PREVALENCE OF POTENTIALLY MALIGNANT ORAL DISORDERS: A COMPARATIVE STUDY AMONG INTERSTATE MIGRANT LABOURERS AND GENERAL POPULATION IN KOCHI CORPORATION

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Dedicated to my grandparents

Their blessings have always lightened my paths

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DECLARATION

I hereby declare that this dissertation titled "***Prevalence of potentially malignant oral disorders: A comparative study among interstate migrant labourers and general population in Kochi Corporation***"is the bonafide record of my original research. It has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

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CERTIFICATE

Certified that the dissertation titled "***Prevalence of potentially malignant oral disorders: A comparative study among interstate migrant labourers and general population in Kochi Corporation***" is a record of the research work undertaken by DrTijo George in partial fulfillment of the requirements for the award of the degree of "Master of Public Health" under my guidance and supervision.

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IOM	International Organization for Migration
NSSO	National Sample Survey Organization
OPMD	Oral Potentially Malignant Disorders
DMFT	Decayed Missing Filled Teeth Index
UNESCO	United Nations Educational, Scientific and Cultural Organization
NACO	National AIDS Control Organization
HIV	Human Immunodeficiency Virus
WHO	World Health Organization
LP	Lichen Planus
OSMF	Oral Submucous Fibrosis
GATS	Global Adults Tobacco Survey
SPSS	Statistical Package for the Social Sciences
LR	Logistic Regression
NCD	Noncommunicable Diseases
BMI	Body Mass Index
SDH	Social Determinants of Health

Abstract

Objective: Oral and pharyngeal cancer are the sixth most prevalent cancer worldwide. Certain precursors of oral cancer such a leukoplakia, erythroplakia, lichen planus, oral sub mucous fibrosis, tobacco pouch keratosis and many more lesions are collectively termed Oral potentially malignant disorders (OPMDs) and are known to differentially affect marginalized groups. This study aims to compare the prevalence of OPMDs among male interstate migrant labourers and men in the general population in the corporation of Kochi. This study also tries to examine the utilization of oral health care among the migrant and the general population.

Methods: A cross-sectional comparative study was done among 164 male interstate migrant men and 136 men in the general population. They were interviewed to collect information on background details, migrant characteristics, dietary pattern, medical history, oral hygiene habits, adverse oral health habits and various barriers faced in seeking professional oral health care. The full mouth oral examination was carried out to detect OPMDs and findingsrecorded as prescribed by the WHO 2013 oral health assessment form.

Results: The study had a response rate of 96.47 percent (164) and 80.0 percent (136) in migrants and the residents respectively. Age adjusted prevalence OPMDs among migrants is 39.7 percent (CI, 25.5-56.0) and among residents is 6.7 percent (CI, 0.0-14.3). Factors significantly associated with OPMDs in migrant were the age group, marital status, DMFT score, use ofalcohol, smoking and smokeless tobacco. The age adjusted proportion of migrants using oral health services were 10.5 percent (CI, 0.0-21.3) when compared to residents 20.6 percent (CI, 8.7-33.4).Factors significantly associated with migrants oral health utilization were missing teeth, pain in teeth or gums, DMFT score, the presence of clinic near house and cost of treatment.

Conclusion: The study revealed that migrants had a greater proportion of people with OPMDs. Early screening and interventions such as those addressing tobacco and alcohol use in the marginalized groups like migrants will reduce the conversion rates of OPMDs into oral cancer. Oral health utilization among migrants is also low. It points towards the need of target programs aiming migrants to reduce the harmful habits and their adverse consequences.

CHAPTER ONE: INTRODUCTION

Migration is an important livelihood strategy for poor groups across the world and not just a response to shocks like natural disasters and wars (Deshingkar and Grimm, 2004). In 2001, the Census of India reported 309 million internal migrants (Census, 2011) and the National Sample Survey Organization (NSSO) estimates 326 million migrants in 2007–2008 (NSSO 2007-2008) in India. In Kerala according to the National Sample Survey estimates for 2007-08, the number of migrants from other states is about one million (NSSO 2007-2008). According to Census 2001, among the districts in Kerala, Ernakulam district where Kochi is located, recorded the highest inflow of migrants from other states (Surabhi and Kumar, 2007).

Unlike skilled migrants, most unskilled/ less skilled migrants are young people who belong to rural areas. There is a general lack of participation by such peoples in social and political processes in the area they currently reside in (UNESCO, 2012).Most of them belong to Other Backward Classes or Scheduled Castes /Scheduled Tribes. Their levels of education are generally low. Hence unskilled/ less skilled migrants constitute a group with several layers of vulnerability that can lead to very high levels of inequity in terms of health outcomes and health care services. Many local systems have processes that may limit access of migrants to public resources – systems themselves may be drivers of inequity in migrants beyond conventional barriers such as language and cost. Employer supported systems may offer some respite – a study among migrants in Thiruvananthapuram reported that the lack of employer related support systems were significant predictors of poor health care seeking.(Sreejini and Varma, 2015)

Oral cancers are highly associated with increased use of tobacco betel quid and alcohol which are high among migrants in Kerala. The association had been documented as early as in the Bhore Committee report which states that the "incidence of buccal cancer falls heavier on the male than on the female and on Muslims more than the Hindus. This form of cancer has its lowest incidence the Punjab, where *pan* chewing is not indulged, in to the same extent as in other parts of India. Unhappily this habit is growing rapidly in that province as well" (Report of the Health Survey and Development Committee, 1946)

Oral cancers are usually preceded by potentially malignant oral disorders which has the same risk factors as oral cancer. Potentially malignant oral disorders can be identified by health care providers in initial stages and treated which can reduce the burden of oral cancer both on the health system and general public including high risk people like migrants and socially deprived communities (Sankaranarayanan et al., 2005).

Although there is increasing knowledge generation with respect to migrant health in India, policy level attention and interventions are minimal. Some attention at the policy and strategy level has been garners for conditions like HIV/ AIDS (NACO, 2010) and services like immunization, particularly pulse polio immunization (Government of Delhi, 2015).

However, there is ample scope for improvement as the proposed National Health Mission District/ City health action plans calls for taking into consideration special situations like migrants at the planning stage itself. Migrant status has been fittingly identified as an additional level of vulnerability over poverty (National Health Mission , 2012).

This move has a potential for setting the stage for India to move ahead in the direction set by the 61st World Health Assembly on the health of migrants. This declaration called for

recognition of various dimensions of migration, their influence on health outcomes, differential levels of risk within migrants and need for additional data on migrant health and access to health care (World Health Assembly, 2008).

CHAPTER TWO: Review of literature

2.1 **Migration**

Migration is defined as a "process of moving, either across an international border, or within a state. It is a population movement encompassing any kind of movement of people, whatever its length, composition and causes; it includes the migration of refugees, displaced persons, uprooted people and economic migrants" (International Organization for Migration, 2011)

Migrants are defined as "persons and family members, moving to another country or region to better their material or social conditions and improve the prospect for themselves or their family" (International Organization for Migration, 2011).

A migrant worker is defined as a "person, who is to be engaged, is engaged or has been engaged in a remunerated activity in a state of which he or she is not a national" (UNESCO, 2005).

2.2 **Types of migrants**

Commonly migration is classified into international and internal migration and according to duration of time like short term and long term migrations or based on skill as skilled and unskilled migrants.

2.2.1 **International migration**

It is the movement of people from country of origin or the country of habitual residence to establish them either permanently or temporarily in another country. There were about 232

million international migrants in 2013, with the developing regions hosting 41 per cent of the world's total(United Nations, 2013).

2.2.2 **Internal migration**

It is the movement of people (temporary or permanent) from one area of a country to another with a purpose of establishing a new residence. Internal migration plays a big role in the economic and social life of a community or country, but with accompanying problems like regional imbalances and lack of labourers which points to the need of safe migration (UNESCO, 2012).

2.3 **Compounding vulnerabilities in migrants**

Labourers who work in difficult and unhygienic conditions may suffer from several health problems and are at risk of developing several diseases (Srivastava & Sasikumar, 2003). Risk levels are different even within migrants and between migrants and host populations. This is especially true for diseases like Human Immunodeficiency Virus (HIV) , Tuberculosis, Malaria, musculoskeletal injuries, poor child and maternal health, poor social and mental health (Borhade, 2012). Vulnerabilities may get compounded due to job uncertainty, poverty, social and geographic isolation, intense time pressures, poor housing conditions, intergenerational conflicts, separation from family, lack of recreation and health, shelter and safety concerns and these may act as stressors for migrant workers (Hansen and Donohoe, 2003) People who are exposed to stressful circumstances may resort to unhealthy behaviors such as a poor diet, smoking, alcohol drinking and drug taking, which are harmful to their general health and oral health. These harmful habits increases the risk of dental decay and oral cancer (Blas and Kurup, 2010).

Many studies have revealed that migrant workers have habits which can lead to poor health in the long run (Surabhi and Kumar, 2007). A study from Northern Kerala reported that 41.8 percent of male migrants smoked tobacco products and 71.7 percent used smokeless form of tobacco. Most of the users were daily, heavy users (Aslesh et al., 2013). Another study conducted among migrant population in Trivandrum, 89.8 percent of the study population used tobacco (Sreejini and Varma, 2015). The relation between tobacco and oral disease especially oral cancer and oral potential malignant disorders is well established (World Cancer Report, 2008).

2.4 **Potentially malignant oral disorders:**

Potentially malignant oral disorders is defined by WHO as the "risk of malignancy being present in a lesion or condition either at time of initial diagnosis or at a future date" (Grover, Malik, Kumar, et al., 2014).

In May 2005 WHO collaborating centre for oral cancer in United Kingdom (UK) along with experts in the field of epidemiology, oral medicine, oral pathology and molecular biology met in London to put forward this new terminology which would help to prevent the existing confusion in the terminologies. The existing classification by WHO which came into existence in 1978 divides the oral lesion in two by defining them as

Precancerous lesions: a precancerous lesion is a morphologically altered tissue in which oral cancer is more likely to occur than in its apparently normal counterpart.

Precancerous condition: a precancerous condition is a generalized state associated with a significantly increased risk of cancer.

The main reasoning for this differentiation was based on the false hypothesis that the origin of malignancy in case of precancerous lesion take place in the site of lesion and on other hand precancerous condition, the malignancy may arise in any anatomical site of mouth and pharynx (Warnakulasuriya, NW Johnson, et al., 2007).

The potentially malignant oral disorders of main concern are leukoplakia, erythroplakia, oral lichen planus, oral submucous fibrosis, tobacco pouch keratosis, palatal lesion of reverse cigar smoking, Actinic cheilosis**,** discoid lupus erythematosus, hereditary disorders such as dyskeratosis congenita and epidermolysis bullosa (Warnakulasuriya, NW Johnson, et al., 2007) (Napier and Speight, 2008). Among them important are leukoplakia, erythroplakia, oral lichen planus, oral submucous fibrosis, tobacco pouch keratosis (World Cancer Report, 2008)

2.4.1 **Leukoplakia**: The term leukoplakia (‘leuko means white and plakia means patch.) was coined by Schwimmer in 1877 to refer a white lesion in tongue. The definition for leukoplakia has been changing from time to time. In 1978 WHO defined oral leukoplakia:’a white patch or plaque that cannot be characterized clinically or pathologically as any other disease’(Brouns et al., 2013). Later in the first International Conference on oral leukoplakia, Malmo, Sweden, the definition was modified as “A white patch or plaque that cannot be characterized clinically or pathologically as any other disease and is not associated with any physical or chemical causative agent except use of tobacco.” Then again modification came in International Symposium, Uppsala, Sweden as “A predominantly white lesion of the oral mucosa that cannot be characterized as any other definable disease.” This definition was again refined by changing the term “any other definable disease” with “any other definable

lesion" and now most recently in 2005 WHO adopted the definition of leukoplakia as "a white plaque of questionable risk having excluded (other) known diseases or disorders that carry no increased risk for cancer" (Warnakulasuriya, NW Johnson, et al., 2007)

2.4.2 **Erythroplakia**: Oral erythroplakia is considered as a potentially malignant lesion of the oral mucosa. It is the most dangerous of all the oral cancer precursor lesions (Panwar and Bitharia, 2013). Fournier and Darie first described the lesion in 1893 and designated as erythroplasia with unknown etiology (Mortazavi and Baharvand, 2014). WHO defines erythroplakia as "A fiery red patch that cannot be characterized clinically or pathologically as any other definable disease" (Warnakulasuriya, NW Johnson, et al., 2007). Shear classified erythroplakia into three variants namely

a) Homogeneous erythroplakia – lesion that appeared flat, velvety and with uniformly red appearance

b) Granular erythroplakia – red lesions with granular surface

c) Speckled erythroplakia /erythroleukoplakia – predominantly red lesion speckled with white spots. (Deepa R Nair et al., 2012)

Oral erythroplakia occurs most frequently in older men and main sites involved are the floor of mouth, lateral tongue, retromolar pad, and soft palate. Erythroplakia showed a alarming malignant transformation rate of 90 percent which points towards the importance of early detection and treatment (Mortazavi and Baharvand, 2014;van der Waal, 2010).

2.4.3 **Lichen planus**: Lichen planus (LP) is a chronic autoimmune muccocutaneous disease which can affect the oral mucosa, skin, nail, genital mucosa. Clinical variations of oral LP

are reticular, papular, plaque-like, erosive, atrophic, bullous. Lesions are usually bilateral (Grover, Malik, Bhambar, et al., 2014; Sugerman et al., 2000). Clinically its is presented by wickham striae, white papules, erythema, erosion and blisters. It is commonly seen in dorsum of tongue, buccal mucosa and gingival (Sumairi B Ismail et al., 2007). Most commonly affected sites in oral cavity include posterior buccal mucosa, followed by tongue (lateral and dorsal), gingival palate and vermilion border. Any region in the oral cavity can be affected (Grover, Malik, Bhambar, et al., 2014; Deepa R Nair et al., 2012).The risk of malignant change in oral lichen planus has been controversial for a long time and re-ported to be between 0.4 percent and 5.6 percent and is most commonly affecting middle aged people (Lodi et al., 2005; Scully and Carrozzo, 2008; van der Meij et al., 2007).

2.4.4 **Oral submucous fibrosis (OSMF):** Oral submucous fibrosis was first described by Schwartz in 1952 (Murti et al., 1995). It is now classified as a potentially malignant disorder of oral mucosa, predominantly seen in people of Asian descent. It is a chronic progressive disorder and its clinical presentation depends on the stage of the disease at detection. The submucosal fibrosis can affect most parts of the oral cavity, pharynx and upper third of the oesophagus. OSMF Clinical features consist of blanching, intolerance of spicy food, Petechiae, Depapillation of tongue, Oral ulceration, Leathery mucosa, Taste disturbance in the early stages and later stages consist of Fibrous bands, Trismus, Flattening of palate, “Hockey stick” uvula Reduction in tongue mobility, Xerostomia (Aziz, 2010). It has a malignant transformation rate of about 0.5-7.4 percent (Aziz, 2010;Rajalalitha and Vali, 2005).

2.4.5 **Tobacco pouch keratosis:**

According to Global Adult Tobacco Survey(GATS) survey smokeless tobacco use in India among adults is almost 25.9 percent (GATS, 2010). Tobacco pouch keratosis are specific smokeless tobacco associated mucosal alteration typically occurring in the buccal or labial vestibule in the oral cavity (Neville and Day, 2002). Clinically it is seen as white corrugated or wrinkled area where the irritant is placed constantly (Sahitha, 2014).

2.5 **Prevalence of potentially malignant oral disorders**

Prevalence of potentially malignant oral disorders varies widely from country to country and within regions. This has been attributed to differences in socio demographic characteristics, tobacco use related aspects and clinical definitions of disease (Johnson et al., 2011). Globally studies on potentially malignant oral disorders are mainly on Leukoplakia and prevalence rates of oral Leukoplakia vary from 0.1 percent to 10.6 percent depending on region or geographical location (World Oral Health Report, 2003). In a systematic review the global prevalence of Leukoplakia was found out to be 2.6 percent (Petti, 2003). The prevalence of potentially malignant oral lesions in South Asian countries like Sri Lanka (11.3 percent) and Taiwan (12.7 percent) are high when compared to countries in Europe and American continents. In India wide variation in prevalence of potentially malignant oral disorders is seen depending on the state. Prevalence of oral mucous lesion was 4.1 with greater prevalence in men than women in Chennai (Saraswathi et al., 2006). In another study in Andhra Pradesh prevalence was 4.2 percent (Vinay et al., 2014). The reports of prevalence from several other studies are listed in Table 3.1.

Table 3.1: Prevalence of OPMDs reported by pertinent studies from India (excluding Kerala)

Author, year	**Location**	**Population studied**	**Prevalence**
Kumar et al., 2015	Indore, 2015	Cross section of the population	13.7%
Chaudhari et al., 2013	Pune, 2013	Jailed persons - males	6.4%
Chandrashekar and Reddy, 2011	Mysore, 2011	municipal employees	5.2%
Warnakulasuriya et al., 2010	Chandigarh, 2010	Office workers of Government Civil Secretariat	5.6%#
Mehrotra et al., 2010	Vidisha, 2010	Camp attendees of 10 day out camp at outpatient department of District hospital	8.4%
Doifode et al., 2000	Nagpur, 2000	Cross section of the population – urban	2.4%
Gupta et al., 1976	Ahmedabad, 1976*	Textile mill workers	26.6%

Computed from results; * Oldest full paper accessed – this study reported all oral lesions including those that were not premalignant

Kerala has witnessed studies on potentially malignant oral disorders which showed a prevalence of 2.07 percent in Ernakulam among bidi smokers (Gupta, 1984). A more recent robust study reported a 5.8 percent prevalence of OPMD. This was from the initial screening stage of a large scale population based randomized control trial done in Trivandrum (Sankaranarayanan et al., 2005). Studies in migrants have been few and a recent study

reported that oral mucosal lesions including all the precancerous lesion/conditions, anatomic variations and ulcers was 26.2 percent in migrants in northern Kerala (Aslesh et al., 2013).

2.6 Correlates of Potentially malignant oral disorders

2.6.1 Intrinsic factors

I. Age

Many studies have shown that as age increases the prevalence of potentially malignant disorders also increases (Axéll and Rundquist, 1987).

II. BMI:

Studies from Kerala have shown that BMI has a inverse relationship between oral leukoplakia and oral sub mucous fibrosis but another study found that BMI did not decrease the risk of multiple oral pre malignancy after adjusting for other correlates (Jacob et al., 2004).

III. Diabetes:

Diabetic patients was three times more likely to get oral Leukoplakia than non diabetic patients (Dietrich et al., 2004). Studies from Kerala has demonstrated an increased risk of developing Erythroplakia, in diabetic patients both in men and women (Dikshit et al., 2006).

IV. Blood group: Studies have shown that blood group can also be considered as a risk factor for precancerous lesions. In a study conducted among 50 precancerous and 50 controls group 'A' blood group was prevalent among precancerous group (Bhateja and Arora, 2014).

2.6.2 Extrinsic factors

I. Alcohol:

Individuals consuming alcohol daily have twice to thrice greater risk of potentially malignant oral disorders. Alcohol drinking has been associated with elevated risks of oral leukoplakia, oral submucous fibrosis and erythroplakia (Neville and Day, 2002).

II. Tobacco:

Tobacco carcinogenicity is more than evident and about one fourth of oral cancer cases are attributable to cigarette smoking (Petti, 2009). Epidemiological studies show that the risk of developing oral cancer is five to nine times greater for smokers than for nonsmokers, and this risk may increase to as much as 17 times greater for extremely heavy smokers of 80 or more cigarettes per day (Neville and Day, 2002).

III. Areca nut:

It is used in different quantities and different forms throughout the world with high prevalence among the Asian countries. It is estimated that the 10 to 20 percent of world population uses areca nut. Studies have shown that betel quid with or without tobacco are risk factors for potentially malignant disorders (Amarasinghe et al., 2010; Jacob et al., 2004; Neville and Day, 2002).

IV. Education:

Low level of education was considered as high risk factor for oral cancer and pre malignant lesions (Scheppers et al., 2006). In a study people having higher education were protective against potentially malignant oral disorders.

V. Income:

Oral cancer and potentially malignant oral disorders are linked to social and economic deprivation and highest occurrence reporting in the disadvantaged groups. Studies have shown that people belonging to low income group are at more risk to have potentially malignant oral disorders (Hashibe et al., 2003).

VI. Occupation:

Studies show that people doing non manual jobs had fewer chances of getting potentially malignant oral disorders (Hashibe et al., 2003).

VII. Lack of fruit and vegetables in diet

Studies show that vegetable and fruits intake after controlling for tobacco decreases the risk of having potentially malignant oral disorders (Gupta et al., 1999; Maserejian et al., 2006). Another study also show that fruit intake acts a protective factor against oral leukoplakia (Hashibe et al., 2003)

2.7 **Utilization oral health care services**

It is defined as the process of seeking professional oral health care and submitting oneself to the application of oral health services, with the purpose to prevent or treat health problems (Scheppers et al., 2006). Identifying the factors that prevent and promote the use of health care services will ultimately help health care system and organizations create programs for improving health services and increasing their utilization. Andersen's initial behavior model of 1960s was used to guide the selection of factors that are associated with the utilization of

dental health care services (Andersen, 1995). It consists of predisposing factors, enabling factors and need factors.

2.7.1 **Predisposing characteristics**

Socio demographic factors

Age: People belonging to younger age tend to use more oral health services (Kakatkar et al., 2011; Ref et al., 2014). In a study among minority groups young age was found to hinder their health service utilization (Scheppers et al., 2006).

Education: Levels of education play an important role in utilization of health services. In a systematic review low levels of education was found to lower the health service utilization (Scheppers et al., 2006). Similar results was found in other studies about oral health care utilization (Taiwo et al., 2014).

Marital status: Marital status was found to be highly influential determinant to utilization of health care among minority patient as pregnancy and child care provides entry point to health system especially for women and also men accompanying them (Scheppers et al., 2006).A study from Jordan also showed a significant association between marital status and oral health care utilization (Ref et al., 2014).

Working and living conditions:

Type of job: In a Study from Karnataka India the worker class i.e. the daily labourers had a significant association with utilization of oral health care (Jain et al., 2013;Varenne et al., 2006)

Living condition: Studies have found that poor and insecure living condition tends to decrease the utilization of health services. A study done Burkina Faso living conditions was strongly associated with utilization of oral health care services.

Oral hygiene (brushing): Poor oral hygiene is linked with decreased use of oral health care services (Agarwal et al., 2011).

Adverse oral health habits: Studies have shown that many people using areca nut products have a belief that it is used to refresh mouth and this perceived feeling can affect the utilization of oral health care services (Kahende et al., 2009). Discussions with senior health care professional in the field of dentistry have revealed that people who smoke tobacco especially cigarettes tend to visit dentist more often as the teeth may get stains.

2.7.2 **Enabling characteristics:**

Personal factors:

Income: Lack of financial resources and poor income was identified as a potential barrier for health service use. Studies in the field of oral health also shown that income is significantly associated with oral health care utilization (Jain et al., 2013; Ref et al., 2014).

Presence of family members: Presence of family members especially wife and children may enhance their health service utilization and same may be applicable for the oral health care utilization (Scheppers et al., 2006).

Awareness about oral health: In a study conducted in Karnataka the lack of awareness about oral health had a significant association with utilization of oral health care (Jain et al., 2013).

2.7.3 **Health system related factors:**

Fear of dentist or dental treatments: Many studies have identified that fear of dentist or dental treatments have a major factor that affects utilization of oral health care services. In a study done in Jordan they found significant association between fear of dentist and utilization of oral health care (Ref et al., 2014). Similar study results was also seen in a study in Karnataka (Jain et al., 2013). But a study from Burkina Faso show that people who fear dentist tend to use more oral health care services (Varenne et al., 2006). These studies being cross-sectional, the direction of association is questionable – dental visits might have actually triggered fear and that may explain the finding in the Burkina Faso study.

Presence of clinic nearby (both private/government): The availability of more outpatient services increased the utilization of health care services. The presence of a clinic or dental services was found to be significantly associated with utilization of oral health in many studies (Gambhir et al., 2013). Poor awareness about Government health facilities was associated with poor health care seeking in migrants in Thiruvananthapuram. (Sreejini and Varma, 2015)

The dentist's ability to speak a language known to patient**:** In a systematic review a study found among minority group's people used less health services as they were unable to the local language. A study conducted among Bangladeshi migrant workers in UK language was identified as a major factor for not availing the health services (Pearson et al., 1999).

Timing of clinic: Clinic timings are an inconvenience for many health care issues ranging from immunizations and infectious disease to chronic diseases and lifestyle interventions. A similar pattern is expected for dental care seeking as well.

Cost of dental care: In many studies conducted cost of treatment was a reason for not using oral health care services. Similar results were found in studies conducted in India (Jain et al., 2013).

2.7.4 **Need characteristics**

Self perceived oral health care: Studies have shown that good health perceptions tend to decrease the health service utilization. In a study in Jordan people with good oral health perception tend to use less oral health care services (Ref et al., 2014).

Pain: People tend to use more oral health services when they are confronted with symptoms like severe pain. Studies from Jordan and Nigeria have shown significant association between pain and oral health care utilization (Taiwo et al., 2014).

Tooth missing due to caries: Studies have shown that people with missing tooth tend to use more oral health care services (Taiwo et al., 2014).

Clinically assessed potentially malignant oral disorders: Studies have shown that people visit dentist or utilize dental care only when they are confronted with symptoms like pain or ulcers. So most of the potentially malignant disorders remain unnoticed and does not affect the oral health care utilization of the people.

2.8 **Intervention targeting migrant health in Kerala**

While some schemes and laws exist to protect migrant workers(such as Minimum Wages Act, Interstate Migrant Workmen (Regulation of Employment and Condition of Service) Act), many schemes for the poor such as Comprehensive Health Insurance Scheme (CHIS) are state specific and do not cover migrant workers. A few schemes exist such as –

1. Inter State Migrant Workers Welfare Scheme-launched on the may day of 2010, implemented through the Kerala Construction Workers Welfare Fund Board, requiring per capita annual contribution of Rs 30 (Kumar, 2011).
2. Suraksha Scheme of Kerala State AIDS Control Society (KSACS)-eight projects of Targeted Intervention for migrants, related to control of HIV/AIDS (KSACS, 2015)
3. Immunization Strengthening (Arogyam Kerala, 2015), particularly Pulse Polio (The Hindu, 2015).
4. Safe Kerala Campaign under which migrants will be screened for infectious diseases (Press Trust of India).

2.9 **Rationale of the study:**

Interstate migrant labourers are certainly a boon for the Kerala economy, but it is evident from the literature that they resort to unhealthy behaviors such as poor diet, smoking, alcohol and betel nut products as they regularly get exposed to stressful conditions and tiring jobs (Blas and Kurup, 2010). Studies from Kerala show that tobacco usage and alcohol are high among migrants. These unhealthy behaviors affect their general and oral health. Oral cancers also share the same risk factor. Studies show that our country accounts for a quarter of the world burden of oral cancer (Jemal et al., 2010). Potentially malignant oral disorders are usually the initial signs of the oral cancer which can be easily diagnosed and treated. Studies suggest that prevalence of oral lesions among migrants are much higher than general population (Ashlesh et al., 2013; Sankaranarayanan et al., 2005). A study trying to find the difference in prevalence correlates of potentially malignant oral disorders and factors that affect oral health care utilization among migrants and general population is timely in the context of

1. The 61st World Health Assembly declaration(to which India is a signatory) that calls for additional data in migrants health and access to health care
2. National Health Mission framework for implementation that identifies migrants status has an additional level of vulnerability over poverty.
3. Decentralized city health action plans that include migrants
4. Primary prevention (Tobacco control) and Secondary Prevention (Screening) of oral cancer has specified in the objectives of the National Cancer Control Program.

2.10 **Objectives**

- To compare the prevalence of potentially malignant oral disorders among male interstate migrant labourers and men in the general population.
- To examine the differences in correlates of potentially malignant oral disorders among interstate migrants labourers and general population.
- To examine various factors that cause differences in utilization of oral health care services among interstate migrants labourers and general population.

CHAPTER THREE: METHODOLOGY

3.1 **Study design**: The study was a community based comparative cross sectional study.

3.2 **Study setting:** The study was conducted among male migrant labourers and men in general population aged above 18yrs in Corporation of Kochi. Out of total 74 wards in the corporation of Kochi the study was conducted in 17 migrant dense wards selected from the Ernakulam mainland area which consists of 44 wards in Corporation of Kochi. The Ernakulam main land area was selected from Corporation of Kochi as it consists of Ernakulam city area which recorded the highest inflow of migrants and urbanization in the state of Kerala (Surabhi and Kumar 2007).

3.3 **Sample size:** The expected prevalence of premalignant oral lesions in migrants is about 26.2 percent (95 percent confidence interval 20.6-31.4) in study done on migrants in northern Kerala (Aslesh et al.,2013). The lower limit of 95 percent CI i.e. 20.6 percent was taken for calculation as the oral lesions reported in the study included both the anatomic variations and ulcers. The expected prevalence of premalignant oral lesions among general population in a screening done as part of study in Trivandrum Regional Cancer Centre (RCC) was 5.86 percent (Sankaranarayanan et al., 2005). Sample size was calculated using open Epi version 3.03. Taking difference in prevalence i.e. 14.74 percent and power as 80 percent sample size was calculated as 90 in each arm and anticipating a 20 percent non response rate each arm was calculated as 108 and rounded of to 110. Taking an arbitrary design effect of 1.5 sample size of 330 was obtained and was rounded off to 340 taking 170 subjects in each arm.

3.4 **Sample selection procedure:**

The required sample size was obtained by Multi stage cluster sampling. From the 44 wards were most of the construction is taking place, 17 migrant dense populated wards were identified with the help of data available from the office of Kochi Corporation Medical Officer and District Medical Officer Ernakulum district.Each ward was taken as a cluster and 10 people were selected both from the migrants and general population. Migrants were selected from migrant settlements / migrant dense workplaces identified with the help of health workers/counselor from the respective wards and the general population were identified from the households. Ten adjacent households to the migrant dwelling/place of contact in the same road/lane were taken and whether to go to right or left adjacent side was decided by the availability of road and if road was available on both sides the way to get households was decided by tossing the coin i.e. heads to right and tail to left. The first house to visit was selected based on random number generated using an android app R version gpv1.0.11. Every alternate house in the same direction was visited thereafter. Locked houses or households with male members who were not present at the first visit were re-visited up to a maximum of 3 visits

- If two or more eligible subjects were there in one household the youngest one consenting was taken up for the study.
- For the study we defined the term migrant labourer as an unskilled/semiskilled person who is not from Kerala state, gets remuneration on daily/weekly basis, works in unorganized sectors and does not own a ration card.

Inclusion criteria (Interstate migrant labourers)

- Those who have stayed for more than 6 months in corporation of Kochi.

- Those who do not have a ration card.
- Those who can understand Hindi.

Inclusion criteria (General population)

- Those who have a ration card and name are present in voters list.
- Those who have been residing in corporation limits for minimum of 5 years.

3.5 **Data collection technique:** Data was collected using an interview schedule to capture the socio demographic characteristic, living conditions, migrant details, dietary habits, oral hygiene habits, presence of any systemic diseases, health system factors that affect utilization, adverse oral health habits and questions on oral health knowledge. The structured interview schedule was translated into Malayalam and Hindi and then back translated to English. The interview was done in Malayalam for general population and in Hindi for migrants by the Principal investigator who is fluent in Hindi and Malayalam. The subjects not able to speak or understand Malayalam or Hindi were excluded from the study. A previous study among migrants in urban areas of Kerala had reported that 27.1 percent had working knowledge of Malayalam and 49.2 percent were well versed in Hindi (Rajan and Sumeetha, 2015). Hence this strategy was expected to cover more than two-thirds of migrants living in study area. The interview schedule was followed by a full mouth oral examination to determine the prevalence of potentially malignant oral disorders and hard tissue examination. The clinical examination was conducted as per WHO Oral Health Survey guidelines 2013. The respondents were clinically examined by making them to sit on an available comfortable chair with high back rest and the examiner standing either in front or behind them. Oral visual inspection was done in bright daylight and with the additional use

of a flashlight where ever needed. Labial and buccal mucosa, retromolar area, gingiva, anterior tongue, floor of mouth, and hard palate were carefully inspected and palpated when necessary. The assessment of dental caries was carried out by DMFT index (Decayed Missing and Filled Teeth) where each tooth will be coded whether it's decayed, missing or filled. Any other serious oral conditions were recorded and intervention urgency noted. Such persons were referred to dental department of General hospital, Ernakulam with a reference letter mentioning the problems found during the study. The interview and clinical examination were carried out by the principal investigator for all respondents.

For the study potentially malignant oral disorders of main concern are defined as

Leukoplakia: In2005 WHO adopted the definition of Leukoplakia as "a white plaque of questionable risk having excluded (other) known diseases or disorders that carry no increased risk for cancer".(Warnakulasuriya et al., 2007;Abidullah et al., 2014)

Erythroplakia: WHO defines erythroplakia as "A fiery red patch that cannot be characterized clinically or pathologically as any other definable disease'. (Warnakulasuriya, N Johnson, et al., 2007)

Oral lichen planus: Lichen planus is a chronic autoimmune mucocutaneous disease which can affect the oral mucosa, skin, nail, genital mucosa its is presented by wickham striae, white papules, erythema, erosion and blisters.(Sumairi B. Ismail et al., 2007)

Oral submucous fibrosis: Oral submucous fibrosis (OSF) is a chronic disorder characterized by fibrosis of the lining mucosa of the upper digestive tract involving the oral cavity, oropharynx and frequently the upper third of the oesophagus. (Warnakulasuriya et al., 2007;Nair et al., 2012)

Tobacco pouch keratosis: Tobacco pouch keratosis are specific smokeless tobacco associated mucosal alteration typically occurring in the buccal or labial vestibule in the oral cavity, clinically presented as white corrugated or wrinkled area where the irritant is placed constantly(Datta, 2015; Neville and T a. Day, 2002; Sahitha, 2014).

3.6 Data analysis: The main data collection was done from June 15th to September 2nd 2015 by the principal investigator. SPSS 21 was used for the analysis. The data will be analyzed for the prevalence of potentially malignant oral disorders and oral health care utilization. Various correlates of potentially malignant oral disorders and factors that influence oral health care utilization were analyzed. Quantitative variables were summarized in means and standard deviations. Qualitative variables were summarized into proportions and 95 percent confidence intervals. Appropriate standardization and statistical tests (unpaired t test for quantitative variables; Chi square/ Fischer exact test for categorical variables; linear by linear association for trend; odds ratio and 95 percent CI for statement of risk) were applied. Logical frameworks were used to obtain multivariate models (if applicable) for describing determinants of oral premalignant lesions in the study group. Logistic regression analysis was used for multivariate modeling and commonly used model diagnostic procedures were applied to access the validity of the models. Conceptual framework used in the study is appended. (See Appendix I)

3.7 Ethical considerations:

The study received the clearance from Technical Advisory Committee-public health and Institute Ethics Committee of Sree Chitra Tirunal Institute of Medical Science and

Technology before recruitment of subjects. The following ethical concerns were considered while conducting the study.

Confidentiality: The identity of the participant is kept anonymous. Each participant has been given a unique identification number. The identifying information given by the participant will not be disclosed to anyone under any circumstances anywhere at any time. All the copies of filled interview schedules, clinical assessment forms and consent forms will be kept under the custody of principal investigator and will be destroyed when they are deemed no longer needed.

Consent: Written informed consent was obtained from the subject prior to the start of the interview. The subject had the freedom to refuse at the outset or even withdraw from the study at any stage.

Beneficence: Subjects were informed that they would not have any direct benefit from the study, however subjects were informed of the oral problems, if any identified during clinical examination and the subject were referred to the nearest dental facility for further check-up and treatment.

Risks: Since mouth mirror and probe were used during clinical assessment, to reduce the risk to the minimum, one autoclaved mouth mirror and probe per person were used. The instruments were packed in different zip lock bags after autoclaving and were opened only at the time of clinical assessment. Whenever possible, in some subjects disposable mouth mirror and probe were used, subject to availability in the market. All the necessary hand hygiene practices using alcohol based hand-rubs were followed as part of infection control.

CHAPTER FOUR: RESULTS

This chapter describes about the outcome of data analysis based on the objectives. Data was summarized and standardized for permitting comparisons between the principal outcomes of interest. Further analysis attempted to look for association between independent and outcome variables.

4.1 General description of study

The study was done in Corporation of Kochi with a calculated sample size of 340 among the two arms – 170 each in the migrant and resident arms. The study yielded a response rate of 96.5 percent (164) among migrants and 80.0 percent (136) in the residents reaching to a total of 300 study participants. All reasons for non-response were lack of willingness to participate in the study – a few people raised concerns on the question related to cooking fuel used. Some variables did not have any variation in their distribution in both the study groups - almost everyone in the study sample used piped drinking water and flush toilet irrespective of being migrant or resident. Oral hygiene aids like tooth brush and tooth paste were used universally by everyone who responded in the study. Therefore for further analysis we have omitted the above said variables.

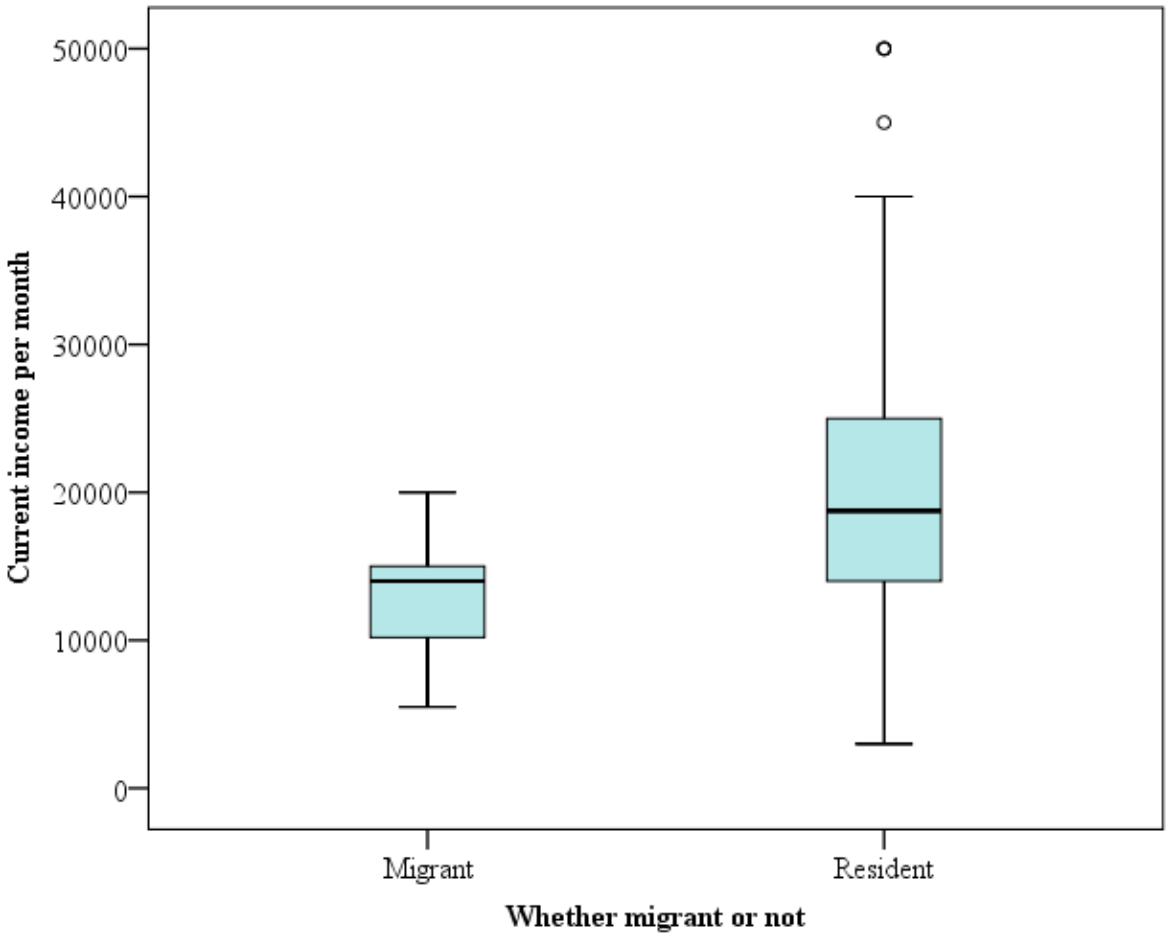
4.2 Summary statistics of the study variables

4.2.1 Socio demographic characteristics

The mean age of study population among migrants and residents was 27.3($\pm$7.2) and 33.3($\pm$8.4) years respectively. Subjects were further divide into 3 groups based on age as 18-24, 25-34 and 35 and above years for further analysis. All migrants reported that they were

employed and 162 of 164 were employed in shop/construction. Only 83.3 percent residents reported to be employed-among them 26.8 percent were employed as senior government/professionals, 28.6 percent as clerical/supervisor position and the remaining in the construction sector. The self reported mean monthly income in rupees was 13159.1 (±=3269.2) in migrants and 21027.2 (±10768.81) among residents.

Figure 4.1: Box plot depicting income distribution of study groups



1For further analysis study groups were divided into - low and high, taking the median income (14000) of migrant as the cut off. The main cooking fuel used among residents was LPG 97.8 percent while in migrants it was diesel/wood (73.8 percent).More than 80 percent of people live in pucca houses both in migrants and residents. A new variable socio economic

group was computed combining the variables like cooking fuel, type of house and income group. Use of LPG, residing in a pucca house and being in the high income group constituted classification as high socio economic group.

Table 4.1: Socio demographic characteristics of the study groups

Variables	Migrants (%)	Residents (%)	P value
Age group(yrs)			
18-24	70(42.7)	22(16.2)	<.001
25-34	71(43.3)	59(43.3)	
>=35	23(14.0)	55(40.4)	
Education			
Primary and less	130(79.3)	10(7.4)	<.001
Greater than primary	34(20.7)	126(92.6)	
Marital status			
Married, living with spouse	12(7.3)	82(60.30)	<.001
Unmarried	95(57.9)	52(38.20)	
Married not living with spouse	57(34.80)	2(1.50)	
Socio Economic group			
Low	141(86.6)	58(42.6)	<.001
High	23(14.0)	78(57.4)	

Migrants were significantly younger and less educated than the residents. They were also more likely to be unmarried and belonging to low socio economic group.

4.2.2. **Migrant characteristics**

Migrants were mainly from districts like Jalpaiguri (19.5 percent), Bhojpur (11.0 percent) and followed by districts like Purba Medanipur (6.7 percent), Kushinagar (6.7 percent), Navodhar (6.1 percent) and Sundargarh (5.5 percent). All except 2 migrant's cited employment as the reason for migration, the two exceptions reporting that they were involved "chappel" making business.

Figure 4.2: Figure showing states of origin

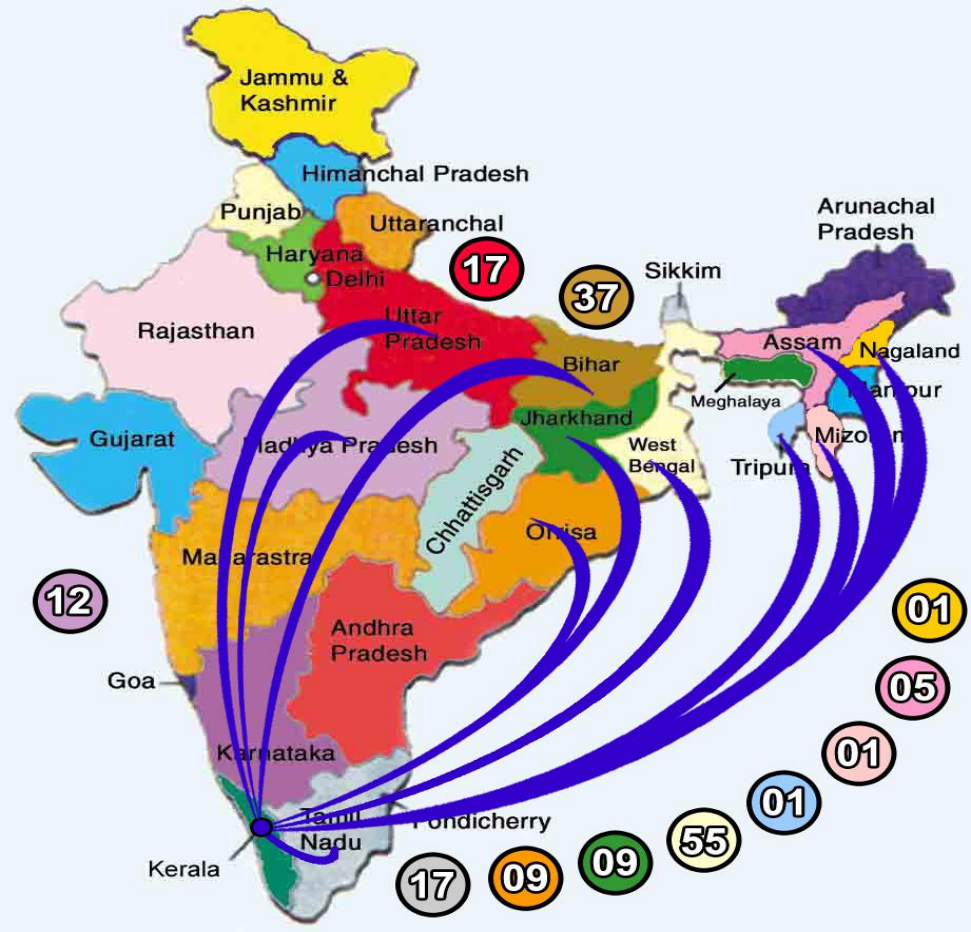


Table 4.2: Migration trajectories

Variables	Frequency(n)	Percentage (%)
According to place of last residence		
No previous urban experience	152	92.7
Previous urban experience	12	7.3
According to place of birth#		
R-R-U	152	92.6
R-U-U	11	6.7
U-U-U	1	.06

#R=Rural, U=Urban

4.2.3 **Life style related factors**

Expect low vegetable consumption and alcohol use, all the current adverse habits such as low fruit consumption, smokeless tobacco use and smoked tobacco use were higher in migrants than in residents (See table 4.3). Alcohol use was significantly higher in residents when compared to migrants. The main alcoholic beverage reported by migrants was brandy (72.0 percent), followed by rum (54 percent), whiskey (12 percent) and beer (10 percent). The residents reported rum (54.0 percent), whiskey (68.5 percent), vodka (46.7 percent), scotch (13/0 percent), beer (55.4 percent), wine (31.5 percent) and brandy (55.4 percent) as the forms of alcohol consumed. Daily consumption of alcohol was reported by 3.7 percent of migrants and 5.9 percent of residents. Alcohol use patterns were extremely diverse and it was

not possible to compute the units of alcohol consumption. Units were not considered as different drinks and the content/amount of alcohol consumed varied.

Table 4.3: Diet related and other adverse health related habits

Variables	Migrants (%)	Residents (%)	P value
Fruits consumed			
<= 1 times/ week	58(35.4)	33(24.3)	.037
> 1 times/ week	106(64.6)	103(75.7)	
Vegetable consumed			
<= 1 times/ week	1(0.6)	3(2.2)	.230
> 1 times/ week	163(99.4)	133(97.8)	
Current Areca nut/betel quid use			
No	58(35.4)	126(92.6)	<.001
Yes	106(64.6)	10(7.4)	
Current Smoking			
No	76(46.3)	79(58.1)	.043
Yes	88(53.7)	57(41.9)	
Current Alcohol use			
No	114(69.5)	48(35.3)	<.001
Yes	50(30.5)	88(64.7)	

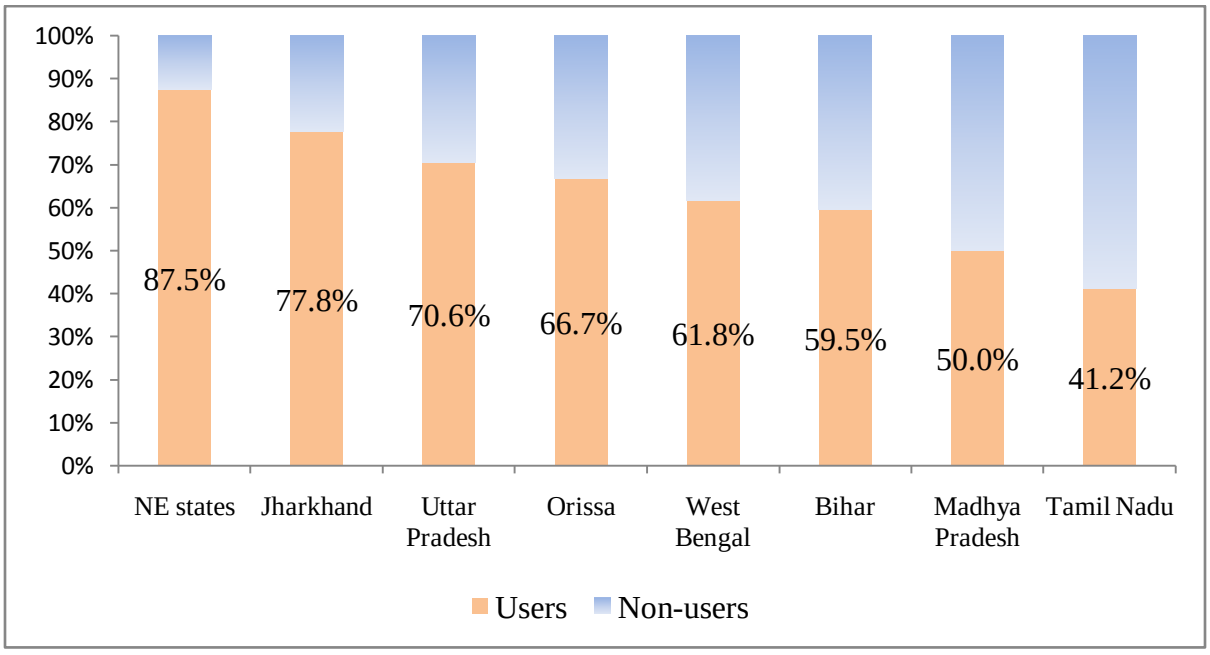
Table 4.4: Frequency and duration of tobacco and alcohol use

Variables	Migrants (%)	Residents (%)	P value
Frequency of smokeless tobacco(products used daily)			
	N=106	*N=10*	
<3	50(47.2)	9(90.0)	.010
>=3	56(52.8)	1(10.0)	
Duration of smokeless tobacco(years)			
No	63(38.4)	129(94.9)	.000
<10	76(46.3)	6(4.4)	
>=10	25(15.2)	1(0.7)	
Frequency of smoking tobacco(no: of cigarettes/beedi used daily)			
	N=89	*N=57*	
<2	39(43.8)	32(56.1)	.146
>=2	50(56.2)	25(43.9)	
Duration of smoking tobacco use(years)			
No	75(45.7)	79(58.1)	.009
<10	62(37.8)	49(36.0)	
>=10	27(16.5)	8(5.9)	
Duration of alcohol use(years)			
No	114(69.5)	48(35.3)	.000
<10	40(24.4)	66(48.5)	
>=10	10(6.1)	22(16.2)	

Table 4.5: Age standardized tobacco usage

	Migrants		Residents	
	Crude prevalence	Age standardized	Crude prevalence	Age standardized
Smokeless tobacco	101 (61.6%)	64.9% (49.3-80.5)	7(5.1%)	3.8% (0.0-9.8)
Smoked tobacco	88(53.7%)	56.6% (40.2-73.0)	57(41.9%)	36.8% (22.5-51.1)
Overall tobacco	112(68.3)	74.3% (60.8-87.8)	57(41.9%)	36.8% (22.5-51.1)

Figure 4.3: Pattern of smokeless tobacco use based on state of origin of migrants



Out of the 106 migrants using areca nut only 5 used areca nut without tobacco, while three of the ten residents using areca nut use the same without tobacco. Among areca nut users proportion of users adding tobacco to areca nut was significantly higher in migrants (p=0.002). Frequency and duration of both smoking and smokeless tobacco use were higher in migrants even without age standardization. Age standardized tobacco use is given in table no: 4.5

4.2.4 **Health issues**

Table 4.6: Self reported health issues

Variables	Migrants (%)	Residents (%)	P value
Any morbidity			
No	129 (78.7)	113 (83.1)	.333
Yes	35 (21.3)	23 (16.9)	
Non Communicable Diseases			
No	158 (96.3)	122 (89.7)	.022
Yes	6 (3.7)	14 (10.3)	
Diabetes			
No	163 (99.4)	126 (92.6)	.003
Yes	1 (0.6)	10 (7.4)	
Skin conditions			
No	149 (90.9)	134 (98.5)	.005
Yes	15 (9.1)	2 (1.5)	

Migrants had a greater proportion of people reporting fever (7.3 percent) and musculoskeletal disorders (4.3 percent) that warranted treatment seeking. Among residents there was no cases of fever reported and musculoskeletal disorders reported was 2.2 percent.

4.2.5 **Oral health characteristics**

All the study subjects reported to use tooth paste and brush irrespective of being migrants and residents. As far as perceived oral health status and practice are concerned migrants fair equally well or better than residents.

(See table 4.7)

4.2.6 **Oral health awareness:**

Eleven questions were asked to assess oral health awareness and all the correct answers were coded as 1 and the wrong as zero. Median of total possible score (5.5) was kept as the cut off and anything above 5.5 was assumed to have good oral awareness and anything below cut off as poor oral awareness. The questions included four pictures of which one was oral cancer, a condition used in tobacco product package warnings. Correct responses to this were quite low. Even amongst tobacco users, the proportion who gave a correct response to the picture on oral cancer was 26.8 percent among migrants and 40.4 percent among residents.

(See table 4.8)

Table 4.7: Self reported oral health characteristics

Variables	Migrants (%)	Residents (%)	P value
Presence of natural teeth(functional dentition)			
10-19 teeth	4 (2.4)	7 (5.1)	.294
More than 20	138 (84.1)	116 (85.3)	
Don't know	22 (13.4)	13 (9.6)	
Missing tooth (caries)			
No	129 (78.7)	89 (65.4)	.011
Yes	35 (21.3)	47 (34.6)	
Pain or discomfort in teeth or gums			
No	114 (69.5)	100 (73.5)	.444
Yes	50 (30.5)	36 (26.5)	
State of gums and teeth			
Poor	65 (39.6)	77 (56.6)	.003
Good	99 (60.4)	59 (43.4)	
Frequency of cleaning teeth			
Once a day	63 (38.4)	92 (67.6)	<.001
Two or more times	101 (61.6)	44 (32.4)	

Table 4.8: Oral health awareness characteristics

Variables	Migrants (%)	Residents (%)	P value
Oral health awareness group			
Poor awareness	107 (65.2)	37 (27.2)	<.001
Good awareness	57 (34.8)	99 (72.8)	
Response to picture on oral cancer			
Incorrect	121 (73.8)	86 (63.2)	.049
Correct	43 (26.2)	50 (36.8)	

4.2.7 **Clinical examination:**

Table 4.9: DMFT and BMI categories of the study group

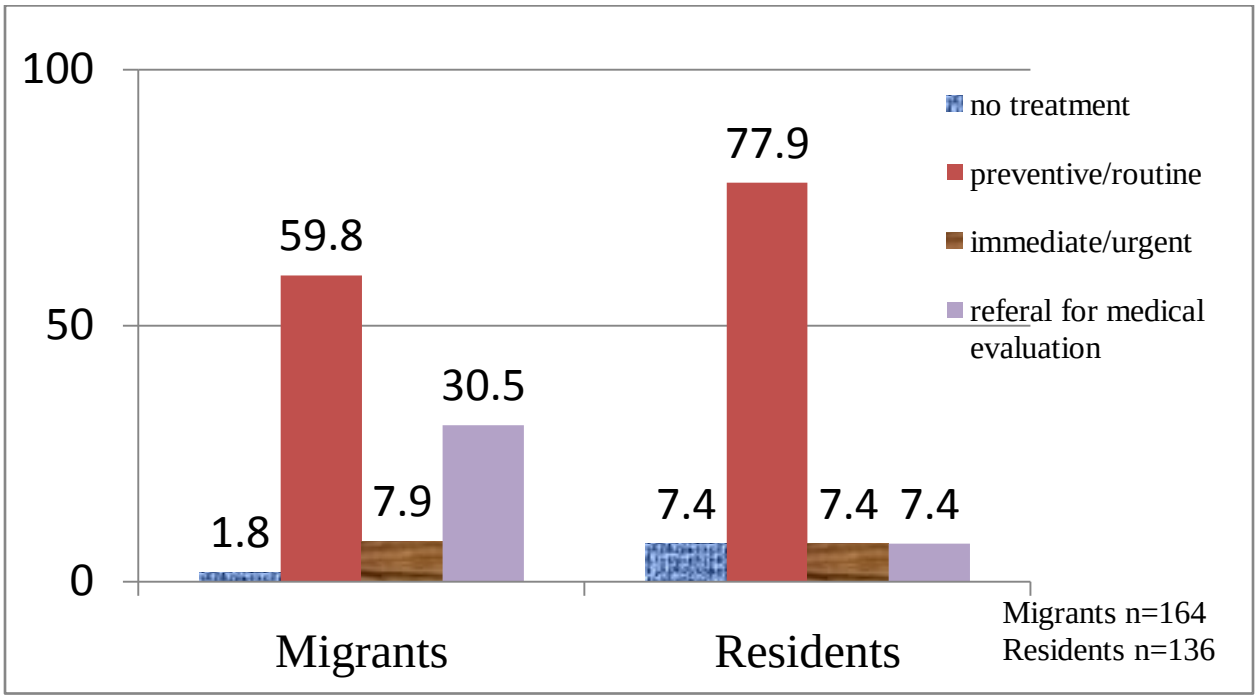
Variables	Migrants (%)	Residents (%)	P value
Oral examination – DMFT			
Zero	59 (36.0)	20 (14.7)	<.001
>Zero	105 (64.0)	116 (85.3)	
General examination – BMI			
<=25 kg/ m^2	139 (84.8)	79 (58.1)	<.001
>25 kg/ m^2	25 (15.2)	57 (41.9)	

The results of the oral examination (DMFT) and the body mass index are given here. Mean DMFT score of the migrant group was 1.94 ($\pm$2.06) and resident group was 3.32 ($\pm$2.27).

Lifelong caries experience was significantly high in residents. Almost half of the residents are overweight.

Mean BMI score among migrants was 21.73 (±2.60) and residents were 24.17 (±3.31).

Figure 4.4: Oral intervention urgency for subjects



Among migrants 38.4 percent need immediate /urgent oral treatment or evaluation as compared to 14.8 percent in residents. If preventive and routine treatments are included, 98.2 percent migrants and 92.6 percent residents needed some form of professional dental/oral care.

4.3 **Prevalence of Oral potentially malignant disorders (OPMDs)**

Table 4.10: Crude and age standardized prevalence of OPMD

	Crude prevalence n (%)	**Age standardized prevalence**	95% CI of age standardized prevalence
Migrants (N=164)	50 (30.4)	**39.7%**	23.5 – 56.0
Residents (N=136)	10 (7.3)	**6.9%**	0.0 – 14.3

Among study subjects 50 migrants and 10 residents had OPMDs. This was the primary objective of the study. This was more than the anticipated difference in OPMDs between migrants and residents. The types of lesions observed are listed in Table 4.11.

Table 4.11 Types of OPMDs

TYPES OF OPMDs	**Migrants (%)**	**Residents (%)**
No abnormalities	114 (69.5)	126 (92.6)
Leukoplakia	15 (9.1)	4 (2.9)
Erythroplakia	1 (0.7)	0 (0)
Lichen planus	3 (1.8)	2 (1.6)
Oral submucous fibrosis	15 (9.1)	0 (0)
Tobacco pouch keratosis	16 (9.8)	4 (2.9)

The most common site for potentially malignant disorders was buccal mucosa – 66 percent and 60 percent among migrants and residents respectively.

4.4 C**orrelates of OPMDs**

Table 4.12: Risk of OPMDs in migrants as compared to residents

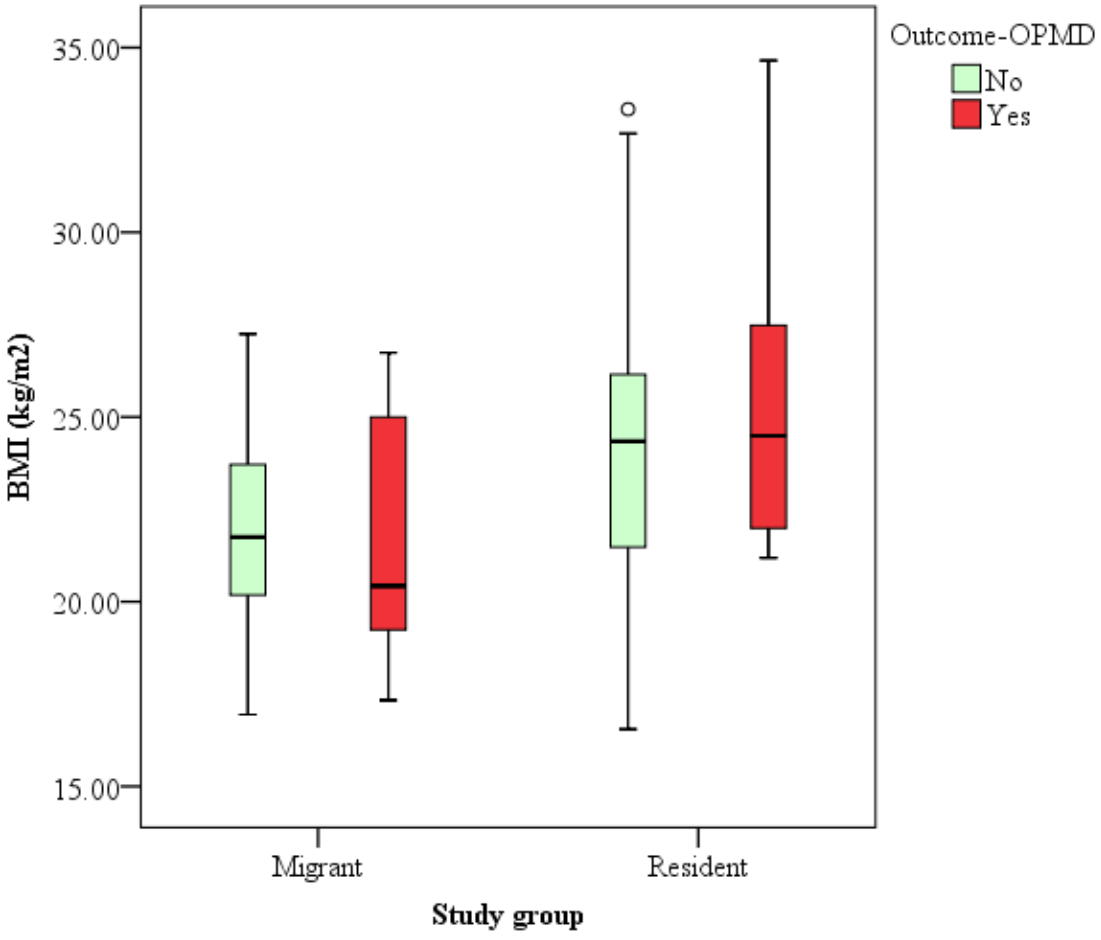
	OPMDs		Crude Odds ratio (95% CI)
	Absent n (%)	**Present n (%)**	
Residents	126 (92.6)	10 (7.4)	1
Migrants	114 (69.5)	50 (30.5)	5.5 (2.6-11.4)*

Migrants and residents differ significantly from each other for a majority of the independent variables studied. These must be considered while calculating the risk of OPMDs in migrants as compared to residents. Cross tabulations of presence of OPMDs against all independent variables irrespective of migrant/resident status gave logical findings, except BMI. Among migrants, proportion of OPMD was significantly higher in persons with BMI 25 or above. However, mean BMI was lower in those with OPMD than in those without OPMD and there was no significance when using unpaired t test (see table 4.13). Box plots also did not suggest higher BMI in those with OPMD in this group (see figure 4.5). Therefore this variable was dropped from further analysis. There were only 11 cases of diabetes in the whole sample of 300 – initial analysis including diabetes gave unusually high odds ratios and so this variable also was excluded.

Table 4.13: Comparison of mean BMI in persons with and without OPMDs

	OPMDs		P value
	No Mean ± SD	Yes Mean ± SD	
Migrant	21.8 ± 2.4	21.6 ± 3.0	0.707
Resident	24.1±3.2	25.3±4.2	0.259

Figure 4.5: Box plots of BMI distributions of migrants and residents grouped according to presence or absence of OPMDs



OPMDs is significantly higher in the following groups-less educated, unmarried/married not living with spouse, low socio economic group, use of alcohol, tobacco(smoking and smokeless), having any morbidity, skin problems, less caries(no missing, DMFT=0,poor oral health awareness).See appendix VIII for details.

4.5 **Multivariate analysis of whole study subjects and its different correlates**

Based from the findings from literature and significance in bivariate analysis independent variables were chosen. Binary logistic regression was done using back ward LR method was used. Independent variables selected was age group, educational status, marital status, socioeconomic group, fruits consumption, duration of smokeless tobacco use, ,duration of smoked tobacco use, duration of alcohol use, NCD, skin conditions, missing tooth, awareness group, cleaning interval, DMFT score and whether migrant or not. For each of the independent variable its strength of association with the Presence of OPMDs was given as odds ratio along with the confidence interval after adjusting for other variables.

4.5.1 **Model diagnostics**

The model was checked and outliers were excluded using the Cooks distance and standardized residuals. We found the model overall correct classification proportion had 2.5 percent improvement after excluding the outliers. So the model excluding the outliers was taken. The chosen model sample size was 290 and number of independent variables used was 16 and sample size was accurate enough for the model – 18.1 cases per variable. Omnibus test for coefficient was significant for the model ($p<0.001$). The final model did not have variable with Standard error of beta coefficient more than two which was recommended to rule out multicollinearity. Calculated proportional chance accuracy rate was calculated which

needed to be 25 percent more than the predicted chance accuracy rate. The proportional chance accurate rate was 71.5 percent and the predicted was 84.8 percent - less than 1.25 times the chance accuracy rate (89.3 percent). This is a limitation of this model.

Table 4.14: Correlates of OPMDs in study population

Sl. no	Factors	Adjusted OR	95%CI
1)	Alcohol use		
	No current use	1	
	<10 years	3.1	1.3 – 7.6
	>10 years	13.7	3.0 – 61.4
2)	Smokeless tobacco use		
	No current use	1	
	<10 years	12.6	3.6 – 43.7
	>10 years	24.8	5.8 – 104.9
3)	Category		
	Residents	1	
	Migrants	**4.6**	1.1 – 19.0

Adding age group to the model purposefully did not alter these findings considerably. These variables remained significant, with some minor variations in the odds ratios.

4.6 **Utilization of oral health care**

Among migrants, 10 had visited the dentist for pain and four for follow up treatment. In residents 18 had visited for pain, five for follow up treatment, four for consultation and one

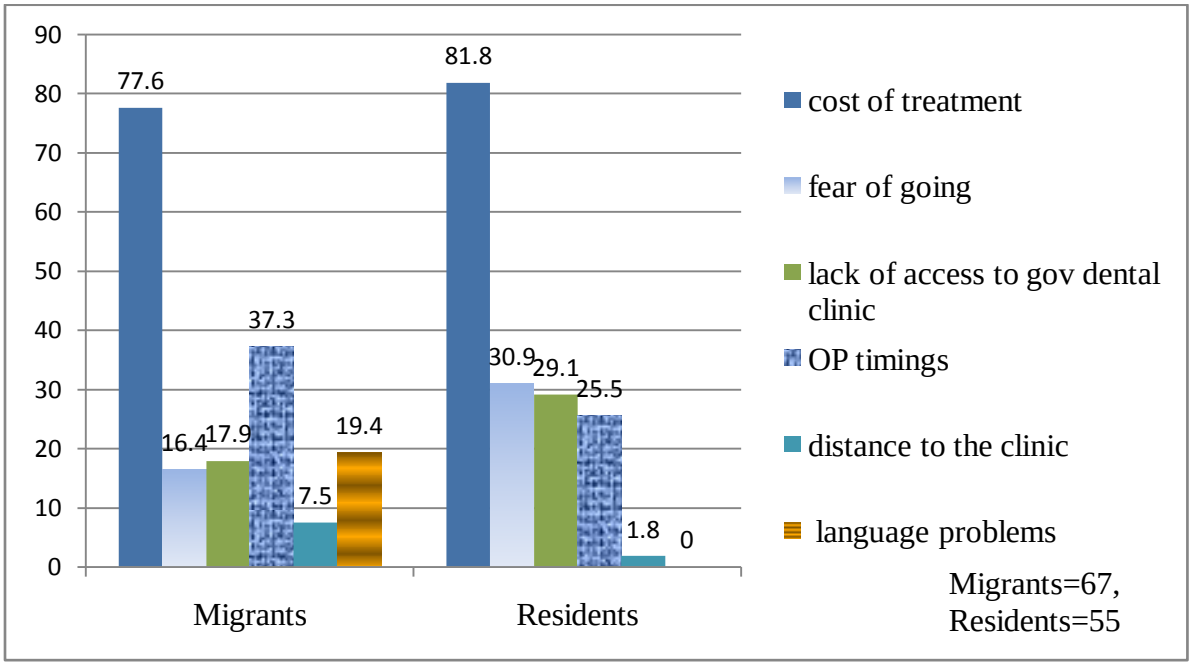
while accompanying his child to see the dentist. Sixteen migrants and three residents had sought oral health care from other health care providers (all pharmacists).The main reason for these consultations was pain except one who reported halitosis. Migrants who visited other health care provider (other than dentist) was 16 when compared to migrants three.

Table 4.15: Proportion of people who utilized oral health care services

	Crude proportion	**Age standardized proportion**	95% CI
Migrants	14 (8.5%)	**10.5%**	0.0 – 21.3
Residents	28 (20.6%)	**21.0%**	8.7 – 33.4

Among migrant, 97 (59.1%) persons and among residents, 81 (59.6%) did not face any barriers in seeking dental care. The remaining faced various barriers of which cost was the commonest one mentioned. (See figure 4.5)

Figure 4.6: Barriers for oral health care utilization



4.7 **Factors associated with oral health care utilization**

All 14 consultations in migrants and 27 of 28 consultations in residents were in people who experienced dental pain in the last 6 months. Other factors significantly associated with oral health care seeking are listed in tables 4.16 and 4.17

Table 4.16: Sociodemographic factors and personal habits significantly associated with oral care seeking

Variables	**Utilization of oral health care**		**P value**
	No (%)	**Yes (%)**	
Age group(yrs)			
18-24	85(92.4)	7(7.6)	.052
25-34	111(85.4)	19(14.6)	
>=35	62(79.5)	16(20.5)	
Education			
Primary and less	127(90.7)	13(9.3)	.028*
Greater than primary	131(81.9)	29(18.1)	
Socio Economic group			
Low	178(89.4)	21(10.6)	.016*
High	80(79.2)	21(20.8)	
Duration of smokeless tobacco			
No	158(82.3)	34(17.7)	.048*
<10	76(92.7)	6(7.3)	
>=10	24(92.3)	2(7.7)	

Table 4.17: Morbidity and health system factors associated with oral care seeking

Variables	Utilization of oral health care		P value
	No (%)	Yes (%)	
Presence of diabetes			
No	251(86.9)	38(13.1)	.053
Yes	7(63.6)	4(36.4)	
Missing tooth (caries)			
No	206(94.5)	12(5.5)	<.001
Yes	52(63.4)	30(36.6)	
Pain or discomfort in teeth or gums			
No	213(99.5)	1(0.50)	<.001
Yes	45(52.3)	41(47.7)	
State of gums and teeth			
Poor	116(81.7)	26(18.3)	.041
Good	142(89.9)	16(10.1)	
How often you clean teeth daily			
Once a day	128(82.6)	27(17.4)	.078
Two or more times	130(89.7)	15(10.3)	
Presence of clinic near house			
No	146(96.7)	5(3.3)	<.001
Yes	112(75.2)	37(24.8)	

Multivariate analysis using binary logistic regression backward LR was attempted to find out independent predictors of Oral care seeking. The predicted model had a correct classification proportion (86.0 percent) much lower than the required level above the chance accuracy proportion (94.9 percent). Having missing teeth (OR 8.3, 95 percent CI 3.8 – 9.8) and the presence of dental clinic near residence (OR 7.8, 95 percent CI 2.9-21.3) were significant predictors of oral care seeking.

Table 4.18: Subgroup analysis of factors affecting oral care seeking in migrants

Variable	**Proportion in migrants (n=164)**	**Crude OR (95% CI)**
Presence of musculoskeletal diseases		
No	11(7.0)	
Yes	3(40.9)	9.95 (1.97-50.17)*
Missing teeth		
No	5(3.9)	
Yes	9(25.7)	8.58 (2.65-27.71)*
Presence of clinic near house		
No	3(2.2)	
Yes	11(40.7)	30.70 (7.74-121.80)*
Cost of treatment		
No	6(5.4)	
Yes	8(15.4)	3.21 (1.05-9.79)*

Sub group analysis among migrants to look for predictors of oral care seeking suggested similar findings. In addition presence of musculoskeletal disease was associated with better oral care seeking. Perception of cost of treatment as a barrier was paradoxically associated with better oral care seeking. Among residents, missing teeth (OR 9.46, 95 percent CI 3.61 – 24.77) was the only condition significantly associated with oral care seeking.

4.8 **Utilization levels and OPMDs**

Only six (10.0 percent) subjects with OPMDs had visited a dentist in the past 6 months. All six have reported that the reason for the visit was pain and no other reason was mentioned to the open ended question of other possible reasons. Migrants with OPMDs less likely to have a dental consultation last six months (See table 4.19)

Table 4.19: Utilization of services by persons with OPMD

	OPMDs		**P value**
	Yes	**No**	
Migrant	2 (4.0%)	48 (96.0%)	0.011
Resident	4 (40%)	6 (60%)	

CHAPTER FIVE: DISCUSSION

This comparative cross sectional study to find prevalence of OPMD among migrants and residents of corporation of Kochi yielded satisfactory response rates in both the groups .However response rates was much higher in migrants than in residents. Several residents did not consent due to apprehension related to questions like cooking fuel used, probably because of issues related to subsidies of LPG use.

5.1 **Differences in vulnerabilities related to socio demographic characteristics**

Migrants were significantly younger than the residents, a finding that was expected and consistent with age patterns of unskilled migrants (UNESCO, 2013). The disparity in education status between migrants and residents were very well marked. Most residents had greater than primary education while only a fifth of the migrants had greater than primary education. The mean monthly income of migrants is significantly lower than that of residents even though 16.7 percent of the residents were not employed. Only 14 percent migrants enjoyed a relatively comfortable socio economic situation characterized by living in a pucca house with LPG as cooking fuel and having monthly income above 14000 Rupees. It may however be noted that monthly income levels have improve considerably from that reported in a previous study in 2012 in which 99.6 percent of migrants working in the construction sector had monthly income less than 15000 Rupees (Rajan and Sumeetha, 2015).

Only 7.3 percent migrants were living with their spouse at present – a finding that suggests that the remainder may not contact with the health care system through the conventional entry points like immunization (Scheppers et al., 2006). Most migrants were from rural areas and were being exposed to an urban environment for the first time. The

findings however suggest that there is minimal denial of basic entitlements such as water supply, access to a toilet and other amenities. All persons both migrants and residents had universal access to basic oral care, such as tooth paste and tooth brush. While vegetable consumption levels were comparable in both the study groups. Migrants consumed fruit less frequently. This can be attributed to increased cost of fruits. The study findings may not reflect problems due to overcrowding as it was not measured. Nevertheless this situation may be seen as a positive impact of raids conducted as part of the Safe Kerala Campaign (The Hindu, 2014).

Our study reiterates the various levels of vulnerability that can exist in migrants – lesser education, lower income/socio economic category, lack of immediate support from family, belonging to a rural background.

5.2 **Differences in vulnerabilities due to habits**

The tobacco epidemic in migrants remains alarming. Nearly two third of migrants were using smokeless tobacco and among them half were heavy users. Smoking in migrants although less prevalent, is by no means of less importance. Despite their relatively younger age, many migrants have been using tobacco products for more than 10 years. The study in northern Kerala had reported similar pattern of tobacco use (See Table 5.1). Our findings are similar and serve to highlight the conclusion of that study that the ban on sale of smokeless tobacco product in the state did not have impact on use of smokeless tobacco in marginalized groups like migrants (Aslesh et al., 2013). Only 7 residents used smokeless tobacco, whereas 41.9 percent of residents and 54.3 percent migrants used smoked forms of tobacco and the risk behaviors remains unabated in Kerala today. It is notable that significantly more

migrants use smokeless tobacco and the proportion of migrants smoking over 10 yrs is almost 3 times than of resident, therefore it is safe to conclude that tobacco remains a major problem in Kerala with migrants having a differential level of addiction as compared to residents.

Table 5.1 Tobacco use among migrants in Kerala

Location	Year	Smoked Tobacco	Smokeless Tobacco
Thiruvananthapuram[1]	2012	72.8%	64.3%
Kannur[2]	2013	41.8%	71.7%
Ernakulam[3*]	2015	56.6%	64.9%

1 Sreejini and Varma, 2015; 2 Aslesh et al., 2013; 3 Present study; *Standardized proportions

While almost a third of migrants consume alcohol, the proportion was nearly two thirds in residents. Duration of alcohol use was also significantly higher in residents .This results reflect the observation that Kerala probably has the highest per capita consumption of liquor in the country.

5.3 **Differences in general and oral health problems, particularly OPMDs**

Fever and musculoskeletal disorders were significantly higher among migrants, while overweight, non communicable diseases particularly diabetes are seen high among residents. This is probably the reflection of differences in the age distribution and working condition between the two groups. Life time caries experience is significantly higher among residents, is again a possible reflection of age differences between the two groups.

The age standardized prevalence of OPMDs among migrants is 39.7 percent as compared to 6.4 percent in residents. This translates into an approximate 5.5 times higher risk of OPMDs in migrants (without adjusting). Adjusting for smokeless tobacco and alcohol use the risk remains high at 4.5. Age adjustment in addition to these variables did not bring down the risk any further. The effects of progression to cancer can be devastating given the incremental vulnerabilities that get layered on to the migrant status. Migrants therefore constitute a high risk group for screening for oral cancer.

The other variables independently associated with OPMDs were use of smokeless tobacco and alcohol. Smokeless tobacco use up to 10 years had nearly13 fold higher risk of OPMDs. This doubled to almost 25 if the use was more than 10 years. Alcohol use up to 10 yrs was associated with a 3 times risk of OPMDs and almost 14 times risk when the use was above 10 years. As the model had less than the ideal accuracy rate (1.25 the predicted chance accuracy rate) these results should be interpreted with caution. However subgroup analysis in migrants gave a robust model in which alcohol and smokeless tobacco use remains significant. The risk of OPMD in smokeless tobacco users seems to be far higher in the migrants in subgroup analysis, when compared to combined analysis done including the residents. It is likely that other stressors in migrants may play a role in the increased risk of developing OPMDs even after adjusting for alcohol use. Irrespective of OPMD status almost all migrants and residents have conditions that may benefit from preventive or routine dental care. Similar proportions of both groups have conditions that require immediate/urgent treatment. The conspicuous difference lies in the proportion of OPMD requiring evaluation.

5.4 **Differences in Oral Health Care Utilization**

Utilization of oral health care services in migrants was exactly half of that in residents. Utilization level of the resident population may be a reflection of the limited access of people to specialized dental services as these are largely private and profit oriented. This may be the reason why difference in utilization is not significant (as conclude by looking at 95% CI). Dental pain remained the near universal factor in persons who utilized oral health care services. Further analysis gave the following variables significantly associated with the outcome-missing teeth, presence of dental clinic near the residence. Considering the cross-sectional nature of the study the direction of the association can be judged. The same reason may explain the paradoxical finding that migrants who perceived cost of treatment has a barrier had better utilization levels. The other interesting finding in the study is that users of smokeless tobacco had much lower levels of utilization than non users while studies have shown to be in the opposite direction(Azagba et al., 2013; Bloom et al., 2012; Kahende et al., 2009).

Dental consultation seems to be driven by pain with OPMDs being a silent entity. Even the few people with OPMDs who had seen a dentist had done so for pain and none of them shared experiences suggestive of detailed oral assessment of their oral condition. This makes the strong argument for screening at least in the high risk population for OPMDs. Even though significantly more residents with OPMDs had dental consultation the burden in residents seems to be hidden as none of them had been assessed in details.

5.5 **A "social determinants of the health (SDH) framework" view of the findings** (Health, 2008)

Looking at the findings of primary data analysis and review of literature using a SDH framework lens the following observations can be arrived at regarding the differential health compromising conditions in the migrants as compared to the residents.

1. Socio economic and political context-In migration of workers into the construction sector of Kerala hints an economic environment which favours the growth of such sectors, alongside social policies that protect wages. However migrant health (and oral health as a whole) has low priority in policies, with few safety net system for the migrant health. Collective responsibility for migrant health and welfare issues is limited. Gaps exist in the implementation of the tobacco policy, smokeless tobacco use is rampant in different parts of the state.(Rajan and sameetha,2015;Sreejini and Varma, 2015;Aslesh et al, 2013)
2. Social Hierarchy (Class, Power, Prestige, discrimination)-All migrants by default belong to the worker class position and thus may have less control over productive resources (Health, 2008). Underlying masculinity models may be the drivers of alcohol, tobacco use and less health care seeking in migrants and residents – these effects may be exacerbated in migrants who are largely single or living away from their spouses in worker settlements. Ethnicity of migrants in relation to residents, their lower education levels, unskilled jobs and lower mean monthly income all point to be multiple layers of differentials in structural determinants of SDH. Migrants are

risk of being stigmatized and seen as the source of problems than those who suffer from the problems per se. Outbreak of infectious diseases have been attributed to them in the past.(Chakraborty, 2015;Rajan and Sumeetha, 2015)

3. Intermediary factors- Differences in material circumstances such as living and working conditions and tobacco use are adverse towards migrants however alcohol use is higher in residents. Risk of OPMDs in the migrant subgroup is higher than the risk obtained from the pooled data. This suggests synergism of risk factors leading to increased vulnerability of OPMDs in migrants. An oral health care system is practically nonexistent and over the counter medication is the major respite particularly for the migrants. Employer supported care and health system supported care is inconsistent as shown from different studies. (Sreejini and Varma ,2015; Kumar, 2011)
4. Migrants have ended up with disproportionate levels of OPMDs with continuing high prevalence of tobacco use, the risk of malignant transformation is high. There exists no sound strategy at present in Kerala to address these problems. Given that most migrants are from rural settings, belonging to SC/ST/OBC groups, are less literate and poor, the consequences of oral cancer and other tobacco related diseases or even serious musculoskeletal problems can drastically affect them and their families, thereby increasing inequity in health and well being.

5.6 **Strength of the study**

1.It is a community based field study rather than a hospital/Clinic based studies usually carried out for OPMDs.

2. The entire study including clinical examination was carried out by a single investigator. Hence, there is no inter-observer bias.
3. The study brings out a marginalized group under the risk of developing oral cancer and other risk associated with tobacco and alcohol use.
4. The study provides insight into the gaps in the tobacco control program of Government of Kerala and how marginalized group are sidelined in this program.
5. The findings of literature review and primary data analysis are interpreted using the WHO Social Determinants of Health framework to place the micro level findings in the study groups in a larger context.

5.7 **Limitations of the study**

1. Biopsy, the confirmatory test for confirming the malignant potency in the lesions, was no done.
2. The study was done only in males leaving behind women.
3. Being self reported study except for clinical examination part, results have to be taken with caution.
4. A qualitative component to the study would have helped to understand people perceptions about OPMDs and utilization of oral health care in detail.
5. Frequency of consuming alcohol could not be measured due to practical difficulties.

5.8 **Recommendations**

These recommendations are based on the basis of the literature review and the actual study findings.

1. Health related Policies give more importance to migrants so that they figure in services beyond immunization and communicable disease control. These should take into consideration the unequal distribution of multiple structural and class factors in migrant groups
2. Tobacco control strategies need to be continued /enhanced in migrants as well as resident groups, with a special focus on smokeless tobacco use in migrants. The approach should not be one of policing (given the existing ban on smokeless tobacco products) and should be one of inclusion.
3. Health system should incorporate large scale screening of oral cavity especially in marginalized populations with high risk behaviors like tobacco and alcohol use.
4. Local support mechanisms (employer driven / health system driven) should be established so that migrants are made aware of the existing government health care services both for general health and oral health and their entitlements.
5. Oral health care systems are conspicuous by their absence in the lights of most of the study subjects. Short term measures should be undertaken to provide access, affordable dental care to people and long term measures should be initiated to establish oral health care systems based on the needs of people.

5.9 **Conclusion**

The study revealed that migrants had a greater proportion of people affected with OPMDs than residents. Early screening and intervention especially in the marginalized groups like migrants will identify high risk lesions and such persons may be subjected to interventions that will reduce the conversion rates of OPMDs into oral cancer. Tobacco use and alcohol use was found to be independent significant risk factors associated with OPMDs. Smokeless tobacco use levels were high in the migrants, despite the existing ban in Kerala. Use of smoked forms of tobacco is high among both migrants and residents. It points towards the need of targeted programs aimed at migrants to reduce the harmful habits and stressful living conditions. Oral health utilization among both migrants and residents is low, the former about half that of the latter. Utilization is closely related to dental pain and OPMDs do not figure in reasons for utilization. As OPMDs and other non communicable diseases share common risk factors, existing programs can be easily remolded or a new programs targeting both can be implemented.

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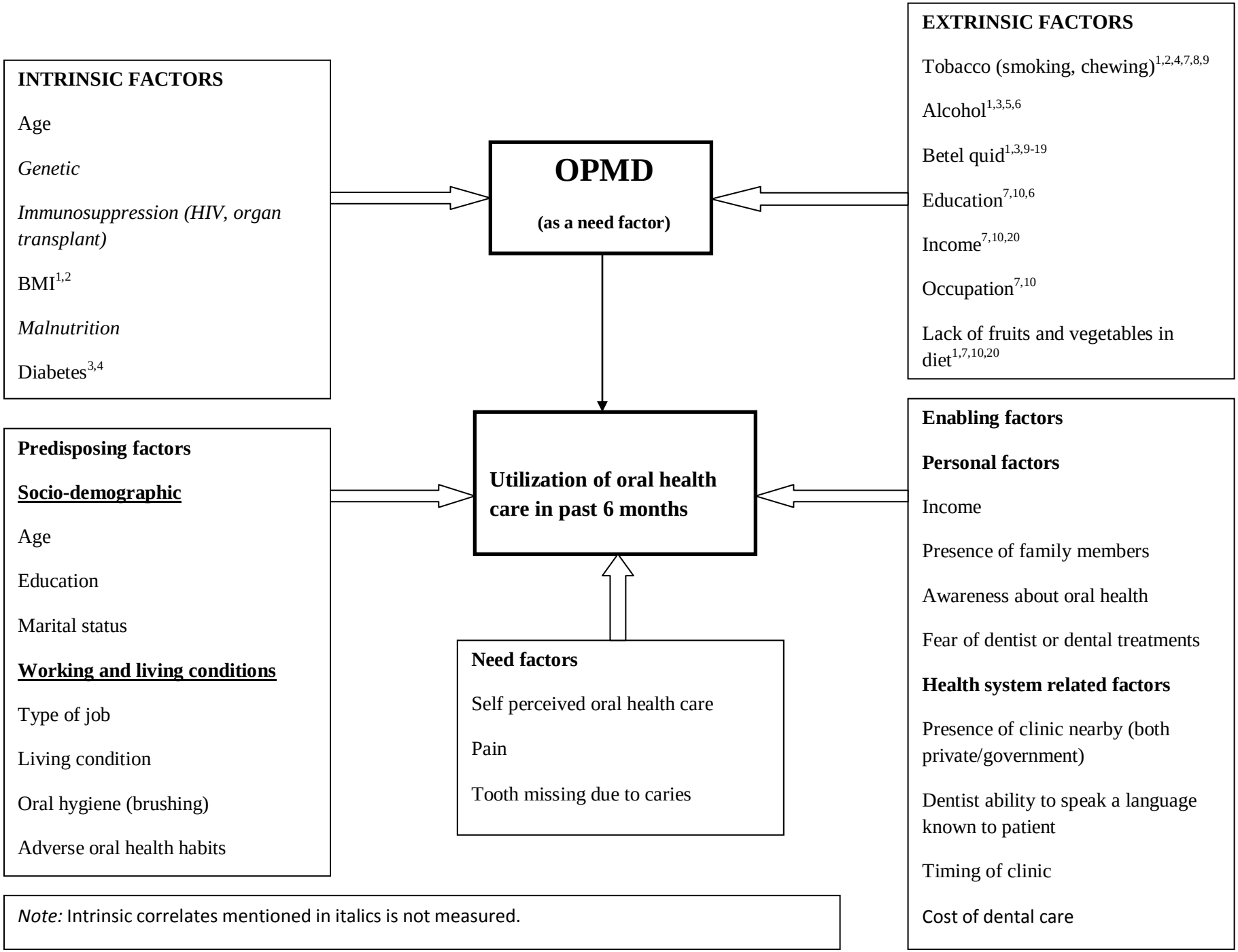
ANNEXURE I

Figure: Modified Anderson model for oral health care utilization with correlates of potentially malignant oral disorders



ANNEXURE II

Prevalence of potentially malignant oral disorders: A comparative study among interstate migrant labourers and general population in Kochi Corporation.

Achutha Menon Centre for Health Science Studies
Sree Chitra Tirunal Institute for Medical Sciences and Technology
Thiruvananthapuram-11

Subject information sheet for interview schedule and oral examination

Dear Sir,

Good morning/ Good afternoon. I am Dr. Tijo George, a student of Masters of Public Health at Achutha Menon Centre for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. As a part of course requirement, I am conducting a study on the topic "A cross sectional study to compare the prevalence of potentially malignant oral disorders among male interstate migrant labourers and men in the general population in the corporation of Kochi."

The purpose of this study is to compare the prevalence and correlates of potentially malignant oral disorders among male migrants and men in general population. The study also examines the difference in oral health care utilization among migrants and general population. For this, I would like to ask you some related questions and also examine your mouth (with a disposable probe and mirror). This will take about 20 minutes of your time. You may experience some mild discomfort during the oral examination. The study also contains some questions about your habits that may be personal. If any oral problems are diagnosed, I may be able to guide you for a general follow up. This may be advantageous for you. There will be no other personal benefit to you, but your co-operation will add greatly to scientific knowledge and benefit the society.

This study is purely for research purpose and your identity will be kept confidential. Any personal identification information given by you will not be disclosed to anyone under any circumstances anywhere at any time. All the copies of filled interview schedules and consent

forms will be kept under the custody of principal investigator and will be destroyed when they are deemed no longer needed.

The participation is voluntary, and you are free to refuse to participate at any point of time, without fear of harm or penalty. Your refusal to participate will not affect your employment or your health care at any point of time during or after the study. You may choose not to answer any question you do not wish to and also refuse oral examination.

If you have any questions you may ask me Dr Tijo George (tijgeo@sctimst.ac.in) at the number 8281333863 or the member secretary of Ethics Committee of SCTIMST that has cleared my study. The member secretary can be contacted at the following number:

Dr. Mala Ramanathan ,

If you agree to participate in this study, please indicate your consent by signing on the consent form provided.

Consent form for interview schedule and oral examination

Are you willing to participate in this study? ☐ Yes ☐No

Consent Statement:

I understand the purpose of this study and I am willing to participate in this study. I understand that I can withdraw from the study at any point of time. I also consent for the investigators to carry out the oral check-up for me.

Signature and name of the participant and date

ANNEXURE III

Prevalence of potentially malignant oral disorders: A comparative study among interstate migrant labourers and general population in Kochi Corporation.

Achutha Menon Centre for Health Science Studies
Sree Chitra Tirunal Institute for Medical Sciences and Technology
Thiruvananthapuram-11

Interview Schedule

Cluster no: ..... Date: .....

Division code ..... Identification number .....(Different for migrants and general residents)

Sl.No	Questions	Responses
Questions on socio demographic characteristics		
1.	Age in completed years	
2.	Highest level of education	0. No formal education 1. Less than primary school 2. Primary school completed(completed 7th class) 3. High school completed(completed 10th) 4. Higher secondary school completed(completed 12th class) 5. Diploma after higher secondary 6. Graduate 7. Postgraduate and above
3.	Marital status	1. Never married 2. Currently married 3. Separated 4. Divorced 5. Widower
4	Does your spouse and/or children live with you?	1. No 2. Yes 3. NA
5	What is the total no: of people living with you in this residence?(excluding wife and children)	----------

6	Are you currently working?	1.No (skip to Q 10) 2.yes
7	What is your current occupation?	1. Senior government officials/professionals 2. Clerical jobs 3. Shop and hotel workers 4. Supervisors 5. Construction workers 6. Street vendors 7. Others
8	What is your average current income per day/month?	----------rupees/day Or ----------rupees/month(skip to Q 10)
9	In a normal month (30 days) how many days do you work?	----------days
10	Place of birth	1.Rural/village 2.Urban/town
Living conditions		
11.1	Type of sanitation facility available?	1. Flush toilet 2. Pit toilet/latrine 3. No facility
11.2	Source of drinking water available?	1. Piped 2. Well water 3. Hand pump 4. Surface water 5. others
11.3	Type of cooking fuel used?	1. LPG 2. Wood 3. Kerosene 4. Crop residues 5. Biogas 6. Diesel 7. Others
11.4	Type of house/dwelling	1. Kaccha 2. Semi pucca 3. Pucca
Questions specific to migrants(from 12 to 16)		
12	Reasons for migration	1. Employment 2. Business 3. Others (specify)
13	State of origin	----------
14	District	----------
15		1.Rural/village

	Place of last residence before coming to Kochi?	2.Urban/town
16	What is the duration of stay at present place of residence after migration (in months)?	----------
Questions on dietary habits (To understand pattern of diet that may influence oral health)		
17	What type of diet do you consume?	0. Vegetarian 1. Non vegetarian
18.	How frequently do you consume fruits?	0. Never 1. Once in a week 2. More than once in a week 3. Everyday
19.	How frequently do you consume vegetables?	0. Never 1. Once in a week 2. More than once in a week 3. Everyday
Questions on Medical history(To understand systemic diseases that influence oral health)		
20.	Are you currently under any type of medication?	0. No 1. Yes (Specify)
21.	Current illnesses if any	0. No illness 1. Diabetes 2. Hypertension 3. Respiratory illness 4. Cardiac/heart problems 5. Skin problems 6. Injury/fracture/burn 7. Eye related diseases 8. Ear related diseases 9. Others(Specify) .....
Questions on oral health		
22.	How many natural teeth do you have?	0. No natural teeth 1. 1 to 9 2. 10 to 19 3. 20 teeth or more 4. Don't know
23	Do you have any missing tooth due to caries (i.e. due to decay and not due to any injury or accidents)?	0 No 1 Yes

24.	How would you describe the state of your teeth and gums?	1. Excellent 2. Very good 3. Good 4. Average 5. Poor 6. Very poor 7. Don't know
25.	During the past 6 months, did your teeth or mouth cause any pain or discomfort?	0. No 1. Yes
26.	Have you ever visited dentist in the past 6 months for treatment or check up?	0. No(skip to Q no: 28) 1. Yes
27.	If yes what was the main reason for your last visit to the dentist?	0. Consultation / advice 1. Pain or trouble with teeth, gums or mouth 2. Treatment / follow up treatment 3. Routine check up treatment 4. Others (Specify).....
28	Have you ever visited a health care provider other than a dentist in the past 6 months for an oral health problem?	0 No(Skip Q:29 and Q:30) 1 Yes
29	If yes, whom have you visited?	----------
30	What were the main oral problems for which you visited a health care provider other than dentist?(multiple options possible)	1. Pain 2. Swelling 3. Sensitivity 4. Others(specify)
31.	How often do you clean your teeth?	0. Never 1. Once a month 2. 2-3 times a month 3. Once a week 4. 2-6 times a week 5. Once a day 6. Twice or more a day
32		0 No 1 Yes(skip to Q no:34)

	Do you use tooth brush to clean your teeth?	
33	If not toothbrush what else you use?(specify)	----------
34.	Do you use toothpaste to clean your teeth?	0. No 1. Yes(skip to Q no: 36)
35	If not toothpaste what else you use?(specify)	----------
The following questions are about **health system factors** that may affect the utilization of your oral health care services		
36	What are the factors that discourage you from seeking dental treatment? (Select all that apply)	0 No factors 1 Fear of going to dentist for dental treatments 2 Inability of dentist to speak in a language I know 3 Cost of treatment 4 Distance to the dental clinic 5 Lack of access to a government dental clinic 6 Out patient(OP) timings 7 Others (specify)
37	Do you have a dental clinic/hospital with oral health care facility near to your house/residents?	0 No(skip to Q no :40) 1 Yes 2 Don't know(skip to Q no:40)
38	If yes, is it private or government oral health care facility.	0 Private 1 Government 2 Don't know
39	Does the clinic/hospital with oral health care services near to your residents/house have evening op?	0 No 1 Yes 2 Dont know
Questions on adverse habits which can possible affect the potentially malignant oral disorders		
40	Have you ever consumed any areca nut/betel nut products?	0. No (if no skip to Q 46) 1. Yes
41	Type of betel nut/areca nut products used?(multiple options possible)	1. Betel quid/pan 2. Pan masala 3. Gutkha 4. Supari 5. Others(specify)
42	Type of betel quid/pan chewing?	1. With tobacco 2. Without tobacco

43.	How often do you consume Betel nut/areca nut products?	1. Daily 2. Occasionally 3. Past(skip to Q:46)
44	Frequency of chewing betel quid products daily?	1. Less than 1 2. 1-3 3. 4-5 4. 6-10 5. Greater than 10
45	Duration of chewing betel quid products?	1. Less than 5 years 2. 6-10 years 3. 11-15 years 4. Greater than 15 years
46	Have you ever smoked any tobacco products?	0. No (skip to Q 51) 1. Yes
47.	Type of tobacco products used?	1. Cigarette 2. Beedi 3. Both 4. Others(specify)
48	How often do you smoke any tobacco products?	1. Daily 2. Occasionally 3. Past(skip to Q:51)
49	Frequency of smoking tobacco products daily?	1. Less than 1 2. 1 3. 2 4. 3 5. 4 and more
50	Duration of usage of smoking tobacco products?	1. 1-5 yrs 2. 6-10 yrs 3. 11-15yrs 4. 16 and above
51.	Have you ever consumed alcohol?	0. No(if no skip to Q 56) 1. Yes
52	Type of alcohol consumed?	1. Rum 2. Whisky 3. Vodka 4. Scotch 5. Beer 6. Wine 7. Others(specify)
53	How often do you consume alcohol?	1. Daily 2. Occasionally 3. Past(skip to Q:56)

54.	How frequently do you consume alcoholic drinks? (rum, vodka, whisky, gin, scotch)	1. 1 peg per day 2. 2 peg per day 3. 3 peg per day 4. 4 peg per day 5. 5 and more peg per day
55	Duration of drinking alcohol?	1. 1-5 yrs 2. 6-10 yrs 3. 11-15yrs 4. 16 and above
The following questions are about **Oral health awareness** that may affect utilization of oral health care		
56	Which of the following help you to improve oral health?	
56.1	Does brushing twice a day?	0 No 1 Yes 2 Don't know
56.2	Decreasing smoking/chewing habits?	0 No 1 Yes 2 Don't know
56.3	Eating fewer amounts of sweets?	0 No 1 Yes 2 Don't know
56.4	Regular oral check up?	0 No 1 Yes 2 Don't know
56.5	Eating more fruits and vegetables?	0 No 1 Yes 2 Don't know
57	Is it natural to lose teeth as you age?	0 No 1 Yes 2 Don't know
58	What should be the interval of changing your toothbrush?	0 Once in 1 month 1 Once in 2 month 2 Once in 3 month 3 Once in 4 month 4 Don't know
59)Can you Please explain the following pictures		

59.1)		
59.2)		
59.3)		
59.4)		

Clinical examination

1) Dentition status

	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
Crown																
Root																

Crown																
Root																
	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38

0 = sound

1 = caries

2 = filled with caries

3 = filled, no caries

4 = Missing due to caries

5 = Missing for any other reason

7 = Fixed dental prosthes including implants

8 = unerupted

9 = not recorded

2) Oral potentially malignant disorders.

CONDITIONS	LOCATION
1)	1)
2)	2)
3)	3)

Condition

0 = No abnormal condition

1 = Leukoplakia

2 = Erythroplakia

3 = Lichen planus

4 = Oral submucous fibrosis

6 = Tobacco pouch keratosis

7 = smokers palate

8 = Others

9 = not recorded

Location

1 = Vermillion borders

2 = Lips

3 = Sulcus

4 = Buccal mucosa

5 = Floor of the mouth

6 = Tongue

7 = Hard and/ or soft palate

8 = Alveolar ridges/ gingiva

9 = Not recorded

3) Anthropometric measures

Weight:

Height:

BMI:

4) **Any other important oral findings**:

1)

2)

3)

4)

5)

INTERVENTION URGENCY: ----------

0) NO TREATMENT NEEDED
1) PREVENTIVE OR ROUTINE TREATMENT NEEDED
2) IMMEDIATE OR URGENT TREATMENT NEEDED DUE TO INFECTION /PAIN
3) REFERAL FOR COMPREHENSIVE MEDICAL EVALUATION/TREATMENT

ANNEXURE IV

അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസ്

ശ്രീ ചിത്രതിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസ് ആന്റ് ടെക്നോളജി, തിരുവനന്തപുരം 695 011, കേരള

കൊച്ചി കോർപ്പറേഷനിലെ അന്യ സംസ്ഥാന തൊഴിലാളികളുടേയും പൊതുജനങ്ങഴുടേയും വായിൽ അർബുദത്തിനു കാരണമാകാവുന്ന രോഗങ്ങളുടെ താരതമ്യ പഠനം

<u>അഭിമുഖത്തിനും വായയുടെ ഉൾഭാഗം പരിശോധിക്കുന്നതിനുമായുള്ള സമ്മതം രേഖപ്പെടുത്തുന്ന ഫോം.</u>

സർ/മാഡം,

എന്റെ പേര് ഡോ. ടിജോ ജോർജ്ജ്. ഞാൻ തിരുവനന്തപുരത്തെ 'ശ്രീ ചിത്ര തിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസ് ആന്റ് ടെക്നോളജി' എന്ന സ്ഥാപനത്തിലെ 'അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത് സയൻസ് സ്റ്റഡീസിൽ' 'മാസ്റ്റർ ഓഫ് പബ്ലിക് ഹെൽത്ത്' കോഴ്സ് വിദ്യാർത്ഥിയാണ്. ഈ കോഴ്സിന്റെ ഭാഗമായി ഞാൻ കൊച്ചി കോർപ്പറേഷനിലെ ജനങ്ങളുടേയും അന്യ സംസ്ഥാന തൊഴിലാളികളുടേയും പൊതുജനങ്ങളുടേയും വായിൽ അർബുദത്തിനു കാരണമാകാവുന്ന രോഗങ്ങളുടെ ഒരു താരതമ്യ പഠനം നട ത്തുകയാണ്.

ഇതോടൊപ്പം അന്യ സംസ്ഥാന തൊഴിലാളികളുടേയും പൊതുജനങ്ങളു ടേയും ദന്താരോഗ്യസംരക്ഷണത്തിനുള്ള സേവനങ്ങൾ എങ്ങനെഉപയോഗപ്പെടു ത്തുന്നതിനെക്കുറിച്ചും ഉള്ള താരതമ്യപഠനം നടത്തുന്നു. ആയതിനാൽ താങ്ക ളോട് കുറച്ച് ചോദ്യങ്ങൾ ചോദിക്കുകയും വായയുടെ ഉൾഭാഗം പരിശോധിക്കു കയും ചെയ്യേണ്ടതുണ്ട്. താങ്കളുടെ ചില വ്യക്തിപരമായ ശീലങ്ങളെപ്പറ്റിയും അറിയേണ്ടതുണ്ട്. ഏതെങ്കിലും തരത്തിലുള്ള ദന്തരോഗങ്ങൾ കാണപ്പെട്ടാൽ

താങ്കൾക്ക് രോഗശമനത്തിന് ആവശ്യമായ മാർഗ്ഗനിർദ്ദേശങ്ങളും നൽകുന്നതാ യിരിക്കും. ഇത് താങ്കൾക്ക് ഗുണകരമാകാനിടയുണ്ട്.

ഈ പഠനം പൂർണ്ണമായും ഗവേഷണ ആവശ്യത്തിന് വേണ്ടിയുള്ളതും വിവരങ്ങൾ ശേഖരിക്കുന്നവയെല്ലാം രഹസ്യമായി സൂക്ഷിക്കുന്നതുമായിരിക്കും. താങ്കളിൽ നിന്നും ലഭിക്കു വിവരങ്ങൾ യാതൊരു കാരണവശാലും പുറത്ത് മാറ്റാരേയും അറിയിക്കുന്നതല്ല. താങ്കൾ തരുന്ന വിവരങ്ങൾ പൂർണ്ണമായും രഹ സ്യസ്വഭാവത്തോടെ സൂക്ഷിക്കുകയും ആവശ്യം കഴിഞ്ഞ ശേഷം നശിപ്പിക്കു കയും ചെയ്യുന്നതാണ്.

ഈ പഠനത്തിൽ പങ്കെടുക്കുന്നതിന് പൂർണ്ണ താൽപര്യമുണ്ടെങ്കിൽ മാത്രം പങ്കെടുത്താൽ മതിയാകും. താങ്കൾക്ക് താത്പര്യമില്ലെങ്കിൽ ഇതിൽ നിന്നും ഏതു സമയത്തും പിൻമാറാവുന്നതാണ്. ഇതു താങ്കളെ ഒരു രീതിയിലും ആരോ ഗ്യപരമായോ, തൊഴിൽപരമായോ ബാധിക്കുന്നതായിരിക്കില്ല. താങ്കൾക്ക് ഉത്തരം നൽകാൻ താത്പര്യമില്ലാത്ത ചോദ്യങ്ങൾക്ക് ഉത്തരം നൽകാതിരിക്കു ന്നതിനും വായയുടെ ഉൾവശം പരിശോധിക്കുന്നതിൽ നിന്നും പിൻമാറാവുന്ന തുമാണ്. ആവശ്യമെങ്കിൽ താങ്കൾക്ക് മെമ്പർ സെക്രട്ടറിയെ ബന്ധപ്പെടാവുന്ന തുമാണ്. ഈ പഠനവുമായി ബന്ധപ്പെട്ട് എന്തെങ്കിലും തരത്തിലുള്ള സംശയങ്ങ ളോ, ആശങ്കകളോ ഉണ്ടെങ്കിൽ എന്നെ നേരിട്ട് ബന്ധപ്പെടാവുന്നതാണ് (8281333863) പഠനവുമായി ബന്ധപ്പെട്ട് കൂടുതൽ അന്വേഷണങ്ങൾക്കായി ശ്രീ ചിത്ര ഇൻസ്റ്റിറ്റ്യൂട്ടിലെ നീതി നിർവ്വാഹണ സമിതി മെമ്പർ സെക്രട്ടറി ഡോ. മാലാ രാമനാഥനോട് (0471-252434) ചോദിക്കാവുന്നതാണ്.

സമ്മതപത്രം

ഈ പഠനത്തിൽ പങ്കെടുക്കുവാൻ താങ്കൾക്ക് സമ്മതമാണെങ്കിൽ താങ്കളുടെ ഒപ്പ് താഴെകൊടുത്തിരിക്കുന്ന സ്ഥലത്ത് രേഖപ്പെടുത്തി സമ്മതം നൽകാവുന്നതാണ്. താങ്കൾക്ക് ഈ പഠനത്തിൽ പങ്കെടുക്കുവാൻ സമ്മതമാണോ ?

അതെ ☐ അല്ല ☐

ഈ പഠനത്തിന്റെ ആവശ്യകത എനിക്ക് ബോധ്യപ്പെടുകയും, ഈ പഠനത്തിൽ പങ്കെടുക്കുവാൻ ഉള്ള താത്പര്യം അറിയിക്കുകയും ചെയ്യുന്നു. ഈ പഠനത്തിൽ നിന്നും ഏതു സമയത്തും പിൻമാറാൻ കഴിയുമെന്ന് ഞാൻ മനസിലാക്കുന്നു. വായയുടെ ഉൾവശവും പല്ലുകളും പരിശോധിക്കുവാനുള്ള സമ്മതവും ഇതിനാൽ അിറയിച്ചുകൊള്ളുന്നു.

പങ്കെടുക്കുന്ന വ്യക്തിയുടെ ഒപ്പും ഡേറ്റും (തീയതി)

ANNEXURE V

അച്യുതമേനോൻ സെന്റർ ഫോർ ഹെൽത്ത്
സയൻസ് സ്റ്റഡീസ്
ശ്രീ ചിത്രതിരുനാൾ ഇൻസ്റ്റിറ്റ്യൂട്ട് ഫോർ മെഡിക്കൽ സയൻസ് ആൻഡ് ടെക്നോളജി, തിരുവനന്തപുരം 695 011

ക്ലസ്റ്റർ നമ്പർ : തീയതി :

ഡിവിഷൻ : തിരിച്ചറിയൽ സംഖ്യ:

(സ്ഥിരതാമസക്കാർക്കും കുടിയേറ്റക്കാർക്കും വേണ്ടി)

ക്രമ നമ്പർ	ചോദ്യങ്ങൾ	പ്രതികരണങ്ങൾ
1.	വയസ്സ്	
2.	ഉന്നത വിദ്യാഭ്യാസ യോഗ്യത	(0) ഔപചാരിക വിദ്യാഭ്യാസം ഇല്ല (1) പ്രാഥമിക വിദ്യാഭ്യാസത്തിനും താഴെ (2) പ്രാഥമിക വിദ്യാഭ്യാസലം പൂർത്തിയാക്കിയിട്ടുണ്ട് (7-ാം തരം പൂർത്തിയാക്കിയിട്ടുണ്ട്) (3) ഹൈസ്ക്കൂൾ വിദ്യാഭ്യാസം പൂർത്തിയാക്കിയിട്ടുണ്ട് (4) ഹയർ സെക്കന്ററി വിദ്യാഭ്യാസം പൂർത്തിയാക്കിയിട്ടുണ്ട് (പത്താം തരം പൂർത്തിയാക്കിയിട്ടുണ്ട്)

		തരം പൂർത്തിയാക്കിയിട്ടുണ്ട്) (5) ഹയർ സെക്കന്ററിക്കുശേഷം ഡിപ്ലോമ (6) ബിരുദധാരി (7) ബിരുദാനന്തര ബിരുദധാരി
3.	വിവാഹാവസ്ഥ	(1) അവിവാഹിത(ൻ) (2) വിവാഹിത(ൻ) (3) ഭാര്യ/ഭർത്താവുമായി പിരിഞ്ഞു നിൽക്കുന്നു (4) വിവാഹമോചിത(ൻ) (5) വിധവ (വിഭാര്യൻ)
4.	ജീവിതപങ്കാളിയും മക്കളും താങ്കളുടെ കൂടെയാണോ ജീവിക്കുന്നത്?	(1) അതെ (2) അല്ല (3) ബാധകമല്ല
5.	ഈ ഭവനത്തിൽ താമസിക്കുന്ന മൊത്തം ആളുകളുടെ എണ്ണം, (ഭാര്യയ്ക്കും മക്കൾക്കും പുറമേ)	..
6.	താങ്കൾ നിലവിൽ ഉദ്യോഗസ്ഥൻ ആണോ?	(1) ഇല്ല (തുടർന്ന് ചോദ്യം 10) (2) ഉണ്ട്
7.	താങ്കളുടെ നിലവിലുള്ള തൊഴിൽ?	(1) സർക്കാർ ജോലിക്കാരൻ/ജോലിക്കാരൻ (2) ഓഫീസ് ക്ലാർക്ക് (3) പീടിക തൊഴിലാളി, ഹോട്ടൽ തൊഴിലാളി (4) മേൽനോട്ടക്കാരൻ

		(സൂപ്പർവൈസർ) (5) കെട്ടിട തൊഴിലാളി (6) വഴി വാണിഭക്കാരൻ (7) മറ്റുള്ളവ
8.	താങ്കളുടെ പ്രതിദിന വരുമാനം?	---------- രൂപ/ദിനം/ ---------- രൂപ/മാസം (തുടർന്ന് ചോദ്യം)
9.	താങ്കൾ ഒരു മാസ(30 ദിനങ്ങൾ) ത്തിൽ എത്ര ദിവസം തൊഴിൽ ചെയ്യാറുണ്ട്?	---------- ദിവസം
10.	ജനന സ്ഥലം	(1) ഉൾനാട്/ഗ്രാമം (2) നഗരം/പട്ടണം
ജീവിതാവസ്ഥ		
11.1	ഏതുതരം ശൗചാലയമാണ് ലഭ്യതയിലുള്ളത്	(1) ഫ്ളഷ് കക്കൂസ് (2) കുഴി കക്കൂസ്/കക്കൂസ് (3) ശൗചാലയ സൗകര്യമില്ല
11.2	ഏതുതരം കുടിവെള്ളം ആണ് ലഭ്യതയിലുള്ളത്?	(1) കുഴൽവെള്ളം പൈപ്പ് വെള്ളം (2) കിണർ (3) ഹാൻഡ് പമ്പ് (4) ഭൂപ്രതല ജലം (5) മറ്റുള്ളവ
11.3	ഏതുതരം പാചക ഇന്ധനം ആണ് ഉപയോഗിക്കുന്നത്?	(1) എൽ.പി.ജി (2) വിറക് (3) മണ്ണെണ്ണ

		(4) ബയോഗ്യാസ് (5) ഡീസൽ (6) മറ്റുള്ളവ
11.4	ഏതുതരം വീട്?	(1) കുടിൽ /ഓല മേഞ്ഞത് (2) ഓട്/ആസ്ബസ്റ്റോസ് (3) കോൺക്രീറ്റ്/വാർത്ത
നിർദ്ദിഷ്ട ചോദ്യങ്ങൾ(അന്യസംസ്ഥാന തൊഴിലാളികൾക്ക്		
12.	കുടിയേറി പാർക്കുന്നതിനുള്ള കാരണങ്ങൾ	(1) തൊഴിൽ (2) കച്ചവടം (3) മറ്റുള്ളവ(വ്യക്തപ്പെടുത്തുക)
13.	ജനിച്ച സംസ്ഥാനം	------
14.	ജില്ല	----------
15.	കൊച്ചിയിൽ വരുന്നതിനുമുമ്പ് താമസിച്ചിരുന്ന സ്ഥലം?	(1) ഉൾനാട്/ഗ്രാമം (2) നഗരം/പട്ടണം
16.	ഇപ്പോൾ ഉള്ള സ്ഥലത്ത് താങ്കൾ എത്ര കാലമായി കുടിയേറി താമസിച്ച് പോരുന്നു?(എത്ര മാസമായി)	----------
പഥ്യാഹാരമായ ചോദ്യങ്ങൾ: ആഹാരരീതികൾ എങ്ങനെ?		
17.	ഏതുതരം ആഹാരരീതി ആണ് താങ്കൾ ശീലിച്ച് പോരുന്നത്?	(0) സസ്യാഹാരം (1) മാംസാഹാരം
18.	സാധാരണയായി താങ്കൾ എപ്പഴെല്ലാമാണ് പഴങ്ങൾ കഴിയ്ക്കാറുള്ളത്?	(0) ഒരിക്കലുമില്ല (1) ആഴ്ചയിൽ ഒരിക്കൽ (2) ആഴ്ചയിൽ ഒന്നിലധികം തവണ

		(3) എന്നും
19.	സാധാരണയായി താങ്കൾ എപ്പോഴെല്ലാമാണ് പച്ചക്കറികൾ കഴിയ്ക്കാറുള്ളത്?	(0) ഒരിക്കലുമില്ല (1) ആഴ്ചയിൽ ഒരിക്കൽ (2) ആഴ്ചയിൽ ഒന്നിലധികം പ്രാവശ്യം (3) എന്നും
പൂർവ്വ വൈദ്യചികിത്സാ സംബന്ധിയായ ചോദ്യങ്ങൾ:		
20.	താങ്കൾ ഇപ്പോൾ ഏതെങ്കിലും തരത്തിലുള്ള ചികിത്സയിലാണോ?	(0) അല്ല (1) ആണ് (വ്യക്തമാക്കുക)
21.	നിലവിൽ എന്തെങ്കിലും ആരോഗ്യപ്രശ്നമുണ്ടോ? ഏത്?	(0) രോഗമില്ല (1) പ്രമേഹം (2) രക്തസമ്മർദ്ദം (3) ശ്വാസകോശസംബന്ധിയായ രോഗങ്ങൾ (4) ഹൃദയസംബന്ധിയായ രോഗങ്ങൾ (5) തൃക്ക് രോഗങ്ങൾ (6) മുറിവ്/ഒടിവ്/പൊള്ളൽ (7) നേത്രസംബന്ധിയായ രോഗങ്ങൾ (8) കർണ്ണസംബന്ധിയായ രോഗങ്ങൾ (9) മറ്റുള്ളവ (വ്യക്തമാക്കുക) ..
ദന്താരോഗ്യസംബന്ധിയായ ചോദ്യങ്ങൾ :		
22.	താങ്കളുടെ വായിൽ എത്ര പല്ലുണ്ട്?	(0) പല്ലില്ല (1) 1-9 (2) 10-19

		(3) 20-ൽ കൂടുതൽ (4) അറിയില്ല
23.	താങ്കളുടെ ഏതെങ്കിലും പല്ലുപറിച്ചു കളഞ്ഞിട്ടുണ്ടോ? (മുറിവോ അപകടമോ അല്ലാതെ കേടുമൂലം)	(0) ഇല്ല (1) ഉണ്ട്
24.	താങ്കളുടെ ദന്താരോഗ്യവും മോണയുടെ ആരോഗ്യവും താങ്കൾ എങ്ങനെ വിലയിരുത്തുന്നു?	(1) ഭികച്ചത് (2) അത്യുചിതം (3) ഉചിതം (4) ശരാശരി (5) മോശം (6) വളരെ മോശം (7) അറിയില്ല
25.	കഴിഞ്ഞ ആറു മാസത്തിനിടയ്ക്ക് താങ്കൾക്ക് ഏതെങ്കിലും തരത്തിലുള്ള ദന്താരോഗ്യപ്രശ്നങ്ങൾ അനുഭവപ്പെട്ടിട്ടുണ്ടോ?	(0) ഇല്ല (1) ഉണ്ട്
26.	താങ്കൾ കഴിഞ്ഞ ആറു മാസത്തിനിടയ്ക്ക് എപ്പോഴെങ്കിലും ദന്തസംബന്ധിയായി ചികിത്സയ്ക്കോ, പരിശോധനയ്ക്കോ വൈദ്യസഹായം തേടിയിട്ടുണ്ടോ?	(0) ഇല്ല (തുടർന്ന് ചോദ്യം 28) (1) ഉവ്വ്

27.	ഉണ്ടെങ്കിൽ, എന്തുകൊണ്ട്?	(0) പരിശോധന (1) വായ, ദന്ത, മോണ വേദന (2) ചികിത്സ / തുടർചികിത്സ (3) പതിവ് പരിശോധന (4) മറ്റുള്ളവ (വ്യക്തമാക്കുക)
28.	കഴിഞ്ഞ ആറുമാസത്തിനിടയിൽ താങ്കൾ ദന്തപ്രശ്നങ്ങൾ മൂലം ദന്തഡോക്ടറെ അല്ലാതെ മറ്റാരെയെങ്കിലും സമീപിച്ചിട്ടുണ്ടോ ചികിത്സയ്ക്ക്	(0) ഇല്ല (തുടർന്ന് ചോദ്യം 31) (1) ഉണ്ട്
29.	ഉണ്ടെങ്കിൽ, ആര്?	----------
30.	താങ്കൾ അദ്ദേഹത്തെ സമീപിക്കാൻ കാരണമായ പ്രശ്നങ്ങൾ എന്ത്? (ഒന്നിലധികം യിരത്തെടുക്കാവുന്നതാണ്)	(1) വേദന (2) നീര് (3) പുളിപ്പ് (4) മറ്റുള്ളവ (വ്യക്തമാക്കുക)
31.	താങ്കൾ എപ്പോഴെല്ലാം പല്ല് വൃത്തിയാക്കാറുണ്ട്?	(0) ഒരിക്കലുമില്ല (1) മാസത്തിലൊരിക്കൽ (2) മാസത്തിൽ രണ്ടോ മൂന്നോ തവണ (3) ആഴ്ചയിൽ ഒരിക്കൽ (4) ആഴ്ചയിൽ 2-6 തവണ (5) ദിവസേന 1 തവണ (6) ദിവസേന 2-ൽ അധികം തവണ
32.	പല്ലു വൃത്തിയാക്കാൻ താങ്കൾ ബ്രഷ് ഉപയോഗിക്കാറുണ്ടോ?	(0) ഇല്ല (1) ഉണ്ട് (തുടർന്ന് ചോദ്യം 34)

33.	ടൂത്ത് ബ്രഷ് അല്ലെങ്കിൽ മറ്റെന്ത് ആണ് താങ്കൾ ഉപയോഗിക്കുന്നത്?	----------
34.	താങ്കൾ പല്ലുതേയ്ക്കാൻ ടൂത്ത് പേയ്സ്റ്റ് ഉപയോഗിക്കാറുണ്ടോ?	(0) ഇല്ല (1) ഉണ്ട് (തുടർന്ന് ചോദ്യം 36)
35.	ടൂത്ത് പേയ്സ്റ്റ് അല്ലെങ്കിൽ മറ്റെന്താണ് താങ്കൾ ഉപയോഗിക്കുന്നത്? (വ്യക്തമാക്കുക)	----------
താഴെ പറയുന്നതു ആരോഗ്യമേഖലയെ സംബന്ധിക്കുന്ന ചോദ്യങ്ങളാണ്		
36.	ദന്തസംബന്ധമായ പരിശോധനയ്ക്കും ചികിത്സയ്ക്കും താങ്കളെ പിന്തിരിപ്പിക്കുന്ന ഘടകങ്ങൾ ഏവ? (ഒന്നിലധികം തിരഞ്ഞെടുക്കാവുന്നതാണ്)	(0) ഒരു ഘടകവുമില്ല (1) ദന്തഡോക്ടറെ സമീപിക്കുന്നതിനുള്ള ഭയം (2) ദന്തഡോക്ടർക്ക് ഞാൻ സംസാരിക്കുന്ന ഭാഷ അറിയാത്തതുകൊണ്ട് (3) ചികിത്സാ ചിലവ് (4) ദന്താശുപത്രിയിലേക്കുള്ള ദൂരം (5) സർക്കാർ ദന്താശുപത്രിയിലേക്ക് എത്തുവാൻ ഉള്ള ബുദ്ധിമുട്ട് (6) പുറംരോഗികൾക്കുള്ള സമയക്രമീകരണം (7) മറ്റുള്ളവ (വ്യക്തമാക്കുക)
37.	താങ്കളുടെ വാസസ്ഥലത്തിന് അടുത്ത് ദന്തചികിത്സാലയമോ	(0) ഇല്ല (തുടർന്ന് ചോദ്യം 40) (1) ഉണ്ട്

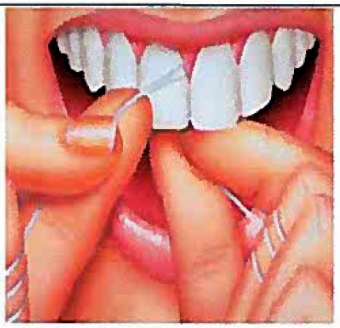
	ആശുപത്രിയോ ഉണ്ടോ?	(2) അറിയില്ല (തുടർന്ന് ചോദ്യം 40)
38.	ഉണ്ടെങ്കിൽ, അത് സ്വകാര്യ ചികിത്സയോ, സർക്കാർ ചികിത്സായോ?	(0) സ്വകാര്യം (1) സർക്കാർ (2) അറിയില്ല
39.	വീടിനടുത്തുള്ള സ്വകാര്യ/സർക്കാർ ചികിത്സാലയത്തിൽ പുറംരോഗികൾക്കായി വൈകുന്നേരം ചികിത്സാ സൗകര്യം ഉണ്ടോ?	(0) ഇല്ല (1) ഉണ്ട് (2) അറിയില്ല
ദന്താരോഗ്യത്തെ ബാധിക്കുന്ന ദുഃശ്ശീലങ്ങളെക്കുറിച്ചുള്ള ചോദ്യങ്ങൾ		
40.	താങ്കൾ വെറ്റില - അടയ്ക്ക ഉൽപന്നങ്ങൾ ഉപയോഗിക്കാറുണ്ടോ?	(0) ഇല്ല (1) ഉണ്ട് (തുടർന്ന് ചോദ്യം 46)
41.	എന്തുതരം അടയ്ക്ക ഉൽഘന്നങ്ങൾ ആണ് ഉപയോഗിക്കുന്നത്? (ഒന്നിലധികം തിരഞ്ഞെടുക്കാവുന്നതാണ്)	(1) പാൻ (2) പാൻ മസാല (3) ഗുഡ്ക (4) സുപാരി (5) മറ്റുള്ളവ
42.	താങ്കൾ എങ്ങനെയാണ് മുറുക്കാറുള്ളത്?	(0) പുകയില കൂട്ടി (1) പുകയില ഇല്ലാതെ
43.	അടയ്ക്ക, വെറ്റില ഉൽഘന്നങ്ങൾ/മുറുക്കാറുള്ളത്? താങ്കൾ എപ്പോഴെല്ലാം ആണ് ഉപയോഗിക്കുന്നത്?	(1) നിത്യേന (2) വല്ലപ്പോഴും (3) മുൻപ് /പണ്ട് (തുടർന്ന് ചോദ്യം 46)

44.	നിത്യേന താങ്കൾ വെറ്റില അടയ്ക്ക ഉൽപന്നങ്ങൾ ഉപയോഗിക്കുന്ന അളവ്?	(1) 1-3 (2) 4-5 (3) 6-10 (4) 10-നു മുകളിൽ
45.	എത്രകാലമായി താങ്കൾ അടക്ക വെറ്റില ഉൽപന്നങ്ങൾ ഉപയോഗിക്കുന്നു?	(1) 5 വർഷത്തിനു താഴെ (2) 6-10 വർഷം (3) 11-15 വർഷം (4) 15 വർഷത്തിനു മേലെ
46.	താങ്കൾ പുക വലിച്ചിട്ടുണ്ടോ?	(0) ഇല്ല (തുടർന്ന് ചോദ്യം 51) (1) ഉണ്ട്
47.	ഏതുതരം പുകയില ഉൽപന്നങ്ങളാണ് ഉപയോഗിച്ചിട്ടുള്ളത്?	(1) സിഗരറ്റ് (2) ബീഡി (3) മേൽപറഞ്ഞ രണ്ടും (4) മറ്റുള്ളവ (വ്യക്തമാക്കുക)
48.	എപ്പോഴെല്ലാമാണ് താങ്കൾ പുകയില ഉൽപന്നങ്ങൾ ഉപയോഗിക്കാറ്?	(1) നിത്യേന (2) വല്ലപ്പോഴും (3) മുൻപ്/പണ്ട് (തുടർന്ന് ചോദ്യം 51)
49.	ദിവസേന താങ്കൾ എത്ര പുകയില ഉൽപന്നങ്ങൾ ഉപയോഗിക്കാറുണ്ട്?	(1) 1-ൽ താഴെ (2) 1 (3) 2 (4) 3 (5) 4-ൽ അധികം
50.	എത്രകാലമായി താങ്കൾ പുകവലിക്കുന്നു?	(1) 1-5 വർഷം (2) 6-10 വർഷം

		(3) 11-15 വർഷം (4) 16-വർഷത്തിനു മേലെ
51.	താങ്കൾ എപ്പോഴെങ്കിലും മദ്യപിച്ചിട്ടുണ്ടോ?	(0) ഇല്ല (തുടർന്ന് ചോദ്യം 56) (1) ഉണ്ട്
52.	എന്തു തരം മദ്യമാണ് ഉപയോഗിച്ചിട്ടുള്ളത്?	(1) റം (2) വിസ്കി (3) വോഡ്ക (4) സ്കോച്ച് (5) ബിയർ (6) വൈൻ (7) മറ്റുള്ളവ
53.	എപ്പോഴെല്ലാം ആണ് താങ്കൾ മദ്യപിക്കാറ്?	(1) നിത്യേന (2) വല്ലപ്പോഴും (3) മുൻപ്/പണ്ട് (തുടർന്ന് ചോദ്യം 56)
54.	താങ്കൾ മദ്യപിക്കുന്ന അളവ്?	(1) 1 പെഗ് / ദിവസം (2) 2 പെഗ് / ദിവസം (3) 3 പെഗ് / ദിവസം (4) 4 പെഗ് / ദിവസം (5) 5-ൽ അധികം / ദിവസം
55.	എത്രകാലമായി താങ്കൾ മദ്യപിക്കുന്നു?	(1) 1-5 വർഷം (2) 6-10 വർഷം (3) 11-15 വർഷം (14) 16 വർഷത്തിനു മേലെ

ദന്താരോഗ്യത്തെപ്പറ്റിയുള്ള അവബോധം അളക്കുന്ന ചോദ്യങ്ങൾ:		
56.	ദന്താരോഗ്യം വർദ്ധിക്കുന്നതിന് സഹായകരമാവുന്ന ഘടകങ്ങൾ ഏവ?	
56.1	നിത്യേനയുള്ള രണ്ട് നേരം പല്ലുതേയ്ക്കൽ	(0) ഇല്ല (1) ഉണ്ട് (2) അറിയില്ല
56.2	മുറുക്കുന്നതും പുകവലിക്കുന്നതും കുറയ്ക്കുന്നത്	(0) ഇല്ല (1) ഉണ്ട് (2) അറിയില്ല
56.3	മധുരം കഴിക്കുന്നത് കുറയ്ക്കുന്നത്	(0) ഇല്ല (1) ഉണ്ട്
56.4	പതിവ് ദന്ത പരിശോധന	(0) ഇല്ല (1) ഉണ്ട് (2) അറിയില്ല
56.7	ധാരാളം പഴം പച്ചക്കറികൾ കഴിക്കുന്നത്	(0) ഇല്ല (1) ഉണ്ട് (2) അറിയില്ല
57.	താങ്കളുടെ വയസ്സിനനുസരിച്ച് പ്രായമാകുമ്പോൾ പല്ല് കൊഴിഞ്ഞുപോകുന്നത് സ്വാഭാവികമായി കരുതുന്നുവോ?	(0) ഇല്ല (1) ഉണ്ട്
58.	എത്രകാലം കൂടുമ്പോഴാണ് പല്ലുതേയ്ക്കുന്ന ബ്രഷ് മാറ്റി ഉപയോഗിക്കുന്നത്?	(0) മാസത്തിൽ ഒരു തവണ (1) 2 മാസത്തിൽ ഒരു തവണ (2) 6 മാസത്തിൽ ഒരു തവണ

		(3) 4 മാസത്തിൽ ഒരു തവണ (4) അറിയില്ല
59.	താഴെ കൊടുത്തിരിക്കുന്ന ചിത്രങ്ങൾ എന്താണെന്ന് വിവരിക്കുവാൻ സാധിക്കുമോ?	
59.1		
59.2		
59.3		

59.4		

ANNEXURE VI

कोच्ची नगरपालिका में साधारण जनसंख्या एवं अंतरराज्य मज़दूरों में पाये जानेवाले मौखिक रोगों से संबंधित संभावित घातक के प्रचार की तुलनात्मक अनभागीय अध्ययन
अच्चुता मेनोन स्वास्थ्य विज्ञान अध्ययनकेंद्र
श्री चित्र निरुनाल आर्युविज्ञान एवं प्रौद्योगिकी संस्थान तिरुवनंतपुरम

<u>सक्षात्कार एवं मौखिक जांच के लिए सहमति पत्र</u>

प्रिय महोदय/महोदया

नमस्कार, मैं, डॉ.टिजो जॉर्ज, श्री चित्र निरुनाल आर्युविज्ञान एवं प्रौद्योगिकी संस्थान, तिरुवनंतपुरम के अच्चुता मेनोन स्वास्थ्य विज्ञान अध्ययन केंद्र में लोक स्वास्थ्य के स्नातकोत्तर छात्र हूँ । पाठ्यक्रम के अवश्यकता के लिए मैं कोच्ची नगरपालिका में साधारण जनसंख्या एवं अंतरराज्य मज़दूरों में पाये जानेवाले मौखिक रोगों से संबंधित संभावित घातक के प्रचार की तुलनात्मक अनभागीय नामक विषय पर अध्ययन कर रहा हूँ।

यह अध्ययन, साधारण लोक एवं अंतरराज्य पुरुष मदुरों के विभिन्न मौखिक रोगों के संबंध जांच – पडताल कर रहा है। आप से इस के संबंध में कुछ प्रश्न पुछें जायेगें एवं आप के मुहं का जांच भी किया जाऐगा। (डिस्पोसिबिल प्रोब और शिशे से) यह करीब बीस मिनिट लग सकते हैं। मौखिक जांच के समय आपके कुछ असुविधा हो सकते हैं । अध्ययन के समय आपके आदतों के बारे में प्रश्न पुछें जायेगें जिस में व्यक्तिग भी हो सकते हैं।आगर जांच के दौरान कुछ मौखिक समस्या दिखाई पडते हैं तो आप को में साधारण चिकित्सा के लिए मार्गदर्शित कर सकता हूँ, जो आप के लिए उपयोगी सिद्ध होगें।

यह अध्ययन सिर्फ अनुसंधान के लिए हैं,और आप से संबंधित जानकारी गोपनीय रखा जाऐगा। आप के संबंधित जानकारी की खुलासा नहीं किया जाऐगा। आप का व्यक्तिगत जानकारी एवं सहमति पत्र मुख्य अन्वेषक के संरक्षण में रहेगा और उपयोग के बाद विनिष्ट किया जाऐंगा।

यह स्वैच्धिक रुप से भाग लेते है और आप किसी भी समय बिना किसी भय या जुर्माना से इस में निकल सकते है ।आप इस अध्ययन से निकल ने से आपका नौकरी या स्वास्थ्य सेवाओं पर किसी भी प्रकार असर नहीं पडेंगा। आप से पुछे जाने वाले किसी भी प्रश्न का उत्तर नहीं दे सकते है या मौखिक जांच से मना कर सकते है। आप इस अध्ययन में सहयोग करने से वैज्ञानिक ज्ञान और समुह को भयदा मिलेगा।

अगर आप को इस अध्ययन से संबंधित कोई भी प्रश्न हो तो मुझे, डॉ.टिजो जॉर्ज (tiigeo@sctimst.ac.in) दूरभाष सं. 8281333863 पर या एस सी टी आई एम एस टी के नीतिशास्ज्त्र सदस्य सचिव जो मेरे अध्ययन को मंज़ूरू दिया है, उन से भी पूछ सकते हैं।

सदस्य सचिव को निम्नांकित दूरभाष में संपर्क कर सकते हैं ।

डॉ. माला रामानाथन, दूरभाष सं. -

अगर आप इस अध्ययन में भाग लेना चाहती हैं तो कृपया सहति पत्र पर हस्ताक्षर करें

क्या आप इस अध्ययन में भाग लेना चाहते हैं। ☐ हां ☐ नहीं

सहमती विवरण

मैं इस अध्ययन का उद्देश्य को समझते हैं और मैं इस अध्ययन में भाग लेने के लिए तैयार हूँ। मुझे यह भी मालूम हैं कि मैं किसी भी समय पर अध्ययन से वापस ले सकते हूँ । जानचकर्ताओं ने मेरे लिए मौखिक चेक-अप के लिए ले जाने के लिए भी मैं सहमति देते हैं।

प्रतिभागी के हस्ताक्षरएवं तारीख

ANNEXURE VII

कोच्ची नगरपालिका में साधारण जनसंख्या एवं अंतरराज्य मज़दूरों में पाये जानेवाले मौखिक रोगों से संबंधित संभावित घातक के प्रचार की तुलनात्मक अनभागीय अध्ययन
अच्चुता मेनोन स्वास्थ्य विज्ञान अध्ययनकेंद्र
श्री चित्र निरुनाल आर्युविज्ञान एवं प्रौद्योगिकी संस्थान तिरुवनंतपुरम।

<u>सक्षात्कार विवरण</u>

क्लस्टर सं.:..... दिनांक: .....

प्रभाग कोड ..... पहचान संख्या .....(प्रवासी एवं सधारण लोक के लिए अलग)

क्रम. सं.	प्रश्न	उत्तर
सामुहिक स्थिति से संबंधित प्रश्न		
1.	उम्र	
2.	उच्च श्रेणी शिक्षा	0. अनपठ 1. प्राथमिक शिक्षा तक नहीं 2. प्राथमिक शिक्षा पूरा किया (सातवी क्लास तक) 3. हइस्कूल तक पूरा किया 4. दसवी श्रेणी तक पूरा 5. दसवी श्रेणी हाद 6. स्नातकGraduate 7. स्नातकोत्तर एवं उस के आगे
3.	वैवाहिक जीवन	1. शादी नहीं किया 2. शादी शुदा 3. बिझाडा गया 4. तलाक 5. विदवा
4	क्या आप के पत्नी और बच्चे साथा में हैं ?	1. नहीं 2. हां
5	घर में आप के साथ कितने सदस्य हैं ? पत्नी एवं बच्चों को मिलाकर	----------
6	क्या आप अभी काम कर रहीं है?	1. नहीं (प्रश्न 10 में जायीए)

		2. हां
7	आपका चालू नौकरी क्या है?	1. वरिष्ठ सरकारी अधिकारी/पेशेवार 2. लिपिक काम 3. दुकान या दाब कर्मचारी 4. परिवेक्षक 5. निर्माण मज़दुर 6. गली में बेचनेवाला 7. अन्य
8	आप के दिन में व्यय कितने मिलता है?	----------रुपये/दिन ----------रुपये/ महीने(प्रश्न 10 में जायीए)
9	महिने(30 दिन) में कितने दिन आप को काम मिलता हैं?	----------दिन
10	जन्म स्थान	1.ग्रामीण/गांव 2.शहर
जीवनोपया स्थिति		
11.1	किस प्रकार का सफाई सुविधा उपलब्ध है?	1. फ्लष शौचालय 2. पिट शौचालय 3. सुविधा नहीं
11.2	किस प्रकार की पिने की पानी की व्यवस्था है?	1. पैप से 2. कुऐ से 3. हांट पंप से 4. प्रदल जल 5. अन्य
11.3	किस प्रकार के इंदन से खान पकाते है?	1. एल पी जी 2. लकड़ी 3. मिट्टी का तेल 4. क्रोप रिसिडस 5. बयोग्यास 6. डिज़ल 7. अन्य
11.4	घर के प्रकार	1. कच्चा 2. लघु पुक्का 3. पुक्का
प्रवासी के लिए प्रश्न**(12** से **16** तक **)**		
12	देशान्तरागमन का कारण	1. नौकरी

		2. दांदा 3. अन्य (स्पष्ट करें)
13	किस राज्य से है	----------
14	जिल्ला	----------
15	कोच्ची में अने से पहले आप के घर कहां पर था ?	1.ग्रामीण/गांव 2.शहर
16	देशान्तरागमन के हाद कितने समय तक चालू स्थल में रहते हो ?	----------
अहारिका के संबंध में प्रश्न (आपके अहारिक मौखिक स्वास्थ्य किस प्रकार प्रभाव डालता यह जाने के लिए)		
17	किस प्रकार का अहार आप खाते हैं	0. शाकाहारी 1. मांसाहारी
18.	कितने फल आप खाते होगें?	0. नहीं 1. सप्ताह में एक बार 2. सप्ताह में एक से अधिक बार 3. हर दिन
19.	कितने सब्जी आप खाते होगें?	0. नहीं 1. सप्ताह में एक बार 2. सप्ताह में एक से अधिक बार 3. हर दिन
चिकित्सा संबंधित प्रश्न **(** आपको रोग के कारण मौखिक स्वास्थ्य किस प्रकार प्रभाव डालता यह जाने के लिए)		
20.	क्या आप किसी रोग के लिए इलाज कर रहीं है ?	1. नहीं 2. हां (स्पष्ट करें)
21.	अब कोई बिमारी हैं ?	0. रोग नहीं 1. मधुमेह 2. रक्ताचाप 3. श्वासकोश संबंधित रोग 4. हृदय संबंधित रोग 5. त्वच संबंधित 6. घाव/फ्राक्चर/जलन 7. आंख से संबंधित

		8. कान से संबंधित 9. अन्य (स्पष्ट करें) .....
मौखिक स्वास्थ्य से संबंधिक प्रश्न		
22.	आप को कितने स्वाभाविक दांत हैं ?	0. स्वाभाविक दांत नहीं 1. 1 to 9 2. 10 to 19 3. 20 दांत से अधिक 4. पता नहीं
23	क्या किसी हाद्से वे वज से दांत निकल गया है ?	1.नहीं 2.हां
24.	**आप के दांत एवं मसुडे किस प्रकार है ?**	1. उच्चस्थरीय 2. बेहत्तरीन 3. बेहत्तर 4. समान्य 5. खराब 6. बहुत खराब 7. पता नहीं
25.	**पिछले छे महिने के अंतर आप को दांत की परिशानी हुई हैं**	1.नहीं 2.हां
26.	**पिछले छे महिने के अंतर आप ने दांत की जांच किया है**	1.नहीं (प्रश्न 28 में जायीए) 2.हां
27.	अगर हां हैं तो किस प्रकार की इलाज के लिए अपने दांत के डॉक्टर के पास गये	0. परामर्श / सलाह 1. मुख/दांत/मसुडे में दर्द 2. इलाज 3. दैनिक चेक-अप 4. अन्य (स्पष्ट करें).....
28	पिछले छे महिने के अंतर दांत के डॉक्टर के अलाव मौखिक इलाज के लिए किसी अन्य स्वास्थ्य केंद्र गया है	1.नहीं(प्रश्न 31 में जायीए) 2.हां

29	आगर गया है तो किस से मिला हैं ?	----------
30	दांत के डॉक्टर के अलाव मौखिक इलाज के लिए किसी अन्य स्वास्थ्य केंद्र में जाने कि वजह क्या है	1. दर्द 2. स्वलिंग 3. घाव 4. अन्य (स्पष्ट करें)
31.	आप दांत किलने बार साफ करोंगें ?	0. नहीं 1. महीने में एक बार 2. महीने में एक या दो बार 3. सप्ताह में एक बार 4. सप्ताह में एक या दो बार 5. दिन में एक बार 6. दिन में एक या दो बार
32	दांत साफ करने के लिए टूत ब्रष का उपयोग करते है	1.नहीं 2.हां(प्रश्न 34 में जायीए)
33	अगर टूत ब्रष नहीं तो कैसे ?(स्पष्ट करें)	----------
34.	क्या दांत साफ करने के लिए टूत ब्रष का उपयोग करते है?	1.नहीं 2.हां(प्रश्न 36 में जायीए)
35	अगर टूत ब्रष नहीं तो कैसे ?(स्पष्ट करें)	----------
स्वास्थ्य प्रणाली कार्य के संब्ध में प्रश्न		
36	**आप दांत के इलाज के लिए क्यों नहीं जाते** ?	0 कोई कार्य नहीं 1 दांत के डॉक्टर के पास जाने से डरते है 2 दांत के डॉक्टर से बात करने में मुश्किल 3 खर्चा 4 दंदल क्लिनिक नस्दीक नहीं 5 सरकारी दंदल क्लिनिक नस्दीक नहीं 6 ओ पी समय पर अन्य (स्पष्ट करें)
37	दंदल क्लिनिक घर के नस्दीक है?	0)नहीं(प्रश्न 40 में जायीए) 1)हां

		2)पता नहीं(प्रश्न 40 में जायीए)
38	अगर हां तो सरकारी /गैर सरकारी स्वास्थ्य सुविधा ?	0 **सरकारी** 1 **गैर सरकारी** 2 पता नहीं
39	घर के नस्दीक के दंदल क्लिनिक में शाम की ओ पी की सुविधा हैं ?	0.नहीं 1.हां 2.पता नहीं
अदत के वजह से मौखिक स्वास्थ्य विकार से संभावना संबंधिक प्रश्न		
40	क्या आप पान मसाला का उयोग करते है ?	1.नहीं(प्रश्न 46 में जायीए) 2.हां
41	किस प्रकार का आप पान मसाला का उयोग करते है ?	1. पान 2. पान मसाला 3. गुडका 4. सुपारी 5. अन्य
42	किस प्रकार का पान मसाला आप चबाते है ?	1. दुम्रपान के साथ 2. बिना दुम्रपान के साथ
43.	आप कितने पान मसाला का उयोग करते है ?	1. दैमनक 2. कभी कभी 3. भुतकाल में(प्रश्न 46 में जायीए)
44	दैनिक में कितने पान मसाला का उयोग करते है ?	1. से कम 2 1-3 3 4-5 4 6-10 5 10 से ज्यादा
45	कितने समय पान मसाला का उयोग करते है ?	1. 5 साल से कम 2. 6-10 साल 3. 11-15 साल 4. 15 साल से ज्यादा
46	क्या आप दुम्रपान का उयोग करते है ?	1.नहीं(प्रश्न 51 में जायीए) 2.हां
47.	आप किस प्रकार का दुम्रपान का उयोग करते	1. सिगरट

	है ?	2. बिडी 3. दोनों 4 अन्य (स्पष्ट करें)
48	आप किस समय तक दुम्रपान का उयोग करते है ?	1. दैमनक 2. कभी कभी 3 भुतकाल में (प्रश्न 51 में जायीए)
49	दैनिक में कितने दुम्रपान का उयोग करते है ?	1. 1 से कम 2. 1 3. 2 4. 3 5. 4 से ज्यादा
50	कितने समय से दुम्रपान का उयोग करते है ?	1. 1-5 साल 2. 6-10 साल 3. 11-15साल 4. 16 ज्यादा
51.	क्या आप शराब का उपयोग करते है?	1.नहीं (प्रश्न 56 में जायीए) 2.हां
52	आप किस प्रकार का शराब का उपयोग करते है?	1. रंम 2. विस्की 3. वोटका 4. सेकोच 5. बियर 6. वैन 7. अन्य (स्पष्ट करें)
53	आप किस समय तक शराब का उयोग करते है ?	1. दैमनक 2. कभी कभी 3. भुतकाल में (प्रश्न 56 में जायीए)
54.	दैनिक में कितने शराब का उयोग करते है ?	1. दिन में 1 पेग 2. दिन में 2पेग 3. दिन में 3 पेग 4. दिन में 4 पेग 5. दिन में 5 पेग से ज्यादा
55	कितने समय से शराब का उयोग करते है ?	1. 1-5 साल 2. 6-10 साल 3. 11-15साल

		4. 16 साल से ज्यादा
मौखिक स्वास्थ्य जागरुकता से संभावना संबंधिक प्रश्न		
56	किस तरह मौखिक स्वास्थ्य को सुधारा जा सकता है	
56.1	दैनिक टूत ब्रष का उपयोग	1.नहीं 2.हां
56.2	दुम्रपान/पान मसाल का उपयोग न करना	1.नहीं 2.हां
56.3	मिठाई का उपयोग कम करना	1.नहीं 2.हां
56.4	यथाक्रम मोखिक जांच	1.नहीं 2.हां
56.5	फल एवं सब्जी का अधिक उपयोग	1.नहीं 2.हां
57	क्या यह साधारण है कि आप के उम्र में दांत निकलना	1.नहीं 2.हां
58	अपने टूथब्रश को बदलने के अंतराल क्या होना चाहिए?	0 महीने में 1 बार 1 महीने में 2 बार 2 महीने में 3 बार 3 महीने में 4 बार 4 पता नहीं
59	आप निम्न चित्रों व्याख्या कर सकते हैं	

ANNEXURE VIII

Summary of results of bivariate analysis for factors associated with OPMDs and Health care utilization.

Table :1 To find the association between OPMDs and Socio demographic characteristics.

Variables	Presence of OPMDs		P value
	No (%)	Yes (%)	
Age group(yrs)			
18-24	75(81.5)	17(18.5)	.908
25-34	103(79.2)	27(20.8)	
>=35	62(79.5)	16(20.5)	
Education			
Primary and less	98(70.0)	42(30.0)	.000
Greater than primary	142(88.8)	18(11.3)	
Marital status			
Married with spouse	84(89.4)	10(10.6)	.000
Unmarried	123(83.7)	24(16.3)	
Married not with spouse	33(55.9)	26(44.1)	
Socio Economic group			
Low	152(76.4)	47(23.6)	.028
High	88(87.1)	13(12.9)	

Table 2

Assosiation of OPMD vs dietary habits and alcohol

Variables	Presence of OPMDs		P value
	No (%)	Yes (%)	
Fruits consumed			
Once a week or less	69(75.8)	22(24.2)	.233
More than once a week	171(81.8)	38(18.2)	
Vegetable consumed			
Once a week or less	3(75.0)	1(25.0)	.801
More than once a week	237(80.1)	59(19.9)	
Duration of alcohol use			
No	137(84.6)	25(15.4)	.035
<10	82(77.4)	24(22.6)	
>=10	21(65.6)	11(34.4)	

Table 3:

Association between Adverse oral habits and OPMDs

Variables	Presence of OPMDs		P value
	No (%)	Yes (%)	
Areca nut use			
No	171(92.9)	13(7.1)	.000
Uses without tobacco	6(75.0)	2(25.0)	
Uses with tobacco	63(58.3)	45(41.7)	
Frequency of smokeless tobacco			
<3	45(76.3)	14(23.7)	.000
>=3	24(42.1)	33(57.9)	
Duration of smokeless tobacco			
No	177(92.2)	15(7.8)	.000
<10	52(63.4)	30(36.6)	
>=10	11(42.3)	15(57.7)	
Frequency of smoking tobacco			
<2	56(78.9)	15(21.1)	.014
>=2	45(60.0)	30(40.0))	
Duration of smoking tobacco use			
No	139(90.3)	15(9.7)	.000
<10	81(73.0)	30(27.0)	
>=10	20(57.1)	15(42.9)	

Table 4:morbidity vs OPMDS

Variables	Presence of OPMDs		P value
	No (%)	Yes (%)	
Any morbidity			
No	200(82.6)	42(17.4)	.019
Yes	40(69.0)	18(31.0)	
NCD			
No	225(80.4)	55(19.6)	.563
Yes	15(75.0)	5(25.0)	
Diabetes			
No	232(80.3)	57(19.7)	.539
Yes	8(72.7)	3(27.3)	
Skin conditions			
No	230(81.3)	53(18.7)	.025
Yes	10(58.8)	7(41.2)	

TABLE 5:Oral health characteristics vs opmds

Variables	Presence of OPMDs		P value
	No (%)	Yes (%)	
Presence of natural teeth(functional dentition)			
10-19 teeth	11(100)	0(0)	.142
More than 20	199(78.3)	55(21.7)	
Don't know	30(85.7)	5(14.3)	
Missing tooth (caries)			
No	168(77.1)	50(22.9)	.038
Yes	72(87.8)	10(12.2)	
Pain or discomfort in teeth or gums			
No	169(79.0)	45(21.0)	.483
Yes	71(82.6)	15(17.40	
State of gums and teeth			
Poor	115(81.0)	27(19.0)	.773
Good	125(79.1)	33(20.9)	
How often you clean teeth yourself			
Once a day	127(81.9)	28(18.1)	.386
Two or more times	113(77.9)	32(22.1)	
Oral health awareness group			
Poor awareness	109(75.7)	35(24.3)	.073
Good awareness	131(84.0)	25(16.0)	

Table 6: Clinical and oral examination vs OPMDs

Variables	Presence of OPMDs		P value
	No (%)	Yes (%)	
DMFT			
Zero	54(68.4)	25(31.6)	.003
>Zero	186(84.2)	35(15.8)	
BMI			
<=25	176(80.7)	42(19.3)	.604
>25	64(78.0)	18(22.0)	
Oral health seeking			
No	196(80.0)	49(20.0)	.163
Visit HCP, not dentist	8(61.5)	5(38.5)	
Visit dentist	36(85.7)	6(14.3)	

TABLE 7:

Socio demographic factors and oral health utilization

Variables	Utilization of oral health care		P value
	No (%)	Yes (%)	
Age group(yrs)			
18-24	85(92.4)	7(7.6)	.052
25-34	111(85.4)	19(14.6)	
>=35	62(79.5)	16(20.5)	
Education			
Primary and less	127(90.7)	13(9.3)	.028*
Greater than primary	131(81.9)	29(18.1)	
Marital status			
Married with spouse	76(80.9)	18(19.1)	.195
Unmarried	131(89.1)	16(10.9)	
Married not with spouse	51(86.4)	8(13.6)	
Socio Economic group			
Low	178(89.4)	21(10.6)	.016*
High	80(79.2)	21(20.8)	

Table 8: Duration of habits and utilization

Variables	Utilization of oral health care		P value
	No (%)	Yes (%)	
Duration of smokeless tobacco			
No	158(82.3)	34(17.7)	.048*
<10	76(92.7)	6(7.3)	
>=10	24(92.3)	2(7.7)	
Duration of smoking tobacco use			
No	133(86.4)	21(13.6)	.983
<10	95(85.6)	16(14.4)	
>=10	30(85.7)	5(14.3)	
Duration of alcohol use			
No	143(88.3)	19(11.7)	.348
<10	87(82.1)	19(17.9)	
>=10	28(87.5)	4(12.5)	

Table 9:Morbidity vs utilization

Variables	Utilization of oral health care		P value
	No (%)	Yes (%)	
Any general morbidity			
No	212(87.6)	30(12.4)	.102
Yes	46(79.3)	12(20.7)	
Presence of NCD			
No	243(86.6)	37(13.2)	.174
yes	15(75.0)	5(25.0)	
Presence of diabetes			
No	251(86.9)	38(13.1)	.053
Yes	7(63.6)	4(36.4)	
Presence of musculoskeletal diseases			
No	251(86.6)	39(13.4)	.151
Yes	7(70.0)	3(30.0)	
Presence of skin diseases			
No	244(86.2)	39(13.8)	.716
Yes	14(82.4)	3(17.6)	
Presence of eye diseases			
No	250(86.2)	40(13.8)	.636
yes	8(80.0)	2(20.0)	

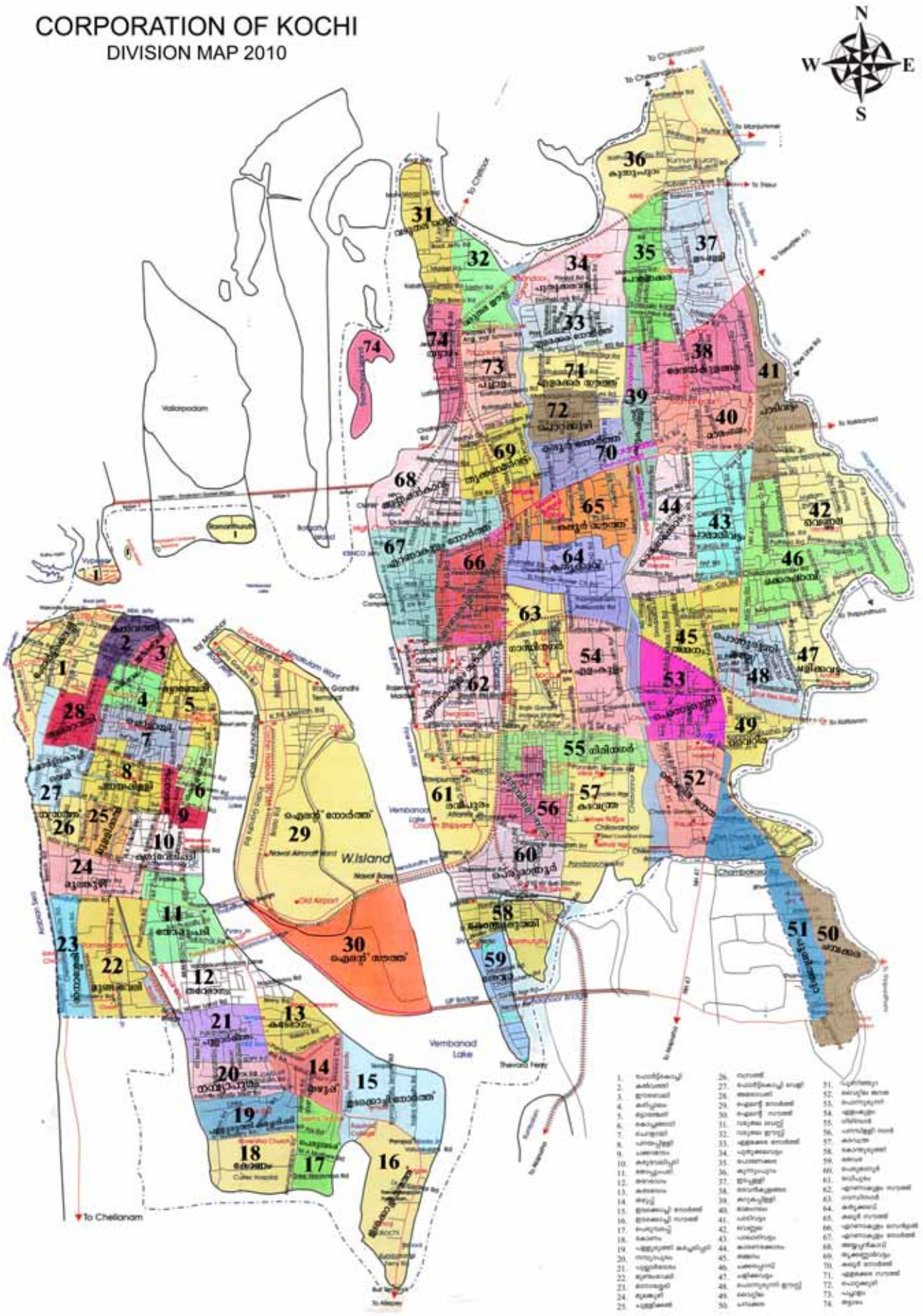
Table:10
Oral health vs utilization

Variables	Utilization of oral health care		P value
	No (%)	Yes (%)	
Presence of natural teeth(functional dentition)			
10-19 teeth	9(81.8)	2(18.2)	.836
More than 20	218(85.8)	36(14.2)	
Don't know	31(88.6)	4(11.4)	
Missing tooth (caries)			
No	206(94.5)	12(5.5)	<.001
Yes	52(63.4)	30(36.6)	
Pain or discomfort in teeth or gums			
No	213(99.5)	1(0.50)	<.001
Yes	45(52.3)	41(47.7)	
State of gums and teeth			
Poor	116(81.7)	26(18.3)	.041
Good	142(89.9)	16(10.1)	
How often you clean teeth daily			
Once a day	128(82.6)	27(17.4)	.078
Two or more times	130(89.7)	15(10.3)	
Oral health awareness group			
Poor awareness	128(88.9)	16(11.1)	.166
Good awareness	130(83.3)	26(16.7)	

Table11
Factors that affect oral health care utilization

Variables	Utilization of oral health care		P value
	No (%)	Yes (%)	
Presence of clinic near house			
No	146(96.7)	5(3.3)	<.001
Yes	112(75.2)	37(24.8)	
Fear of dentist			
No	236(86.8)	36(13.2)	.251
Yes	22(78.6)	6(21.4)	
Language barrier			
No	246(85.7)	41(14.3)	1.000
Yes	12(92.3)	1(7.7)	
Cost of treatment			
No	179(88.2)	24(11.8)	.116
Yes	79(81.4)	18(18.6)	
Lack of access to government clinic			
No	234(86.0)	38(14.0)	1.000
Yes	24(85.7)	4(14.3)	
Op timings			
No	227(87.0)	34(13.0)	.209
yes	31(79.5)	8(20.5)	

ANNEXURE IX


CORPORATION OF KOCHI
DIVISION MAP 2010
N
W
E
S
W.Island
Vembanad Lake
To Chellanam

ANNEXURE X

श्री चित्रा तिरुनाल आयुर्विज्ञान और प्रौद्योगिकी संस्थान

तिरुवनन्तपुरम - 695 011, केरल, भारत

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY

THIRUVANANTHAPURAM - 695 011, INDIA

(An Institute of National importance under Govt. of India)

Institutional Ethics Committee

(IEC Regn No. ECR/189/Inst/KL/2013)

SCT/IEC/752/JUNE -2015 10-06-2015

Dr. Tijo George
MPH Scholar, AMCHSS,
SCTIMST, Thiruvananthapuram

Dear Dr. Tijo George,

The Institutional Ethics Committee reviewed and discussed your application to conduct the study entitled "Prevalence of potentially malignant oral disorders: A comparative study among interstate migrant labourers and general population in Kochi corporation" (iEC/752) on 2nd June, 2015.

The following documents were reviewed:

Original submission

1) *Covering letter, 2) TAC approval letter, 3) Curriculum vitae, 4) Thesis proposal*
5) *Informed consent English*
6) *Questionnaire English.*
7) *informed consent Malayalam*
8) *Questionnaire Malayalam*
9) *informed consent Hindi*
10) *Questionnaire Hindi*
11) *Conceptual framework*

Revised submission

1. *Covering letter addressed to the Chairperson, IEC, SCTIMST dated 08.06.2015.*
2. *Modified IEC Application Form was submitted.*
3. *Modified TAC proposal was submitted.*

तार : चित्रमेट Grams : Chitramet
फोन Phone : 2443152
फाक्स Fax : (91)471-2446433 2550728
ई-मेइल E-mail : sct. @sctimst.ac.in
वेबसाईट Website : www.sctimst.ac.in

The following members of the Ethics Committee were present at the meeting held on 2nd June, 2015 at G. Parthasarathi Board Room, AMCHSS, SCTIMST.

SL. No.	Member Name	Highest Degree	Gender	Scientific /Non Scientific	Affiliation with Institution(s)
1.	Dr. R.V.G. Menon	PhD	Male	Lay Person	No
2.	Smt. Sathi Nair	MA	Female	Lay Person	No
3.	Dr. Kala Kesavan. P	MD	Female	Pharmacologist	No
4.	Dr. Mala Ramanathan	MSc, PhD, MA	Female	Ethicist/Social Scientist (Member Secretary)	Yes

IEC Decision

The IEC approved the conduct of the study in the present form.

Remarks:

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent and asks to be provided a copy of the final report.

There was no member of the study team /guide who participated in voting / decision making process. The ethics committee is organized and operated according to the requirements of Good Clinical Practice and the requirements of the Indian Council of Medical Research (ICMR).

Sincerely,

Mala Ramanathan
Member Secretary, IEC