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Dissertation
on

The Prevalence of Consumption of Tobacco among Women Taking Ante-natal Care at One of The PSUs of South-West Delhi

International Institute of Health Management Research - Delhi

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PG-22-060

Under the guidance of
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PGDM (Hospital and Health Management) 2022-24
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TO WHOMSOEVER IT MAY CONCERN

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Under the supervision of *Dr. Preetha GS* for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from 11-03-2024 to 25-05-2024
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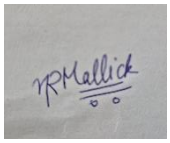

Signature

ASSESSMENT OF PREVALENCE OF TOBACCO CONSUMPTION AMONG WOMEN TAKING ANTENATAL CARE AT ONE OF THE PSU IN SOUTH-WEST DELHI

DISSERTATION BY

DR NEHADUR RAHMAN MALLICK

GUIDED BY

DR PREETHA GS

A mother's womb has traditionally been thought to have a safe place where foetus was protected from the adverse effects of environmental exposures however, maternal smoking undermines this belief.

-Dr Nehadur Rahman Mallick

SYNOPSIS

Introduction: The burden of death due to tobacco consumption recorded death of about the 7 million with direct tobacco use and 1.8 million due to indirect smoking, with the goal of SDG 3.2 that aims by 2030 to completely eradicate the death of the children and adult by the age of 5 is a challenging when there is prevalence of the consumption of tobacco among pregnant women. The study aim to assess the consumption of the tobacco among the women taking ante-natal care at one of the dependant PSU at South –West Delhi, while the study also aims to assess the type of the tobacco product consumed by the participants and which products is most prominently used by the residents of the community and assessment of the behavioural changes due to awareness about pregnancy

METHODOLOGY: The total of about 334 patient were taken under the descriptive cross-sectional study conducted at the dependent dispensary of Goyala dairy for all the women taking ate-natal care at it. All the participants who were above the reproductive ages were taken under the consideration along with the marital status mandated to be married giving consent for the study, the data was captured in through the direct questionnaire that was developed using the GATS (Global Adult Tobacco Survey), the exit interview was taken for all the participants with the assurance of the confidentiality and integrity during the process, the data collected underwent the data cleaning and arrangement through the MS-EXCEL while the analysis was carried out through the SPSS 2.2.2.O (original version) , All tables and figures attached were from the MS-EXCEL and SPSS

RESULTS: Total of 1.8% of the study participants currently use tobacco, whilst 98.2% of the total population non-consumers, while all use smokeless tobacco. Furthermore, 11 individuals, or 3.4% of the entire population, had previously used tobacco products, exclusively the smokeless tobacco products. The current tobacco consumers use occasional consumers but had the history daily consumption of tobacco, the considerable decrease is due to the awareness about the pregnancy. There is also a strong awareness about the ill effects about the tobacco consumption

RESULTS: 1.8% of the prevalence is a considerable low compared to the 4% national data, but even 1 cases is a serious concern if they outcome is foetal or mother death, these can be further reduced by implementing strong awareness programme and stable policy for the trick check in the unauthorised vendors , to reduce the accessibility.

KEY WORDS

tobacco cessation, public health, oral health, Risk factors, Cancer, Antenatal care services, India, pregnancy, review, tobacco cessation, Smokeless tobacco, birth weight, low birth weight, Low Birth Weight, Abnormal Weight, Premature, Prevalence, Risk Factors, Maternal, Causes

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When "I" is replaced by "we" even the illness becomes wellness

I would like to take this opportunity to express my deep sense of gratitude to all those people without whom this project could have never been completed. I would like to extend my gratitude to my whole family with special mention of my late uncle for always supporting me in all phases of struggle and success and inspiring me to achieve more in life and most importantly to believing in me.

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Dr Nehadur Rahman Mallick

PG/22/060

Second Year, PGDM.

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LIST OF SYMBOLS AND ABBREVIATIONS

ABBREVIATIONS		
SR NO	**ABBR.**	**FULL FORM**
1.	ARDS	Acute Respiratory Distress Syndrome
2.	CVD	Cardio Vascular Disease
3.	CVS	Cardio Vascular System
4.	DHS	Demographic And Health Surveys
5.	GATS	Global Adult Tobacco Survey
6.	GTS	Green Tobacco Sickness
7.	GYTS	Global Youth Tobacco Survey
8.	IARC	International Agency For Research On Cancer
9.	ILD	Interstitial Lung Diseases
10.	LBW	Low Birth Weight
11.	LMIC	Low Middle-Income Country
12.	NFHS	National Family Health Survey
13.	NHIS	National Health Interview Survey
14.	NIA	Non-Invasive Ventilator
15.	NSS	National Sample Survey
16.	OED	Oral Epithelial Dysplasia
17.	OSCC	Oral Squamous Cell Carcinoma
18.	SDG	Sustainable Development Goals
19.	SEAR	South-East Asia Region
20.	SGA	Small Gestational Age
21.	SLT	Smokeless Tobacco
22.	ST	Smoked Tobacco
23.	THC	Delta-9-Tetrahydrocannabinol
24.	VLBW	Very Low Birth Weight
25.	WHO	World Health Organization

1. INTRODUCTION

One of the main causes of avoidable mortality and illness is the tobacco pandemic. Cigarette smoking is the most common method of tobacco use worldwide. A little over 8 million people die each year from illnesses related to tobacco use. Of these deaths, 7 million are directly linked to tobacco use, and 1.2 million are brought on by second-hand smoke exposure. Approximately one million deaths in India are caused by tobacco use each year. About 150 million individuals in India live in poverty as a result of tobacco use. The financial, educational, and medical costs associated with tobacco users' premature deaths push their families more into poverty.

The majority of tobacco users begin using products in their youth or adolescence and reach adult levels by the time they are in their late 20s. The decade between the ages of 10 and 19 is referred to as adolescence. Between the ages of 13 and 15, one in five boys and one in ten girls worldwide use tobacco products. Because tobacco contains nicotine, teens who start smoking might develop an accelerated reliance on it within a few months of their first exposure and use it for the rest of their lives. The (WHO) estimates that nearly 70% of adult premature deaths are caused by activities that begin in adolescence, such as substance misuse, aggressiveness, depression, risky driving, and sexual activity.

In India, 1 in 10 teenagers between the ages of 13 and 15 smoke cigarettes, and nearly half of them start using tobacco products before they become 10 years old. A (GYTS) was carried out in India in 2019, and the results showed that the percentage of tobacco users was 8.5% in that year. Among boys and girls in the 13–15 age range, the percentage of current tobacco users was 9.6% and 7.4%, respectively. In Rajasthan, 4.1% of teenagers in the 13–15 age range reported using tobacco in the GYTS of 2019. Singh and Gupta came to the conclusion that 2.1% of boys (1.5%–2.6%) and 1.7% of girls (0.9%–2.5%) in Rajasthan were tobacco smokers in the 13–18 age range.

Numerous factors, such as peer pressure, family conflicts, experimenting, easy access to nicotine products, and personality traits, can impact an adolescent's decision to use tobacco. Adolescent smoking is significantly predicted by low family income, parents with less education, and homes headed by a single parent. On the other hand, it was shown that family characteristics including closeness, discipline, and monitoring helped prevent smoking.(1)

India poses a significant health concern due to its tobacco usage, which is the second highest in the world. More than twice as many adults in India as in the European Union used tobacco in some capacity in 2017 (266.8 million adults in India used tobacco in some capacity. Tobacco usage has been portrayed as an

epidemic in and of itself because to the health hazards and associated expenditures. India has a lower rate of cigarette smoking than western nations, and the majority of tobacco used there is smokeless tobacco or bidi smoking making cigarette smoking just one aspect of the nation's total tobacco use

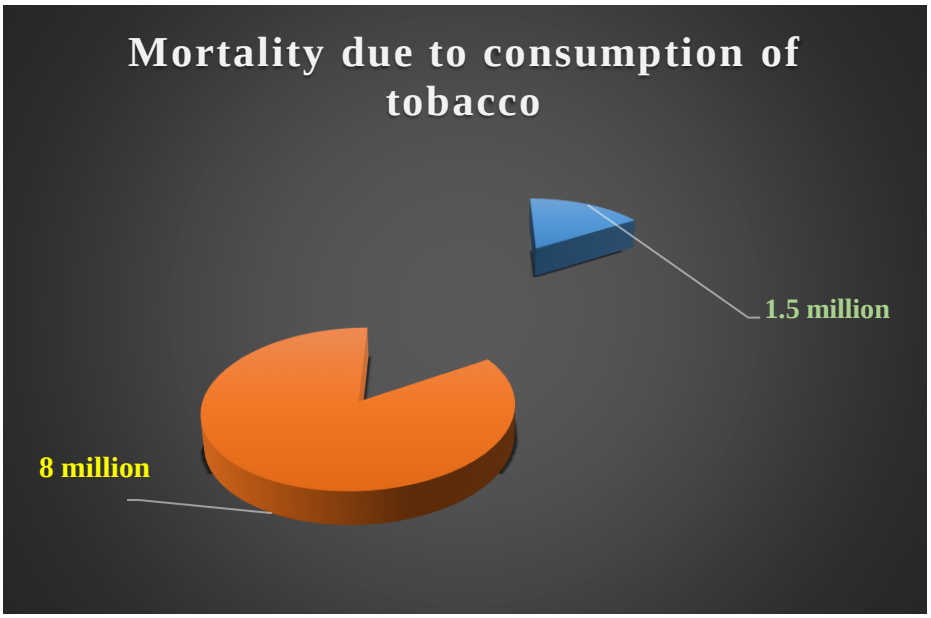
In India, tobacco use in its many forms is the cause of over a million adult fatalities each year. In India, using smokeless tobacco is likewise seen as a serious health danger because it has been linked to a higher chance of passing away.(2)
In addition to being a risk factor for chronic obstructive pulmonary diseases and cardiovascular disorders, tobacco use is also linked to half of all malignancies in males and 25% of all cancers in women in India.2 3 Due in part to the high frequency of tobacco chewing, India also has one of the highest incidences of oral cancer worldwide.4–7 There are three different ways to chew tobacco: pan (a piper betel leaf filled with sliced areca nut, lime, catechu, and other spices) and pan-masala or gutkha (a chewable tobacco containing areca nut) and mishri (a tobacco powder applied to the gums like toothpaste).
According to WHO estimates, by 2020, the number of tobacco-related fatalities in India could surpass 1.5 million per year.8 need to understand the real trends. There are few trustworthy and nationally representative tobacco use prevalence statistics available.1.
In a similar vein, little is known about the sociodemographic factors that influence chewing and smoking tobacco.1. 9–14 WHO estimates that the prevalence of tobacco use in all its forms among men and women is 33% and 65%, respectively, based on previous small-scale studies.

The National Sample Survey Organization's 52nd (52nd NSS), which was carried out in 1995–96, was the first nationally representative household survey to use surrogate home informants to gather data on tobacco consumption for people aged 10 and above. (3)
Cigarettes are poisonous in any form or disguise. It is without dispute in scientific research that tobacco smoke exposure results in illness, death, and disability.
The (IARC) monograph states that there is enough data in humans to conclude that tobacco use causes cancer in the following areas: the lung, the oral cavity, the naso-, oro-, and hypo-pharynx, the nasal cavity and paranasal sinuses, the pancreas, the liver, the kidney (body and pelvis), the ureter, the urinary bladder, the uterine cervix, and the bone marrow.
Although there is not enough evidence to conclude that smoking cigarettes causes colorectal cancer, it is known to be linked to the disease. Smoking is the primary

cause of lung cancer fatalities in males (ninety percent) and women (eighty percent).
It is well accepted that there are causal links between active smoking and cardiovascular illnesses, chronic obstructive pulmonary disease, and unfavourable reproductive consequences.

Research on bidi smoking, the most popular kind of tobacco use in India, point to the substance's potential for cancer. Case-control studies show a substantial correlation between bidi smoking and malignancies of the mouth (including subsites), throat, larynx, oesophagus, lung, and stomach.
Significant trends in the length of time and quantity of bidis smoked are evident in almost all investigations. Smoking is thought to be responsible for 40% of India's TB cases. There is a strong correlation observed between tuberculous infection, disease, and tuberculosis mortality when individuals are exposed to tobacco smoke, whether passively or actively. Between the ages of 30 and 69, smoking was linked to an increased risk of death from tuberculosis as well as respiratory, vascular, and neoplastic diseases. The chance of dying from tuberculosis was 2.60 times greater among bidi smokers in Mumbai than among never-smokers. (GTS) is an occupational ailment that affects tobacco farmers. It is an acute form of nicotine toxicity brought on by nicotine absorbed via the skin. This study provides nationally representative estimates of the prevalence and the socioeconomic and demographic correlates of current tobacco consumption—both smoking and chewing—among Indians aged 15 and older using data from the (NFHS-2). The study's conclusions will be useful in developing tobacco control programs. (4)

FIG: 1



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1.1 EPIDERMOLOGY OF TOBACCO ASSOCIATED PATHOLOGIES

The most popular tobacco use in the United States is still smoking cigarettes, however the percentage of adults who smoke has been falling in recent years (NHIS) for 2015 reports that the percentage of adults who are at least 18 years old who smoke was 15.1%, down from 20.9% in 2005 Worldwide data has also shown that tobacco use is generally declining in the United States. According to data from the (WHO), the global smoking rate among adults over 15 years old decreased by 2.8% between 2007 and 2015, from 23.5% to 20.7. Globally, the prevalence of smoking has decreased, but the number of smokers has not global population stayed at 1.1 billion between 2007 and 2015 due to population increase. Population-based interventions like increasing tobacco taxes, tobacco price increases, mass media campaigns opposing tobacco use, comprehensive smoke-free laws, improved access to resources for quitting tobacco use, and the adoption of governmental regulations on tobacco products are some of the factors associated with declines in the prevalence of smoking.

Numerous negative effects of cigarette smoking on the body include the emergence of malignancies and chronic illnesses. Individuals exposed to second-hand smoke

also experience negative health impacts. The length of time spent smoking over many years and the amount of tobacco smoke exposure determine how smoking affects one's health. The process by which smoking tobacco cigarettes leads to harmful health effects is multifaceted and involves exposure to free radicals from the smoke's constituents, which increases oxidative stress, inflammation, and DNA damage. (5)

1. Carcinomas associated with smoking
2. Smoking associated CVS diseases
3. Pulmonary Pathologies
4. Pregnancy related issues
5. Child birth related issues

1.2 PHARMACOLOGY OF NICOTINE

Humans have been using nicotine in tobacco products for thousands of years. It has been used in a variety of ways, but more recently, at least in the West, it has mostly been consumed in smoked forms.
When combined with tobacco, nicotine is likely the second most commonly used substance worldwide, after caffeine from tea and coffee. All nations, cultures, and nearly all religions frequently use tobacco and/or nicotine. Worldwide, in 2012, 31% of males and 6% of women used tobacco. Smokers have faced a lot of pressure, especially in the western world.

To halt for the previous forty years or so. Although the prevalence has decreased by half in several nations, about 20% of adult were tobacco users in 2012. In its purest form, nicotine is a colourless, odorous liquid. It has a half-life of around two hours and is metabolized hepatic ally. It binds to proteins less than 5%. Route dependence determines bioavailability, with the highest app 90% when ingested orally (such as smokeless tobacco) and roughly 60% when breathed (such as cigarettes).

Nicotine's primary pharmacological activity involves binding to nicotinic acetyl cholinergic receptors. Despite the fact that nicotine exclusively directly activates nicotinic receptors—not muscarinic receptors—the ultimate effect is frequently a complicated web of indirect effects on other the metabolic and lipolysis processes involved in weight regulation may be an exception to the main role of brain nAChR positive effects, as they appear to be more peripherally mediated.

Transmitter systems, including the adrenergic, glutamate, and dopamine systems.

Nicotine's favourable effects, including improved cognitive function and greater control over arousal and negative emotions, may be caused by activation of central nAChRs.
Nicotine activates the nAChRs in a similar way to acetylcholine, but it appears to maintain the receptors' depolarized state longer when the nicotine molecule is attached to the receptor. Consequently, nicotine has two different effects: first, it stimulates the receptor, acting as an agonist, and then it blocks the receptor, acting as an antagonist. In people who are intolerant to nicotine, these effects impede regular functioning; so, the central nervous system must adjust to the disruptive effects of nicotine. Since the brain adjusts to overcome blocking rather than stimulation by upregulating the number of nicotine receptors, blocking appears to have a greater impact than stimulation.

1.3 TOBACCO VERSUS NICOTINE

The main ingredient in tobacco use is nicotine. While it is a prerequisite for consistent tobacco use, is it enough, It appears that cigarette smoking causes dependence in users just as quickly as other substances, if not more quickly. Beyond just nicotine, tobacco appears to have other impacts as well. Thousands of compounds make up tobacco smoke.
Whether any of them also add to the reinforcing effects of tobacco smoke is an intriguing subject. It has long been known that smoking cigarettes inhibits the enzyme monoamine oxidase (MAO), which catalyses the metabolism of monoamine neurotransmitters like dopamine. This amplifies the effects of the neurotransmitters in the smokers' brains and greatly contributes to reward and dependence.

It has been proposed that acetaldehyde, a well-known component of tobacco smoke, is the origin of the MAO inhibition because it is a strong inhibitor of MAO (both the A and B subtypes). Nicotine self-administration in experimental rats is improved when acetaldehyde is additionally administered to the rats. According to other research, the condensation products of salsolinol, acetaldehyde, and Harmans are more plausible candidates to be MAO inhibitors. Salsolinol nornicotine, anatine and anabases (nicotine alkaloids) are also themselves directly rewarding in rats (6)

1.4 CARCINOMAS ASSOCIATED WITH TOBACCO

More than 90% of oral malignancies are of the pathogenic kind known OSCC). In the world, oral cancer is the eighth most common cause of cancer-related deaths10. Roughly 220000 new instances of oral and oropharyngeal malignancies are reported annually (5% of all cancers worldwide) 11. Recent OSCC epidemiology indicates that incidence is typically higher in emerging or lower-middle-income nations than in affluent nations. The studies indicates that age, sex, race, gender, alcohol, tobacco, betel nut, diet, and nutrition are risk variables linked to OSCC. Tobacco is the most widely used among them. There is a definite dose-response association between tobacco use and the risk of oral cancer, as shown by several epidemiological research or possibly a cancerous oral condition. An analysis of 454 patients with oral carcinoma conducted early in 1994 by a study revealed that 60% of these patients smoked, and that over 95% of the tumours were squamous cell carcinoma. In 1999, another study emphasized the role of tobacco in the development of (OED) in a significant number of patients in Europe.

In South-East Asia, there are about 180000 occurrences of oral cancer annually, with smoking and chewing behaviours being the primary causes of almost 90% of these cases. Tobacco products can include up to 60 known or suspected carcinogens, depending on the kind. These carcinogens can raise the relative risk of cancer through a variety of processes, such as oxidative stress on tissues, persistent reactive oxygen species, lipids, carbohydrates, and DNA disruption(7).

Physicians have long understood that smoking is the primary cause of lung cancer. This is still the case today, since second-hand smoke exposure or cigarette smoking account for roughly 90% of lung cancer deaths. In actuality, despite smoking fewer cigarettes, smokers today are at higher risk of developing lung cancer than they were in 1964. Modifications in the composition and manufacturing process of cigarettes could be one factor.

Lung cancer continues to be the most common cause of cancer-related deaths among men and women, despite improvements in treatment. Every year in the US, second-hand smoke-related lung cancer claims the lives of almost 7,300 non-

smokers. Six Tobacco smoke from the burning end combined with ambient air might be referred to as second-hand smoke(8).

1.5 Cardiovascular Disorders Associated with Tobacco History

Numerous research conducted throughout the world over the past few decades have demonstrated a causal link between tobacco use and CVD. Government and research organizations prioritize reducing the consequences of tobacco smoking by focusing on its complications because (CVD) is the world's leading cause of death. It has been demonstrated that smoking has catastrophic effects on the cardiovascular system, which can result in death and long-term disability. The most popular way to consume tobacco is by smoking, which puts not only the smoker but also those in their immediate vicinity—including children—in danger. This is referred to as second-hand or passive smoking.

Atherosclerosis is the first stage of most CVDs. Plaque build-up in a blood artery's wall, known as atherosclerosis, results in the inner layer of the vessel narrowing and becoming uneven. It decreases blood flow and arterial flexibility, which lowers the blood supply to distal regions. The imbalance between oxygen supply and demand that results from reduced blood flow to a particular tissue is known as ischemia. A plaque may eventually burst and result in thrombosis, which is a blood clot completely obstructing a blood vessel. Tissue death, or infarction, happens when oxygen and nutrients are denied to the body. These are, in essence, the issues that arise from most CVD instances.

For thousands of years, people have utilized the cannabis plant, sometimes referred to as marijuana, for its analgesic and anti-inflammatory properties. CBD and (THC) are the two major active ingredients in cannabis. The widely distributed CB1 and CB2 cannabinoid receptors in mammalian bodies mediate the effects that these constituents cause. These receptors are stimulated by endogenous cannabinoids, and they are involved in a variety of physiological functions, such as the neurological and immune systems. The central nervous system contains the majority of CB1, which is thought to be the cause of THC's psychoactive effects. Conversely, CB2 is mostly located in the immune system. As a result, it has an anti-inflammatory effect on the process of immunological regulation(9).

1.6 PULMONARY PATHOLOGIES

Cigarette smoking is linked to a wide spectrum of non-neoplastic pulmonary lesions, such as vascular changes, airway disorders with reduced airflow, and interstitial lung diseases with diffuse radiographic abnormalities and limited lung volumes.

Smoking Related Non-Neoplastic Lung Diseases:

Obstructive lung disease

Emphysema

Emphysema is defined as "a condition of the lung characterized by abnormal, permanent enlargement of the air spaces distal to the terminal bronchiole, accompanied by destruction of their walls." This definition has been around for a very long time, having been defined in 19592, 11. The word "destruction" is crucial because it distinguishes emphysema from airspace enlargement caused by age, pneumonectomy, or interstitial fibrosis (honeycomb cysts).

Alteration of large airways

This is a contentious field, not because there is no evidence linking smoking to vascular changes, but rather because there is uncertainty and contradictory theory about the origin of the alterations and whether they result from hypoxia, vascular bed degradation, inflammation, or other secondary causes. The authors of this paper limit their discussion to the pathological characteristics present in the vessels, avoiding a detailed examination of the debate.(10)

Small airway disease

A non-cartilaginous airway is considered small if its internal diameter is less than 2 mm. These airways extend from the eighth generation of airways approximately to the respiratory bronchioles, which open into the gas-exchange mechanism (the alveoli), and terminal bronchioles, which are the smallest airways without alveoli. Small airways in healthy lungs contribute very little to total airway resistance. It has been estimated that before changes can be identified by regular pulmonary function tests, 75% of all small airways must be blocked.

Pulmonary hypertension

Elevated pulmonary artery pressure is a common characteristic shared by a diverse range of illnesses together referred to as pulmonary hypertension. Patients frequently show symptoms of right heart strain or failure along with dyspnoea that gets worse with exercise. In order to confirm the diagnosis and identify the underlying aetiology, a high suspicion index and comprehensive testing are needed. Treating the underlying cause and reducing the symptoms are the cornerstones of management. Options for treating chronic thromboembolic pulmonary hypertension include surgery and intervention. For patients who are not responding to medical therapy, lung transplantation may be explored(11).

1.7 Interstitial lung disease

The term (ILDs) describes a diverse range of complex ailments that affect the interstitial of the lungs and are characterized by either fibrosis or inflammation. This leads to a decrease in lung function and a worsening of respiratory symptoms by impairing gas exchange. While the exact cause of certain ILDs is unknown, the majority of instances have apparent causes, including underlying autoimmune disorders, genetic predispositions, environmental exposures (such as to chemicals, allergens, and air pollution), or the use of specific drugs. The body of evidence and research pertaining to aetiology identification, epidemiological comprehension, clinical diagnosis enhancement, and the development of non-pharmacological and pharmacological treatments has increased. An extensive summary of the state of knowledge on interstitial lung disorders is given in this review(12).

1.8 Laws and health financing related to tobacco consumption

Governments have long used tobacco taxes as a means of raising money, even if the use of such taxes to discourage smoking is still relatively new in many nations. Tobacco taxes have also been emphasized in a number of forums as a way to raise money domestically for health and other development initiatives.
Interest in tobacco pricing has increased further since the Addis Ababa Action Agenda4 and the 2030 Agenda for Sustainable Development were recently established.

The UN General Assembly approved the Addis Ababa Action Agenda in July 2015. The United Nations acknowledged that "price and tax measures on tobacco can be an effective and important means to reduce tobacco consumption and health-care costs, and represent a revenue stream for financing for development in many countries" in this agenda, which was the result of the Third International

Conference on Financing for Development.4
The 2030 Agenda for Sustainable Development was subsequently approved by the UN General Assembly in September 2015.5.
The **(SDGs)** on this agenda are ones that every Member State has committed to achieving by 2030. Target 3.4 of SDG 3, which aims to "ensure healthy lives and promote well-being for all ages," is to lower premature death(13).

1.9 17 SUSTAINABLE DEVELOPMENT GOALS – SDG3

Sustainable development requires fostering well-being at all ages and guaranteeing healthy lives.

TARGETS

By 2030, the global maternal death rate should be reduced to fewer than 70 per 100,000 live births, and preventable new-born and under-5 fatalities should be eliminated, with targets of 12 and 25 per 1,000 live births respectively. Efforts should be intensified to end epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases, and to combat hepatitis and other communicable diseases. Premature mortality from non-communicable diseases should be reduced by one third, and mental health and well-being promoted. Substance abuse prevention and treatment should be strengthened, and the number of global deaths and injuries from road traffic accidents halved by 2020. Universal access to sexual and reproductive health-care services and integration into national strategies should be ensured. Universal health coverage, including financial risk protection and access to quality health-care services and affordable medicines and vaccines, should be achieved. Deaths and illnesses from hazardous chemicals and pollution should be substantially reduced. Implementation of the WHO Framework Convention on Tobacco Control should be strengthened, and research and development of vaccines and medicines for diseases affecting developing countries should be supported, ensuring access to affordable essential medicines. Health financing, workforce recruitment, development, and retention in developing countries should be substantially increased, and capacities for early warning, risk reduction, and management of health risks should be strengthened, particularly in developing countries.

2. BACKGROUND

The SDG 3 target **3.2** By 2030, end preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births. By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being. **3.5** Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.(14)

2.1 EFFECT OF TOBACCO ON MATERNAL AND CHILD HEALTH

Numerous research has examined the consequences of smoking during pregnancy and linked it to a number of unfavourable perinatal outcomes. It has been demonstrated that there is a dose-response relationship between active tobacco use and certain negative outcomes, including reduced birth weight, preterm birth (birth before 37 weeks of pregnancy), decreased foetal measurements (foetal measurements decrease after the first trimester), and transfer to a neonatal intensive care unit. Additionally, smoking has been linked to a dose-dependent increase in the risk of intrauterine fatal death. Despite the negative consequences mentioned, smoking has been found to be a preventive measure against pre-eclampsia. Smoking during pregnancy can affect fatal lung development and cause respiratory issues in the new-born. The long-term exposure of a developing foetus to smoking during pregnancy may lead to a higher incidence of gastrointestinal disorders.

2.2 GLOBAL PREVALANCE OF TOBACCO AMONG WOMEN DURING ANTE-NATAL PERIOD

Pregnancy-related smoking is thought to be 1.7% common worldwide. In high-income nations, this percentage is much higher—it reached 7.2% in the USA and 8.1% in Europe—according to an evaluation conducted in 2018. It is important to proceed with caution when interpreting these numbers, since up to 25% of pregnant women who had previously smoked cigarettes misrepresented that they had stopped during their pregnancy. Pregnant women who are less educated or who become pregnant unexpectedly are more likely to smoke and are less likely to stop when they become pregnant(15).

2.2.1 FOETAL EPIDEMIOLOGY OF ASSOCIATED PATHOLOGIES

More than 20 years ago, it was clearly shown that active smoking had a negative effect on pregnancy and/or raised the chance of premature delivery.4-6. An intriguing summary of the research released after the 2000s on the connection between active or passive smoking and an increased risk of low birth weight or preterm delivery has been presented using data from the past 20 years. Over the past 20 years, there does not seem to have been a significant shift in the prevalence of new-born morbidity linked to active or passive mother smoking. There is enough data, according to the 2004 Surgeon General's Report, to conclude that maternal smoking and fatal growth restriction and/or an increased risk of premature delivery are causally related.8–10. Conversely, the medical specialists that expectant mothers see most likely haven't done enough to date to manage and inform pregnant patients about quitting smoking, either actively or passively(16).

An infant's birth weight is the initial weight recorded after delivery; it is best to measure it in the first few hours following delivery, before a noticeable amount of postnatal weight loss has taken place. The WHO defines LBW as a birth weight of less than 2500 g (up to and including 2499 g). For many years, this has been the accepted definition of LBW. The definition that is now in use was decided upon by the 29th World Health Assembly in 1976. Before this, "2500 g or less" was the definition of LBW. VLBW, <1500 g and ELBW, <1000 g are two more classifications for low birth weight [1]. Preterm birth causes low birth weight (PTB, intrauterine growth restriction (IUGR, sometimes called fatal growth restriction), short gestation (less than 37 full weeks), or both.

Regardless of gestational age, an absolute weight of less than 2,500 grams is referred to as low birth weight. New-borns whose birth weight falls below the 10th percentile for gestational age are classified as (SGA). The report's specific focus will be on birth weights under 2,500 grams. (17)

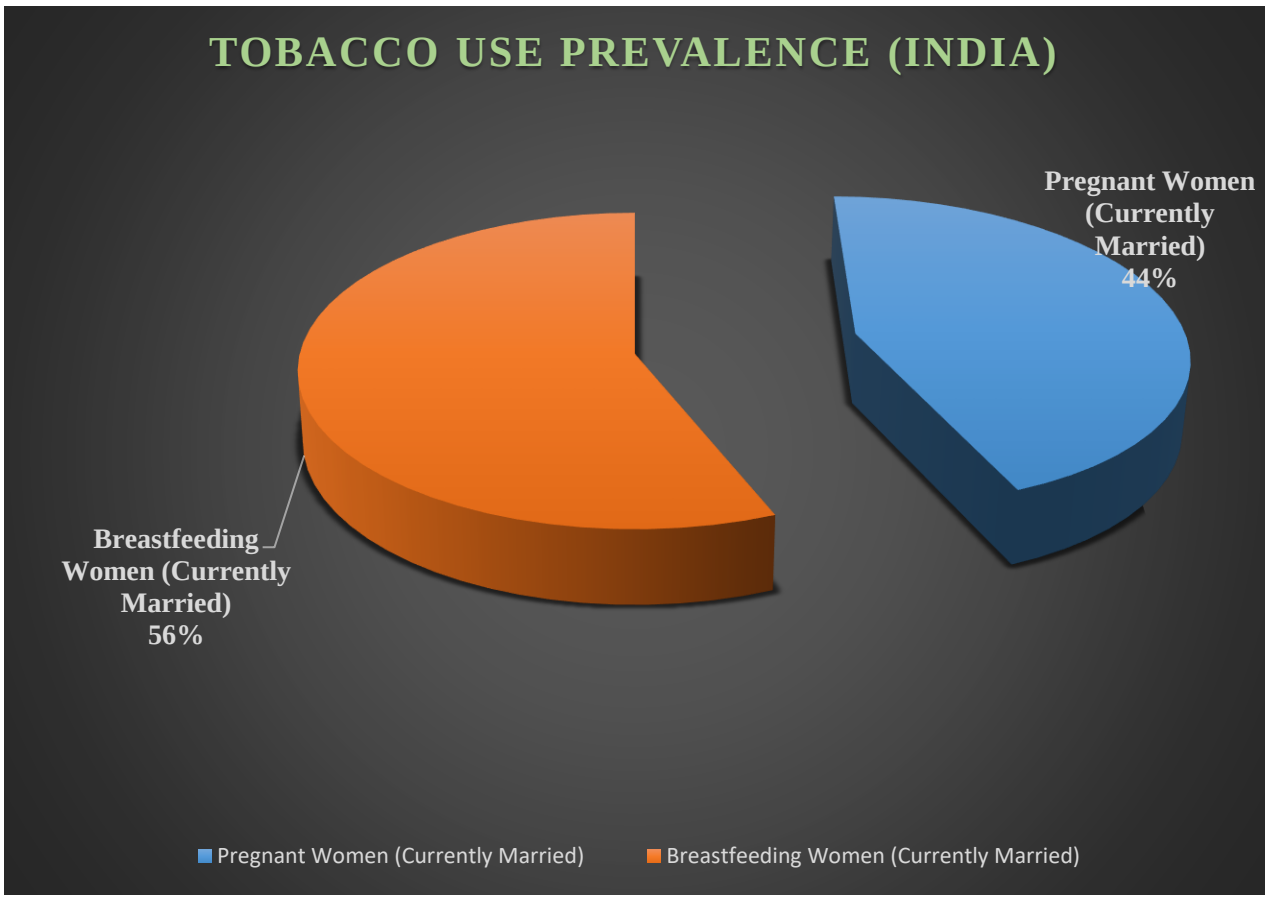
The clinical illness known as (ARDS) is typified by a number of clinical manifestations and pathological reactions that mainly affect the respiratory system. The most prevalent causes of ARDS in pregnancy include large transfusions, sepsis, and viral infections. (NIV) support, most of them recover. As long as the facility has experience and a well-established patient care procedure, NIV is safe during pregnancy. The finest places to care for patients in need of intrusive mechanical breathing are those with experience. Parturient have greater PaO2/FiO2 goals than patients who are not pregnant.

2.3 PREVALANCE OF TOBACCO CONSUMPTION IN INDIA

Smoking during pregnancy is bad for the foetuses as well as the pregnant women. Data on the prevalence and determinants of tobacco use among pregnant women in India are lacking at the national level(1).

Over 85% of tobacco-using currently married pregnant (85.6%) and breastfeeding (85.6%) women in India only used smokeless tobacco (SLT). The prevalence of tobacco use among these women was 2.5% and 3.2%, respectively. It was discovered that among currently married pregnant women, the age group of 30-34 years, employed women, and the richest wealth quintile were independent predictors of smoked tobacco use. On the other hand, the South Indian region and the middle wealth quintile were revealed to be independent predictors of cigarette use among breastfeeding women who are currently married.(18)

FIG 2



2.4 TYPES OF TOBACCO PRODUCTS

Smokeless tobacco products (SLT) in India the various forms of smokeless tobacco used in different regions include chewing tobacco plain (tambakoo), guthka, zarda (vizapatta), loose leaf (sada pata, chadha, tobacco leaf), gul, kharra, kiwam, mishri, mawa, dohra, and gudakhu. Additionally, there are naswar (nass, niswar, and nasvay), tapkeer (tapkir, dry snuff, bajar), creamy snuff, tuibur (tobacco water, hidakphu), toombak (saute, sute, ammari, stood), mainpuri (kapoori), and lal dantamanjan (red tooth powder, red toothpaste). Other forms include dissolvable tobacco, snus, moist snuff (dip), rapé, chimó, tombol, twist (chew, chaw, chewing tobacco), shammah (el-shama, chemma, al-shammah), plug (spit tobacco, chew, chaw), iqmik (black bull, dediguss), Ghana traditional snuff (tawa), neffa (tenfeha, nufha), snuif, and taaba.(19)

2.5 IMPORTANCE OF MATERNAL MORTALITY RATE AS A HEALTH SYSTEM INDICATOR

The health of women during their pregnancies, deliveries, and postpartum periods is referred to as maternal health. To ensure that women and their infants achieve their maximum potential for health and well-being, every stage should be enjoyable.

Despite significant advancements during the previous 20 years, 287 000 women lost their lives during or after pregnancy and delivery in 2020. This is an excessively high number. In addition to indirect reasons including anaemia, malaria, and heart disease, the most frequent direct causes of maternal injury and death are excessive blood loss, infection, high blood pressure, botched abortion, and obstructed labour.

The majority of maternal fatalities can be avoided with prompt intervention by qualified healthcare provider in a nurturing setting. Preventable maternal death must continue to be the top priority at the top of the international agenda. However, merely making it through pregnancy and delivery cannot ever serve as a barometer of effective maternal health care. In order to improve health and wellbeing, it is imperative to increase measures aimed at preventing maternal injury and disability.

Every conception and delivery are distinct. To guarantee that every woman has

access to considerate and excellent maternity care, it is imperative to address disparities that impact health outcomes, particularly those related to gender and sexual and reproductive health and rights.

(20)

2.6 TOBACCO CONSUMPTION AND ITS IMPACT IN LOWERING THE MATERNAL MORTALITY RATE

Maternal smoking exposure is associated with birth abnormalities, stillbirths, preterm births, and infant fatalities. While exposure to second-hand smoke during pregnancy is associated with a 13% increased risk of congenital malformation and a 23% increased chance of stillbirth, maternal smoking during pregnancy is linked to a doubling of the risk of abrupt infant death and birth malformations.

Pregnancy-related hypertension, or elevated blood pressure, has a substantial impact on the morbidity and mortality of expectant mothers and babies. Pregnancy-related tobacco smoking exacerbates this burden and raises the possibility of hypertensive problems and unfavourable delivery outcomes. The purpose of the current study was to assess the population-level combined risk of hypertension and tobacco use among pregnant women in India.

Pregnant tobacco users had a considerably greater prevalence of hypertension (7.5%) than non-users (6.1%).(21)

3. REVIEW OF LITERATURE

3.1 BURDEN OF TOBACCO CONSUMPTION ON HUMAN HEALTH

1. A study conducted by (Dai et al., 2022) yielded that Smoking is a significant and persistent public health concern since it is a primary behavioural risk factor for many health consequences. While the effects of smoking on health have been extensively documented, few studies have thoroughly and methodically examined the dose-response relationship between smoking and a wide range of health outcomes. Using a meta-analytic approach that accounts for between-study variation in uncertainty estimates, we conducted systematic reviews up to May 31, 2022, and re-estimated the dose-response associations between current smoking and 36 health outcomes. Of the 36 outcomes that were chosen, 8 showed strong to very strong evidence of a correlation with smoking, 21 showed weak to moderate evidence, and 7 showed no correlation at all. The method overcomes many of the drawbacks of conventional meta-analyses and offers thorough, current, and user-friendly assessments of the data regarding smoking's negative health impacts. For those who support tobacco control, policy makers, researchers, doctors, smokers, and the general public, these figures offer crucial information.

2. Another study conducted by (Razzak et al., 2020) yielded As the primary preventable cause of mortality, tobacco use poses a serious threat to public health. In order to better understand smoking prevention and cessation in the United Arab Emirates, we reviewed epidemiological research that were accessible on the prevalence of tobacco use, the related health impacts, and treatments that have been evaluated in this regard. There were fourteen publications total; eleven of them were cross-sectional studies, one was a case-control study, one was a cohort longitudinal research, and one was quasi-experimental. Our findings imply that estimates of the prevalence of smoking now vary greatly. Reviewing the prevalence of smoking, health risks, and solutions in the United Arab Emirates is a first for the region.

3.2 RISK FACTORS

3. Another study conducted by (Wu et al., 2024) highlighted One of the biggest risk factors for the onset and advancement of chronic obstructive pulmonary disease (COPD) is still smoking. Given that teenage smoking is linked to worse health outcomes, an individual's smoking initiation age may have a significant impact on the course and severity of their COPD.
   From September 2016 to January 2023, we observed eligible COPD patients who were admitted to hospitals. Early smoking patients were those who began smoking before the alveolar development stage (ADS, smoking initiation < 24 years old), while late smoking patients began smoking after ADS (smoking initiation > 24 years old). We gathered clinical and demographic information to describe the patients and tracked their status from the time of hospital discharge till the follow-up. The main outcomes were the all-cause mortality within one year, three years, and beyond three years following discharge.
   Among 697 patients with COPD, those who started smoking earlier had a lower rate of quitting ($P < 0.001$) and a higher smoking index ($P < 0.001$) than those who started smoking later in life. Early smokers still had worse lung function ($P = 0.023$), bigger left ventricular diameters ($P = 0.003$), higher frequency of triple treatment use during stable stage ($P = 0.049$), and more acute exacerbations in the year prior to enrolment ($P < 0.05$) despite corrected smoking index. According to survival analysis, they were more likely to die after being discharged within three years ($P = 0.004$) and after three years ($P < 0.001$). Moreover, even among COPD patients who started smoking early and stopped after making adjustments to their smoking index had thicker left ventricular diameters ($P = 0.003$) and worse lung function ($P < 0.05$). A survival analysis also revealed that they had a higher long-term mortality rate ($P = 0.010$) and a shorter survival period ($P = 0.0128$).

4. (Tian et al., 2023) highlighted through his study that by 2030, China wants to lower the percentage of adult smokers from 27.7% to 20%. To motivate the public to stop smoking, it is vital to comprehend the potential long-term damage of lung function in smokers. 14,273 men in all participated in the Huadong Sanatorium health examination between January 2012 and December 2019. We employed multiple linear regression in cross-sectional

analysis to assess the relationship between smoking status and baseline pulmonary function. In a subsequent longitudinal research, 3,558 males who had at least two spirometry examinations were examined. We compared the annual reduction in lung function using mixed linear models that were confounder-adjusted. In a cross-sectional study, there were declines in FEV1 of −1.48% and −133.56 mL (95% CI: −167.27, −99.85) respectively when compared to never-smokers. By 2030, China wants to lower the percentage of adult smokers from 27.7% to 20%. To motivate the public to stop smoking, it is vital to comprehend the potential long-term damage of lung function in smokers. 14,273 men in all participated in the Huadong Sanatorium health examination between January 2012 and December 2019. We employed multiple linear regression in cross-sectional analysis to assess the relationship between smoking status and baseline pulmonary function. In a subsequent longitudinal research, 3,558 males who had at least two spirometry examinations were examined. We compared the annual reduction in lung function using mixed linear models that were confounder-adjusted. In a cross-sectional study, there were declines in FEV1 of −1.48% and −133.56 mL (95% CI: −167.27, −99.85) respectively when compared to never-smokers.

5. (Sadri & Mahjub, 2007) yielded through their study that there is evidence from multiple epidemiological research indicating tobacco use raises the risk of mouth cancer. However, no systematic review that looks at the consistency of the findings across studies has been identified. We conducted a meta-analysis of epidemiological research to determine the strength of the association between tobacco use and mouth cancer. Using Medline, an automated literature search turned up primary studies. All of the epidemiological studies included in the abstracts were originally published in English in Oral cancer and tobacco use were associated with a combined risk ratio of 4.65 (95%CI, 3.19-6.77). Additionally, the continents of America had the highest combined odds ratio (OR= 7.65; 95%CI, 5.11-11.45), while Asia had the lowest (OR= 1.88; 95%CI, 0.95-3.71). The pooled OR estimate varied amongst the investigations. The overview was given between 1990 and 2007 estimations of the odds ratios (OR) between tobacco smokers and non-smokers for oral cancer. For this meta-analysis, a

total of fifteen case-control studies were employed. Using the random effects model as a basis, the OR summary was determined.

6. Study conducted by (More et al., 2021) yielded that The world's greatest preventable cause of early death is tobacco usage. In addition to its harmful effects on oral health, smoking also raises the chance of dental implant failure, precancerous disorders, bad breath, periodontal diseases, poor wound healing, and oral cancer. A total of 140 participants provided data. A self-administered questionnaire was used in a cross-sectional study to find out participants' sociodemographic details, awareness of how smoking affects their dental health, and willingness to give up smoking and take part in cessation programs. The degree of knowledge on the effects of smoking on dental implants, tooth discoloration, and oral cancer was found to differ statistically significantly. But it was noted that members of the upper socioeconomic class displayed a relatively higher level of greater consciousness than in the other classifications. There were no discernible variations in the degree of knowledge on the impact of smoking on wound healing and gum disease. Out of 140 respondents, 113 stated that they would be willing to stop smoking, and 78 indicated that they would be open to taking part in cessation programs.

3.6 EPIDEMOLOGY

1. (Kipling, 2024) **in the study highlighted that** Smoking during pregnancy raises the risk of health problems for the unborn child, premature birth, stunted foetal development, and infant death. Counseling from medical professionals can help people stop smoking. In order to determine the prevalence of smoking before, during, and after pregnancy as well as whether health care providers inquired about cigarette smoking before, during, and after pregnancy among women who had recently given birth, data from the 2021 Pregnancy Risk Assessment Monitoring System were analysed. In 2021, 12.1% of women who smoked before becoming pregnant, 5.4% of women who smoked throughout pregnancy, and 7.2% of women who smoked during the postpartum period stopped smoking. The incidence of smoking varied by jurisdiction, ranging from 3.5% to 20.2% prior to

pregnancy and 0.4% to 11.0% during 1.0% to 15.1% during the postpartum phase, and during pregnancy. 73.7% of women who indicated that a healthcare practitioner inquired about smoking during any prenatal appointment, 93.7% during any prenatal care visit, and 57.3% during a postpartum check-up were among the women who had a health care visit during the relevant time. In order to minimize smoking among pregnant and postpartum women, routine assessments of smoking habits among these populations can help inform the creation and application of evidence-based tobacco control policies at the state and local levels of the health care system.

2. (Hamadneh et al., n.d.) Intended to look into the attitudes and smoking habits of pregnant Jordanian women. Hence, between August and September 2019, 436 moms who were visiting medical institutions in the Governorate of Irbid, Jordan, participated in a cross-sectional survey to learn more about their smoking habits and attitudes. After their pregnancy was confirmed, 13 (2.9%) of the 436 pregnant women in the Governorate of Irbid, Jordan, stopped smoking, while 77 (17.6%) of them carried on.

While smokers believed that hookah and e-cigarettes were less harmful than cigarettes (5.19% compared 21.99%, $p = 0.001$, and 6.49% versus 19.37%, $p = 0.009$, respectively), pregnant non-smokers concluded that hookah and e-cigarettes were just as harmful to health as cigarettes.

When it came to the risks that smoking poses for prenatal outcomes like abortion, non-smokers knew much more (31.94% versus 10.39%, p Placental abruption (31.94% versus 10.39%, $p = 0.001$), foetal malformations and intrauterine growth restriction (36.65% versus 14.29%, $p = 0.007$), foetal death (30.89% versus 6.49, $p < 0.001$), neonatal asthma (47.12% versus 28.57%, $p = 0.038$), and ear diseases (42.41% versus 20.8%, $p = 0.012$) are among the conditions that affect new-borns. In Jordan, smoking is very common among expectant mothers. There is still a lack of knowledge about the long-term effects of tobacco usage. Information regarding the risks associated with smoking in any form should be included

in educational programs. An excellent time to encourage quitting smoking is during pregnancy.

3. (Jafari et al., 2021) performed the systematic and meta-analysis the goals of review were to present an updated estimate of the prevalence of ever-and current-cigarette smoking among women in global geographic areas and, through the use of a cumulative meta-analysis, to show a trend in the prevalence of smoking over time. We performed a systematic review and meta-analysis of published papers on the prevalence of ever and current cigarette smoking in women, adhering to PRISMA criteria. From January 2010 to April 2020, we searched PubMed, Web of Science (ISI), Scopus, and Ovid. A screening was also done on the reference lists of the papers that were part of this evaluation. Two authors independently reviewed and extracted the data. The pooled prevalence of women who have smoked cigarettes ever and currently was estimated using a random effects model. Origins of diversity were identified through the use of meta-regression and subgroup analysis across the studies. Women who smoke cigarettes reported a combined prevalence of ever smoked 28% and currently smoking 17% of cigarettes. The combined frequency of ever having smoked cigarettes was 23% among adolescent girls/students, 27% among adult women, 32% among pregnant women, and 38% among women who were afflicted with the illness. Oceania, Asia, Europe, America, and Africa had pooled prevalence rates of ever smoking cigarettes of 36%, 14%, 38%, 31%, and 32%, respectively. Women are highly likely to smoke cigarettes, a substantial finding across all demographics including adults, adolescents, and expectant mothers. To lessen the adverse consequences and prevalence, it is therefore essential to create and implement suitable educational programs for children, particularly in schools.

4. (Alege et al., 2021) pointed through their study that tobacco use has emerged as the world's biggest threat to public health, killing about 7 million people a year, of which 6 million are directly related to tobacco use and 890,000 are caused by passive smoking. This study evaluated the prevalence of tobacco use and related risk factors among 15–49-year-old pregnant women. An analytical cross-sectional study utilizing purposive sampling and a simple

sample method for the respondents was carried out among 199 pregnant women in a health institution. To compare quantitative data at a 95% CI, binary logistic regression and the chi-square test were employed. The percentage of respondents who used tobacco was 39.2%. According to the results, smoking during pregnancy offers pregnant women a sense of ultimate control ($p \leq 0.001$). Those who started smoking earlier also agreed with this over their life and health ($p \leq 0.008$); among pregnant women aged 20–29, the likelihood of tobacco use decreased ($p \leq 0.032$); individuals disputing that tobacco use is a sign of maturity ($p \leq 0.003$); and those disagreeing that smoking can help reduce stress, calm nerves, and control moods ($p \leq 0.002$). However, smoking more than five times a day ($p \leq 0.01$) and smoking cigarettes ($p \leq 0.017$) were cultural characteristics significantly connected with smoking that decreased the likelihood of smoking during pregnancy. It was found that pregnant women at Kijomoro and Eliofe Health Centre III had a high rate of tobacco usage. Pregnant women must therefore be made aware of the negative health effects that tobacco use has on both them and their unborn children.

5. (Alege et al., 2021) focused that over their life and health ($p \leq 0.008$); among pregnant women aged 20–29, the likelihood of tobacco use decreased ($p \leq 0.032$); individuals disputing that tobacco use is a sign of maturity ($p \leq 0.003$); and those disagreeing that smoking can help reduce stress, calm nerves, and control moods ($p \leq 0.002$). However, smoking more than five times a day ($p \leq 0.01$) and smoking cigarettes ($p \leq 0.017$) were cultural characteristics significantly connected with smoking that decreased the likelihood of smoking during pregnancy. It was found that pregnant women at Kijomoro and Eliofe Health Centre III had a high rate of tobacco usage. Pregnant women must therefore be made aware of the negative health effects that tobacco use has on both them and their unborn children.

6. (Singh et al., 2022) conducted a study Smokeless tobacco (SLT) is widely used in many Asian nations, including India. Pregnant women use SLT at a notably high rate, which is regarded as a global problem. As such, long-term negative impacts result from the linked health effects of SLT usage on expectant mothers and the foetus. In light of this, the purpose of this paper is

to comprehend the consequences of the degree of variation in SLT use estimates among pregnant Indian women based on two nationally representative surveys. In the fourth round of the Demographic and Health Survey or the National Family Health Survey (DHS NFHS 2015-16), 184,641 pregnant women were interviewed, while 1,403 pregnant women provided responses for the Global Adult Tobacco Survey (GATS 2016–17). Pregnant women's SLT use patterns varied significantly between It was clear to see the NFHS-4 and the GATS-2. Overall, it was shown that the GATS had a higher prevalence of SLT usage among pregnant women than the NFHS, and this pattern held true for age groups ranging from 15 to 34. The lack of accurate estimates of SLT usage among expectant mothers necessitates a focused approach to addressing data quality issues, tobacco control initiatives, and the harmful effects of SLT use on reproductive, maternal, and child health policy.

7. (Sharma et al., 2024) conducted a study in Pakistan highlighting Tobacco smoking among women in the 15–9 age group may be linked to unfavourable results for the health of mothers and children. Using the Multiple Indicator Cluster Surveys datasets from three Pakistani provinces, we estimated the prevalence of (ST), cigarettes, and water pipe use among these women in Pakistan and investigated associations with socioeconomic disparities and birth weights following recent childbirths (within the last two years). Women who had recently given birth (WWRC) and women who hadn't recently given birth (WWoRC) were asked about their current tobacco usage prevalence. We also contrasted the birth weights and socioeconomic condition of tobacco users and non-users. In WWRC and WWoRC, the corresponding prevalence of water pipe smoking and current ST use were 1.2% and 2.5% and 1.4% and 1.8%, respectively.

   The provinces of Pakistan differed by 13 percentage points in ST use. Points in the WWRC and WWoRC while using a water pipe, by 10% and 15% of the total, respectively. Higher levels of education or wealth index were associated with a significant reduction in the odds of using tobacco products in any form. The average birth weight of children born to moms who smoked water pipe was 0.83 kg (95% CI -1.6 to -0.1) lower than that of children born to mothers who did not use tobacco, whereas it was 0.33 kg

(95% CI -0.9 to 0.3) higher for ST users. There appears to be no change in tobacco use behaviour surrounding pregnancy and early parenthood, with the incidence of current smokeless tobacco use and water pipe smoking among women of reproductive age in Pakistan varying significantly (~13 and ~15 percentage points, respectively).

The research emphasizes There's a need to learn more about how common tobacco use is in Pakistan, and more contextual study is necessary to figure out why tobacco use is so high in some places. This data emphasizes how important it is to enhance the current tobacco control initiatives and regulations, especially those that could aid in lowering usage and preventing uptake. Additionally, we observed a statistically significant difference (830 g) in birth weight for babies born to mothers who smoked water pipe at the time of the interview compared to children born to mothers who did not use any form of tobacco, and a non-statistically significant difference of approximately 330 g for children born to mothers who used smokeless tobacco at the time of the interview.

Together with conclusions, according to certain research, water pipe smoking and low birth weight are related. In addition to burning charcoal, which is necessary when using a water pipe, exposure to smoke containing toxicants from the tobacco product itself could be one explanation. High exposures to polycyclic aromatic hydrocarbons and carbon monoxide, which are known to be teratogenic and carcinogenic, are another consequence of water pipe smoking. More study is necessary to fully understand the effects of smokeless tobacco use on birth outcomes. Longitudinal studies that take into consideration a variety of products, their ingredients, and the quantity used are necessary.

8. (Sharma et al., 2024, p. 310) conducted a study on Women's tobacco usage, particularly during pregnancy, is a public health issue. It is important to recognize the variations in tobacco use among people worldwide. Data from 42 (LMICs) were gathered between 2010 and 2016 for the (DHS) in order to estimate the prevalence of smoking, smokeless tobacco use, and dual usage among women of reproductive age (15–49 years) who are pregnant or not. The examined the differences in tobacco use between the two groups after

adjusting for age, place of residence, level of education, and combined wealth index. Additionally, conducted a subgroup analysis specifically for the (SEAR), where women's tobacco use is significantly more varied than in other regions, mostly because smokeless tobacco use is more common there. In light of According to data collected from 1,310 716 women in 42 LMICs, smoking prevalence was 1.09% (95%CI: 0.81-1.42) among non-pregnant women and 0.69% (95%CI: 0.51-0.90) among pregnant women. Pregnant women used smokeless tobacco at a prevalence of 0.56% (95%CI: 0.33-0.84) compared to 0.78% (95%CI: 0.35-1.37) among non-pregnant women. Pregnant women's relative risk ratios (RRRs) for smoking (0.85; 95%CI: 0.67-1.09) and using smokeless tobacco (0.81; 95%CI:0.67-1.00) were not significantly lower than those of non-pregnant women, and there was an inverse association between both forms of tobacco use and education and wealth index. Smoking and smokeless tobacco use were prevalent among pregnant women in SEAR, with rates of 1.81% and 0.45%, respectively. Nonetheless, compared to non-pregnant women, pregnant women were 7% (RRR 1.07; 95%CI: 1.02-1.12) more likely to use smokeless tobacco. In spite of the increased danger to the foetus during pregnancy, there is no proof that pregnant and non-pregnant women in 42 LMICs consume tobacco in different ways. It is particularly concerning and calls for more research that pregnant women in SEAR use smokeless tobacco at much greater rates. Compared to high-income countries (HICs), women in low- and middle-income countries (LMICs) consume tobacco less frequently, yet this difference may be attributed to the fact that LMICs are further along in the epidemiological transition of tobacco use.

The level of tobacco use may increase, as it did in HICs, if the tobacco industry is allowed to continue marketing its products to women while disregarding the issue of public health. Additionally, it is troubling that tobacco use in any form during pregnancy exists despite low prevalence rates and the lack of evidence linking them to differences between pregnant and non-pregnant women is linked to worse pregnancy outcomes. This implies that women in LMICs should be made more aware of the dangers of tobacco smoking, particularly while they are pregnant. Developing preventive and cessation interventions is necessary to reduce tobacco use (both smoking and non-smoking), as women from lower socioeconomic backgrounds and with lower levels of education are disproportionately affected by tobacco use.

9. Pregnancy-related risks such as alcohol intake and tobacco use are rising dramatically in low- and middle-income nations, especially those in sub-Saharan Africa. Nonetheless, there hasn't been much focus on them in Nigerian maternal health services and research. (Adeoye, 2022) looked into the prevalence, trends, and risk factors for alcohol use and tobacco exposure among pregnant women in Ibadan, Nigeria. This is a portion of the Ibadan Pregnancy Cohort Study (IbPCS), a prospective cohort study of pregnant women in Ibadan, Nigeria, that looked into the relationships between lifestyle factors, maternal obesity, and perinatal outcomes in Ibadan. During enrolment, 1745 pregnant women's alcohol use and tobacco exposure were measured using self-reports using a questionnaire given by an interviewer. At the 5% level of statistical significance, the associations were analysed using bivariate and multiple logistic regression techniques. The frequency Alcohol consumption occurred in 551 (31.7%) pregnancies and 222 (12.7%) pregnancies, respectively; that is, one in every eight pregnancies involves alcohol. Beer (12%) and palm wine (52%) were the two most popular alcoholic beverages among expectant mothers. Pre-pregnancy alcohol usage [AOR = 10.72, 95% CI: 6.88-16.70] and religion (Muslims were less likely to drink during pregnancy than Christians; AOR = 0.60, 95% CI: 0.40-0.92) were the predictors of alcohol intake during. One in every 27 pregnancies is exposed to tobacco, as seen by the 64 (3.7%) index pregnancy cases where tobacco exposure was reported. In comparison, the rates of smokeless tobacco, second-hand smoke, and cigarette smoking were 1.8%, 1.7, and 0.4, respectively. The most prevalent was pre-pregnancy cigarette smoking, which 33 people (1.9%) reported.
   Predictor of tobacco consumption during pregnancy in our study cohort [AOR = 12.95; 95% CI: 4.93, 34.03). In Nigeria, alcoholism and tobacco use are widespread yet often ignored threats to the health of expectant mothers and their children. Policies and programs pertaining to alcohol and tobacco control should be largely implemented during prenatal care in Nigeria in order to avoid usage among pregnant and reproductive-age women.

3.3 GLOBAL ADULT TOBACCO SURVEY QUESTIONAIRE

One adult who lives in each chosen household must complete the household questionnaire (HQ) that makes up the GATS questionnaire. The HQ's tasks include verifying that the chosen home satisfies GATS eligibility standards and compiling a list of all the household's eligible members. Following a random selection of one person from the roster, this person will be required to fill out the individual questionnaire (IQ). Background characteristics, tobacco use, smokeless tobacco, quitting, second-hand smoke, economics, media, and knowledge, attitudes, and perceptions regarding tobacco are among the topics covered in the IQ test.

The field interviewers are given step-by-step instructions in the question-by-question specifications on how to utilize the handheld computer to conduct the basic GATS household and individual questions. The guide offers detailed information for each and every Questions about purpose, instructions, and route information are included in the survey for households and individuals. Keep in mind that GATS nations should alter this handbook to fit their own national questionnaires.

4. OBJECTIVES

4.1 Primary objective

1. Assess the prevalence of consumption of tobacco among the women taking antenatal care at the health facility,

4.2 Secondary objectives

1. To identify the smokeless tobacco user (SLTU) and smoked tobacco users (STU), the frequency of consumption and,

2. Assessment of the change in behaviour towards the tobacco consumption due the pregnancy.

5. METHODOLOGY

Study Design
A descriptive Cross-sectional study was conducted to assess the consumption of tobacco in pregnant women taking antenatal care at the health facility at one of the PSU in South-West District of Delhi.

Study Population
A purposive sampling technique is selected with the total of 384 participants taken into the study for the women taking antenatal care one of the dedicated health facility in the locality of the study are. With the confidence interval of 95% and 5% margin of error. The total population of the area is approximately 55,000. P value is 0.5.
(In a similar study conducted by S. S. R. Pasupuleti, P. Mohan, and P. J. Babu, "Prevalence and predictors of tobacco use among currently married pregnant women in India," *Popul. Med.*, vol. 3, May 2021, doi: 10.18332/popmed/134755 prevalence rate from previous study was found to be 4.6%. While in one of the studies by J. Chaudhary, E. Gupta, P. K. Singh, and S. Singh, "Tobacco exposure among antenatal women in India: Challenges in tobacco screening & cessation counselling," *Indian J. Med. Res.*, vol. 158, no. 5–6, pp. 477–482, 2023, doi: 10.4103/ijmr.ijmr_188_23 the prevalence of exposure of tobacco was between 4%-8%)

The site selected for the study is Goyala Dairy and the facility selected for the study is the Dispensary of Goyala Dairy which caters the health needs of 55,000 population along with the two Mohalla clinic and 1 TB clinic.

Duration of the study
The initial review of literature was started in 15th January, 2024 and initially some participants were interviewed to analyse the tool in that duration itself the study is projected to be completed by 30th May 2024 with minimum 13-14 participants covered each Antenatal day with expected turnover of new patients between 08:00am- 12:00am at the health facility.
Site
The site selected for the study is Goyala Dairy and the facility selected for the study is the Dispensary of Goyala Dairy which caters the health needs of 55,000 population along with the two Mohalla clinic and 1 TB clinic.

Inclusion Criteria

- All the women taking the Antenatal care at the health facility.
- All the Women giving the consent for the participation.
- All women the above 15 years of age.
- All the women comfortable with the interview.

Exclusion Criteria

- Women not coming to the health facility for the Antenatal check-ups.
- Women not giving Consent for the participation.
- Women from area other than Goyala Dairy was not be considered for the interview

Data Collection Method

- Primary Data was collected by approaching the women at the facility by taking a direct interview using a checklist tool. After undertaking an informed consent an exit interview will take from them. The checklist tool has a set of 27 close ended questioner all of it based on GATS (Global Adult Tobacco Survey Questionnaire). The data was captured each Antenatal day which is twice in a week at the health facility between 08:00-12:00.

LOCATION

The data was collected in English and Hindi language, whichever suits the participants for the exit interview.

Data Collection Tool

Data collection tool is developed using the Global Adult Tobacco survey (GATS) Questionnaire was used in the Study to determine the prevalence of consumption of tobacco amongst the women taking antenatal care. The tool captured the socio-cultural information of the participants, the type of tobacco product consumed and its frequency of consumption. The tool also captured the change in behaviour of consumption of tobacco during pregnancy and reason for the change in the behaviour.

6. RESULT

TABLE: 01

DISTRIBUTION OF AGE					
	N	Minimum	Maximum	Mean	Std. Deviation
AGE	334	15	39	24.26	4.212

The table 01 present distribution shows a high level of participation, with 334 out of 334 individuals (100%) giving their consent for the study. This high conversion rate indicates near-universal agreement to participate among the sample population.

The age distribution of a sample population of 334 individuals. The age of participant's spans from a minimum of 15 years to a maximum of 39 years, indicating a relatively young cohort. The mean age is 24.26 years, which suggests that the central tendency of this group skews towards early adulthood. This mean age value is useful for understanding the general age profile of the sample, as it provides a single value that summarizes the average age of all individuals (refer to table 1).

Additionally, the standard deviation is 4.212 years, a measure of the amount of variation or dispersion in the age data. A standard deviation of 4.212 indicates that most of the individuals' ages are within approximately 4.2 years of the mean age, either older or younger. This level of variability suggests that while the ages do spread out somewhat, they do not diverge drastically from the average, pointing to a fairly homogeneous age distribution within this group. Overall, these statistics paint a detailed picture of the age characteristics of the sample, highlighting a youthful demographic with moderate age diversity.

The age distribution of the sample population reveals a predominantly youthful demographic. The majority of individuals fall within the 20–29-year age range, with 125 individuals (37.4%) aged 20-24 and 133 individuals (39.9%) aged 25-29. This concentration indicates that over three-quarters of the sample are in their twenties. Smaller proportions are observed in the 15–19-year range, comprising 41 individuals (12.3%), and the 30–34-year range, with 33 individuals (9.9%). The least represented group is the 35–39-year range, with only 2 individuals (0.6%).

Overall, the data highlights a young population, with a significant focus on individuals in their early to late twenties.

TABLE: 02

FAMILY STATUS		
Type	**Frequency**	**Percent**
Joint	110	32.8
Nuclear	224	66.9
Total	334	100.0

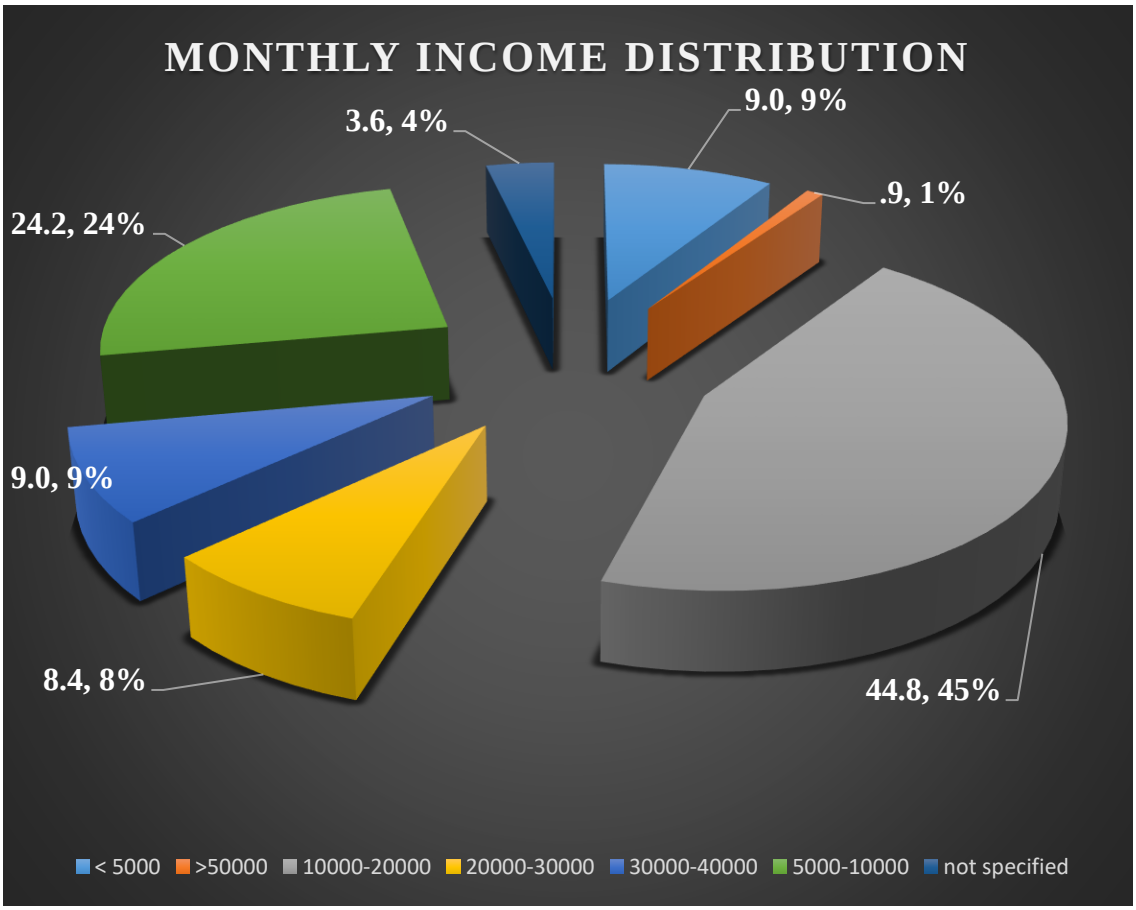
The distribution of two different family structure shown in table:02 types within a given population is shown by the data supplied. In particular, 224 nuclear families make up 66.9% of the total while 110 joint families make up 32.8% of the total. Overall, there are 334 families in the population; nuclear families make up the majority (66.9%) and joint families make up the minority (32.8%).

TABLE: 03

Working Status		
Type	**Frequency**	**Percent**
Housemaker	280	83.6
Student	32	9.6
Working (Contract)	22	6.6

The table 03 shows how a sample of the study population is doing at work. Of the 335 people who participated in the poll, 280, or 83.6%, are housewives. With 32 people, students make up 9.6% of the population, while those working under contract make up 6.6% with 22 people. This split shows that the majority of the population is made up of homemakers, who are followed in size by students and contract workers.

FIG: 3

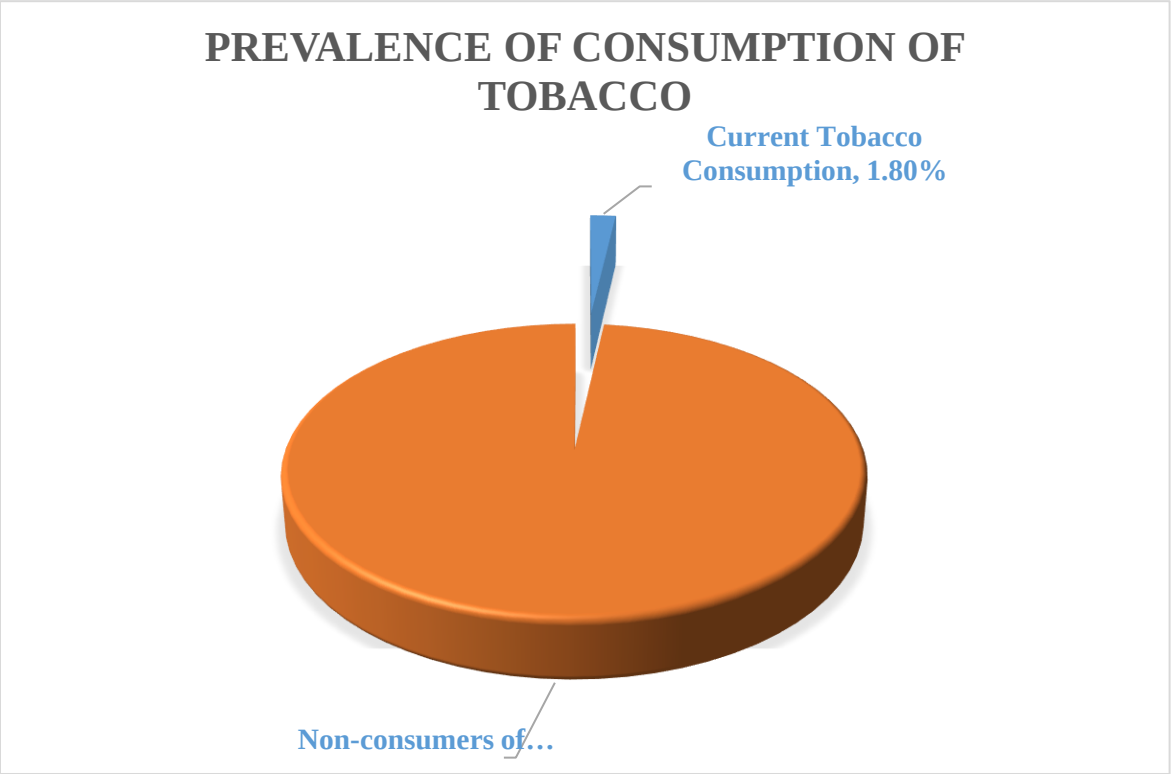


An overview of the monthly income distribution among the population studied is shown by the pie chart. Nearly half of the population, or 45%, earn more than 50,000 a year, making up the greatest segment of the population. At 24%, the next largest group earns between 30,000 and 40,000. A smaller percentage of people make less than 5,000 (8%), between 5,000 and 10,000 (9%), and between 20,000 and 30,000 (9%). Four percent of the population earns between 10,000 and 20,000, while the smallest group—one percent—did not disclose their income. With a sizable majority making over 30,000, this distribution reveals a notable skew towards higher income groups within the population.

The study population's qualification status shows a wide diversity of educational backgrounds. There are 84 persons (or 25.1%) in the largest group who have less education than matriculation. This suggests that a sizeable section of the populace lacks the education necessary for basic matriculation. There is a sizable portion of the population without any formal education, as evidenced by the second largest

group, which consists of 78 people (23.3%).
Sixty-two people, or 18.5% of the sample, are secondary school graduates. This implies that approximately 25% of the population has completed secondary school or another formal education program. Graduates make up 14.6% of the sample; of them, 49 have completed postsecondary education, while 48 persons (14.3%) have not. possess finished their matriculation.
Only 8 people (2.4%) and 1 person (0.3%) in this sample have post-graduate qualifications recorded individually, indicating that high educational achievement is uncommon. Furthermore, 3 persons (0.9%) did not provide their educational background.
All things considered, the data indicates that a sizable fraction of the sample has lower educational levels, the majority having either no formal schooling at all or less than matriculation. Less people have completed higher education, such as graduation and post-graduation, which suggests that this group has a low rate of advanced educational attainment.

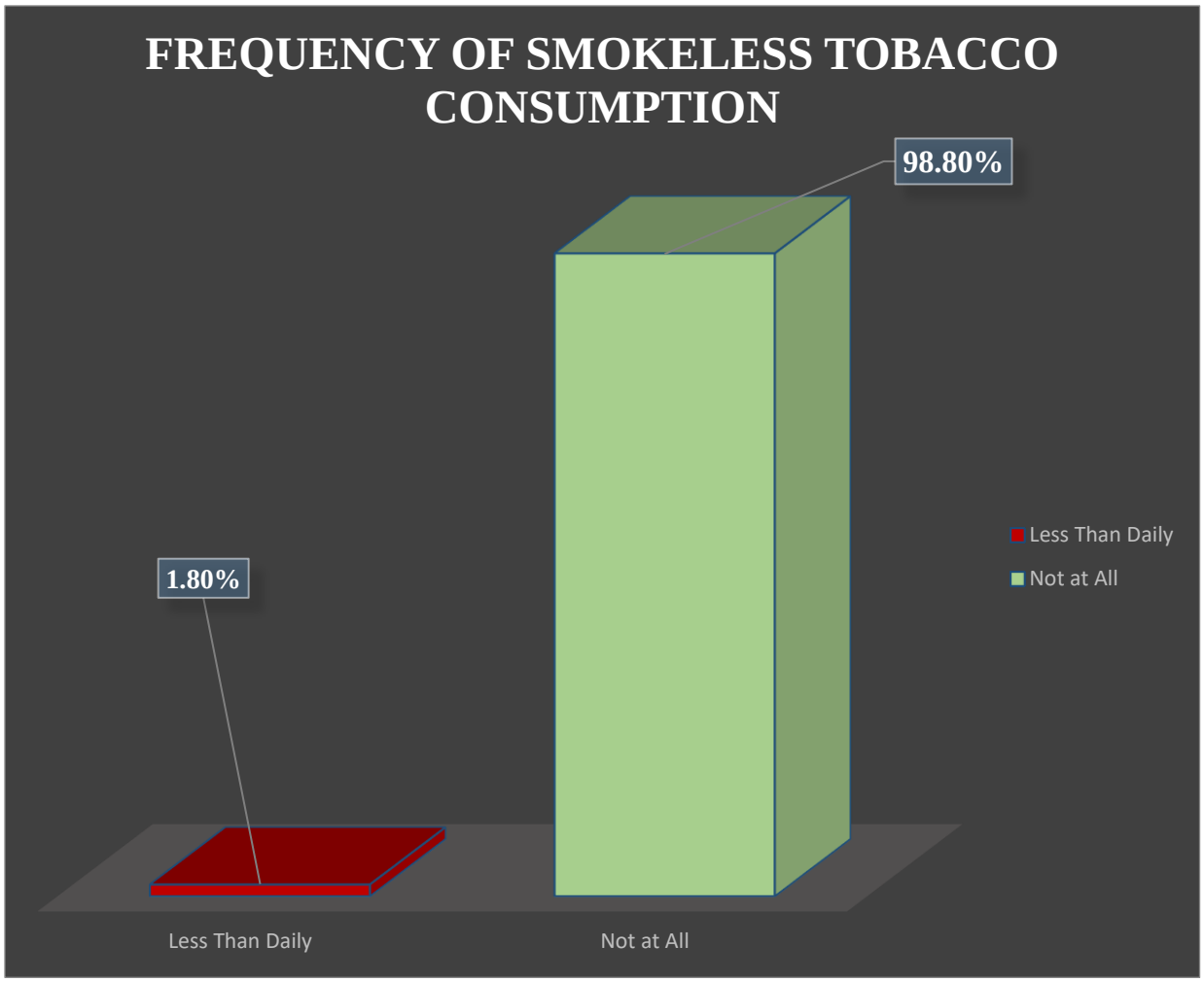
FIG: 4



There is a low prevalence of current users in the sample population according to data on tobacco usage. In particular, 1.80% of the sample's participants currently use tobacco, whilst 98.00% of them do not. This implies that the vast majority of

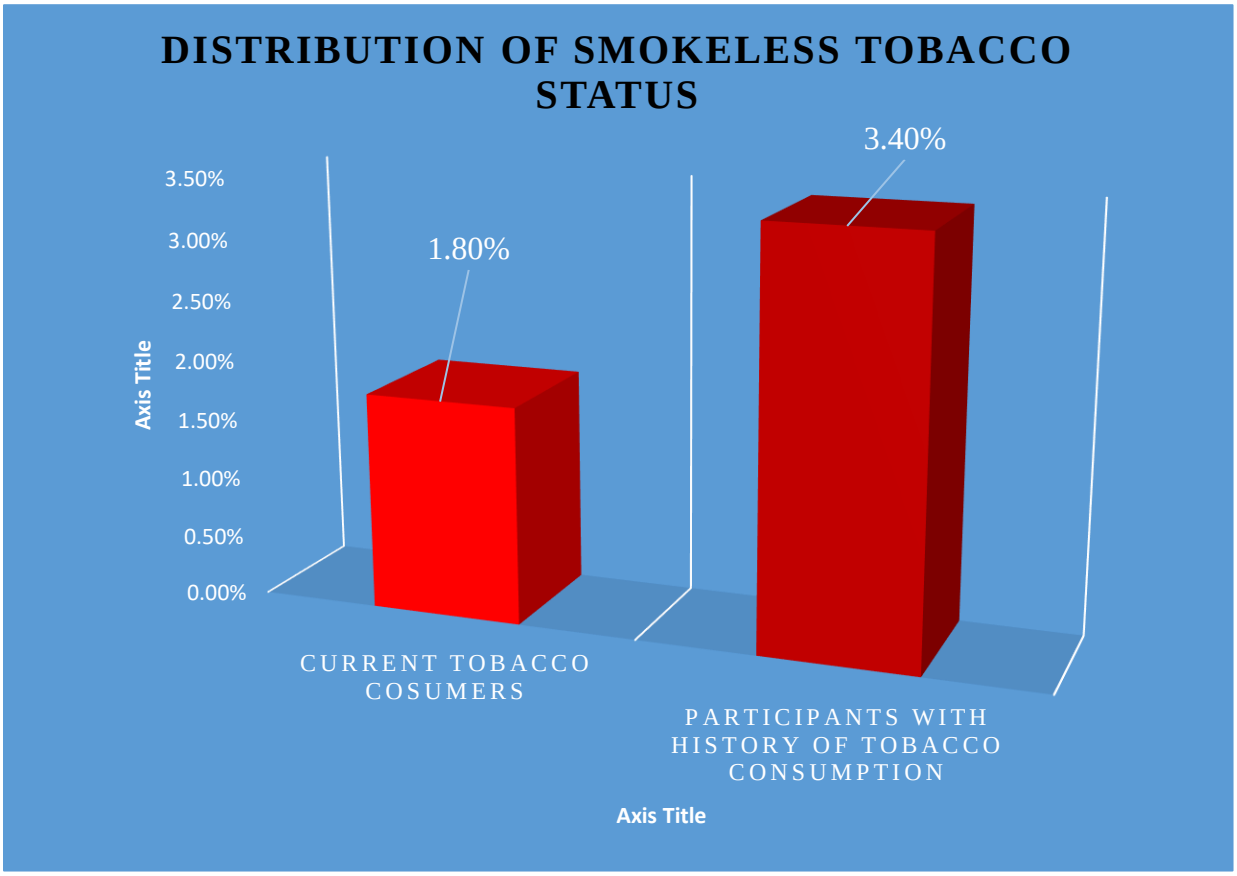
members of this group do not use tobacco, indicating that tobacco usage is quite uncommon among them.

FIG: 5



The given figure 6 depicts that out of the total population who are consuming the tobacco are 1.8% that contributing to the 6 participants of the total population are occasional tobacco consumers, all these participants are exposed to SLT products and none of the participants ST.

FIG: 6



The total expose of the tobacco consumption when assessed we see the distribution the figure 7 presents the following results, the total 6 participants who are current smokers are occasional smokers but had the history of daily consumption of tobacco products in the past while the 11 participants who had the history of tobacco consumption had occasional tobacco consumption habit but now have completely reduced the tobacco consumption, while the all 334 patients who are the 100% of the population are aware of the tobacco ill effects on the ante-natal health, and poor foetal health

4 Discussion

The reproductive age is often undermined against the married age which is ruled out in our study as the participants with the youngest age recorded was 15 years which is the clear indication that the reproductive age must be taken in the consideration in such kind of the study especially in areas like Goyala dairy with mixed socio-demographic distribution, the study conducted by (Shukla et al., 2021, p. 310) considered the reproductive age 15 rather than the married age which is 18 years in India, one of the study conducted by (Gausman et al., 2024), The standardized absolute change in child marriage rates for males across states and Union Territories between 2006 and 2021 varied from -1·3 in Rajasthan to 0·3 in Manipur. Between 2006 and 2021, the number of boy child marriages in four states and Union Territories increased overall. Similar to the decline in child marriage among girls, the prevalence decreased more between 2006 and 2016 than it did between 2016 and 2021. Compared to eight states and Union Territories between 2016 and 2021, only three states and territories experienced an increase in boy child marriages between 2006 and 2016. Out of the 25 states and Union territories that still had data available, 12 (48%), saw a slower rate of decline in child marriage for boys between 2016 and 2021 compared with 2006–16.

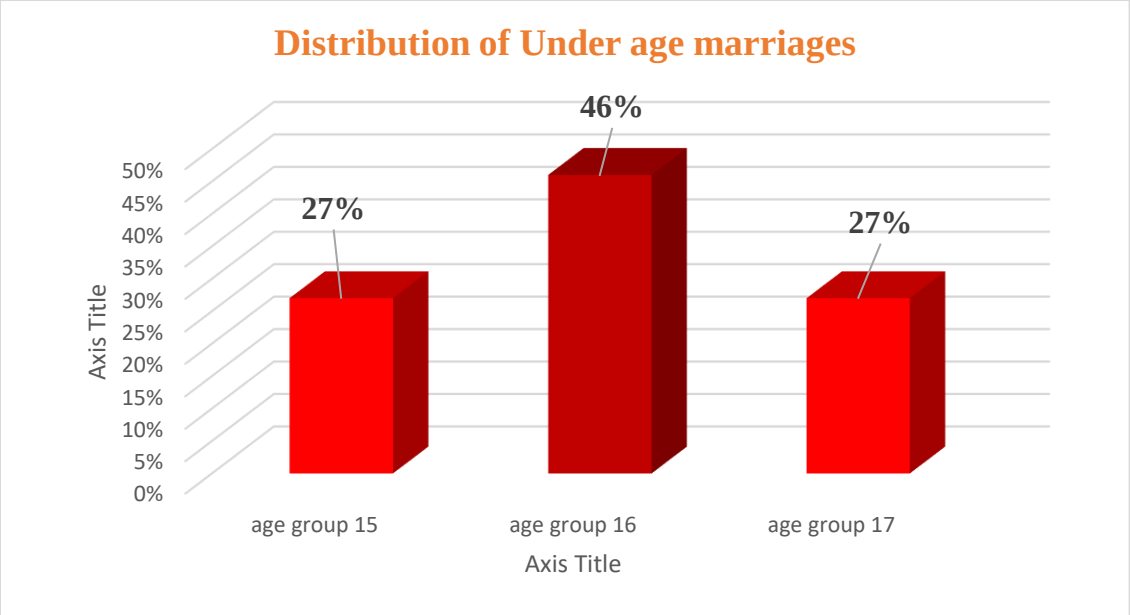
It is necessary to understand that there is marked reduction in below legal age of marriage in India but still there is significant population prone to the underage marriage in both male and female, the reproductive age referred as the age where the women is capable to bear a child(popedadmin, 2018), the Goyala dairy which is located in the south west Delhi caters the mixed population where the prevalence of underage marriage can significantly been appreciated through our study were 15 years of age has been recorded in women who are pregnant contributing to 1.5% of the total study population

Pregnancy is a very crucial period in a women life when she bears a child and the awareness about the factors the will affect her health as well as the foetal health is the major factor that must be taken into the consideration by the public health practitioners when it comes to the increasing the health status of the population, tobacco consumption in any form the serious threat during the antenatal period of the women as the tobacco has the serious effect on the women health and the foetal health as well. There is tobacco consumed in the study population occurs in different forms they are shockable and non- shockable forms, one of the study conducted (Sieminska & Jassem, 2014), the study highlighted that there is a high

potential of the smokable tobacco among girls and women but the low and middle income countries still persist to use the smokeless tobacco especially the middle age women , like chewing the beetle nut or consuming the tobacco for brushing the teeth, these type of practices re also a considerable risk and burden on public health, our study was based on the same findings where the prevalence of the tobacco among the 1.8% (refer to fig 2) there is the considerable amount of women who which is 100% recorded to have been using the chewable tobacco thus proving the dominance of the chewable tobacco over the smokable tobacco in the mixed population like the Goyala dairy population, which represents the mixed strata of the population, now if we refer the (figure 4) there were then significant 11 participant contributing to 3.4% of the total population who had the history of consuming the tobacco and have stopped or reduced its due to the awareness about the ill effects of the tobacco have been the non -smokable tobacco users , these findings suggest total past and current prevalence.

There is a very important finding that there was the under-age marriage that was identified in the study population that was distributed among the 5% of the total participants under the study, they belonged to the age group mostly from 15 to 17-year age with highest 16 year was identified as the married ladies and were taking antenatal care at the health facility.

FIG: 7



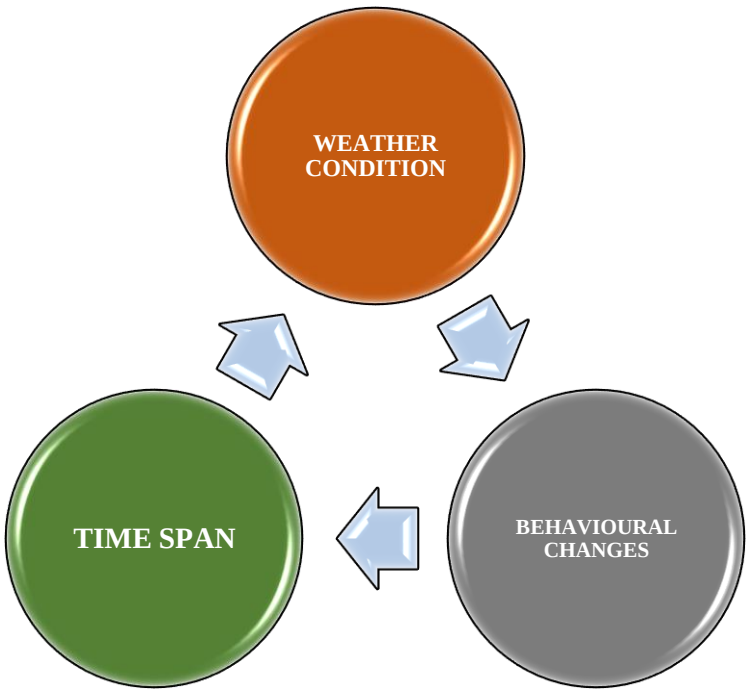
Challenges in the study

The study took place in the scorching heat of the summers in Delhi that was a great challenge, the reduced turn-out rate of the antenatal women was significantly been seen during that time period, the low turn-out rate has been the greatest problem to cover the population calculated into our study.

The study also took place in health facility during the ante-natal period which is only two days in the week, this is a very big challenge as we need to cover maximum participants in those specific periods of time.

The pregnancy is a very important period where there is lot of changes that are seen in the women bearing the child in the womb one of the study conducted by (Cousins-Read, 2013) stated that the ante-natal women are the high risk patient that can undergo serious and severe complications due to the elevated hypertension and leading to the serious complications like miscarriage, so the approach towards the participants required the moderate approach like presence of the ASHAs and ANMs or MOs during the study.

FIG: 8



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8. Conclusion

The MMR are the critical indicator for the pasteurisation of the public health system globally, the low MMR indicates the best healthcare system implemented in the region and the policies thus marking the country and region about the framework in the specific time period. Gestational period is a very crucial period not just for the women but for the entire region and country as the mother bears a child and if the healthcare delivery is not done at this minor level, it may turn out to be the fall of the healthcare system.

What can we see from our study? 3% of the total population see with the prevalence of the tobacco consumption in women taking ante-natal care but what we are ignoring is the fact that 3 % of the total population is under the high risk for contributing to the poor foetal outcome. Total of the 6 participants under the study might turn up with the complications like low birth weight, very low birthweight and miscarriages,

The prevalence of the smokeless tobacco is the main cause of the prevalence which is tough to quit the areas of such socio-economic distribution are seen with such critical findings like the pan Gumti and independent vendors selling the SLT products every corner of the areas that has to be checked in.

We need to understand that the elevated demand of the if met will cause such event to occur like in our case we can see that there is enormous part of the population are exposed to the smokeless tobacco products through the enormous channels of the Gumtis and the vendor chains that are distributed widely, we need to understand the greater number of the Gumtis and shops presents with a greater number of these outcomes, that has to be checked every time to reduce the demand and supply through policies,

The tobacco consumption has to be taken under the consideration through a channel of the awareness programs that has to be implemented throughout the area with the collaboration of all the healthcare workers in sustainable partnership with the community together to aware the masses about the ill effects of the tobacco on the pregnancy.

The tobacco consumers should not be taken as a discrimination aspect of the community rather a proactive approach is required to help each other to bring out this problem and fight in a collaborative way. This can be done at both micro,

Marco and Meso level and implement to reduce the practices, the understanding of the cause of the prevalence is more important than reducing the current events.

8.1 Recommendations

1. It is necessary for the policy making in the accessibility of the tobacco products in the market, especially the cigarettes, pan and gutkas are available for the general public, there must be a check through the illegal vendors without the trade licencing, there must be restrictions in the new vendors establishing new shop in the market. This can be done by not giving permission in the market to establishing new vendors on selling the tobacco product. There must be a strict policy in the selling of the products of that kind. These include the smoked and smokeless products.
2. There is an intense interaction and intervention of the healthcare workers with the community butt needs to be further strengthening to be done by more awareness and programs implementation, demonstration of the skits programs to make the people aware about the smoking and tobacco consumption in the community. The distribution of the catalogues and involvement of the school official to make the community aware of the ill products needs to be further implemented to completely eradicate the 3% prevalence in women taking antenatal care to completely reduce the MMR in the community.
3. The more study must be implemented in the community to understand the cause to effect that is causing the tobacco consumption. There must be a clear check on the regular basis at quarterly period to analyse the prevalence of the consumption of tobacco among women to counsel and structure a better frame-work study to establish the sustainable outcome.
4. Apart from the counselling there must be also check on the very crucial factor that is prevailing in the community that is the under-age marriages that is another important cause of the disrupted MMR, there must be check and counselling of all the adolescent women in the community awaking them about the legal marriage age is not just a compulsion of age limit implemented by the government rather a safe house for a pleasant outcome of the mother and child health,
5. There also must be a reporting provision at the dispensary about the second-hand smoking exposure during the ante-natal period by the ante-natal women to track the reported cases of the second-hand smoking exposure, so that a framework can be implemented at all level to council the family

member about the ill effect of tobacco on the women exposed to the indirect smoking.

6. A collaborative partnership of the locals, healthcare workers and policy makers must come together to form a strong stakeholder group to implement the changes recommended to completely eliminate the 3% prevalence.

8.2 NATIONAL TOBACCO CONTROL PROGRAMME

Concerning the Program
In order to

(i) raise public awareness of the negative effects of tobacco use,

(ii) decrease the production and supply of tobacco products, and

(iii) ensure that the provisions of "The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003" (COTPA) are effectively implemented, the Indian government launched the National Tobacco Control Programme (NTCP) in the 2007–08 fiscal year.

(iv) assist individuals in quitting smoking, and

(v) Support the application of tobacco preventive and control techniques recommended by the WHO Framework Convention on Tobacco Control.

The 11th Five Year Plan saw the implementation of the NTCP in 21 states and 42 districts. To maintain the momentum that the NTCP has created

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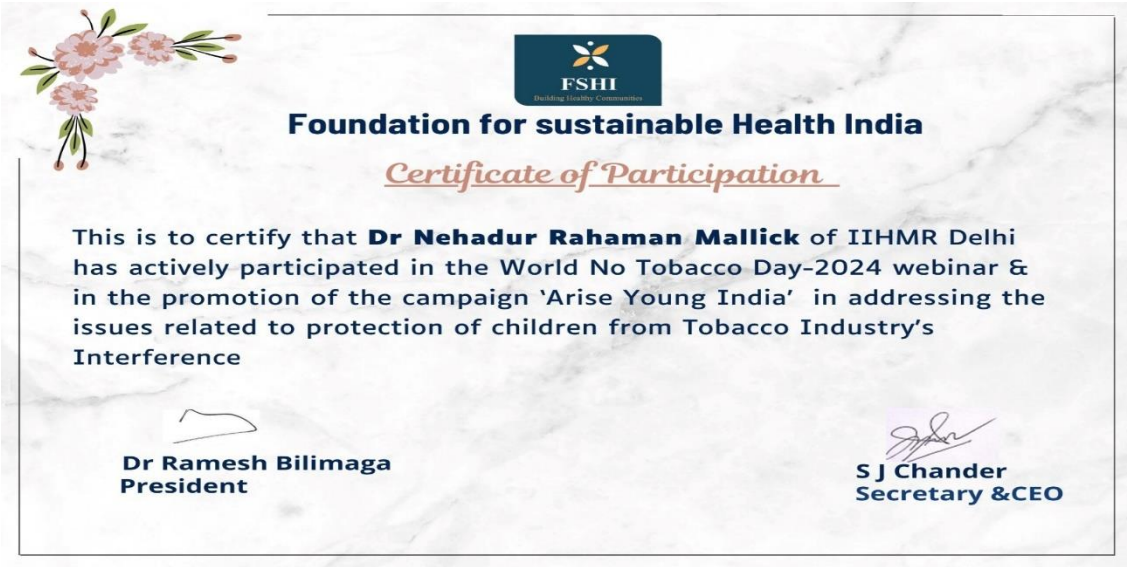
MY CONTRIBUTION FOR THE CESSETION OF TOBACCO CONSUMPTION AND TOBACCO AWARENESS- ARISE YOUTH INDIA

Arise youth India in collaboration with chain of students of medical, dental, homeopathic, Arvada and media schools like Government medical college, Government Dental College, Christ college and International Institute of Health management research came at one platform to collaborate together to expose the dark side of the role of the tobacco industry in encouraging the youth towards the tobacco consumption and role of social media to encourage the masses towards the tobacco consumption


FSHI

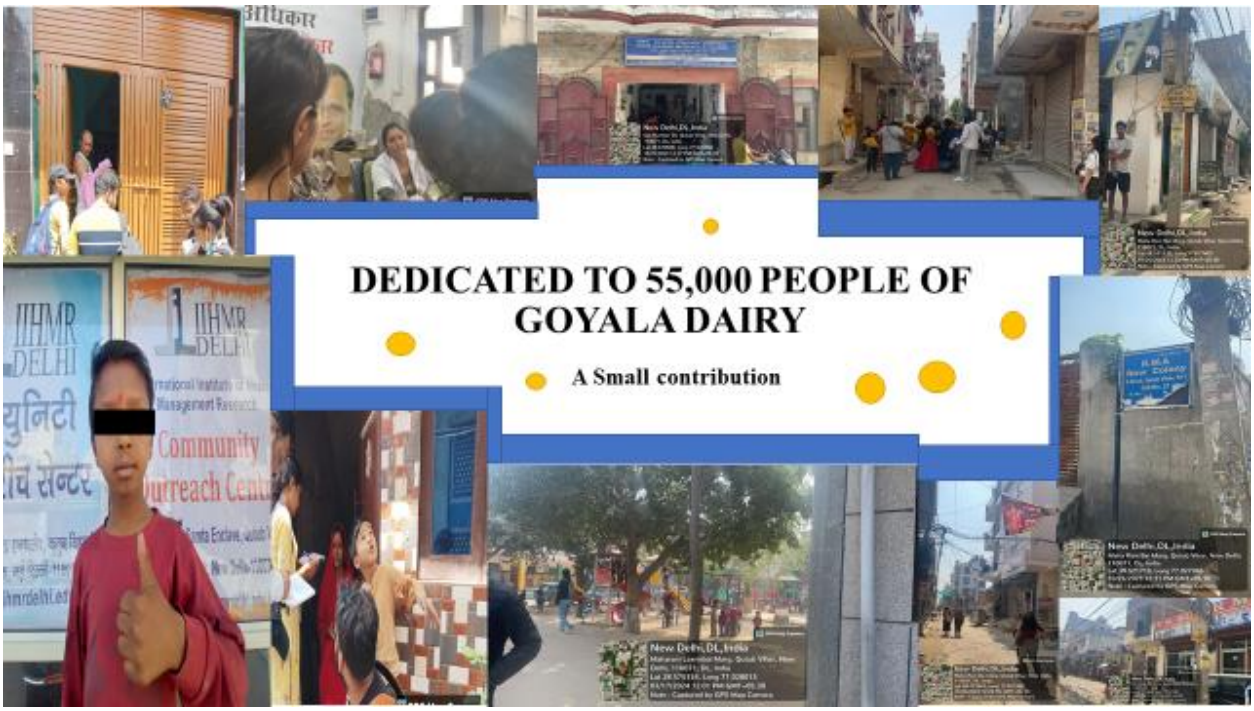
Foundation for sustainable Health India

Certificate of Participation

This is to certify that **Dr Nehadur Rahaman Mallick** of IIHMR Delhi has actively participated in the World No Tobacco Day-2024 webinar & in the promotion of the campaign 'Arise Young India' in addressing the issues related to protection of children from Tobacco Industry's Interference

Dr Ramesh Bilimaga
President

S J Chander
Secretary &CEO



IIHMR DELHI

Pictural journey

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