Mild		0.7	1.3	1.0	3.9	9.4	6.7	7.3	11.7	9.5	16.1	20.0	18.1	3.1	0.0	1.6
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
<b>State Rural</b>	<b>n=</b>	<b>350</b>	<b>329</b>	<b>679</b>	<b>338</b>	<b>341</b>	<b>679</b>	<b>342</b>	<b>340</b>	<b>682</b>	<b>345</b>	<b>355</b>	<b>700</b>	<b>121</b>	<b>131</b>	<b>252</b>
With Fluorosis		30.1	33.2	31.7	42.0	44.1	43.1	46.2	43.7	45.0	42.2	43.1	42.7	13.7	10.6	12.2
Questionable		25.0	27.7	26.4	33.8	34.4	34.1	36.1	32.5	34.3	32.9	33.5	33.2	11.9	10.1	11.0
V Mild & Mild		5.2	5.6	5.4	8.3	9.3	8.8	10.1	11.1	10.6	9.4	8.9	9.2	1.8	0.5	1.2
Moderate		0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.0	0.0
Severe		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>State Urban</b>	<b>n=</b>	<b>162</b>	<b>143</b>	<b>305</b>	<b>154</b>	<b>153</b>	<b>307</b>	<b>152</b>	<b>149</b>	<b>301</b>	<b>156</b>	<b>155</b>	<b>311</b>	<b>51</b>	<b>37</b>	<b>88</b>
With Fluorosis		22.5	28.3	25.4	46.0	34.2	40.1	35.6	38.9	37.3	37.9	36.8	37.4	8.2	7.3	7.8
Questionable		18.3	21.7	20.0	37.2	29.1	33.2	26.5	27.3	26.9	28.1	21.6	24.9	7.1	6.4	6.8
V Mild & Mild		4.2	6.6	5.4	7.5	5.1	6.3	9.1	11.6	10.4	9.8	14.0	11.9	1.1	1.0	1.1
Moderate		0.0	0.0	0.0	1.2	0.0	0.6	0.0	0.0	0.0	0.0	1.1	0.6	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
<b>State Total</b>	<b>n=</b>	<b>512</b>	<b>472</b>	<b>984</b>	<b>492</b>	<b>494</b>	<b>986</b>	<b>494</b>	<b>489</b>	<b>983</b>	<b>501</b>	<b>510</b>	<b>1011</b>	<b>172</b>	<b>168</b>	<b>340</b>
With Fluorosis		29.7	34.0	31.9	45.0	42.8	43.9	45.7	44.8	45.3	42.9	43.2	43.1	12.2	11.1	11.7
Questionable		24.4	27.7	26.1	36.1	34.1	35.1	35.2	32.8	34.0	33.5	32.0	32.8	10.9	10.4	10.7
V Mild & Mild		5.2	6.3	5.8	8.4	8.5	8.5	10.5	12.0	11.3	9.4	10.5	10.0	1.3	0.7	1.0
Moderate		0.0	0.0	0.0	0.4	0.2	0.3	0.0	0.0	0.0	0.0	0.8	0.4	0.0	0.0	0.0
Severe		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

## 6.6 OTHER LESIONS

### 6.6.1 Extra oral lesions

Table 6.15 and Fig. 6.15 present the percent subjects with extra oral lesions by type of lesions.

The prevalence of extra oral lesions was low, seen in the range of 0.6 - 10.2 percent across the ages. The lesions were predominantly ulceration, sores, erosions and fissures, located predominantly on the nose, cheeks and chin, across the ages followed by head, neck and limbs among the 5 and 12 year olds and commissures among the 15 years and above age groups.



Only about 0.5 percent among the 65-74 year age group had abnormalities of upper and lower lips as also enlarged lymph nodes of head and neck region.

The prevalence of extra oral lesions was higher in urban areas (5.2 percent) compared to rural areas (4.7 percent). There were slight gender differentials observed in the pattern of distribution of extra oral lesions and Region-1 had a higher prevalence of Extra Oral Lesions (11.3 percent) compared to Region-2 (1.5 percent) and Region-3 (0.8 percent).

### 6.6.2 T M joint symptoms and signs

Table 6.16 and Fig. 6.16 present the percent subjects with temporo mandibular joint (T.M. Joint) Symptoms and Signs:

Among the 12 year olds, none of the males or female subjects had T.M. Joint symptoms and only about 0.3 percent subjects had presence of the clicking sign.

T.M. Joint Symptoms were reported by less than 1 percent of the subjects among the 5 and 15 year olds. It was present in 6.9 and 20.4 percent subjects among the 35-44 and 65-74 year age groups, respectively.

T.M. Joint signs were elicited among 0.2 -0.5 percent subjects among the 5, 12, and 15 year olds. It was elicited among 6.7 percent of the subjects (7 percent males and 6.3 percent females) in the 35-44 year age group, where clicking (6.5 percent) was the most commonly elicited sign. Among the 65-74 year age group, 23.4 percent subjects (22.2 percent males and 24.6 percent females) demonstrated signs and the most prominent sign was clicking of the T.M. Joint (22.7 percent). The clicking sign was followed by the tenderness sign in most of the subjects ranging from 0.2 -4 percent, except among the 12 year olds where it was nil percent. The sign of reduced jaw mobility was quite low ranging from 0.1 -1.4 percent among the subjects.

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

State : Punjab

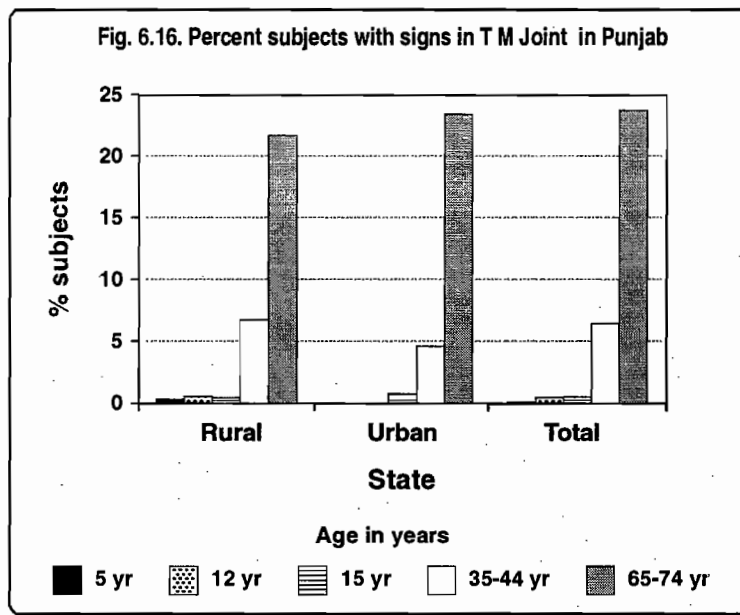
Extra Oral Lesions	n=	5 years			12 years			15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>152</b>	<b>152</b>	<b>304</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>157</b>	<b>154</b>	<b>311</b>	<b>153</b>	<b>151</b>	<b>304</b>
With extra oral lesions		1.2	0.7	1.0	6.1	4.1	5.1	9.9	11.7	10.8	18.6	18.0	18.3	20.0	22.5	21.3
Ulceration,sores,erosions,fissures		1.2	0.7	1.0	6.1	4.1	5.1	9.9	11.7	10.8	18.6	18.0	18.3	20.0	22.5	21.3
head, neck, limbs		0.0	0.0	0.0	2.1	1.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.7	1.6
nose, cheeks, chin		1.2	0.7	1.0	4.0	3.1	3.6	4.9	7.8	6.4	11.6	10.9	11.3	10.9	6.8	8.9
commissures		0.0	0.0	0.0	0.0	0.0	0.0	4.9	3.9	4.4	6.3	6.3	6.3	6.4	7.4	6.9
vermilion border		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	2.2	5.5	3.9
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
<b>Region 2</b>	<b>n=</b>	<b>11</b>	<b>10</b>	<b>21</b>	<b>9</b>	<b>13</b>	<b>22</b>	<b>12</b>	<b>11</b>	<b>23</b>	<b>10</b>	<b>16</b>	<b>26</b>	<b>9</b>	<b>13</b>	<b>22</b>
With extra oral lesions		0.0	9.1	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	3.0	0.0	0.0	0.0
Ulceration,sores,erosions,fissures		0.0	9.1	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	3.0	0.0	0.0	0.0
head, neck, limbs		0.0	9.1	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	3.0	0.0	0.0	0.0
nose, cheeks, chin		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
commissures		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
vermilion border		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cancrum oris		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Abnormalities of upper & lower lips		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Enlarged lymph nodes(head & neck)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Region 3</b>	<b>n=</b>	<b>162</b>	<b>151</b>	<b>313</b>	<b>160</b>	<b>153</b>	<b>313</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>154</b>	<b>159</b>	<b>313</b>	<b>160</b>	<b>152</b>	<b>312</b>
With extra oral lesions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.7	2.6	4.9	3.8
Ulceration,sores,erosions,fissures		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.7	2.6	2.0	2.3
head, neck, limbs		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.7	0.0	0.0	0.0
nose, cheeks, chin		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
commissures		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.2	0.9
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	2.1	0.7	1.4
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	1.4	0.7
Enlarged lymph nodes(head & neck)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.7
<b>State Rural</b>	<b>n=</b>	<b>215</b>	<b>211</b>	<b>426</b>	<b>219</b>	<b>219</b>	<b>438</b>	<b>222</b>	<b>214</b>	<b>436</b>	<b>213</b>	<b>224</b>	<b>437</b>	<b>211</b>	<b>215</b>	<b>426</b>
With extra oral lesions		0.4	1.0	0.7	2.9	1.1	2.0	3.6	3.7	3.7	7.4	6.9	7.2	9.5	10.6	10.1
Ulceration,sores,erosions,fissures		0.4	1.0	0.7	2.9	1.1	2.0	3.6	3.7	3.7	7.4	6.9	7.2	9.5	8.4	9.0
head, neck, limbs		0.0	0.6	0.3	1.1	0.0	0.6	0.0	0.0	0.0	1.1	0.6	0.9	0.0	1.1	0.6
nose, cheeks, chin		0.4	0.4	0.4	1.8	1.1	1.5	1.8	2.2	2.0	3.7	3.8	3.8	3.7	1.8	2.8
commissures		0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.5	1.7	2.2	2.1	2.2	3.0	3.5	3.3
vermilion border		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.4	2.8	2.0	2.4
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	1.1	0.6
Enlarged lymph nodes(head & neck)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6
<b>State Urban</b>	<b>n=</b>	<b>110</b>	<b>102</b>	<b>212</b>	<b>110</b>	<b>103</b>	<b>213</b>	<b>110</b>	<b>106</b>	<b>216</b>	<b>108</b>	<b>105</b>	<b>213</b>	<b>111</b>	<b>101</b>	<b>212</b>
With extra oral lesions		0.7	0.0	0.4	0.7	3.0	1.9	4.1	6.4	5.3	9.4	7.1	8.3	7.2	12.8	10.0
Ulceration,sores,erosions,fissures		0.7	0.0	0.4	0.7	3.0	1.9	4.1	6.4	5.3	9.4	7.1	8.3	7.2	12.8	10.0
head, neck, limbs		0.0	0.0	0.0	0.0	1.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.8
nose, cheeks, chin		0.7	0.0	0.4	0.7	1.5	1.1	2.0	5.0	3.5	6.5	4.3	5.4	4.8	4.6	4.7
commissures		0.0	0.0	0.0	0.0	0.0	0.0	2.0	1.4	1.7	2.9	2.9	2.9	1.7	3.5	2.6
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	3.9	2.0
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
<b>State Total</b>	<b>n=</b>	<b>325</b>	<b>313</b>	<b>638</b>	<b>329</b>	<b>322</b>	<b>651</b>	<b>332</b>	<b>320</b>	<b>652</b>	<b>321</b>	<b>329</b>	<b>650</b>	<b>322</b>	<b>316</b>	<b>638</b>
With extra oral lesions		0.4	0.7	0.6	2.5	1.5	2.0	3.7	4.3	4.0	8.0	6.9	7.5	9.1	11.2	10.2
Ulceration,sores,erosions,fissures		0.4	0.7	0.6	2.5	1.5	2.0	3.7	4.3	4.0	8.0	6.9	7.5	9.1	9.4	9.3
head, neck, limbs		0.0	0.3	0.2	0.9	0.3	0.6	0.0	0.0	0.0	0.9	0.3	0.6	0.1	1.1	0.6
nose, cheeks, chin		0.4	0.3	0.4	1.6	1.2	1.4	1.9	2.8	2.4	4.3	4.0	4.2	4.0	2.4	3.2
commissures		0.0	0.0	0.0	0.0	0.0	0.0	1.9	1.5	1.7	2.4	2.3	2.4	2.8	3.6	3.2
vermilion border		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	2.2	2.4	2.3
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	0.9	0.5
Enlarged lymph nodes(head & neck)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.5

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

T M Joints Assessment	n=	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
<b>Region 1</b>	<b>n=</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
Symptoms present		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.6	19.2	19.5	19.4	54.1	53.0	53.6
Signs present		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.6	19.0	18.8	18.9	53.9	51.1	52.5
Clicking		0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.6	19.0	18.8	18.9	52.2	50.4	51.3
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	3.4	5.1	6.6	5.5	6.1
Reduced jaw mobility		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Region 2</b>	<b>n=</b>	<b>170</b>	<b>147</b>	<b>317</b>	<b>162</b>	<b>184</b>	<b>346</b>	<b>171</b>	<b>174</b>	<b>345</b>	<b>183</b>	<b>193</b>	<b>376</b>	<b>169</b>	<b>165</b>	<b>334</b>
Symptoms present		0.5	0.0	0.3	0.0	0.0	0.0	0.8	1.0	0.9	1.0	0.7	0.9	0.5	1.9	1.2
Signs present		0.5	0.6	0.6	1.6	0.0	0.8	0.8	0.5	0.7	1.2	0.9	1.1	5.3	10.6	8.0
Clicking		0.5	0.0	0.3	1.6	0.0	0.8	0.0	0.5	0.3	1.2	0.5	0.9	4.7	9.8	7.3
Tenderness		0.5	0.6	0.6	0.0	0.0	0.0	0.8	0.5	0.7	0.5	0.5	0.5	0.5	2.2	1.4
Reduced jaw mobility		0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3	0.5	1.4	1.0
<b>Region 3</b>	<b>n=</b>	<b>162</b>	<b>151</b>	<b>313</b>	<b>160</b>	<b>153</b>	<b>313</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>154</b>	<b>159</b>	<b>313</b>	<b>160</b>	<b>152</b>	<b>312</b>
Symptoms present		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	5.5	6.5	20.5	22.9	21.7
Signs present		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8	5.5	6.2	21.9	21.4	21.7
Clicking		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.8	4.8	5.8	21.2	21.4	21.3
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	1.4	1.1	4.8	5.1	5.0
Reduced jaw mobility		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	2.9	2.5
<b>State Rural</b>	<b>n=</b>	<b>347</b>	<b>323</b>	<b>670</b>	<b>333</b>	<b>347</b>	<b>680</b>	<b>340</b>	<b>340</b>	<b>680</b>	<b>345</b>	<b>353</b>	<b>698</b>	<b>337</b>	<b>333</b>	<b>670</b>
Symptoms present		0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.9	0.5	7.3	6.6	7.0	19.0	21.4	20.2
Signs present		0.3	0.4	0.4	1.1	0.0	0.6	0.0	0.6	0.3	6.5	7.1	6.8	20.5	21.8	21.2
Clicking		0.3	0.0	0.2	1.1	0.0	0.6	0.0	0.6	0.3	6.5	6.4	6.5	19.6	21.6	20.6
Tenderness		0.3	0.4	0.4	0.0	0.0	0.0	0.0	0.3	0.2	1.9	1.7	1.8	4.3	4.1	4.2
Reduced jaw mobility		0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	1.3	1.6	1.5
<b>State Urban</b>	<b>n=</b>	<b>146</b>	<b>129</b>	<b>275</b>	<b>149</b>	<b>146</b>	<b>295</b>	<b>151</b>	<b>143</b>	<b>294</b>	<b>151</b>	<b>154</b>	<b>305</b>	<b>151</b>	<b>140</b>	<b>291</b>
Symptoms present		0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.4	0.8	5.2	4.0	4.6	16.3	14.6	15.5
Signs present		0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.4	0.8	6.7	2.8	4.8	21.6	24.9	23.3
Clicking		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	6.7	2.8	4.8	21.0	23.6	22.3
Tenderness		0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.6	1.7	0.3	1.0	0.7	3.0	1.9
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	0.0	1.3	0.7
<b>State Total</b>	<b>n=</b>	<b>493</b>	<b>452</b>	<b>945</b>	<b>482</b>	<b>493</b>	<b>975</b>	<b>491</b>	<b>483</b>	<b>974</b>	<b>496</b>	<b>507</b>	<b>1003</b>	<b>488</b>	<b>473</b>	<b>961</b>
Symptoms present		0.2	0.0	0.1	0.0	0.0	0.0	0.4	0.7	0.6	7.2	6.5	6.9	19.5	21.3	20.4
Signs present		0.2	0.2	0.2	0.6	0.0	0.3	0.4	0.5	0.5	7.0	6.3	6.7	22.2	24.6	23.4
Clicking		0.2	0.0	0.1	0.6	0.0	0.3	0.0	0.5	0.3	7.0	5.9	6.5	21.4	24.0	22.7
Tenderness		0.2	0.2	0.2	0.0	0.0	0.0	0.4	0.2	0.3	1.9	1.4	1.7	3.6	4.3	4.0
Reduced jaw mobility		0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	1.0	1.7	1.4

The T.M. Joint Symptoms were unevenly distributed among the genders. Region-1 had a higher prevalence of symptoms (14.7 percent), compared to Region-3 (5.6 percent) followed by Region-2 (0.7 percent). Overall, the rural areas had a higher prevalence (5.6 percent) compared to urban areas (4.2 percent), except for the 15 year olds.

The T.M. Joint Signs were also unevenly distributed among the genders. Region-1 had a higher prevalence of signs (14.4 percent), compared to Region-3 (5.6 percent) followed by Region-2 (2.2 percent). Overall, the rural areas had a slightly higher prevalence (5.9 percent) than the urban areas (5.8 percent).

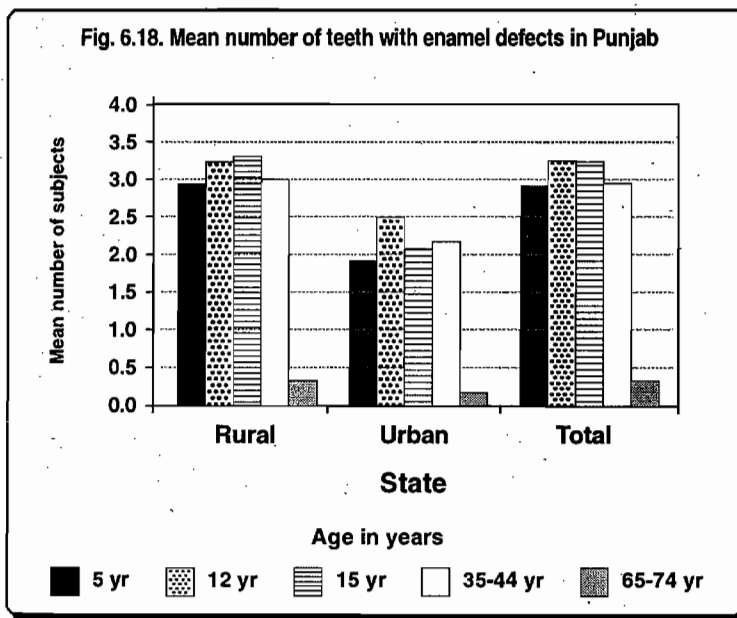
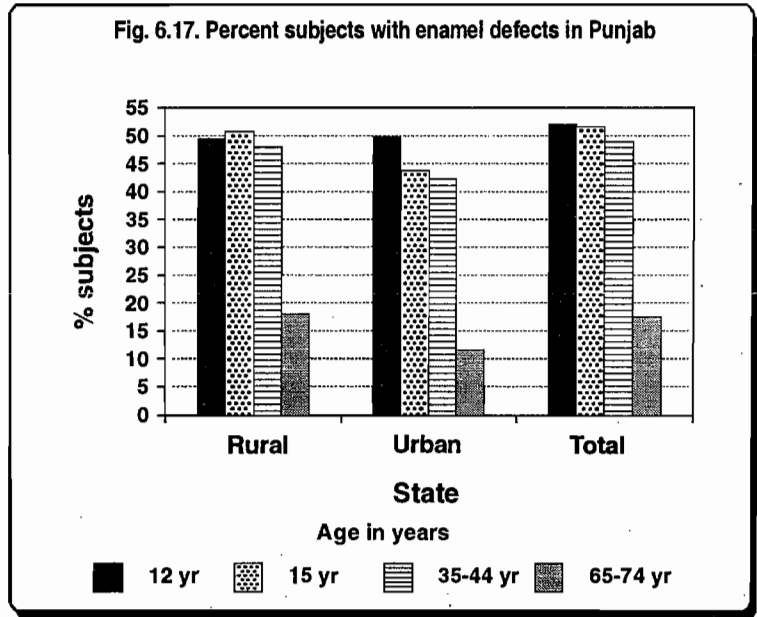


### 6.6.3 Enamel defects (opacities and hypoplasia)

Table 6.17 and Fig. 6.17 present the percent subjects with enamel defects by type of defect and Table 6.18 and Fig. 6.18 present the mean number of teeth affected with enamel defects by type of defects. Structural enamel defects in teeth were recorded in terms of opacities and hypoplasia, types of opacities and combinations of both. The lower age group of 5 years were excluded from the examination.

The enamel defects appeared to be distributed among all the age groups. The percent distribution of subjects with enamel defects was about 18-52 percent and was highest among the 5 year olds (52 percent). The most prevalent enamel defect was demarcated opacity (40.5 percent) followed by diffuse opacity (6.7 percent) of the subjects had combinations of opacities and hypoplasia, across the age groups.

The presence of all the three conditions was very low, seen among the 15 year olds (0.1 percent). The prevalence of enamel defects was higher among rural residents (41.8 percent) compared to urbanites (36.9 percent). Region-1 had a higher prevalence of enamel defects (84.1 percent) compared to Region-3 (67.1 percent) followed by Region-2 (11.2 percent). There were slight differentials observed between the genders.



A total of ten index teeth were utilized for assessing the mean number of teeth with enamel defects per individual. The defects appeared to be evenly distributed among all the age groups. The mean number of teeth affected by enamel defects ranged from 0.3 – 3.2 teeth, across the ages.

The most prevalent enamel defect was demarcated opacity (0.3 -2.9 teeth) followed by diffuse opacity (0.2- 0.3 teeth), across the age groups.

The prevalence of enamel defects was higher in Region-1 (5.9 teeth) than Region-3 (3.2 teeth) followed by Region-2 (0.3 tooth). There were no major gender differentials observed in the pattern of distribution of

enamel defects by type, and the prevalence was higher in rural areas (2.5 teeth) compared to urban areas (1.8 teeth).

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

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
<b>Region 1</b>	<b>n=</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>35</b>	<b>39</b>	<b>74</b>
With enamel defects		94.2	90.8	<b>92.5</b>	88.9	90.0	<b>89.5</b>	86.7	85.3	<b>86.0</b>	67.5	69.2	<b>68.4</b>
with demarcated opacity		92.1	88.9	<b>90.5</b>	79.0	85.1	<b>82.1</b>	86.7	85.3	<b>86.0</b>	67.5	69.2	<b>68.4</b>
with diffuse opacity		35.0	29.3	<b>32.2</b>	29.9	39.3	<b>34.6</b>	19.4	26.4	<b>22.9</b>	0.0	4.7	<b>2.4</b>
with hypoplasia		0.7	2.4	<b>1.6</b>	0.0	0.0	<b>0.0</b>	1.2	2.1	<b>1.7</b>	0.0	4.7	<b>2.4</b>
with other defects		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.5	1.4	<b>1.0</b>	0.0	0.0	<b>0.0</b>
with combinations of opacities and hypoplasia		0.0	0.0	<b>0.0</b>	0.0	0.5	<b>0.3</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
with all three conditions		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
<b>Region 2</b>	<b>n=</b>	<b>175</b>	<b>194</b>	<b>369</b>	<b>178</b>	<b>187</b>	<b>365</b>	<b>193</b>	<b>198</b>	<b>391</b>	<b>122</b>	<b>107</b>	<b>229</b>
With enamel defects		14.2	12.0	<b>13.1</b>	14.5	12.4	<b>13.5</b>	13.1	11.1	<b>12.1</b>	8.9	3.4	<b>6.2</b>
with demarcated opacity		13.2	10.5	<b>11.9</b>	11.2	9.8	<b>10.5</b>	10.8	7.8	<b>9.3</b>	3.5	2.5	<b>3.0</b>
with diffuse opacity		1.5	2.0	<b>1.8</b>	4.5	3.1	<b>3.8</b>	2.8	5.3	<b>4.1</b>	3.5	0.0	<b>1.8</b>
with hypoplasia		0.5	0.0	<b>0.3</b>	0.7	1.2	<b>1.0</b>	1.4	1.3	<b>1.4</b>	0.7	0.0	<b>0.4</b>
with other defects		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.7	0.8	<b>0.8</b>
with combinations of opacities and hypoplasia		0.5	0.0	<b>0.3</b>	1.2	0.0	<b>0.6</b>	0.0	0.0	<b>0.0</b>	1.1	0.0	<b>0.6</b>
with all three conditions		0.0	0.0	<b>0.0</b>	0.0	0.5	<b>0.3</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
<b>Region 3</b>	<b>n=</b>	<b>160</b>	<b>153</b>	<b>313</b>	<b>162</b>	<b>154</b>	<b>316</b>	<b>154</b>	<b>159</b>	<b>313</b>	<b>26</b>	<b>27</b>	<b>53</b>
With enamel defects		79.2	82.2	<b>80.7</b>	78.9	81.0	<b>80.0</b>	73.8	82.8	<b>78.3</b>	35.8	22.9	<b>29.4</b>
with demarcated opacity		79.2	82.2	<b>80.7</b>	78.9	81.0	<b>80.0</b>	73.8	82.8	<b>78.3</b>	35.8	22.9	<b>29.4</b>
with diffuse opacity		1.4	5.0	<b>3.2</b>	0.0	0.0	<b>0.0</b>	0.0	1.5	<b>0.8</b>	0.0	0.0	<b>0.0</b>
with hypoplasia		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
with other defects		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
with combinations of opacities and hypoplasia		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
with all three conditions		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
<b>State Rural</b>	<b>n=</b>	<b>341</b>	<b>349</b>	<b>690</b>	<b>346</b>	<b>346</b>	<b>692</b>	<b>349</b>	<b>356</b>	<b>705</b>	<b>128</b>	<b>136</b>	<b>264</b>
With enamel defects		51.3	47.7	<b>49.5</b>	53.1	50.1	<b>51.6</b>	46.7	48.6	<b>47.7</b>	19.0	17.5	<b>18.3</b>
with demarcated opacity		49.9	46.6	<b>48.3</b>	50.3	47.9	<b>49.1</b>	45.0	46.6	<b>45.8</b>	13.9	16.7	<b>15.3</b>
with diffuse opacity		9.4	9.6	<b>9.5</b>	8.8	9.8	<b>9.3</b>	6.5	8.9	<b>7.7</b>	4.3	0.5	<b>2.4</b>
with hypoplasia		0.6	0.4	<b>0.5</b>	0.0	0.3	<b>0.2</b>	1.2	1.6	<b>1.4</b>	0.9	0.5	<b>0.7</b>
with other defects		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.4	<b>0.2</b>	0.9	0.8	<b>0.9</b>
with combinations of opacities and hypoplasia		0.3	0.0	<b>0.2</b>	0.3	0.0	<b>0.2</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
with all three conditions		0.0	0.0	<b>0.0</b>	0.0	0.3	<b>0.2</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
<b>State Urban</b>	<b>n=</b>	<b>154</b>	<b>154</b>	<b>308</b>	<b>153</b>	<b>150</b>	<b>303</b>	<b>157</b>	<b>156</b>	<b>313</b>	<b>55</b>	<b>37</b>	<b>92</b>
With enamel defects		51.1	48.4	<b>49.8</b>	42.9	44.2	<b>43.6</b>	42.8	41.9	<b>42.4</b>	16.8	6.9	<b>11.9</b>
with demarcated opacity		51.1	46.9	<b>49.0</b>	37.3	41.7	<b>39.5</b>	42.8	40.8	<b>41.8</b>	14.5	6.9	<b>10.7</b>
with diffuse opacity		6.3	5.2	<b>5.8</b>	7.0	8.2	<b>7.6</b>	2.5	6.8	<b>4.7</b>	0.0	1.0	<b>0.5</b>
with hypoplasia		0.0	0.6	<b>0.3</b>	1.2	1.2	<b>1.2</b>	0.3	0.0	<b>0.2</b>	0.0	1.0	<b>0.5</b>
with other defects		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.3	0.0	<b>0.2</b>	0.0	0.0	<b>0.0</b>
with combinations of opacities and hypoplasia		0.0	0.0	<b>0.0</b>	1.2	0.3	<b>0.8</b>	0.0	0.0	<b>0.0</b>	2.3	0.0	<b>1.2</b>
with all three conditions		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>
<b>State Total</b>		<b>495</b>	<b>503</b>	<b>998</b>	<b>499</b>	<b>496</b>	<b>995</b>	<b>506</b>	<b>512</b>	<b>1018</b>	<b>183</b>	<b>173</b>	<b>356</b>
With enamel defects		53.3	50.7	<b>52.0</b>	52.3	50.8	<b>51.6</b>	47.6	48.6	<b>48.1</b>	18.8	16.4	<b>17.6</b>
with demarcated opacity		52.4	49.5	<b>51.0</b>	48.5	48.6	<b>48.6</b>	46.6	47.2	<b>46.9</b>	15.1	15.9	<b>15.5</b>
with diffuse opacity		8.9	9.0	<b>9.0</b>	8.7	9.8	<b>9.3</b>	5.4	8.4	<b>6.9</b>	2.2	0.7	<b>1.5</b>
with hypoplasia		0.4	0.5	<b>0.5</b>	0.4	0.6	<b>0.5</b>	0.8	1.0	<b>0.9</b>	0.4	0.7	<b>0.6</b>
with other defects		0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>	0.1	0.3	<b>0.2</b>	0.4	0.5	<b>0.5</b>
with combinations of opacities and hypoplasia		0.2	0.0	<b>0.1</b>	0.6	0.1	<b>0.4</b>	0.0	0.0	<b>0.0</b>	1.0	0.0	<b>0.5</b>
with all three conditions		0.0	0.0	<b>0.0</b>	0.0	0.2	<b>0.1</b>	0.0	0.0	<b>0.0</b>	0.0	0.0	<b>0.0</b>

Note: Related Table is 6.18.

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

**State : Punjab**

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
<b>Region 1</b>	<b>n=</b>	<b>161</b>	<b>154</b>	<b>315</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
Mean no. of teeth with enamel defects		7.7	7.6	7.7	7.7	7.2	7.5	7.1	7.5	7.3	6.3	6.1	6.2	0.5	0.8	0.7
with demarcated opacity		6.1	6.4	6.3	6.4	6.2	6.3	6.0	6.2	6.1	5.9	5.5	5.7	0.5	0.7	0.6
with diffuse opacity		1.5	1.2	1.4	1.4	1.0	1.2	1.1	1.3	1.2	0.4	0.5	0.5	0.0	0.0	0.0
with hypoplasia		0.1	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 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
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	0.0	0.0	0.0
<b>Region 2</b>	<b>n=</b>	<b>198</b>	<b>172</b>	<b>370</b>	<b>177</b>	<b>195</b>	<b>372</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
Mean no. of teeth with enamel defects		0.2	0.2	0.2	0.5	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.3	0.0	0.2
with demarcated opacity		0.1	0.2	0.2	0.5	0.2	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.1	0.0	0.1
with diffuse opacity		0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1
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
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	0.0	0.0	0.0
<b>Region 3</b>	<b>n=</b>	<b>165</b>	<b>151</b>	<b>316</b>	<b>160</b>	<b>156</b>	<b>316</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
Mean no. of teeth with enamel defects		2.8	3.5	3.2	4.0	4.2	4.1	3.9	4.3	4.1	4.4	4.5	4.5	0.2	0.2	0.2
with demarcated opacity		2.8	3.5	3.2	4.0	4.0	4.0	3.9	4.3	4.1	4.4	4.5	4.5	0.2	0.2	0.2
with diffuse opacity		0.1	0.1	0.1	0.0	0.2	0.1	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
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	0.0	0.0	0.0
<b>State Rural</b>	<b>n=</b>	<b>357</b>	<b>333</b>	<b>690</b>	<b>343</b>	<b>352</b>	<b>695</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
Mean no. of teeth with enamel defects		2.7	3.0	2.9	3.3	3.0	3.2	3.3	3.2	3.3	3.0	2.9	3.0	0.3	0.3	0.3
with demarcated opacity		2.4	2.7	2.6	2.9	2.7	2.8	3.0	2.9	3.0	2.8	2.7	2.8	0.2	0.3	0.3
with diffuse opacity		0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.2	0.2	0.1	0.0	0.1
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
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	0.0	0.0	0.0
<b>State Urban</b>	<b>n=</b>	<b>167</b>	<b>144</b>	<b>311</b>	<b>154</b>	<b>155</b>	<b>309</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
Mean no. of teeth with enamel defects		1.7	2.1	1.9	2.7	2.3	2.5	1.9	2.2	2.1	2.2	2.1	2.2	0.2	0.1	0.2
with demarcated opacity		1.4	1.9	1.7	2.4	2.1	2.3	1.7	1.9	1.8	2.2	1.9	2.1	0.2	0.1	0.2
with diffuse opacity		0.3	0.2	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.1	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
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	0.0	0.0	0.0
<b>State Total</b>	<b>n=</b>	<b>524</b>	<b>477</b>	<b>1001</b>	<b>497</b>	<b>507</b>	<b>1004</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>###</b>	<b>508</b>	<b>489</b>	<b>997</b>
Mean no. of teeth with enamel defects		2.6	3.0	2.8	3.3	3.0	3.2	3.1	3.2	3.2	2.9	2.9	2.9	0.3	0.3	0.3
with demarcated opacity		2.2	2.7	2.5	3.0	2.7	2.9	2.8	2.8	2.8	2.8	2.7	2.8	0.2	0.3	0.3
with diffuse opacity		0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1	0.2	0.2	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
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	0.0	0.0	0.0

Note: Related Table is 6.17.

#### 6.6.4 Prosthetic status (upper & lower)

The prosthetic status was recorded for subjects 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 mouth dentures. The data was recorded separately for the upper arch (maxillary teeth) and the lower arch (mandibular teeth).

Table 6.19 presents the percent subjects with prosthetic status of upper dental arch by type of prosthesis.

Only 0.3 percent of the subjects (0.2 percent for males and 0.4 percent for females) were wearing prosthesis among the 15 year olds. The overall proportion of subjects wearing one or the other type of prostheses in the upper arch increased as age advanced.

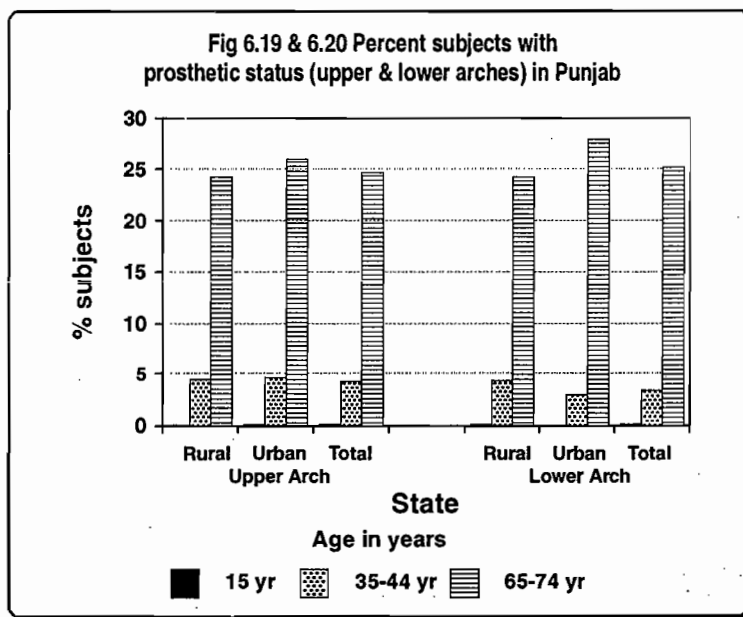
The percent subjects wearing prosthesis in the age group of 35-44 years was about 4 percent while it was 24.3 percent among the age group of 65-74 years. The most prevalent prosthesis among the 65-74 year age group was full removable dentures (21 percent) followed by partial dentures (2.3 percent). Among the 35-44 year age group, partial dentures were seen among 2.2 percent of the subjects. About 0.8 percent of the subjects across all age groups were having one or more bridge.

A slightly higher percentage of urbanites were wearing prosthesis (10.3 percent) than their rural counterparts (9.4 percent). There were slight differentials observed between the genders, and Region-2 had a higher prevalence of prosthesis (8.8 percent) compared to Region-1 (8.6 percent) followed by Region-3 (3.8 percent).

Table 6.20 presents the percent subjects with prosthetic status of lower dental arch by type of prosthesis. Figure 6.19 and 6.20 present the data from Tables 6.19 and 6.20.

The overall proportion of subjects wearing one or the other type of prostheses in the lower arch increased as age advanced. The proportion of population wearing prosthesis in the lower arch was about 0.3 percent among the 15 year olds. About 3.6 and 25.1 percent in the 35-44 and 65-74 year age groups, respectively, were wearing some type of prosthesis. Overall, more males (10.2 percent) than females (9.1 percent) were wearing prosthesis.

Full removable denture was the most common prosthesis (21.1 percent) among the 65-74 year age group, followed by partial dentures (2.6 percent). In the 35-44 year age group, partial dentures were the most common prosthesis (2.3 percent). About 0.7 percent of the subjects across the ages were having one or more bridges.



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

Prosthetic Status (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
With Prostheses present		0.0	0.0	0.0	0.0	0.0	0.0	29.3	22.5	25.9
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	1.2	1.9	1.6
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4
Full removal Denture		0.0	0.0	0.0	0.0	0.0	0.0	28.1	19.8	24.0
<b>Region 2</b>	<b>n=</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
With Prostheses present		0.5	0.7	0.6	7.5	9.5	8.5	31.4	31.9	31.7
Bridge or more than one bridge		0.0	0.7	0.4	2.9	3.5	3.2	1.7	0.5	1.1
Partial denture		0.5	0.0	0.3	4.5	4.8	4.7	3.3	5.4	4.4
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.6
Full removal Denture		0.0	0.0	0.0	0.0	1.1	0.6	25.3	26.0	25.7
<b>Region 3</b>	<b>n=</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
With Prostheses present		0.0	0.0	0.0	0.0	0.0	0.0	12.2	10.3	11.3
Bridge or more than one bridge		0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7	0.6
Partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full removal Denture		0.0	0.0	0.0	0.0	0.0	0.0	11.7	9.5	10.6
<b>State Rural</b>	<b>n=</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
With Prostheses present		0.3	0.0	0.2	4.0	4.6	4.3	24.1	23.2	23.7
Bridge or more than one bridge		0.0	0.0	0.0	1.7	1.6	1.7	0.7	0.7	0.7
Partial denture		0.3	0.0	0.2	2.3	2.6	2.5	1.6	3.2	2.4
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.3
Full removal Denture		0.0	0.0	0.0	0.0	0.3	0.2	21.5	19.2	20.4
<b>State Urban</b>	<b>n=</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
With Prostheses present		0.0	1.2	0.6	3.4	5.6	4.5	27.2	24.2	25.7
Bridge or more than one bridge		0.0	1.2	0.6	1.1	2.2	1.7	1.6	0.0	0.8
Partial denture		0.0	0.0	0.0	2.3	2.2	2.3	2.5	2.8	2.7
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.6
Full removal Denture		0.0	0.0	0.0	0.0	1.1	0.6	22.0	21.4	21.7
<b>State Total</b>	<b>n=</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>508</b>	<b>489</b>	<b>997</b>
With Prostheses present		0.2	0.4	0.3	3.5	4.5	4.0	25.3	23.3	24.3
Bridge or more than one bridge		0.0	0.4	0.2	1.3	1.7	1.5	0.9	0.4	0.7
Partial denture		0.2	0.0	0.1	2.1	2.2	2.2	1.8	2.8	2.3
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2	0.4
Full removal Denture		0.0	0.0	0.0	0.0	0.6	0.3	22.0	19.9	21.0

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

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

Prosthetic Status (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
Prostheses present		0.0	0.0	0.0	0.0	0.0	0.0	29.3	22.5	25.9
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	1.2	1.9	1.6
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4
Full removal Denture		0.0	0.0	0.0	0.0	0.0	0.0	28.1	19.8	24.0
<b>Region 2</b>	<b>n=</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
Prostheses present		0.5	0.7	0.6	7.7	8.1	7.9	34.8	31.7	33.3
Bridge or more than one bridge		0.0	0.7	0.4	1.8	2.9	2.4	2.6	1.0	1.8
Partial denture		0.5	0.0	0.3	5.9	4.2	5.1	4.5	5.4	5.0
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.5	0.9
Full removal Denture		0.0	0.0	0.0	0.0	1.1	0.6	26.5	24.8	25.7
<b>Region 3</b>	<b>n=</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
Prostheses present		0.0	0.0	0.0	0.0	0.0	0.0	12.2	10.3	11.3
Bridge or more than one bridge		0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3
Partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full removal Denture		0.0	0.0	0.0	0.0	0.0	0.0	11.7	10.3	11.0
<b>State Rural</b>	<b>n=</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
Prostheses present		0.3	0.0	0.2	4.7	4.6	4.7	24.4	23.5	24.0
Bridge or more than one bridge		0.0	0.0	0.0	1.3	1.6	1.5	0.3	0.7	0.5
Partial denture		0.3	0.0	0.2	3.3	2.6	3.0	1.9	3.2	2.6
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.5
Full removal Denture		0.0	0.0	0.0	0.0	0.3	0.2	21.8	19.1	20.5
<b>State Urban</b>	<b>n=</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
Prostheses present		0.0	1.2	0.6	2.3	3.3	2.8	31.6	22.9	27.3
Bridge or more than one bridge		0.0	1.2	0.6	0.0	1.1	0.6	3.8	0.0	1.9
Partial denture		0.0	0.0	0.0	2.3	1.1	1.7	3.6	2.8	3.2
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.6
Full removal Denture		0.0	0.0	0.0	0.0	1.1	0.6	23.1	20.1	21.6
<b>State Total</b>	<b>n=</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>508</b>	<b>489</b>	<b>997</b>
Prostheses present		0.2	0.4	0.3	3.4	3.7	3.6	27.1	23.1	25.1
Bridge or more than one bridge		0.0	0.4	0.2	0.7	1.3	1.0	1.5	0.4	1.0
Partial denture		0.2	0.0	0.1	2.7	1.8	2.3	2.4	2.8	2.6
Both Bridge and partial denture		0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.5
Full removal Denture		0.0	0.0	0.0	0.0	0.6	0.3	22.6	19.5	21.1

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

The prevalence pattern of subjects wearing prosthesis and their pattern of distribution by type of prosthesis showed that a slightly higher percentage of urbanites (10.2 percent) were wearing prosthesis than their rural counterparts (9.6 percent), with differentials seen in the distribution among the genders. Region-2 had a higher prevalence of prosthesis (13.9 percent) compared to Region-1 (8.6 percent) followed by Region-3 (3.8 percent).

Table 6.21 presents the percent subjects who were wearing full mouth removable dentures.

There were no subjects aged 15 years who were wearing full mouth removable dentures, and only about 0.3 percent of the subjects in the 35-44 year age group were wearing the same.

Among the 65-74 year age group, 20.9 percent of the subjects (22.2 percent males and 19.6 percent females) were wearing full mouth removable dentures.

Urban areas had a slightly higher prevalence of full dentures (7.4 percent) compared to rural areas (6.9 percent). Region-2 had a higher prevalence (8.8 percent) compared to Region-1 (8 percent) followed by Region-3 (3.6 percent). There were marked differentials in the distribution among the genders.

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

Prosthetic status (Full mouth removal dentures)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
Region 1										
	n=	159	155	314	159	155	314	158	156	314
Percent subjects with full mouth removable dentures		0.0	0.0	0.0	0.0	0.0	0.0	28.2	19.8	24.0
Region 2										
	n=	172	188	360	189	199	388	184	175	359
Percent subjects with full mouth removable dentures		0.0	0.0	0.0	0.0	1.1	0.6	25.6	25.7	25.7
Region 3										
	n=	161	154	315	152	157	309	161	151	312
Percent subjects with full mouth removable dentures		0.0	0.0	0.0	0.0	0.0	0.0	11.8	9.6	10.7
State Rural										
	n=	340	346	686	344	356	700	345	339	684
Percent subjects with full mouth removable dentures		0.0	0.0	0.0	0.0	0.3	0.2	21.6	19.1	20.4
State Urban										
	n=	152	151	303	156	155	311	158	143	301
Percent subjects with full mouth removable dentures		0.0	0.0	0.0	0.0	1.1	0.6	22.5	20.7	21.6
State Total										
	n=	492	497	989	500	511	1011	503	482	985
Percent subjects with full mouth removable dentures		0.0	0.0	0.0	0.0	0.6	0.3	22.2	19.6	20.9

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

### 6.6.5 Prosthetic need (upper & lower)

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

Table 6.22 presents the percent subjects with prosthetic need of upper dental arch by type of prosthesis needed.

There were a higher need for prosthesis as age advanced. Only about 1.5 percent of the subjects required prosthesis among the 15 year olds.

It was mainly a need for one-unit prosthesis (1.2 percent). Among the 35-44 year age group the prosthetic need was 28.9 percent and the most prevalent need was that for multi-unit prosthesis (17 percent) followed by a need for one-unit prosthesis (9.3 percent).

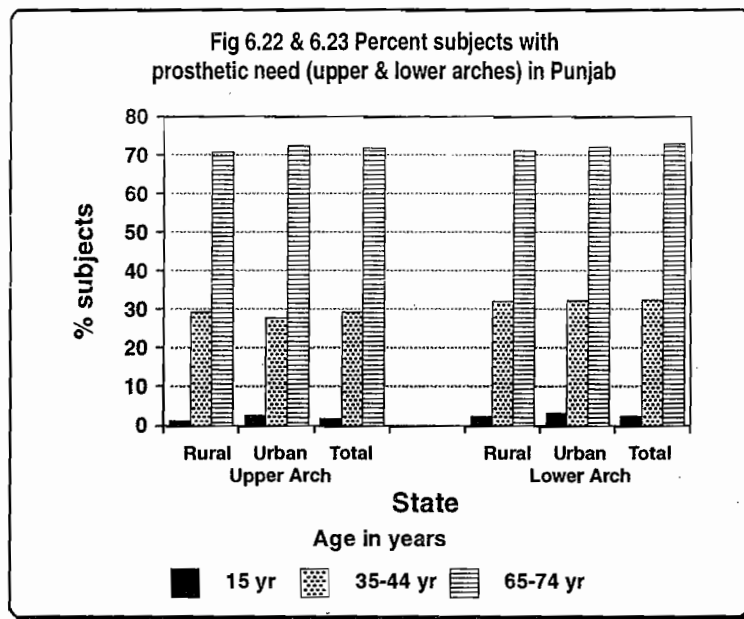
The prosthetic need was highest of the 65-74 year age group (71.6 percent). The most prevalent need was that for full denture prosthesis (47.9 percent, followed by a need for multi-unit prosthesis (18.9 percent).

Overall the prevalence pattern and distribution of need by type of prosthesis showed that there was a higher need for prosthesis among males (34 percent) than females (25.6 percent). There were no major differentials in the need for prosthetic care in the rural (33.5 percent) and urban areas (33.7 percent). Region-1 had a higher prevalence of the need for prosthetic care (46.7 percent) compared to Region-3 (31.2 percent) followed by Region-2 (29.8 percent).

Table 6.23 presents the percent subjects with prosthetic need of lower dental arch by type of prosthesis needed. Figure 6.22 and 6.23 present the data from Table 6.22 and 6.23.

There appeared to be a relatively greater need for prosthesis in the lower arch in subjects compared to the upper arch. As in the case of prosthetic need of upper arch there was a greater need for prosthesis as age advanced.

The need for prosthesis was about 1.9 percent among the 15 year olds and the most prevalent need was that for one-unit prosthesis (1.5 percent). About 31.6 percent of the subjects in the 35-44 year age group needed prosthesis, and the most prevalent need was that for multi-unit prosthesis (16 percent), followed by a need for one-unit prosthesis (11.4 percent). About 70.9 percent of the subjects in the 65-74 year age group needed prosthesis (70.1 percent for males and 71.6 percent for females). The most prevalent need was that for full denture prosthesis (47.7 percent), followed by a need for multi-unit prosthesis (17.7 percent) and a need for a combination of one and/or multi-unit prosthesis (3.4 percent).



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

Prosthetic Need (Upper)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
With Prosthetic need		0.0	0.0	0.0	68.5	60.5	64.5	70.7	80.4	75.6
Need for one unit prosthesis		0.0	0.0	0.0	18.0	16.1	17.1	0.0	0.7	0.4
Need for multi unit prosthesis		0.0	0.0	0.0	43.6	37.9	40.8	18.9	20.8	19.9
Need for combination of one and/or MUP		0.0	0.0	0.0	6.9	6.5	6.7	2.1	4.3	3.2
Need for full prosthesis		0.0	0.0	0.0	0.0	0.0	0.0	49.7	54.6	52.2
<b>Region 2</b>	<b>n=</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
With Prosthetic need		2.7	3.0	2.9	25.4	24.0	24.7	61.2	62.4	61.8
Need for one unit prosthesis		2.2	2.6	2.4	13.4	11.4	12.4	5.9	1.7	3.8
Need for multi unit prosthesis		0.5	0.5	0.5	10.7	10.3	10.5	19.1	22.4	20.8
Need for combination of one and/or MUP		0.0	0.0	0.0	1.4	1.5	1.5	1.7	2.5	2.1
Need for full prosthesis		0.0	0.0	0.0	0.0	0.7	0.4	34.5	35.9	35.2
<b>Region 3</b>	<b>n=</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
With Prosthetic need		0.7	0.0	0.4	11.7	10.8	11.3	82.1	81.5	81.8
Need for one unit prosthesis		0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.7
Need for multi unit prosthesis		0.7	0.0	0.4	11.0	10.1	10.6	11.5	15.5	13.5
Need for combination of one and/or MUP		0.0	0.0	0.0	0.7	0.7	0.7	2.7	3.6	3.2
Need for full prosthesis		0.0	0.0	0.0	0.0	0.0	0.0	66.5	62.4	64.5
<b>State Rural</b>	<b>n=</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
With Prosthetic need		1.7	0.7	1.2	30.0	28.1	29.1	69.5	71.0	70.3
Need for one unit prosthesis		1.0	0.3	0.7	10.9	10.2	10.6	3.3	0.9	2.1
Need for multi unit prosthesis		0.6	0.3	0.5	17.4	15.6	16.5	15.5	20.3	17.9
Need for combination of one and/or MUP		0.0	0.0	0.0	1.7	2.3	2.0	2.5	4.1	3.3
Need for full prosthesis		0.0	0.0	0.0	0.0	0.0	0.0	48.1	45.7	46.9
<b>State Urban</b>	<b>n=</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
With Prosthetic need		1.2	3.6	2.4	29.6	24.5	27.1	69.6	73.8	71.7
Need for one unit prosthesis		1.2	3.6	2.4	9.2	6.0	7.6	3.3	1.2	2.3
Need for multi unit prosthesis		0.0	0.0	0.0	16.9	15.4	16.2	19.3	19.2	19.3
Need for combination of one and/or MUP		0.0	0.0	0.0	3.5	2.0	2.8	1.1	1.0	1.1
Need for full prosthesis		0.0	0.0	0.0	0.0	1.1	0.6	45.9	52.3	49.1
<b>State Total</b>	<b>n=</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>508</b>	<b>489</b>	<b>997</b>
With Prosthetic need		1.4	1.6	1.5	30.2	27.6	28.9	70.4	72.7	71.6
Need for one unit prosthesis		1.0	1.4	1.2	10.0	8.6	9.3	3.2	1.0	2.1
Need for multi unit prosthesis		0.4	0.2	0.3	17.7	16.2	17.0	17.1	20.7	18.9
Need for combination of one and/or MUP		0.0	0.0	0.0	2.5	2.3	2.4	2.2	3.2	2.7
Need for full prosthesis		0.0	0.0	0.0	0.0	0.4	0.2	47.8	47.9	47.9

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

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

Prosthetic Need (Lower)		15 years			35-44 years			65-74 years		
		M	F	T	M	F	T	M	F	T
<b>Region 1</b>	<b>n=</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>155</b>	<b>314</b>	<b>159</b>	<b>156</b>	<b>315</b>
With Prosthetic need		0.0	0.0	0.0	64.8	61.7	63.3	70.7	80.2	75.5
Need for one unit prosthesis		0.0	0.0	0.0	19.9	14.5	17.2	0.0	0.0	0.0
Need for multi unit prosthesis		0.0	0.0	0.0	32.3	33.9	33.1	14.6	21.0	17.8
Need for combination of one and/or MUP		0.0	0.0	0.0	12.6	13.3	13.0	6.4	4.5	5.5
Need for full prosthesis		0.0	0.0	0.0	0.0	0.0	0.0	49.7	54.6	52.2
<b>Region 2</b>	<b>n=</b>	<b>179</b>	<b>192</b>	<b>371</b>	<b>196</b>	<b>201</b>	<b>397</b>	<b>186</b>	<b>181</b>	<b>367</b>
With Prosthetic need		3.2	3.9	3.6	28.3	31.4	29.9	61.2	61.2	61.2
Need for one unit prosthesis		2.5	3.5	3.0	12.7	18.9	15.8	6.9	1.7	4.3
Need for multi unit prosthesis		0.7	0.5	0.6	13.6	9.9	11.8	18.7	21.6	20.2
Need for combination of one and/or MUP		0.0	0.0	0.0	2.0	0.4	1.2	1.2	2.9	2.1
Need for full prosthesis		0.0	0.0	0.0	0.0	2.2	1.1	34.5	34.9	34.7
<b>Region 3</b>	<b>n=</b>	<b>163</b>	<b>156</b>	<b>319</b>	<b>155</b>	<b>160</b>	<b>315</b>	<b>163</b>	<b>152</b>	<b>315</b>
With Prosthetic need		0.7	0.5	0.6	12.6	12.0	12.3	82.1	80.6	81.4
Need for one unit prosthesis		0.0	0.5	0.3	1.2	0.7	1.0	1.4	0.0	0.7
Need for multi unit prosthesis		0.7	0.0	0.4	10.6	10.6	10.6	11.5	13.3	12.4
Need for combination of one and/or MUP		0.0	0.0	0.0	0.7	0.7	0.7	2.7	4.3	3.5
Need for full prosthesis		0.0	0.0	0.0	0.0	0.0	0.0	66.5	62.9	64.7
<b>State Rural</b>	<b>n=</b>	<b>348</b>	<b>351</b>	<b>699</b>	<b>352</b>	<b>360</b>	<b>712</b>	<b>346</b>	<b>343</b>	<b>689</b>
With Prosthetic need		2.0	1.3	1.7	31.5	31.2	31.4	70.5	69.8	70.2
Need for one unit prosthesis		1.7	1.0	1.4	12.0	11.2	11.6	4.0	0.7	2.4
Need for multi unit prosthesis		0.3	0.3	0.3	17.0	16.2	16.6	15.4	19.2	17.3
Need for combination of one and/or MUP		0.0	0.0	0.0	2.5	3.2	2.9	3.0	5.0	4.0
Need for full prosthesis		0.0	0.0	0.0	0.0	0.7	0.4	48.1	45.0	46.6
<b>State Urban</b>	<b>n=</b>	<b>153</b>	<b>152</b>	<b>305</b>	<b>158</b>	<b>156</b>	<b>314</b>	<b>162</b>	<b>146</b>	<b>308</b>
With Prosthetic need		1.2	4.1	2.7	29.6	32.0	30.8	67.4	73.5	70.5
Need for one unit prosthesis		0.0	4.1	2.1	7.9	16.2	12.1	3.3	1.2	2.3
Need for multi unit prosthesis		1.2	0.0	0.6	15.1	11.2	13.2	16.2	18.7	17.5
Need for combination of one and/or MUP		0.0	0.0	0.0	6.6	2.5	4.6	2.0	0.7	1.4
Need for full prosthesis		0.0	0.0	0.0	0.0	2.2	1.1	45.9	52.9	49.4
<b>State Total</b>	<b>n=</b>	<b>501</b>	<b>503</b>	<b>1004</b>	<b>510</b>	<b>516</b>	<b>1026</b>	<b>508</b>	<b>489</b>	<b>997</b>
With Prosthetic need		1.6	2.1	1.9	31.1	32.0	31.6	70.1	71.6	70.9
Need for one unit prosthesis		1.0	1.9	1.5	10.4	12.4	11.4	3.6	0.8	2.2
Need for multi unit prosthesis		0.7	0.2	0.5	16.6	15.3	16.0	15.8	19.5	17.7
Need for combination of one and/or MUP		0.0	0.0	0.0	4.1	3.1	3.6	3.0	3.7	3.4
Need for full prosthesis		0.0	0.0	0.0	0.0	1.2	0.6	47.8	47.6	47.7

Note: For information on status and need for full mouth removable dentures, please refer to Tables 6.22 and 6.25 respectively.

There appeared to be a slightly greater need for prosthesis among females (35.2 percent) than males (34.3 percent). The pattern and type of prosthetic need showed that the need for prosthesis was almost equal among the urbanites (34.7 percent) and rural residents (34.4 percent). Region-1 had a higher prevalence of the need for prosthesis (46.3 percent) than Region-2 (31.6 percent) followed by Region-3 (31.4 percent).

Table 6.24 present the per cent subjects with need for full mouth removable dentures.

Only 0.2 percent of the subjects in the 35-44 year age group required full mouth removable dentures. Those needing full mouth removable dentures in the 65-74 year age group was 48.8 percent, slightly more among females (49.4 percent) than males (48.1 percent). The pattern of need for full mouth removable dentures showed that there was a slightly greater need among urban residents (50.1 percent) than rural residents (48.8 percent). Region-3 had a higher need (22.1 percent) for full mouth removable dentures compared to Region-1 (17.5 percent) followed by Region-2 (12 percent).

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

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
<b>Region 1</b>										
	n=	159	155	314	159	155	314	158	155	313
Percent subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	0.0	0.0	50.0	55.0	52.5
<b>Region 2</b>										
	n=	172	186	358	189	199	388	183	168	351
Percent subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	0.7	0.4	34.4	36.8	35.6
<b>Region 3</b>										
	n=	160	152	312	152	157	309	160	145	305
Percent subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	0.0	0.0	67.6	65.2	66.4
<b>State Rural</b>										
	n=	339	344	683	343	355	698	343	327	670
Percent subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	0.0	0.0	48.6	47.2	47.9
<b>State Urban</b>										
	n=	152	149	301	157	156	313	158	141	299
Percent subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	1.1	0.6	45.9	54.2	50.1
<b>State Total</b>										
	n=	491	493	984	500	511	1011	501	468	969
Percent subjects needing full mouth removable dentures		0.0	0.0	0.0	0.0	0.4	0.2	48.1	49.4	48.8

Note: Related Tables are 6.23 & 6.24

### 6.6.6 Community need for immediate care and referrals

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

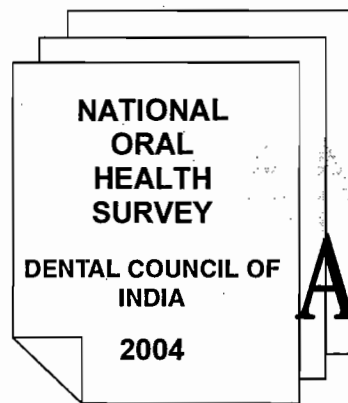
Overall, life threatening and painful or infective conditions were extremely rare. Life threatening conditions were recorded in 0.1 and 0.2 percent subjects among the 12 and 15 year olds, respectively. Pain or infection was recorded in about 8.5 percent of the subjects across all ages. It was least for the 12 year olds (5.4 percent) and highest for the 65-74 year age group (15.8 percent).

A higher proportion of subjects from Region-2 (13.5 percent) suffered from pain or infection as compared to Region-1 (7.2 percent), followed by Region-3 (2.6 percent). There were marked differentials in the distribution among the genders, especially for the older age groups and the prevalence of pain or infection was higher in rural (9.3 percent) compared to urban areas (8.3 percent).

Referrals were made for almost all the conditions recorded for the subjects examined, seen more in urban (12.2 percent) than rural areas (9.7 percent) and more in Region-2 (16.6 percent) compared to Region-1 (7 percent), followed by Region-3 (2.6 percent).

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 : Punjab

Need For Care & Referral	n=	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
<b>Region 1</b>	n=	161	154	315	160	156	316	159	155	314	159	155	314	156	152	308
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	8.1	5.8	7.0	28.9	28.7	28.8
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	0.7	0.0	0.4
Referral		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.1	5.8	7.0	28.4	28.0	28.2
<b>Region 2</b>	n=	192	166	358	171	186	357	177	184	361	187	195	382	168	163	331
Life threatening condition		0.0	0.0	0.0	0.5	0.0	0.3	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Pain or infection		11.7	14.4	13.1	13.4	10.9	12.2	13.8	12.3	13.1	20.0	15.1	17.6	14.9	8.4	11.7
Other condition		2.8	3.3	3.1	5.3	5.3	5.3	4.8	5.1	5.0	5.7	7.2	6.5	4.6	7.3	6.0
Referral		13.6	15.6	14.6	17.2	13.8	15.5	16.8	15.1	16.0	23.4	18.4	20.9	16.9	14.6	15.8
<b>Region 3</b>	n=	162	151	313	158	153	311	162	154	316	152	158	310	161	150	311
Life threatening condition		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	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	15.3	10.7	13.0
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	15.3	10.7	13.0
<b>State Rural</b>	n=	351	328	679	336	342	678	345	343	688	341	352	693	326	323	649
Life threatening condition		0.0	0.0	0.0	0.4	0.0	0.2	0.0	0.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Pain or infection		5.1	5.4	5.3	6.0	5.9	6.0	7.9	6.2	7.1	12.7	7.9	10.3	19.7	15.6	17.7
Other condition		0.4	1.1	0.8	0.7	2.2	1.5	0.0	1.4	0.7	1.8	1.0	1.4	1.0	1.5	1.3
Referral		5.4	5.7	5.6	6.0	6.5	6.3	6.9	7.2	7.1	13.7	8.4	11.1	20.0	16.5	18.3
<b>State Urban</b>	n=	164	143	307	153	153	306	153	150	303	157	156	313	159	142	301
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		7.5	10.3	8.9	7.2	4.6	5.9	3.6	6.1	4.9	9.6	11.0	10.3	14.2	8.3	11.3
Other condition		3.2	2.6	2.9	6.1	3.5	4.8	7.3	4.8	6.1	4.7	9.1	6.9	4.6	7.6	6.1
Referral		9.7	11.5	10.6	13.2	8.1	10.7	10.8	8.4	9.6	13.1	15.4	14.3	16.2	15.6	15.9
<b>State Total</b>	n=	515	471	986	489	495	984	498	493	991	498	508	1006	485	465	950
Life threatening condition		0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Pain or infection		5.5	6.6	6.1	5.9	4.9	5.4	5.7	5.6	5.7	10.7	8.5	9.6	18.1	13.5	15.8
Other condition		1.4	1.5	1.5	2.6	2.4	2.5	2.6	2.5	2.6	2.7	3.9	3.3	2.3	3.5	2.9
Referral		6.5	7.2	6.9	8.0	6.5	7.3	7.6	7.0	7.3	12.5	10.4	11.5	19.0	16.5	17.8



# ANNEXURES

# DENTAL COUNCIL OF INDIA

## EXECUTIVE COMMITTEE

Dr. R K Bali  
President  
New Delhi

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

Dr. Anil Kohli  
New Delhi

Dr. Ravindra Ratolikar,  
Hyderabad

Dr. S. G. Damle  
Mumbai

Dr. B. H. Sripathi Rao  
Mangalore.

Dr. J. R. Sabharwal  
New Delhi

Dr. S. P. Agarwal,  
New Delhi

## OUTGOING MEMBERS

Dr. Mahesh Verma, New Delhi.

Dr. V. Surindra Shetty, Mangalore.

Dr. B. Suresh Chandra, Mangalore.

## SUPPORT STAFF

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

Mr. Shiv Kumar

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

Mr. Praveen Kumar

Mr. C.L. Bhatia

Mr. S. S. Kanyal

Mr. K. V. Abraham

Mr. Puneet Bansal

Mr. P. K. De

Mr. Anil Kumar

## NOHS SECRETARIAT

Mrs. Sarita Verma

ANNEXURE - 1

**CENTRAL SURVEY TEAM**

Dr. R. K. Bali

Dr. V. B. Mathur

Prof. P. P. Talwar

Mr. H. B. Chanana

ANNEXURE - 2

**TECHNICAL WORKING GROUP**

Dr. R. K. Bali, President, DCI

Dr. V.B. Mathur

Dr. Shankar Aradhya

Dr. K.V.V. Prasad

Dr. M.B. Aswathnarayana

Prof. P.P. Talwar

Dr. Amrit Tiwari

**LIST OF STATES, REGIONS WITHIN STATES AND SELECTED DISTRICTS**

ANNEXURE - 3

Sr. No	State	Regions	Region Code	Selected Districts
1	Andhra Pradesh	North Coastal Andhra	01	Vishakapatnam
		South Coastal Andhra	02	Guntur
		Nellore	03	Nellore
		Rayalseema	04	Chittoor
		S Telangana	05	Ranga Reddy
		N Telangana	06	Khammam
2	Assam	N Eastern Hills	01	Karbi Anglong
		Lower Brahmaputra	02	Kamrup
		Upper Brahmaputra	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	Tirunnevali
		S Region	06	Kanyakumari
		Hills Region	07	Nilgiri
17	UP	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

## LIST OF PARTICIPATING DENTAL COLLEGES

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

## REGIONAL COORDINATORS

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

## NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING

ANNEXURE - 6

### TEAM MEMBERS (PUNJAB)

S. No.	Name	Designation
1.	Dr. N.C. Rao	Regional Coordinator
2.	Dr. Vimal Kalia	Supervisor
3.	Dr. Vikas Garg	Dental Surgeon
4.	Dr. Jyoti B. Das	Dental Surgeon
5.	Dr. Amrinder Tuli	Dental Surgeon
6.	Dr. Arminder Pal Singh	Dental Surgeon
7.	Dr. Sohail A. Sheikh	Dental Surgeon
8.	Dr. Gagan Dogra	Dental Surgeon
9.	Dr. Gurpreet Singh	Dental Surgeon
10.	Dr. Vaibhav Munjal	Dental Surgeon
11.	Dr. Sanjay Mittal	Dental Surgeon
12.	Dr. Sanjeev K. Bhagat	Dental Surgeon
13.	Dr. Barjinder Singh	Dental Hygienist
14.	Dr. Happy Gill	Dental Hygienist
15.	Mr. Gurcharan Singh	Driver
16.	Mr. Kuldeep Singh	Assistant

#### ***List of participating Dental Colleges***

1. H.P. Govt. Dental College & Hospital, Shimla (H.P)
2. B.R.S. Dental College and Hospital, Kotbilla, Panchkula (Haryana)
3. Bhojai Dental College & Hospital Budh, Tehsil Nalagarh (H.P.)
4. Baba Jaswant Singh Dental College Hospital & Research Institute, Ludhiana (Punjab)

DENTAL COUNCIL OF INDIA, NEW DELHI

ANNEXURE - 7

भारतीय दंत चिकित्सा परिषद, नई दिल्ली

NATIONAL ORAL HEALTH SURVEY & FLUORIDE MAPPING 2002

राष्ट्रीय मुख स्वास्थ्य सर्वेक्षण तथा फ्लोराइड मैपिंग 2002

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

DATE / तिथि	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	FORM NO.	<input type="text"/>	<input type="text"/>	(1-2)
	(DAY)	(MONTH)	0	2	(YEAR)	फार्म संख्या	1	0	
STATE / राज्य	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(6-7)	TEAM NO.	<input type="text"/>	<input type="text"/>	(3-5)
						दल संख्या (टीम)			
ZONE / क्षेत्र (जोन)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(8-9)				
DISTRICT / जिला	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	(10)				

NAME OF VILLAGE / URBAN BLOCK \_\_\_\_\_ (11-12)

गांव/शहरी ब्लॉक का नाम

VILLAGE CODE R/U/आर/यू R=1 U=2 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 \_\_\_\_\_

साक्षात्कारकर्ता 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)

FORM NO.

फार्म संख्या

1

1

## A. SOCIO-ECONOMIC &amp; DEMOGRAPHIC CHARACTERISTICS OF THE FAMILY

अ. परिवार की सामाजिक-आर्थिक विशिष्टताएं

S. No./ क्रम सं.	Question / प्रश्न	Code / कोड
1.	<b>Name of Respondent and his/her relationship with Head of HH</b> 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/ अन्य ..... 5
2.	<b>Age of Respondent (in completed years)</b> उत्तरदाता की आयु (पूर्ण वर्षों में)	Yrs./ वर्ष
3.	<b>Sex of the Respondent</b> उत्तरदाता का लिंग	M=1/ पु.      M=2/ स्त्री
4.	<b>Religion of the Household</b> धर्म	Hindu/ हिन्दू ..... 1 Muslim/ मुस्लिम ..... 2 Sikh/ सिख ..... 3 Christian/ ईसाई ..... 4 Others/ अन्य ..... 5
5.	<b>Caste of the Household</b> जाति	SC/ अनु. जाति ..... 1 ST/ आदिम जाति ..... 2 OBC/ अन्य पिछड़ा वर्ग ..... 3 Others/ अन्य ..... 4
6.	<b>What is the highest educational level completed by the Head of the HH?</b> मुखिया का शिक्षा स्तर	Illiterate ..... 1 High School ..... 4 अशिक्षित हाईस्कूल Primary ..... 2 Graduate ..... 5 प्राइमरी स्नातक Middle ..... 3 Professional ..... 6 मिडिल व्यावसायिक
7.	<b>How much is the TOTAL Monthly Expenditure of the Household?</b> घर का कुल मासिक व्यय कितना है?	TOTAL Rs. कुल रु.
8.	<b>Type of House (Observe &amp; record)</b> मकान किस प्रकार का है? (देखें व लिखें)	Kuccha/ कच्चा ..... 1 Semi-Pucca/ आधा-पक्का ..... 2 Pucca/ पक्का ..... 3

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 / पुरु F / स्त्री
10.	No. of persons 5 years old पांच वर्ष की आयु के व्यक्तियों की संख्या	M / पुरु F / स्त्री
11.	No. of persons 12 years old बारह वर्ष की आयु के व्यक्तियों की संख्या	M / पुरु F / स्त्री
12.	No. of persons 15 years old पन्द्रह वर्ष की आयु के व्यक्तियों की संख्या	M / पुरु F / स्त्री
13.	No. of persons 35-44 years old 35-44 वर्ष की आयु के व्यक्तियों की संख्या	M / पुरु F / स्त्री
14.	No. of persons 65-74 years old 65-74 वर्ष की आयु के व्यक्तियों की संख्या	M / पुरु F / स्त्री

### 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 लगाएं)	Wheat / गेहूँ ..... 1 Rice / चावल ..... 2 Maize / मक्का ..... 3 Jowar / ज्वार ..... 4 Bajra / बाजरा ..... 5 Others / अन्य ..... 6
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 लगाएं)	Pipe/Tap / पाईप/टोपी ..... 1 Tubewell/Handpump / ट्यूबवेल ..... 2 Draw Well / हैंड पम्प ..... 3 Pond / कुआँ ..... 4 River / नदी ..... 5 Others / अन्य ..... 6
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?	<input type="text"/>
18.	Is your family predominantly Veg./Non-Veg. क्या आपका परिवार मुख्य रूप से शाकाहारी/सामिष है? (Tick One)/ (एक पर चिन्ह लगाएं)	Veg. / शाकाहारी ..... 1 Non-Veg. / सामिष ..... 2



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 व्हाइट-कोलर 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			
25.	How often do you read a Newspaper? / आप समाचार-पत्र कब पढ़ते हैं?	Daily ..... 1 प्रतिदिन Sometime ..... 2 कभी-कभी Not at all ..... 3 कभी नहीं		E B	E B			
26.	How often do you listen to Radio? / आप रेडियो कब सुनते हैं?	Daily ..... 1 प्रतिदिन Sometime ..... 2 कभी-कभी Not at all ..... 3 कभी नहीं		O	O			
27.	How often do you watch to TV? / आप टी वी कब देखते हैं?	Daily ..... 1 प्रतिदिन Sometime ..... 2 कभी-कभी Not at all ..... 3 कभी नहीं		T T	T T			
28.	How often do you watch Cinema in a Hall? / आप सिनेमा हाल में कब देखते हैं?	Once in 3 months ..... 1 3 माह में एक बार Less often ..... 2 बहुत कम Not at all ..... 3 कभी नहीं		O N	O N			

(70-74)

(75-79)

(80-84)

(85-89)

(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>B. Abnormal Oral Habits</b>								
ब. मुख सम्बन्धी असामान्य आदतें								
29.	Does the interviewee generally breathe by nose or mouth ? / आप साधारणतया नाक से सास लेते हैं या मुँह से?	Nose/ नाक ..... 1 Mouth/ मुँह ..... 2 Can't Say/ कह नहीं सकता ..... 3						(95-99)
30.	Did/does the interviewee have a habit of sucking or biting his/her fingers or Thumb? क्या आपको अपनी उँगली चूसने या दाँतों से दबाने की आदत है या थी? (देखें और लिखें)	No/ नहीं ..... 1 Yes/ हाँ ..... 2 Can't Say/ कह नहीं सकता ..... 3						(100-104)
31.	Did/does the interviewee have a habit of thrusting his/her tongue on his/her teeth? (Observe & Record) / क्या आपको अपनी जीभ दाँतों पर दबाने की आदत है या थी? (देखें और लिखें)	No/ नहीं ..... 1 Yes/ हाँ ..... 2 Can't Say/ कह नहीं सकता ..... 3						(105-109)
32.	Did/does the interviewee have a habit of biting 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 Yes/ हाँ ..... 2 Can't Say/ कह नहीं सकता ..... 3						(110-114)
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 दाँत रगड़ने की आदत है या थी?	No Habit/ आदत नहीं ..... 1 In Sleep/ नींद में ..... 2 In Stress/ दबाव में ..... 3 Can't Say/ कह नहीं सकता ..... 4						(115-119)

### 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 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						(120-124)
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S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड	5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35-44 वर्ष	65-74 Yrs./ 65-74 वर्ष
35.	When were these sweet eaten ? / मीठा कब-कब खाया गया?	During Meals ..... 1 भोजन के समय In Between Meals ..... 2 भोजन के समय के बीच During & In Between Meals ..... 3 भोजन के समय व बीच में N.A. / लागू नहीं होता ..... 4						

(125-129)

### D. Oral Hygiene Practices

#### द. मुख की सफाई

36.	How do you generally clean your teeth? सामान्यतः आप अपने दांत कैसे साफ करते हैं?	Finger/ उंगली से ..... 1 Brush/ ब्रश से ..... 2 Datum/ दातून ..... 3 Others (Specify) ..... 4 अन्य						
37.	How often do you clean your teeth in a day ? / दिन में आप कितनी बार दांत साफ करते हैं?	Once/ दिन में एक बार ..... 1 Twice/ दिन में दो बार ..... 2 After every meal ..... 3 प्रति भोजन के बाद Don't clean every day ..... 4 प्रतिदिन साफ नहीं करते						
38.	What are your timings of cleaning teeth ? / दांत साफ करने का समय क्या है?	Morning only/ केवल प्रातःकाल ..... 1 Night only (before going to bed) ..... 2 केवल रात में सोने से पहले Morning & Night ..... 3 प्रातःकाल व रात After meals ..... 4 भोजन के बाद Others (Specify) ..... 5 अन्य						
39.	What material do you generally use to clean teeth ? / सामान्यतः आप अपने दांत किस चीज से साफ करते हैं?	Toothpaste ..... 1 टूथपेस्ट Toothpowder ..... 2 टूथपाउडर Others (Specify) ..... 3 अन्य						

(130-134)

(135-139)

(140-144)

(145-149)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड	5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35-44 वर्ष	65-74 Yrs./ 65-74 वर्ष
40.	<p>Check tooth paste/powder used and record whether it is fluoridated or non-fluoridated?            प्रयुक्त किये गए दूध पेस्ट/पाउडर को चैक करें व लिखें वह फ्लोराइड-युक्त है या फ्लोराइड रहित?</p>	<p><b>Fluoridated</b> ..... 1            फ्लोराइड-युक्त  <b>Non-Fluoridated</b> ..... 2            फ्लोराइड-रहित  <b>Can't Say</b> ..... 3            कह नहीं सकता  <b>None</b> ..... 4</p>						(150-154)
41.	<p>(Ask only if code in Q. 36 was 2.)            How often do you change your toothbrush?            आप अपना दूध ब्रश कितने समय बाद बदलते हैं?</p>	<p>1-3 months/ 1-3 माह ..... 1            4-6 months/ 4-6 माह ..... 2            6 + months/ ..... 3            6 से अधिक            NA (Not using/            Brush) ..... 4</p>						(155-159)
42.	<p>How often you rinse your mouth with water after eating? /            क्या भोजन करने के बाद आप पानी से कुल्ला करते हैं।</p>	<p><b>Never</b> ..... 1            कभी नहीं  <b>Sometimes</b> ..... 2            कभी-कभी  <b>Always</b> ..... 3            सर्वदा</p>						(160-164)
43.	<p>Do you use any other oral hygiene aids?            क्या आप मुँह साफ करने के लिए किसी अन्य साधन का इस्तेमाल करते हैं?</p> <p>(Tick as many as reported)            (जितना बताएं सब लिखें)</p>	<p><b>Dental Floss</b> ..... 1            डेंटल फ्लॉश  <b>Interdental Brush</b> ..... 2            इन्टरडेंटल ब्रुश  <b>Toothpicks</b> ..... 3            दूध पिकस  <b>Fluoride Mouthrinse</b> ..... 4            फ्लोराइड माउथरिन्स  <b>Other</b> ..... 5  <b>Mouthwash/Rinse</b>            (Specify)            अन्य माउथवाश/रिन्स            लिखें  <b>None/ कोई नहीं</b> ..... 6</p>						(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
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### 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 ..... 1 Yes / हाँ ..... 2 Can't Say/ ..... 3 कह नहीं सकता							(185-189)	
45.	What were or was the problem? यदि हाँ, तो समस्या क्या थी या है?  (Tick as many as reported) (जितना बताएं सब लिखें)	Dental decay ..... 1 दंत-क्षय Gum disease ..... 2 मसूड़ों की बीमारी Foul breath ..... 3 दुर्गन्धित सांस Bleeding gums ..... 4 मसूड़ों से खून बहना Trauma ..... 5 ट्रोमा (घोट) Abscess ..... 6 एबसेस (फोड़ा) Crooked teeth ..... 7 टेढ़े-मेढ़े दांत Ulcer ..... 8 अल्सर Others (Specify) ..... 9 अन्य (लिखें)								(190-209)
46.	Who was or were consulted? आपने किससे राय ली?  (Tick as many as reported) (जितना बताएं सब लिखें)	None/ कोई नहीं ..... 1 Friend/Neighbour ..... 2 मित्र / पड़ोसी Relative/ रिश्तेदार ..... 3 Med. Practitioner ..... 4 मेडिकल प्रैक्टिशनर Pharmacist/ ..... 5 फार्मासिस्ट / कैमिस्ट Untrained Dentist ..... 6 अनट्रेण्ड डेंटिस्ट Trained Dentist ..... 7 ट्रेण्ड डेंटिस्ट Others (Specify) ..... 8 अन्य								(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.	<p>Are you suffering or have you ever suffered from one or more of the following :</p> <p>क्या आपको कभी निम्न बीमारियाँ थी या हैं?</p> <p>(Tick as many as reported) (जितना बताएं सब लिखें)</p>	<p>None/ कोई नहीं ..... 1</p> <p>Hypertension ..... 2 हाई प्रेशर/रक्तचाप</p> <p>Diabetes ..... 3 डाईबिटीज</p> <p>Epilepsy ..... 4 एपिलेप्सी</p> <p>Jaundice ..... 5 जोन्डिस</p> <p>Asthma ..... 6 अस्थमा</p> <p>Others (Specify) ..... 7 अन्य</p> <p>Can't Say/ ..... 8 कह नहीं सकता</p>	1 2 3 4 5 6 7 8					
48.	<p>What is or are the availability of dental treatment facilities in your area? / आपके क्षेत्र में दंत-चिकित्सा सम्बन्धी क्या सुविधाएं उपलब्ध हैं?</p> <p>(Tick as many as reported) (जितना बताएं सब लिखें)</p>	<p>None/ कोई नहीं ..... 1</p> <p>Govt. Hosp./ ..... 2 Dispensary सरकारी हस्पताल/ डिस्पेन्सरी</p> <p>Private Hospitals ..... 3 निजी हस्पताल</p> <p>Private Practitioner ..... 4 प्राइवेट प्रैक्टिशनर</p> <p>Don't Know ..... 5 नहीं जानते</p>	1 2 3 4 5					
49.	<p>How accessible are the Oral health facilities with available transport? उपलब्ध परिवहन द्वारा मुख-स्वास्थ्य सुविधाओं तक पहुंच का समय।</p>	<p>Less than ½ hour ..... 1 आधा घण्टा से कम</p> <p>½ to 1 hour ..... 2 आधा से 1 घण्टा</p> <p>&gt; 1 hour ..... 3 1 घण्टा से अधिक</p> <p>Can't Say ..... 4 कह नहीं सकता</p>	1 2 3 4					

(230-249)

(250-269)

(270-274)

S. No./ क्रम सं.	Question / प्रश्न	Response / उत्तर	Code/कोड	5 Yrs. / 5 वर्ष	12 Yrs. / 12 वर्ष	15 Yrs. / 15 वर्ष	35-44 Yrs./ 35-44 वर्ष	65-74 Yrs./ 65-74 वर्ष
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### F. Awareness and Knowledge of Dental Health Problems

एफ. दंत-स्वास्थ्य समस्याओं की जानकारी व जागरूकता

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

(275-294)

(295-314)

(315-334)

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.	<p><b>How can you prevent dental problems?</b> आप किस प्रकार दांतों की बीमारियों को रोक सकते हैं?</p> <p><b>(Tick as many as reported)</b> (जितना बताएं सब लिखें)</p>	<p><b>Not consuming tobacco products / तम्बाकू उत्पादों का इस्तेमाल न करके:</b></p> <p><b>Regular cleaning of teeth with brush</b> ब्रश द्वारा दांतों की नियमित सफाई</p> <p><b>Visiting dentist regularly</b> दंत-चिकित्सक द्वारा नियमित जांच</p> <p><b>Using Fluoride Toothpaste</b> फ्लोराइड टूथ-पेस्ट का इस्तेमाल</p> <p><b>Avoiding sweets</b> Icecreams/chocolates मिठाई, आइसक्रीम व चाकलेट छोड़कर</p> <p><b>Others (Specify)</b> अन्य तरीके</p> <p><b>Don't Know</b> नहीं जानता</p>	1 2 3 4 5 6 7	D E K S A					

### G. Tobacco Smoking and Chewing Habits

जी. तम्बाकू चबाने व पीने की आदतें

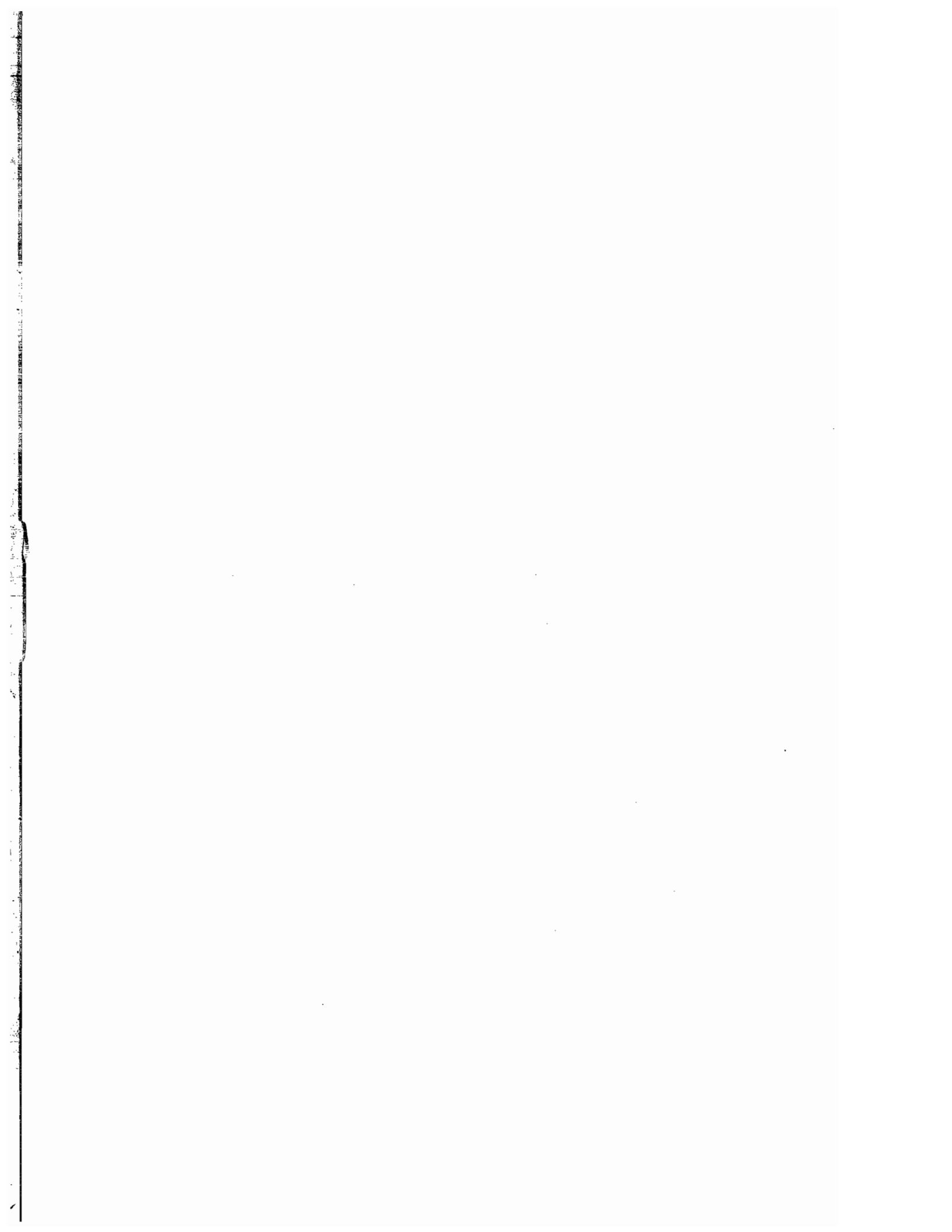
156

(335-339)

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
53.	<p><b>Do you smoke? /</b> क्या आप धूम्रपान करते हैं?</p>	<p>No/ नहीं</p> <p>Yes/ हाँ</p>	1 2	O B				
54.	<p><b>What do you smoke? /</b> आप कौन सा धूम्रपान करते हैं?</p> <p><b>(Tick as many as reported)</b> (जितना बताएं सब लिखें)</p>	<p>Chillum/ चिलम</p> <p>Hookah/ हुक्का</p> <p>Cigars/ सिगार</p> <p>Cigarettes/ सिगरेट</p> <p>Bidis/ बिड़ी</p> <p>Others (Specify)/ अन्य</p>	1 2 3 4 5 6	T O N				

(340-359)

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.	<b>Whether it is with or without Filter?</b> क्या यह फिल्टर सहित है या फिल्टर रहित?	<b>With Filter/ फिल्टर युक्त</b> <b>Without Filter/ फिल्टर रहित</b> <b>Don't Know/ नहीं जानता</b>	1 2 3	D				(360-364)
56.	<b>How many times a day do you normally Smoke? /</b> 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				(365-369)
57.	<b>Did you or do you chew pan with tobacco? /</b> क्या आप पान तम्बाकू के साथ चबाते हैं या चबाते थे?	No/ नहीं Yes/ हाँ Don't Know/ पता नहीं	1 2 3	S				(370-374)
58.	<b>Did you or do you chew pan-masala with tobacco? /</b> क्या आप पान-मसाला तम्बाकू के साथ चबाते हैं या चबाते थे?	No/ नहीं Yes/ हाँ Don't Know/ पता नहीं	1 2 3	A				(375-379)
59.	<b>How long have you been in the habit of chewing pan or pan masala with tobacco? /</b> आप कब से पान या पान-मसाला तम्बाकू के साथ चबाते रहे 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				(380-384)
60.	<b>How often do you chew tobacco in a day? /</b> 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	O				(385-389)
61.	<b>Did you or do you take Alcohol? /</b> क्या आप अल्कोहल (शराब) लेते थे या लेते हैं? (एक पर टिक लगायें)	No/ नहीं Yes/ हाँ	1 2	T				(390-394)
62.	<b>How often do you take Alcohol? /</b> 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

[ ] [ ] [ ] [ ] [ ] [ ]  
(DAY) (MONTH) (YEAR)

FORM NO.

2 0  
(1-2)

STATE

[ ] [ ] [ ] [ ] [ ] [ ]  
(6-7)

ZONE

[ ] [ ] [ ] [ ] [ ] [ ]  
(8-9)

TEAM NO.

[ ] [ ] [ ] [ ] [ ] [ ]  
(3-5)

DISTRICT

[ ] [ ] [ ] [ ] [ ] [ ]  
(10)

NAME OF VILLAGE / URBAN BLOCK

[ ] [ ] [ ] [ ] [ ] [ ]  
(11-12)

CODE

RURAL / URBAN

1 2 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)

# DENTITION STATUS AND TREATMENT NEED

Identification Number

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

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

Primary teeth

Permanent teeth

Crown	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	F = Fissure sealant
D	3	3 Filled, no decay	1 = One surface filling
E	4	4 Missing, as a result of caries	2 = Two or more surface fillings
-	5	5 Missing, any other reason	3 = Crown for any reason
F	6	6 Fissure sealant	4 = Veneer or laminate
G	7	7 Bridge abutment	5 = Pulp care and restoration
-	8	8 special crown or veneer/implant	6 = Extraction
T	T	8 Unruptured tooth, (Crown) / unexposed root	7 = Need for other care (specify).....
-	9	9 Trauma (fracture) Not recorded	8 = Need for other care (specify).....
			9 = Not recorded

## PROSTHETIC STATUS

- 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

Upper Lower

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(162) (163)

## PROSTHETIC NEED

- 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

Upper Lower

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(164) (165)

**DENTOFACIAL ANOMALIES**

**DENTITION**

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

**SPACE**

(168)  (169)  (170)  (171)  (172)

Crowding in the incisal segments.  
 0 = No crowding  
 1 = One segment crowding  
 2 = Two segments crowding

Spacing in the incisal segments:  
 0 = No spacing  
 1 = One segment spaced  
 2 = Two segments spaced

Diastema in mm

Largest anterior maxillary irregularity in mm

Largest anterior mandibular irregularity in mm

**OCCCLUSION**

(173)  (174)  (175)  (176)

Anterior maxillary overjet in mm

Anterior mandibular overjet in mm

Vertical anterior openbite in mm

Antero-posterior molar relation :

0 = Normal  
 1 = Half cusp  
 2 = Full cusp

**NEED FOR IMMEDIATE CARE AND REFERRAL**

Life-threatening condition  (177) 0 = Absent

Pain or infection  (178) 1 = Present

Other condition (specify).....  (179) 2 = Not recorded

Referral  (180)

0 = No  
 1 = Yes  
 9 = Not recorded

**NOTES**

