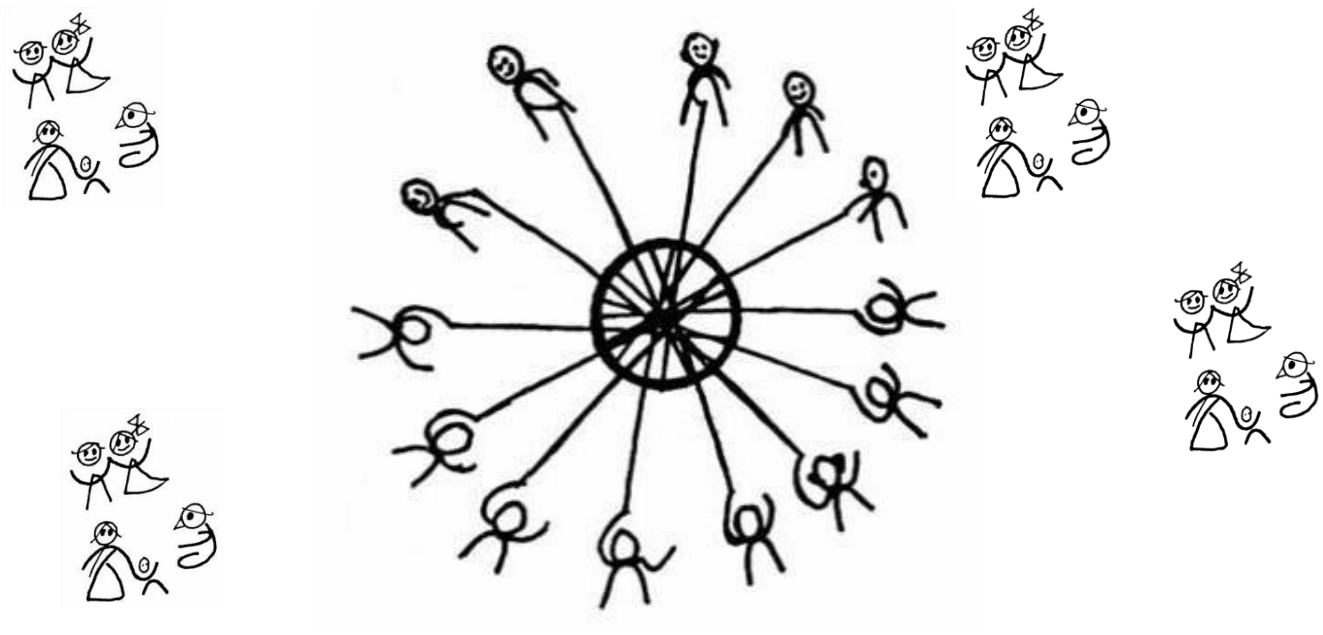
2022-23

Community Health Learning Programme

A Report on the Community Health Learning Experience

Dr. Vijaya Hegde

Mr. S J Chander(Mentor)



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building community health

ACKNOWLEDGEMENT

This humble piece of work is a sincere token of gratitude to all those who have been the reason for its conception as well as its successful completion.

My sincere thanks to my mentor S.J Chander for his guidance, positive encouragement and quest for perfection.

I also thank Mr KartiK, Ms Uma, Janelle for their moderation of the programme and support. it is to them that I owe my deepest gratitude.

I express my gratitude to my batch mates for their valuable insights during the online sessions.

I also like to express my gratitude to all my study participants for their timely help for which I am forever grateful.

PART A:

Why did I join the fellowship?

Community Health Learning Program (CHLP) training trains in many of the areas that has not been covered during my post-graduation. This fellowship allowed me to get direct field experience of my choice, and this will go a long way to help me to come into contact with some of the most common issues faced by the communities . I also got an opportunity to make an impact on the community that I chose to work with for my filed work.

What were my learning objectives and were they met?

1) To acquire knowledge on program planning and evaluation.

2) To develop advocacy and policy development skills.

3) To identify a problem in a community and evolve possible solutions in collaboration with the community

4) To develop responsive community leadership.

In my view most of them were met. It gave me opportunities to get involved in new issues like Trans-Gender Care, Rural People, Women and Health which otherwise would have remained untouched area by me.

Learning from modules and how I applied the learning in my work.

My Reflections:

The Orientation was very helpful and made me feel at ease and also created a feeling of belonging. The program convenors seemed to be approachable and most important was that there was no teacher student environment.

Understanding community Health:

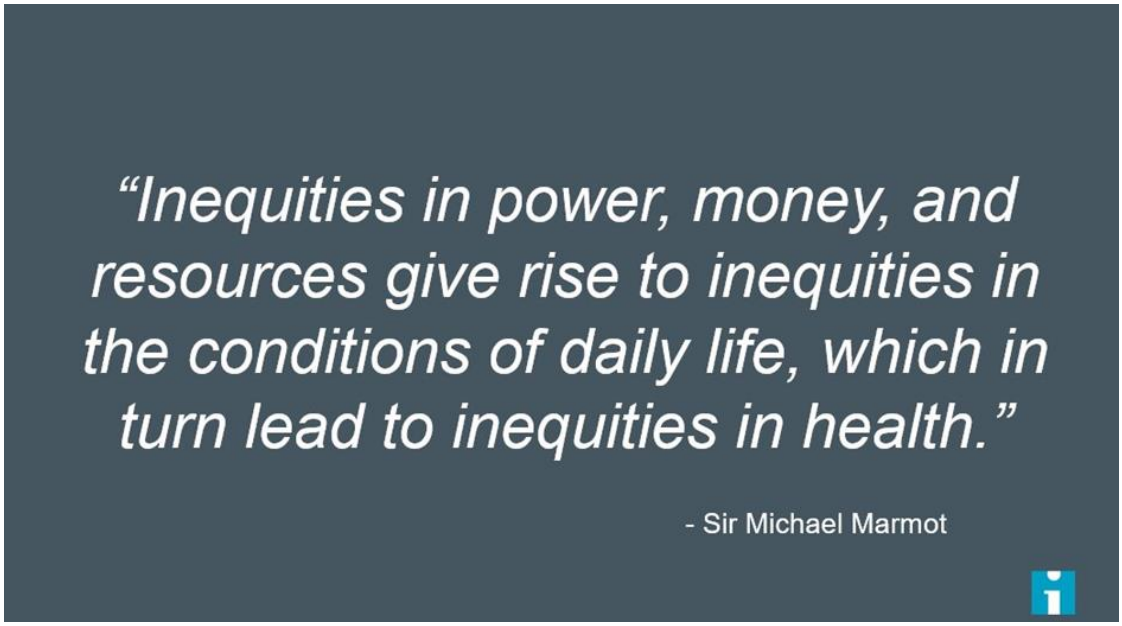
Community should be a vital part of any program, and we need to increase community capacity by increasing health knowledge. In the end of the program the community should feel that their program was a success. Discussions on various organisations gave us an insight into the application of various axioms of community health. Improving community health is a huge undertaking that involves cooperation between public health workers, local government, volunteers and average citizens alike.

The discussion on Community health approach versus Public Health Approach was very insightful. But I find the two terms synonymous in many ways since they are both concerned with improving overall health care amongst groups of people. Public

health can be placed on a larger scale since some issues are more global, while other issues are more community-based and on a smaller scale.

However, SEPCE helps in evaluation, and is based on the needs of the community. Understanding the perceptions of the community towards health equity and equality will help us in framing health care initiatives. As per my knowledge health inequlaities may be due to lack of awareness, social stigma and discrimination especially in rural areas.

The greatest burden of oral diseases is on disadvantaged and socially marginalized populations. Rural communities often lack adequate oral healthcare which may be due to lack of awareness, difficulty in accessibility as well as affordability. Oral health is also an neglected entity especially among the rural mass .The socioeconomic status, gender, literacy are also the contributing factors to avail oral health care among the rural mass. There is a need to know the felt needs of the rural communities and also inculcate a positive attitude towards oral health care.Hence it is imperative to to tackle issues and challenges to achieve health equity.



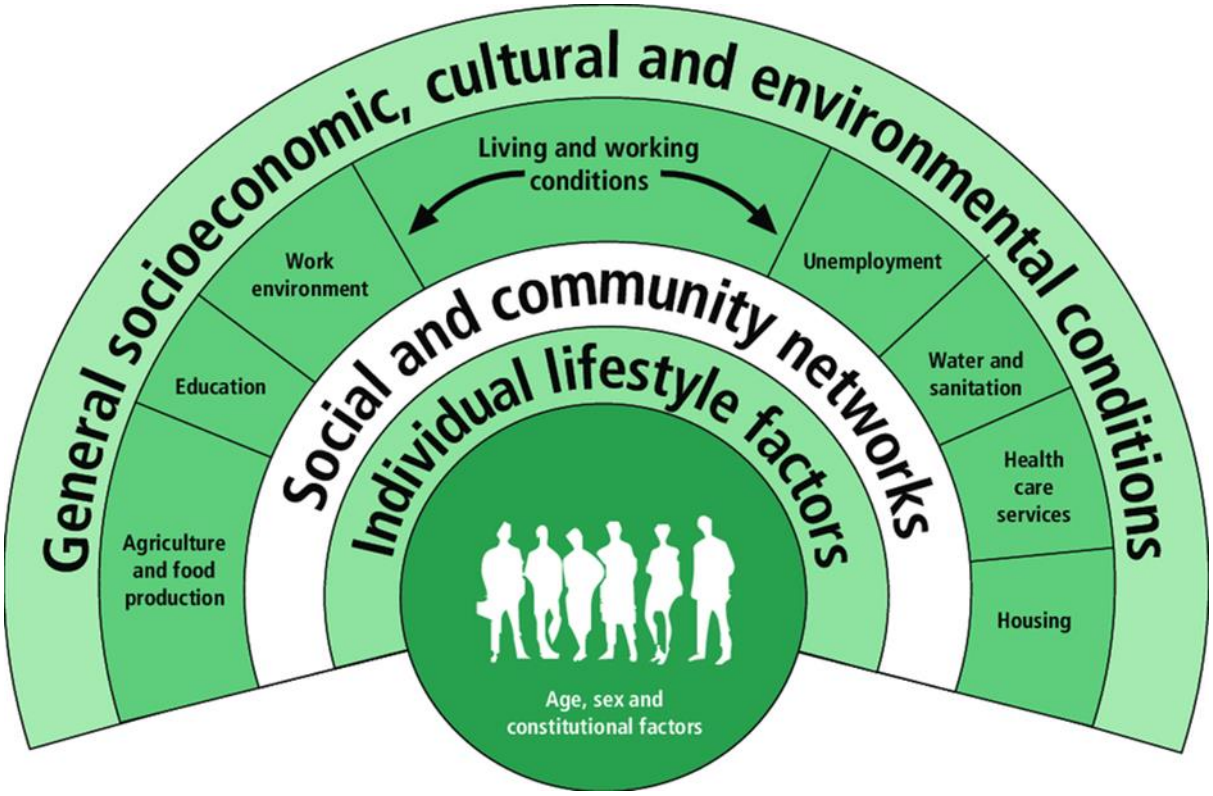
The right to health module emphasised that public health is not a technical activity but is to be seen as a way of asserting the value of human life.WHO creates a legal obligation on states to ensure access, makes it affordable and acceptable. It is also the state's responsibility to allocate the maximum available resources so that there is greater equity and also one should ensure that there is meaningful participation from all stakeholders.

the obligations of the state towards healthcare is that it needs to be:

- Accessible
- Affordable
- Available
- no discrimination
- informative
- Acceptable
- Quality of services needs to be good.

Social Determinants of health:

Social determinants of health are the conditions in the environments where people are born, live, work , play , worship and age that affect a wide range of health , functioning and quality of life outcomes and risks

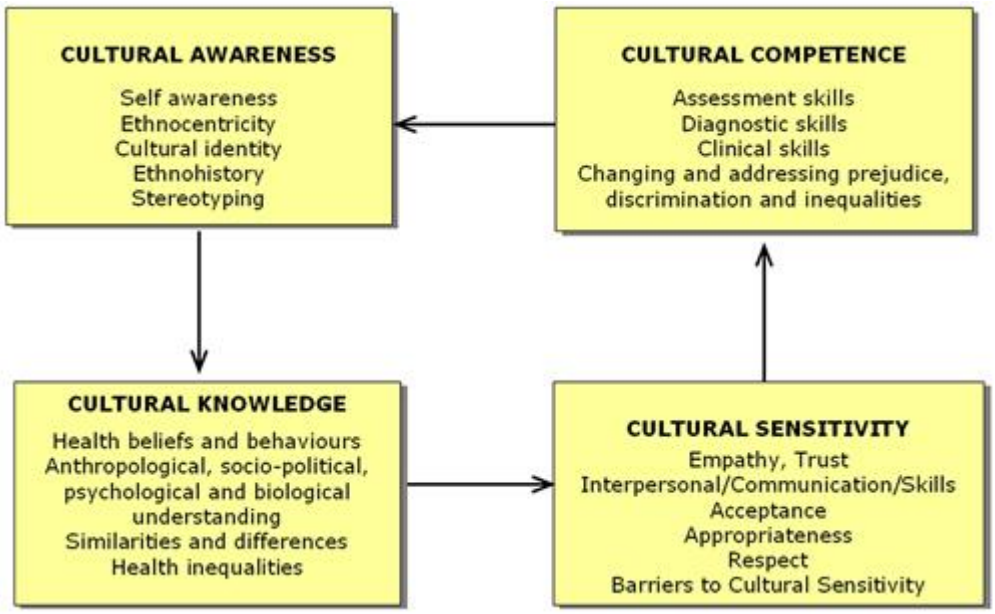


The class on social determinants of health gave us insight on the concept of "Health for all". The social determinants of health (SDH) are the non-medical factors that influence health outcomes. The circumstances in which people are born, live, grow up, work and age and the systems put in place to deal with illness are called social determinants.

The Commission on Social Determinants of Health was set up by the World Health Organisation. It shows how social, economic and political mechanisms give rise to a set of socioeconomic positions, whereby populations are stratified according to income, education, occupation, gender, race and other factors. The socioeconomic positions in turn shape specific determinants of health status (intermediary determinants) reflective of people's place within social hierarchies based on their respective social status.

To construct a CSDH framework we need to first know the community, we need to gather adequate evidence, perform SEPCE analysis, know the barriers, categorise the various factors under the CSDH framework and later know the mechanisms and the various interventions we need to perform. mainly we need to focus on the social determinants to health.

The module 6 on cultural determinants of health helped me to know that culture is a way of life, which includes values, beliefs, arts, science and modes of perception.it gave me an insight of the difference between cultural awareness, cultural sensitivity and cultural competency.



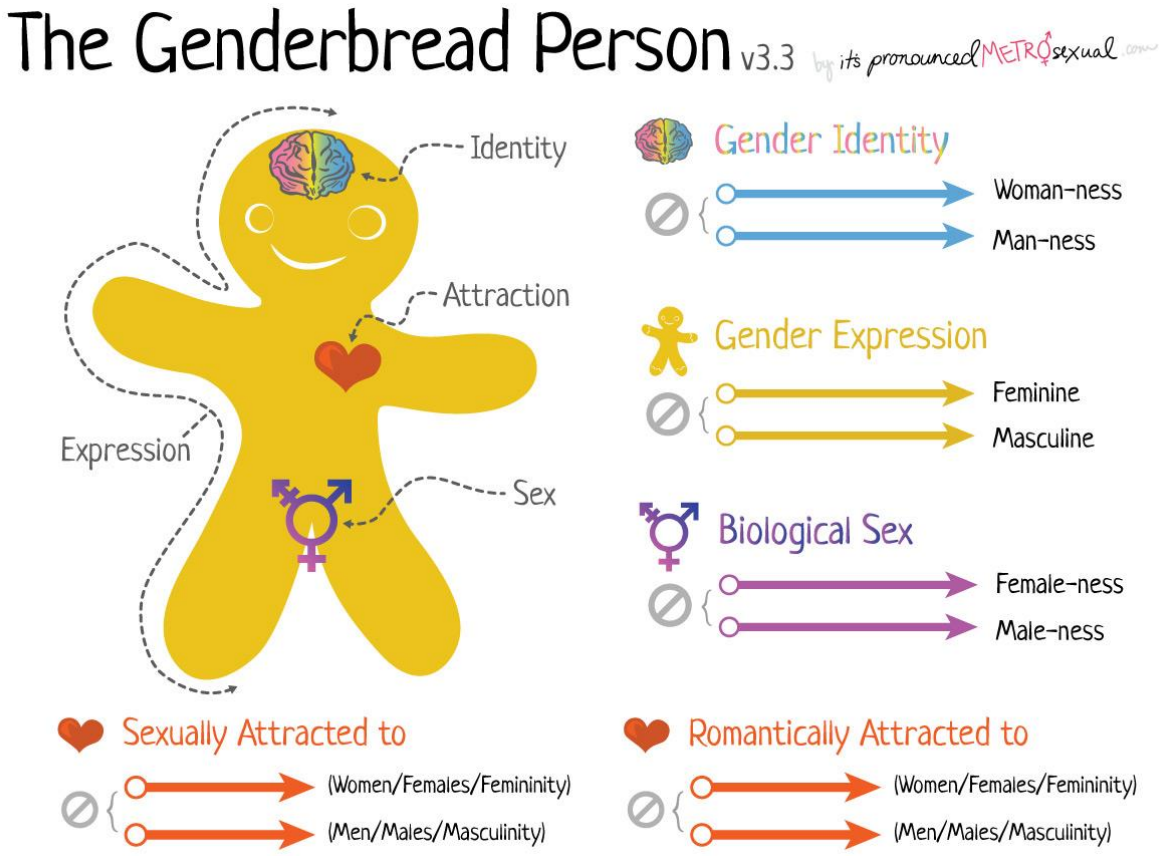
As a researcher we need to address the cultural issues like:

We need to listen, understand and respect the cultural practices, share and be a part of the community, we need to discuss the results of the study and also make them part of the writing process.

Overall the videos by Sunil George was very informative and interesting.

The session on 19th of June on issues related to LGBTQ community was a ice breaker. Though I have been working for transgender population sine the past six years, I was not aware of the gender identification. I also got to know that we are not supposed to discuss of their past unless and until we have obtained permission from them. With my work experience with this minority population, is that they give least importance to health care , unless and until it is their felt need. I worked in silos for them but since the past few months i have collaborated with Yenepoya university,

where we tried to provide them alternate employment training.However according to me , I feel they exploited and ill treated. However this session gave me more insight in to different sex identities, which in fact was new to me.



***Gender Identity**: Gender identity is how you, in your head, think about yourself. It's the chemistry that composes you (e.g., hormonal levels) and how you interpret what that means.

Gender Expression: Gender expression is how you demonstrate your gender (based on social constructs within the culture) through the ways you act, dress, behave, and interact.

Biological Sex: Biological sex refers to the objectively measurable chromosomes, hormones, and organs (secondary sexual characteristics).

Sexual Orientation:This is to whom we are attracted to based our sex.

***(https://www.geneseo.edu/lgbtq/gender-identity)**

Module 7: Comprehensive primary health care:

Primary health care is defined as an essential healthcare which is made universally accessible to individuals and families through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self reliance and self determination. The principles of primary health care are as follows:

Equitable distribution, community participation, intersectoral coordination, appropriate technology and focus on prevention.

My reflections are that, PHC approach has been challenging in a country like India because of the increased prevalence of non communicable disease, lack of education, poverty, and non availability of resources as and when needed . Majority of the population live in urban slums resulting in poor sanitation and compromised health, the major reason being rapid urbanisation. The people are also not satisfied with the treatment provided in the primary health care , not only because of the poor infrastructure but also the staff who are rude and abrupt , and also show discrimination towards vulnerable population. There also has been a shortage in manpower which also may be one of the reasons for their attitude.the current primary health care has been very rigid which does not respond to the needs of the population.

Qualitative research into this area could yield lessons for the delivery of future services. Research into factors influencing service utilization could lead us to developing a public health marketing strategy for care access. A conjoint effort by the state and the institutes can thus be used to reinvent primary healthcare and bring it to the forefront. Qualitative research, to know the factors for inadequate utilisation can be used to reinvent primary health care and bring it to forefront. India's progress towards sustainable development goals.by strengthening the primary health system in india.

Module 8: Equity in Health:

Rights of persons with disability by Dr Anup Antony several aspects of Community based Rehabilitation.

What is CBR?

It enhances the lives of the people with disability within their communities.Community-based rehabilitation (CBR) was initiated by WHO following the Declaration of Alma-Ata in 1978 in an effort to enhance the quality of life for people with disabilities and their families.

It was also shocking to know that in india there are 2.68 crores of individuals who are disabled.

Essential components of CBR?

1. · It should cover everyone
2. · Should be a part of inclusive environment.
3. · Should look for all round development
4. · Should have a balance on service delivery
5. · It should strengthen their groups.

Key activities of CBR:

1. · Capacity Building
2. · Quality Education
3. · Rehabilitation
4. · Livelihood Opportunities
5. · Social Inclusion

Merits of CBR:

1. · Improvement in knowledge
2. · Cost effective

3. · Comprehensive and holistic development

4. · Early identification, intervention and follow up

5. · Community involvement

6. · Equip's PWD's with confidence and teaches them to move forward.

Demerits of CBR:

1. · Government does not replicate

2. · Limited training

3. · Little funding

4. · No referral services.

Challenges of CBR:

1. · Lack of acceptance, understanding

2. · Lack of finance

3. · Poor management

4. · Limited models of good practice

5. · Government has other priorities.

Sustaining CBR:

1. Building Capacity

2. Community Ownership

3. Effective Leardership

4. Local resources to be needed

5. Increased Collaboration

6. Political Support

Module 9: HEALTH SYSTEMS IN INDIA

Oral health is still neglected not only by the community but also by the health systems in our country. India is primarily a rural community with 72.2% of its population living in rural areas.Majority of the population is affected with periodontal disease, dental caries, malocclusion and Oral Cancer. but these diseases can be prevented to a large extent.The key barriers to oral health are affordability, lack of awareness, accessibility,psychological barriers.By integrating oral health in to the health systems, it can be made more accessible and affordable. This necessitates for a return to primary health care principle of focus on prevention.

Barriers in integrating oral health in to primary health care:

· Lack of political leadership, poor understanding of the oral health status of the population and low prioritisation of oral health on the political agenda as well the absence of appropriate oral health policies were identified as barriers for integrated care.

· Scarcity of various trained human resources such as care coordinators, public health workforce and allied dentists were important barriers to oral health integrated care.

· Absence of healthcare policies.

· The primary healthcare providers did not attribute value to continuity of care in the field of oral health because oral health conditions are rarely life threatening

Module 10: Pluralism in health care:

Lot of research has been conducted on the use of medicinal plants on oral health, but they are not still integrated with conventional oral health care.herbs that are commonly used are neem, mango, cashew, eucalyptus, babul and guava leaves. miswak is a popular chewing stick commonly used among the muslim community. The chewing sticks not only cleanes the teeth but also believed to

have anti oxidant properties. Several trials has been conducted to assess the effectiveness of herbal medicines as mouthwashes. however they are not available commercially. In india as a post eating ritual not only people wash their hands but also rinse their mouth which removes the food debris and plaque.The picture is entirely different in rural india when compared to urban india.There is a common belief among the mass that extraction of upper teeth leads to loss of eyesight and also harms the brain. Use of tobacco, cloves, charcoal is commonly used for tooth ache. beliefs are normally passed from one generation to the other. These beliefs are deep seated.Hence i feel there is a need not only to create awareness but also to respect the autonomy of our Cultural beliefs.This is dependent on the local eco system resources.

MODULE 15:

Gender Health:

Gender Equity is fairness in the distribution of resources, budgeting,accessibility and benefits

Gender Equality is absence of discrimination on the basis of persons sex in accessibility , allocation and distribution.

Gender: Gender refers to socially constructed roles, behaviours, expressions and identities .

SexIt is differences in sexual attributes.

Gender and Health is an ever present challenge.It is a social construct which determines our social position, gender differences, leading to biased health issues, biased health care facilities and thereby leading to gender inequality.Gender as a stndalone factor does not cause any disease but in interacts with other factors leading to health issues. Reasons for gender inequalities may be emphasis on womens child bearing roles, excessive workload which not only exposes them to health hazards but also make it difficult for them to take care of their health. In India caste and gender are closely intertwined and hence women empowerment would be incomplete without consideration of the role of caste

In Indian society primary beneficiaries of inheritance are the sons, and in those lines they are provided higher place and also more support to them when compared to the girls. Inequality starts from birth , leading to les importance to education, getting them married against their wishes , shunned during their periods, increased frequency of suicides, and also increased maternal death.

Gender based budgeting and restructuring of revenues and expenditure needs to be made at all levels of health care.

Gender Inequality can be improved based on the following attempts:

- Women leaderships,
- Creating awareness,
- Capacity building, advocacy
- funding women's organisations
- empowerment.
- investing in health care

Mentorship process and reflections:

My mentor Chander SJ is an authority in the field of Tobacco. He is a seasoned adviser, who supported me right from the time of topic selection. Though getting mentorship offline would have been an added experience. But at every phase of my project, I did get his expert guidance and he was there for my presentations.

Project learning experience:

My project was on implications of tobacco use by a tribal community. My first and foremost challenge I faced was in building trust with the community.

Though I have involved the community members in the planning phase itself, the community was reluctant to get involved. However, I managed to convince a few in the beginning. But as I kept visiting their hamlets frequently, I began to see a change. Majority of them co-operated and agreed to join us for my second survey.

The second insight I gained was that the community gave priority to general health when compared to oral health. They were under the impression that oral health issues will not take away their lives.

They had other day to day problems of concerns such as inadequate water supply, electricity, land issues. These were more important than those related to health. Those who went to schools were only a few in numbers.

Take away from CHLP and Looking Ahead -Where do I go from here?

The fellowship empowered me into various other core areas in Public Health. It also helped me to gain vast knowledge and new insights on the most current trends and skills in public health and resource persons who have contributed immensely to the field of Public Health. It may help me for a career transition. It is also be a valuable element to my Resume, as it will make me stand out. I intend to inculcate the knowledge gained here in my public health activities.

Impact of Covid-19:

This had affected my day to day life and the major hurdle that I faced was on taking extensive precautions such as extensive hygiene protocol, social distancing, wearing masks and so on. The impact of the pandemic on me can be divided in to various categories:

a) Healthcare:

- Got infected with the virus
- Family got infected
- Challenges in the diagnosis, quarantine and treatment of suspected or confirmed cases.
- High burden on the medical system.
- Health care professionals were at risk.

- Requirement of protection
- Disruption of medical supply

b) Economic:

- Loss in salary
- Poor cash flow

c)Social:

- Restricted travel
- Interpersonal family relationships issues
- Social distancing
- Closure of Public Places
- Closure of places of entertainment
- Postponement of exams.

d) Mental Health:

- Undue stress
- Depression, Anxiety
- Feeling of Uncertainty
- Financial pressure
- Social Isolation
- Loneliness

PART-B

Background

"Time and health are two precious assets that we don't recognize and appreciate until they have been depleted." – Denis Waitley

Health is a valuable asset not only for an individual but also for the social system. A nation may progress rapidly when its population is healthy and leads a productive life. Oral health is considered as an integral part of general health. Our society is highly stratified by caste and socioeconomic positions. At the bottom of the hierarchy are the lower castes and the indigenous groups[1] .The Koraga tribe is a primitive tribe or to say is one of the oldest tribe of the region is found mainly parts of Dakshina Kannada and Udupi districts of Karnataka and Kasaragod district of Kerala, South India. Their existence is believed to be prior to 6th Century A.D. Though Koragas are tribals, they are regarded as untouchables and are not allowed inside temples and upper caste households in the local conservative Hindu society. It is to be noted that Dakshina Kannada district has, in terms of the Human Development index, very high literacy and health indicators, matching those of Europe. However, The Koraga community has received less attention by the mainstream communities. . But koragas in Dakshina kannada have resolved to free themselves of their degrading occupation once and for all. But due to benefit of welfare programmes their younger generation have acquired education, and some of their young men have studied up to undergraduate and even post-graduate levels. Some are working as teachers and lecturers[2]. The population of the Koraga community is 6,200 persons (1,283 families) in Udupi taluk, 3,154 persons (853 families) in Kundapur taluk, and 1,779 (432 families) persons in Karkala taluk. The major problems faced by this community are health and education realed. The life expectancy of Koraga community members is short when compared to that of other communities[3]

In spite of some positive changes taking place in the social, economic and educational spheres of Koragas since the last decade, Oral health is still a

neglected issue. This may be due to their ignorance , lack of awareness, lack of accessibility and affordability to oral health care.

Tobacco and alcohol use has been prevailing in this community for long and it is a regular practice in their culture. Such habits seems to commence at a very young age and are imparted from generation to generation. They are also unaware of the harmful effects of these habits. This not only causes Oro dental problems but also a precursor for many general health issues.

Tobacco is identified as one of the major risk factor for Non Communicable Diseases, especially among those from low socioeconomic status. Evidence shows that the use of smokeless tobacco is high among the koraga community and health inequalities are rampant. Tobacco use does not only cause oral health related issues but also affects the general health and the environment.

From the history, we all know, tobacco use and alcohol consumption has been prevailing in the tribal communities for so long that it is a regular practice in their culture. Such practices habitually commence at a very young age and sustained life long, additionally it is being imparted from generation to generation. The tribal people being so rooted to their culture are unaware of the outside world and the harmful effects of these practices. Hence by engaging the entire community and volunteers alike from sectors other than health may help to address tobacco control related issues through intersectoral collaboration and capacity building. This will also reduce the burden of Oral Diseases to a great extent.

The cultural patterns and life style of the tribes vary a lot and so does their health seeking behavior. Moreover, the tribal culture is guided by traditionally laid down customs and each member of the culture is ideally expected to conform to it. They rely on traditional systems for their oral health care.

Though most of them are agriculturists and are depending on forests products for livelihood. , At present they are engaged in many other occupations too. Most of them are laborers dependent on daily wages.

Due to their ignorance, they do not take much care pertaining to their own health. They believe that diseases are caused by hostile spirits and ghosts. They have their own traditional means of diagnosis and cure. Good number of them fall prey to the diseases such as skin disease, forest fever, T.B, small

pox, Oral Health Problems etc. Accessibility to proper health care facilities, advanced check-ups and treatments are not affordable to majority of them. The present study will shed light on their oral health and also the implications of Tobacco use on the oral cavity. Based on this understanding, the study will enable to plan and develop strategies for the control of tobacco use and also reduce the oral disease burden which is largely preventable.

SWOT analysis of the community:

• STRENGTHS: • Unique folk culture. • Traditional medicines • Basket making skills. • Agriculturists	WEAKNESS: • Illiteracy, Poverty • Chronic diseases like TB, Skin diseases, anemia • Superstitious beliefs • Lack of Accessibility to health care • Lack of any health care initiatives by the local government officials. • Lack of Community Cohesion
OPPORTUNITIES: • Regular Check up's, Antenatal and Post-natal care at PHC's. • Basic facilities like water supply, electricity and land. • Nutritional supplements for expectant mothers • Community Gathering Spaces • Schools for their children	Threats: • Risk of Extinction due to years of neglect, discrimination and exploitation. • Substandard Housing • Poor Living Conditions

Rationale

Tobacco is one of the major risk factor for Non Communicable Diseases especially among those from low socioeconomic status. A study conducted by Dey S.M shows that the use of smokeless tobacco is high among the koraga community and health inequalities are rampant. Tobacco does not only cause oral health related issues but also affects the general health and the environment. From the history, we all know, tobacco use and alcohol consumption has been prevailing in the tribal communities for so long that it is a regular practice in their culture. Such practices habitually commence at a very young age and sustained life long, further being imparted from generation to generation. The tribal people being so rooted to their culture are unaware of the outside world and the harmful effects of these practices. Hence by engaging, the entire community and volunteers alike from sectors other than health may help to address tobacco control through intersectoral collaboration and capacity building. This will also reduce the burden of Oral Diseases to a major extent.

The purpose of the present study is therefore to assess the implications of Tobacco use on the oral cavity. Considering the high prevalence of tobacco use among koraga community, anti-tobacco activities need to scale up for the community, with more emphasis on behavior change through group or personal approach.

Review of Literature:

- **Reichart A et al (1987)**[4] conducted a study in six major hill tribes of Northern Thailand. Chewing, smoking and oral mucosal lesions were recorded. Considerable differences in the chewing and smoking habits among the various tribes were recorded and some of them were considered tribe-specific. Chewing of betel and miang was more prevalent among the older people, these habits seem to have lost their attraction for the younger people. Cigarette smoking was more prevalent among the middle aged. Leukoedema and preleukoplakia was the most common lesion.
- **Bhasin V (2004)**[5] conducted a study to assess the oral behavior among Bhils, a tribal community of Rajasthan. During the course of the study, 200 Bhil community indicated that there are no traditional or advanced methods of oral hygiene as such for their oral hygiene maintenance. Authors recommended the development of dental caries and infrastructure to impart education about oral hygiene and dental care should form part of the health policy.
- **Syed Z Q (2011)**[6] conducted a cross-sectional study to assess the prevalence and pattern of tobacco use, exposure to tobacco prevention activity among adolescent from tribal area. Data was collected by interview from 240 adolescent by home visits. Prevalence of tobacco use (all forms), smokeless tobacco use and smoking in tribal adolescents were 54.45%, 53.41%, and 23.14%, respectively. Prevalence of tobacco use in boys (66.25%; 95% Confidence Interval (CI) = 60.29-72.21) was more than girls (26%; 95% CI = 25.84–37.57). Prevalence of tobacco use was more in late adolescent period and earning adolescents. The average age of starting smokeless tobacco use and smoking was 13.75 years (SD 2.26) and 14.22 years (SD 2.54), respectively. Boys start smoking relatively earlier than girls (P = 0.04).

- **Narayan D.D (2011)**[7] conducted a study to know the prevalence and the pattern of tobacco consumption among 502 adolescents in Five tribal villages under the Primary Health Centre, Waradh, in the District Yavatmal, Maharashtra State, The results showed that the overall, prevalence of tobacco consumption among the adolescents of the tribal areas was 45.42%. 65.31% male and 26.46% female adolescents were habituated to it. All female, and majority of the male adolescents predominantly consumed a smokeless form of tobacco. Most of them (89%) started chewing tobacco/gutkha between 5-15 years of age. The females had started consuming tobacco at younger ages than the males. Social customs were the major influencing factor for the tobacco consumption, followed by peer pressure. The consumption of tobacco among the family members significantly ($p<0.001$) increased the tobacco use among the adolescents. Social customs, peer pressure and the consumption of tobacco by the family members were the major contributing factors which emphasized the need of strengthening the information, education and communication (IEC) activities.
- **Sushi-Kadanakuppe(2013)**[8] A study was carried out on 2605 people belonging to the Iruligas, a native Karnataka tribe, residing in 26 villages of Ramanagar district in Karnataka to assess their periodontal health status and oral hygiene practices. The study revealed a relatively low prevalence of periodontal disease among these people perhaps because of their practice of using of chew stick which was observed in as many as 80 per cent of the tribal population.
- **Deepa KC(2013)**[9] Total of 523 individuals belonging to the age group 10-80 years were selected randomly from different tribal groups of Wayanad district of Kerala. Selected individuals were personally interviewed in local language and subsequently oral examination was carried out to note the details. Out of 523 participants, 445 (85.1%) were consuming tobacco in one form or other. 91.3% of tobacco users were males and 79.3% females with relatively equal distribution among different communities. Different types of habits observed were chewing, smoking and Snuff of which chewing was found to be more prevalent (60.1%). Various tobacco related oral mucosal lesions observed among the study populations were Leukoplakia 93 (17.8%),

Oral submucous fibrosis (OSMF) 38 (7.2%), Oral squamous cell carcinoma(OSCC) 2(0.4%), and Chewers mucosa 61 (11.7%). Prevalence of tobacco habits and related oral mucosal lesions are high among the tribes of Wayanad. Their ignorance about the adverse effect of tobacco is highly alarming and special attention from government and health professionals is required for improving the health awareness and welfare of this tribal community.

- **Dey S.M (2017)**[10] conducted a study to assess the periodontal health status among Koraga tribal community residing in Mangalore Taluk. Of the total population examined, 81% brushed once daily with 34% of the subjects using tooth paste and brush as oral hygiene aid while, the rest of them used a combination, with other indigenous methods. Majority of them used tobacco in the smokeless form (36%). The oral hygiene status was poor in 56% of the subjects. The present study showed that majority of the Koragas suffered from various gingival and periodontal diseases as assessed by community periodontal index. The dental aesthetic index indicated that 37.5 % of study subjects had very severe malocclusion.

- **Karuveettil V (2020)**[11] Conducted a study to assess the prevalence of tobacco chewing, and related oral mucosal lesions amongst the Paniya tribes of Wayanad. Fifteen in-depth interviews and two focus group discussions were conducted among the key informants from within the tribal colonies of Cheepram and Madikkunnu. This study showed that parental influence and peer pressure as the key factors for smokeless tobacco initiation amongst the adolescent. There was a greater predisposition for women to be chewers of tobacco, particularly after marriage. The key factors influencing initiation of the habit amongst men include peer pressure and availability of tobacco at workplace. The role of contextual factors such as enculturation, marginalization and perceived health benefits also play a substantial role in development of this habit.

- **Ray S S(2021)**[12] A cross-sectional survey of 256 tribals of Chamarajanagar district was conducted. A modified WHO oral health assessment form 2013 was utilized and examined according to the WHO methodology 2013. Based on the age-category, majority of them belonged to the age group of 35-44 years. All the participants belonged to the sub-caste of Soligas. The total decayed missing filled teeth (DMFT) among the subjects was 5.5±4.14,114 (44.5%) of them had gingival bleeding, 76 (29.7%) of them had pockets of 4-5 mm depth, 14 (5.5%) of them had pockets of >6 mm depth, 74 (28.9%) had loss of attachment of 4-5 mm, 16 (6.3%) of them had loss of attachment of 6-8 mm, 3 (1.2%) had leukoplakia, 1 (0.4%) had lichen planus, 12 (4.7%) had ulceration and 12 (4.7%) had abscess. The study showed that a majority of tribes used toothbrush and toothpaste to routinely clean their teeth. High prevalence of dental caries and periodontal diseases was observed among the participants.

Aim: To assess the implications of tobacco habits on the oral health of people belonging to Koraga Community

Objectives of the community health action initiative:

1. To identify the reasons for the initiation of tobacco use.

2. To assess the patterns of tobacco habits among the Study participants.

3. To assess the impact of Tobacco use on their Oral Health.

Community context:

The Koragas are a tribal community found in coastal Karnataka. According to Mr. Suresh a Koraga Community Leader, the major problem faced by them are Health related issues and Illiteracy. Life expectancy is short and reduced fertility rate. Alcoholism and use of tobacco is highly prevalent. Another grouse is that, the basic necessities of the people are not met like power and water supply.

The areas in which Koragas live comprise mostly of agricultural land and forest. They are known for Drum beating and Flute music. They have their own dialect which is strongly influenced by Tulu, Kannada and Malayalam. Their main occupation is basket making and few of them work as scavengers and Labourers. Presently they are Classified as Scheduled Tribes by the Government of India.

Stakeholders:

- Koraga Tribal Community
- Interns from our Dental Institute
- Indian Cancer Society
- Department of Community Medicine

Methodology:

The present study was conducted to assess the implications of tobacco use on oral health among the Koraga community.

a) Study setting: The study was conducted at the hamlets belonging to koraga community close to the research institute.

b) Study design: Mixed method cross-sectional study

c) Study duration: September 2022 to December 2022.

d) Sampling criteria

Participants were included based on Convenience sampling according to the following **inclusion criteria and exclusion**

Inclusion criteria

- Subjects above the age of 18 years were included.
- Subjects who gave informed consent

Exclusion Criteria:

- Subjects not belonging to koraga community
- Subjects who were not present in their house on the day of visit

Sampling technique

Time bound enumeration (quantitative study).

The data collection period of the study was from September 2022 to December 2022. Respondents for the in-depth interviews and focus group discussion were selected through convenient sampling technique. A total of 80 subjects were included for the quantitative survey. 8 in-depth interviews were conducted amongst those using tobacco

Ethical consideration

The study commenced after taking ethical clearance from the Institutional Ethics Committee, A.J.Institute of Dental Sciences (AJIEC 179/2022). After explaining to the respondents on the purpose of the study using a participant information sheet, written informed consent were obtained. Participation was voluntary.

Study tool

For the quantitative survey a structured, closed-ended, investigator administered questionnaire was used to understand the prevalence of tobacco use and its implications on oral health.

In-depth interviews were conducted using an in-depth interview guide. The close-ended questionnaire was designed to collect detailed information such as individual's demographic details, history of tobacco abuse, type of tobacco use, duration of use and its implication on oral health.

Data collection method:

Quantitative data collection was conducted at their hamlet and in a hall which was meant for koraga community.

The in-depth interviews were conducted among 10 subjects in their houses in the evenings after they returned home from their work. Written informed consent was obtained at the beginning of each interview, and also participant information sheet was given to each of the respondents before the interview. Respondents were informed regarding confidentiality of data as per the ethical guidelines. Duration of each in-depth interview or focus group discussion varied between 20 to 40 minutes to one hour. Interviews were conducted in a single session. All in-depth interviews were voice recorded, transcribed and this data along with the survey data served as the primary data for drawing inferences and conclusions. All study subjects were anonymized.

Data analysis

The data was entered into excel sheet (Microsoft Office), and SPSS statistical software package was used. Descriptive analysis was conducted for the quantitative data. Data analysis of the qualitative interviews included the following steps: 1. transcribing the interviews 2. reading through the data 3. coding the data 4. generate codes and categories 5. interpreting the codes.

Results:

Table 1: Sociodemographic Details

Age (Mean)	**40.75 years**
Gender distribution	**Frequency (%)**
Males	**45(56.3%)**
Females	**35(43.8%)**
Education	**Frequency (%)**
Graduate	**14(17.5%)**
High school certificate	**16(20%)**
Illiterate	**12(15%)**
Intermediate or diploma	**12(15%)**
Middle school certificate	**15(18.8)**
Primary school certificate	**11(13.8%)**
Occupation	**Frequency (%)**
Clerical	**4(5%)**
Clerk	**1(1.3%)**
Elementary occupation	**36(45%)**
Intermediate or diploma	**2(2.5%)**
Skilled agriculture and fishery worker	**1(1.3%)**
Skilled workers and shop and market sales worker	**8(10%)**
Technician and associate professional	**2(2.5%)**
Unemployed	**26(32.5%)**

The above table depicts that out of 80 respondents, the mean age of the respondents was 40.75±14.16 years. Majority of the respondents were males (56.3%) when compared to females (43.8%). Among the 80 respondents 14(17.5%) had completed

their graduation, 16(20%) had completed their high school and 12(15%) were illiterates. Among 80 respondents, 36 (45%) of them were doing elementary occupation, 26(32.5%) completed their high school and 12(15%) of them were unemployed.

Table 2a: Utilisation of Dental Care

Utilization of dental care	Frequency (%)
Not used	35(43.8%)
Used	45(56.3%)

The above table depicts that 35(43.8%) of them had not utilized the oral care and 45(56.3%) had used the dental care.

Table 2b: Reasons for not utilizing dental care:

Reasons for not utilizing dental care	Frequency (%)
Not accessible	44(55%)
I don't have dental problems	31(38.8%)
Fear of dental procedures	4(5%)
Teeth are not important for me	1(1.3%)

The above table depicts the reasons for not utilizing dental care, among the various reasons 44(55%) of them responded that oral health care is not accessible. 38.8% of them felt that they do not have any oral problems and 5% of them had fear of dental treatment.

Table 3: Prevalence of Tobacco Use

Smoking	Yes	3(3.8%)
	No	77(96.3%)
Smokeless	Yes	18(22.5%)
	No	62(77.5%)
Alcohol	Yes	2(2.5%)
	No	78(97.5)

The table depicts that 18(22%) of them used smokeless tobacco when compared to 3(3.8%) of them who used smoked form of tobacco. Surprisingly only 2(2.5%) of them consumed alcohol.

Table 4: Effect of tobacco on caries

		Mean	Standard deviation	T	Sig.
Smoking	Yes	6.67	4.509	1.198	0.235(NS)
	No	3.51	4.483		
Smokeless	Yes	1.83	2.975	-1.955	**0.016(S)**
	No	4.15	4.742		

The above table shows the mean distribution of dental caries among the study population. The results show that the mean caries was more among smokers than those using smokeless forms of tobacco. However, a significant difference was seen in dental caries among those consuming smokeless forms of tobacco.

Table 5: Effects of tobacco on Periodontal status

		CPI						Chi square value	Sig.
		0	1	2	3	4	x		
Smoking	Yes	0(0)	0(0)	2(66.7)	0(0)	1(33.3)	0(0)	1.369	0.928(NS)
	No	7(9.1)	1(1.3)	40(51.9)	14(18.2)	14(18.2)	1(1.3)		
Smokeless	Yes	3(16.7)	0(0)	8(44.4)	4(22.2)	3(16.7)	0(0)	2.881	0.718(NS)
	No	4(6.5)	1(1.6)	34(54.8)	10(16.1)	12(19.4)	1(1.6)		

The above table shows that the prevalence of calculus was more among those who are smokers when compared to those using smokeless forms of tobacco. However, the prevalence of shallow pockets and deep pockets was more among smokeless tobacco users. But the results did not show any statistical significant difference($p<0.05$)

Table 6: Effect of tobacco on oro mucosal lesion

		Lesions		Chi square value	Sig.
		absent	OSMF		
Smoking	Yes	3(100)	0(0)	0.080	0.926(NS)
	No	75(97.4)	2(2.6)		
Smokeless	Yes	16(88.9)	2(11.1)	7.066	**0.048(S)**
	No	62(100)	0(0)		

The most common lesion seen among those using smokeless forms of Tobacco was OSMF (Oral Sub Mucous Fibrosis)

Qualitative Analysis:

Reasons for starting the use of Tobacco:

Most of them started smoking after the age of 18 years. The main reason to start tobacco use was due to the stress and to keep them alert. The reason was found similar among the female subjects also.

One of them who performs Buta Kola a highly stylized ritual dance usually performed by the Tulu speaking population for the worship of local deities of Tulunadu, had a large lesion at the base of the tongue. When questioned about the habit, he said *"I use tobacco, it keeps me awake and makes me salivate more, so that I can deliver my Nudi very efficiently".*

His wife works in a factory close to her house, said that ***"I started the habit as everyone in my house used to chew tobacco, and now, if I do not consume, I will not be able to do my work at my workplace, I lose interest in everything".***

Another respondent said ***"We all start at an early age, everyone eats, no one in the family objects"***

Reasons to continue smoking

All the participants considered smoking as a stress buster and they could divert their mind from what was troubling them.

A young adult said ***"Whenever I have tension I want to smoke and relax. It gives relaxation and I would forget all the tension in association with drinking"***

A housemaker said ***"It's a good pass time when I am alone at home, and I don't see the need to stop chewing also".***

A Buta Kola performer said ***"Though I have a lesion, I don't want to waste time in getting it treated, I have lots of work to do, and I will come to your hospital during rainy season as there is no work then, Anyways I have got to die"***

Knowledge regarding health effects

When asked about the harmful effects of tobacco on health, all them said they are aware of the ill effects of tobacco which they got to know from mobile phones.

The Person who had the lesion at the base of the tongue said that ***"I know that it is because of my chewing habit, I can put my finger into the lesion, but I do quit for few days and start it again".*** They were not aware of the COTPA act and its regulations, however watched anti-tobacco advertisements and heard from people that smoking in public is prohibited.

Quitting Tobacco:

Only a few have attempted to quit but were unsuccessful, but they do not want their children to start the habit. An old lady said ***"the habit will go only when she dies".***

Another lady said that ***"I am ready to stop having food, but without chewing I cannot survive".*** The men said that ***"tobacco is a major stress buster, and everyone in the family use tobacco. So many people chew tobacco, nothing happens, so why to worry, anyways we have to die"***

The main leader responded when asked about their habit is that ***"****We are a community who worship nature like the trees, stones, water. What can be more powerful than this nature, which is giving us our daily bread. We do not go to any temple; we worship those trees which discharges a milky sap. We get a stone from the River, place it under the tree and start worshipping that stone. We mainly eat Chicken and on the date of marriage, we are supposed to show*

a live chicken and a Coconut to the Groom and the Bride, just to ensure that, we do not cook any other meat other than chicken. We have been condemned by the society, and till last year (April 2021) our health services are borne by the ITDP department, but now we have to pay from our pocket. Even in government hospitals some of the medicines and treatments are not free".

Barriers to cessation: Dependency to tobacco was the main barrier among the respondents and inability to manage stress.

"I get severe headache, and loose interest in day to day activities" was told by a respondent.

Regulations Related to Tobacco:

The respondents were not aware of any regulations related to tobacco. An adolescent who works in a shop said that ***"laws come and go, it is our wish, but I will not encourage others, but at the same time they start the habit, I will not stop them"***

Discussion:

The quantitative data shows that quite a few of them did not utilize oral care as majority of them felt that oral health care was not accessible, and they do not have any dental problems. This is similar to a study done on pregnant tribal women where the most reported barrier included the lack of awareness and knowledge of the availability of the dental services[13].

The surprising part of the results is that majority of them did not use any form of tobacco, this may be an information bias and they did not want to share information, thinking it may scare them. A study done by Aluckal said that the prevalence of tobacco use was more among the males when compared to females in koraga community[14]. In the present study, stress and family culture was the main reason the participants started tobacco use. A study by Chellapa L R A et al. in 2021, found that main reason to start smoking was due to the influence of peer groups and friends, and also inquisitiveness[15].The reason to continue smoking and relapse in quit attempts in the present study was stress which was similar to statement in the previous studies[16].Medical problems caused by smoking are very well known, major of them being lung cancer and cardiovascular disorders. Oral health is also negatively affected. Oral problems include staining of teeth and dental restorations, reduction of ability to smell and taste, development of diseases such as smoker's palate and melanosis, coated tongue, precancerous lesions and cancer, oral candidiasis, periodontitis, implant failure, and dental caries[17]. However, the present study releveled that those consuming smokeless forms of tobacco had less dental caries when compared to those who used smoked form of tobacco, this may be because the pits and fissures of the teeth get smoothened due to constant salivation, increase in salivation as a result the teeth are self-cleansed. Evidence shows that smoking actually helps to reduce dental caries.

The reason might be smoking increases the thiocyanate level in saliva. Thiocyanate is a normal constituent of saliva that inhibits the possible caries effect[18]. On the other hand, the decreased buffering effect and possible lower pH of smoker's saliva and the higher number of Lactobacilli and *Streptococcus mutans* may indicate an increased susceptibility to caries. People consume tobacco without realizing its hazards, and the main reason for the addiction is due to nicotine, which is the main chemical content present in tobacco[19]. The periodontal health was poor among those among smokeless tobacco users. This may be because of constant chewing the oral hygiene is not maintained well, resulting in accumulation of debris around the teeth leading to poor oral health. The result was contradictory to a study carried out by Sushi-Kadanakuppe on 2605 people belonging to the Iruligas, a native Karnataka tribe, residing at 26 villages of Ramanagar district in Karnataka to assess their periodontal health status and oral hygiene practices. The study revealed a relatively low prevalence of periodontal disease among these people perhaps because of their practice of using of chew stick which was observed in as many as 80 per cent of the tribal population[8]. A study done by Dey S M said that Majority of them used tobacco in the smokeless form (36%) resulting in poor oral hygiene status which was found in 56% of the subjects[10]. The present study showed that majority of the Koragas suffered from various gingival and periodontal diseases as assessed by community periodontal index

However, the qualitative data helps us to understand their beliefs, experiences, behavior and attitudes. This study was devised to explore the perceptions of tobacco initiation in the tribal population. The study confirms that koragas start chewing tobacco as early as 14 years of age, which emphasizes the adolescent onset of tobacco initiation. This is in line with various studies conducted on both smokeless and smoking tobacco initiation[11].This information gives voice to the participants permitting them to share their experiences of effects of tobacco . this is an eye opener not only to their culture but also help us to modify our strategy in tobacco control methods. Present study revealed that tribes were aware of the harmful effects

of chewing, but did not want to quit the habit. The reason stated being they have not seen any examples with such severe outcomes and even if they do, they do not link this to tobacco chewing.

Tobacco chewing is strongly rooted in the culture of Koraga tribes. It is a part of their customs and festivals and has been practiced across generations. Most of the tribes testified that they have grown up seeing their elders chewing tobacco and how normal this habit is perceived in the community. As culture leads to behaviour this factor forms an integral role in habit initiation.

Learning and Reflection

Learning and Reflection

- Built rapport with the community
- Understood the felt needs of the community
- Understood their attitude and awareness towards their oral health

Reflections:

APPLICATION OF PRINCIPLES RELATED TO COMMUNITY HEALTH:

1) Autonomy over Oral Health: Made Oral Health Accessible and Affordable.

2) Integration of other health services: Other medical departments were also involved, to be a part of the programme.

SEPCE ANALYSIS: (In the next page)

SEPCE ANALYSIS:

Social:

Low Socioeconomic status

Illiteracy

Poor neighbourhood

Poor housing

Unemployment

Addiction

Poor social support

Economic:

Discrimination

Income – Because of illiteracy

Wealth

Education –

Increased Infant mortality Rate- also more a social

Childhood Illness

Political:

No Tribal Health Care

No access to food.

No administrative support

Cultural:

Spiritual Beliefs

Socioeconomic Status – is it good or bad,poor or beter

Education

Behavior Norms

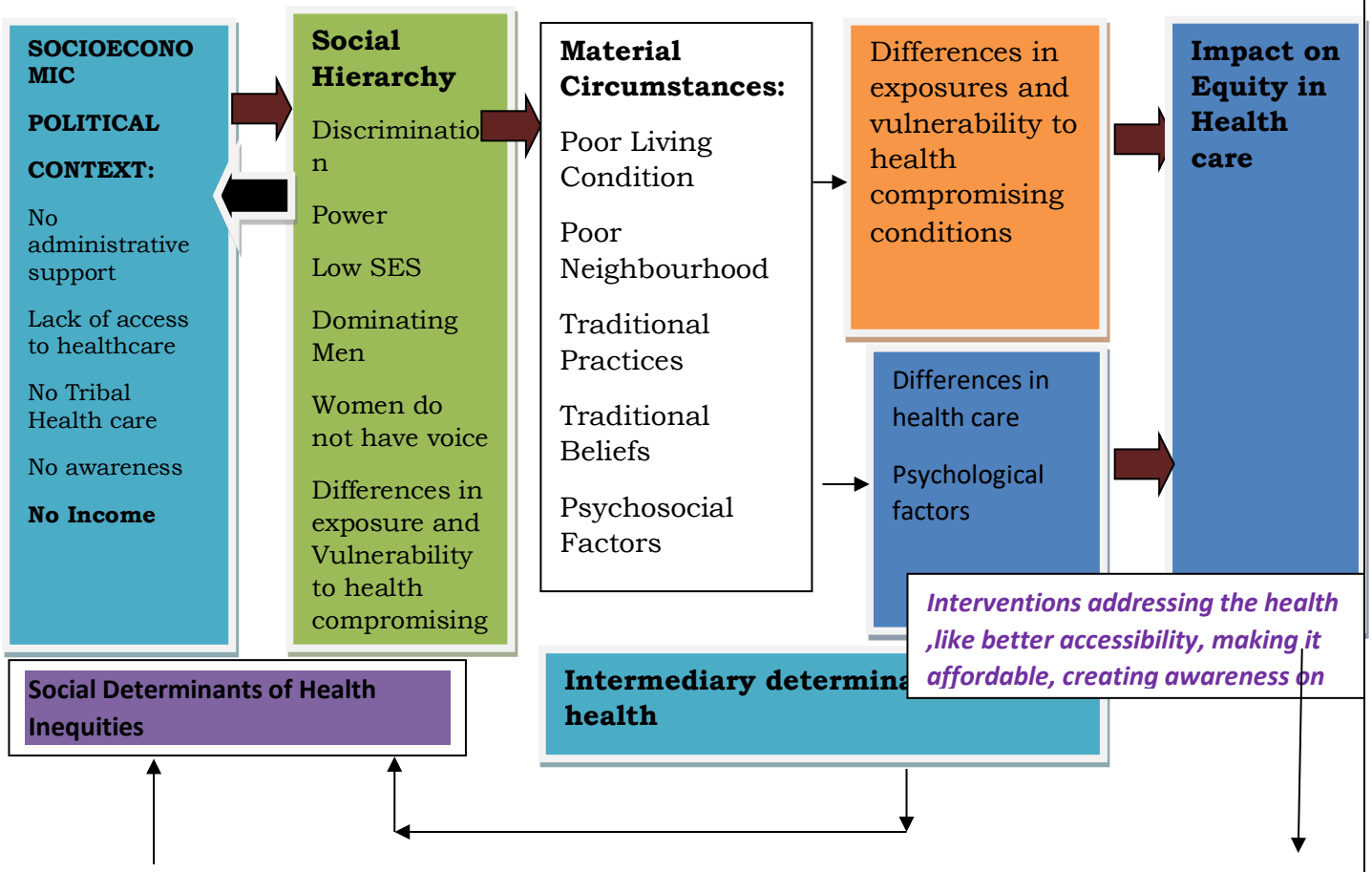
Ecological:

Dominating Men in the family – social

No support to the females

Lack of Awareness -social

Poor Living Condition



Conclusion:

Targeted strategies for effective tobacco control can be developed through an understanding of the socio-cultural factors leading to initiation of smokeless tobacco use among disadvantaged communities. Interventions are suggested which can be applied to similar populations for preventing tobacco initiation based on our findings is given below:

1. Parental awareness on how they influence their children to initiate chewing.
2. Community awareness about the laws of selling tobacco products to minors, sale of tobacco near schools,prohibition of smoking in public places and sale of single stick.
3. Dispelling the myth of tobacco chewing relieving tooth ache by dentists.
4. Educating koraga groups to break the habit together.
5. Assisting the youth in tobacco cessation

Recommendations:

Awareness programmes on tobacco can be incorporated into health education programmes already being conducted by the dental institutes in collaboration with the district tobacco control cell in all the schools close to their hamlets. Constant exposure to messages related to health effects of smoking and drug addiction via awareness campaigns can deter many young people from taking up this habit.

Tobacco cessation programme can be incorporated in primary health centres.

Awareness needs to be created regarding the National Quitline which is very effective and practical, it is an online service.

The quit line number is mentioned on all tobacco products, so people are required to be motivated to quit.

Limitations:

A significant number of potential respondents declined to participate in the study due to their personal reasons and refused to give written informed consent. The findings from this study cannot be generalized due to limited sample size. Lack of Time was also a contributing factor for small sample size.

Lack of Previous studies in the area of interest, due to which the discussion was compromised.

Inferential statistical analysis could not be done as the participation from the female subjects was less when compared to males.

Summary:

The koragas are most backward among the tribes of Karnataka state. Their health status is badly affected by their lifestyles, living conditions, illiteracy, income and employment. Their main health related issues are tuberculosis and skin disorders. They do not give much importance to oral health and is often neglected. But there are limited information on their oral health status and also on oral health related habits like tobacco. So a mixed method study was planned to explore the implications of tobacco use on Oral health.

The subjects were recruited for the study after conducting a meeting with their leaders, so that access to their community is made easier. After several visits, they were approached at their hamlets close to our institute. Many were reluctant to cooperate. Later a total of 80 subjects were recruited for the

quantitative data collection. In-depth interview was conducted only with 10 subjects who had the habit of using tobacco, due to lack of time.

On observation it was found that the dental caries was more prevalent among smokers when compared to those using smokeless forms of tobacco. Periodontal status was poor among those using smokeless forms of tobacco. This may be due to poor maintenance of oral hygiene. The qualitative data shows that they do not intend to quit tobacco and feel that it is part of their culture and they are all nature lovers.

Acknowledgements: We appreciate the Community for their time and valuable thoughts and also arrangements made by the leaders for the clinical examinations.I also wish to

Pease include all those who have supported you in your study.

Annexures

Annexure 1: PATIENT INFORMATION SHEET

TITLE OF RESEARCH:

A study to assess the implications of tobacco habits on the oral health of people belonging to Koraga Community

INVESTIGATOR:

Dr Vijaya Hegde

Professor and Head of the Department

Department of Public Health Dentistry

A.J Institute of Dental Sciences, Mangalore

Email id : drvijayahegde15@gmail.com

Contact number - 9880004859

INTRODUCTION:

I am Dr. Vijaya Hegde from the Department of Public Health Dentistry, A.J. Institute of Dental Sciences, Mangalore. I will be doing a study to assess the implications of tobacco habits on the oral health of people belonging to Koraga Community. I am going to give you information and invite you to be part of this research. You do not have to decide today itself whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

There may be some words that you do not understand. Please ask me to stop as we go through this information sheet and I will take time to explain. If you have questions later, you can ask me.

VOLUNTARY PARTICIPATION

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, it will not affect your treatment in any way

EXPLANATION OF THE PROCEDURE:

Koraga community residing close to the research centre will be considered as study subjects.. Details regarding the socio demographic factors , tobacco use and their effect on oral health will be assessed using a proforma. Details regarding the starting of the habit, frequency, duration, reasons for quitting, relectance to quit will be taken by conducting an interview.

POSSIBLE BENEFITS

There may not be any benefit for you at this stage of the research, but your participation is likely to help us find the answer to the research question. There may not be any benefit to the society but future generations are likely to benefit.

POSSIBLE RISKS: By participating in this research your will not be at risk.

CONFIDENTIALITY:The information that we collect from this research project will be kept confidential. Information about the patient that will be collected during the research will be put away and no one but the researchers will be able to see it. Any information about the patient will have a number code and the name and identity of the patient will be kept confidential.

WITHDRAWAL:You are entitled to withdraw from the study at any point of time.

SIGNIFICANT NEW FINDINGS:New findings, as and when made, regarding your condition, during the duration of the study, would be informed to you.

COST INCURRED BY YOU FOR PARTICIPATION:The procedure will be free of cost.

PAYMENT IN CASE OF UNTOWARD INCIDENTS DURING THE STUDY:No monetary compensation would be given in case of untoward incidents.

CONTACT:If you have any questions you may ask me now or later, even after the study has started. If you wish to ask questions later, you may contact us as follows:

Dr Vijaya Hegde,Professor and Head of the Department,Department of Public Health Dentistry,A.J Institute of Dental Sciences, Mangalore

Email id : drvijayahegde15@gmail.com,Contact number - 9880004859

LEGAL RIGHTS: By signing on the consent form you will be waiving off all legal liabilities against the institution and staffs

CERTIFICATE OF CONSENT

I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction.I consent voluntarily to participate as a participant in this research.

Name of Participants' parent/ guardian:

Signature of Participants' parent/ guardian:

Date

If illiterate

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Name of witness **Thumb print of participant**

Signature of witness

Date

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands that the following will be done.

1. Examination of the mouth will be done

I confirm that the participant was given an opportunity to ask questions about the study, and all questions asked by the participant have been answered correctly and to the best of my ability.

I confirm that the individual has not been forced into giving consent, and the consent has been given freely and voluntarily.

A copy of informed consent form has been provided to the participant.

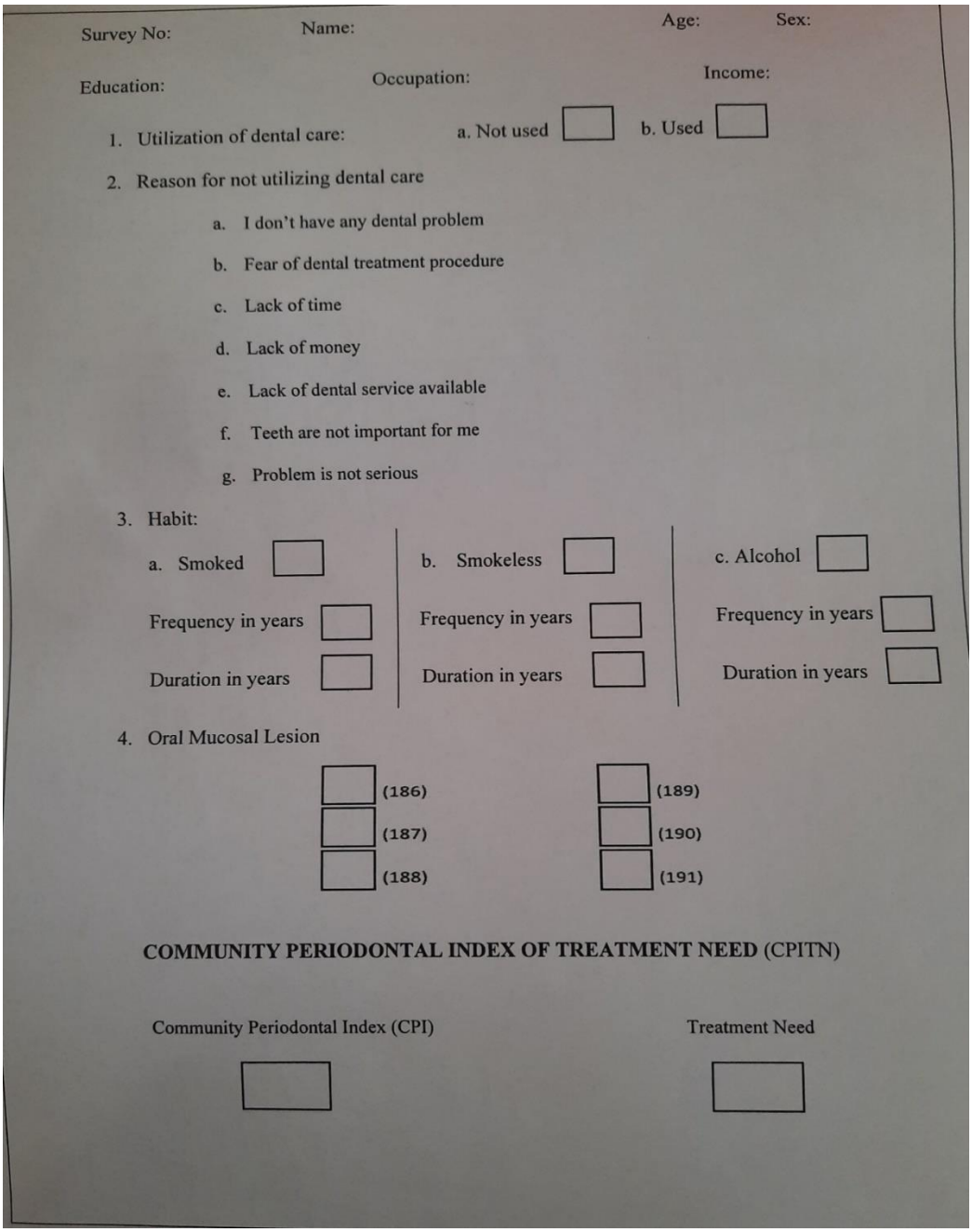
Name of Researcher/person taking consent:

Signature of Researcher/person taking consent:

Date

Photos

Annexure 3: DATA COLLECTION SHEET



Survey No: Name: Age: Sex:

Education: Occupation: Income:

1. Utilization of dental care: a. Not used ☐ b. Used ☐
2. Reason for not utilizing dental care
   a. I don't have any dental problem
   b. Fear of dental treatment procedure
   c. Lack of time
   d. Lack of money
   e. Lack of dental service available
   f. Teeth are not important for me
   g. Problem is not serious
3. Habit:

a. Smoked ☐	b. Smokeless ☐	c. Alcohol ☐
Frequency in years ☐	Frequency in years ☐	Frequency in years ☐
Duration in years ☐	Duration in years ☐	Duration in years ☐

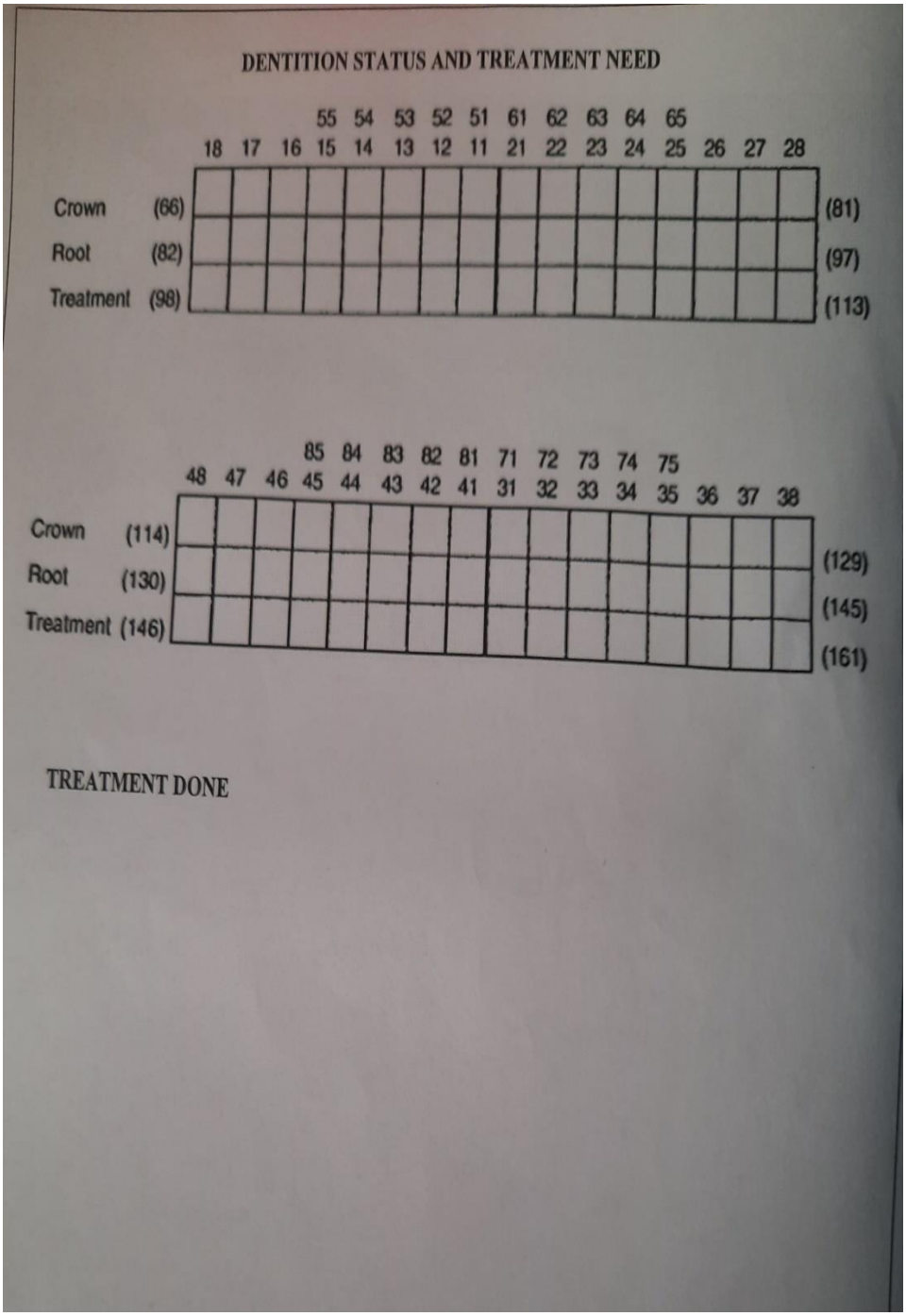
4. Oral Mucosal Lesion

☐ (186) ☐ (189)
☐ (187) ☐ (190)
☐ (188) ☐ (191)

COMMUNITY PERIODONTAL INDEX OF TREATMENT NEED (CPITN)

Community Periodontal Index (CPI) ☐ Treatment Need ☐

DENTITION STATUS AND TREATMENT NEED



TREATMENT DONE

References:

1. Mohindra KS, Haddad S, Narayana D. Women's health in a rural community in Kerala, India: do caste and socioeconomic position matter? J Epidemiol Community Health. 2006 Dec;60(12):1020–6.

2. Nalinam.M NalinamM. Depopulation of Koraga Tribes in South India. IOSR-JHSS. 2013;8(4):1–5.

3. Prabhu G. 'Koraga community lags in health, education'. The Hindu [Internet]. 2016 Dec 30 [cited 2022 Dec 14]; Available from: https://www.thehindu.com/news/national/karnataka/%E2%80%98Koraga-community-lags-in-health-education%E2%80%99/article16966107.ece

4. Precancerous and other oral mucosal lesions related to chewing, smoking and drinking habits in Thailand - Reichart - 1987 - Community Dentistry and Oral

5. Bhasin V. Oral Health Behaviour Among Bhils of Rajasthan. Journal of Social Sciences. 2004 Jan 1;8:1–5.

6. Quazi Syed Z, Gaidhane A, Bawankule S, Khatib MN, Zodpey S. Prevalence and pattern of tobacco use among tribal adolescents: Are tobacco prevention messages reaching the tribal people in India? Annals of Tropical Medicine and Public Health. 2011 Jul 1;Jul-Dec 2011 | Vol 4 | Issue 2:74–80.

7. Narayan DD, Dhondibarao GR, Ghanshyam KC. Prevalence of tobacco consumption among the adolescents of the tribal areas in Maharashtra. 2011 Jan 1;5:1060–3.

8. Kadanakuppe S, Bhat P. Oral health status and treatment needs of Iruligas at Ramanagara District, Karnataka, India. The West Indian medical journal. 2013 Oct 31;62:73–80.

9. Deepa KC, Jose M, Prabhu V. Prevalence and Type of Tobacco Habits and Tobacco Related Oral Lesions among Wayanad Tribes, Kerala, India. Indian Journal of Public Health Research & Development. 2013 Apr 10;4(2):63–8.

10. Dey SM, V ND, Jude M. Assessment of periodontal health status among Koraga tribes residing in Mangalore taluk: a cross sectional study. International Journal of Research in Medical Sciences. 2017 Aug 26;5(9):3980–4.

11. Karuveettil V, Joseph J, S VK, Sanjeevan V, Padamadan HJ, Varghese NJ. The Ominous beginning-Perceptions of Smokeless Tobacco Initiation among the Paniya Tribes of Wayanad: A qualitative Study. Asian Pac J Cancer Prev. 2020 Jun;21(6):1615–22.

12. Ray SS, Doddaiah SK, N. C, Gopi A, M. R. NM, Bilimale AS. Oral health status of the tribal population of Chamarajanagar district, Karnataka. Int J Community Med Public Health. 2021 Sep 27;8(10):4902.

13. Barman D, Ranjan R, Kundu A. Factors associated with dental visit and barriers to the utilization of dental services among tribal pregnant women in Khurda district, Bhubaneswar: A cross-sectional study. J Indian Soc Periodontol. 2019;23(6):562–8.

14. Aluckal E. Tobacco use, smoking quit rates, and socioeconomic patterning among indigenous tribe of rural Mangalore, India. Annals of Oncology. 2017 Nov 1;28:x110.

15. Chellappa LR, Leelavathi L, Indiran MA, Rathinavelu PK. Prevalence and dependency of tobacco use among tribal gypsies in Thoothukudi district - A cross sectional study. J Family Med Prim Care. 2021 Feb;10(2):738–44.

16. Peers and adolescent smoking - Kobus - 2003 - Addiction - Wiley Online Library [Internet]. [cited 2023 Jan 9]. Available from:

17. Mittal N, Singh N, Naveen Kumar PG. Prevalence of Dental Caries among Smoking and Smokeless Tobacco Users Attending Dental Hospital in Eastern Region of Uttar Pradesh. Indian J Community Med. 2020;45(2):209–14.

18. Hugoson A, Hellqvist L, Rolandsson M, Birkhed D. Dental caries in relation to smoking and the use of Swedish snus: epidemiological studies covering 20 years (1983-2003). Acta Odontol Scand. 2012 Jul;70(4):289–96.

19. Leelavathi: Awareness of the hazards of tobacco usage... - Google Scholar [Internet]. [cited 2023 Jan 9].