

## Self- Reported Perceptions on Tobacco Related Health Consequences among Women Tobacco Users

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#### Abstract

##### Background:

The use of tobacco by the general population is widely prevalent all over the world including India. Like other parts of the country, it is highly responsible for many of the avoidable diseases and pre-mature deaths in the North-eastern states of India due to the consumption of both smoke and smokeless forms of tobacco by men and women. Mizoram state is one among the topmost in the cancer atlas at the national and international level as tobacco is one of the important contributing factors.

##### Methodology:

The present study was conducted in the year 2012 among 350 Mizo women tobacco users in Aizawl district, Mizoram. The respondents are healthy, in the reproductive age group between 13 years – 45 years. The study comprised of qualitative and quantitative approaches and data was collected through semi structured interview schedule.

##### Aim:

The present study attempts to understand the perceptions of tribal women on health consequences of tobacco use, the correlation between tobacco use and occurrences of major health problems, minor health complaints and the severity of minor health complaints.

##### Findings:

The results indicate that women perceived a number of effects of tobacco use. Majority of the respondents understand that pregnancy related complications, respiratory ailments, oral & oesophagus cancer, and dental problems are due to tobacco use. Also, minor health complaints like fatigue, cough, etc are experienced by the respondents.

**Keywords:** Addiction, Nicotine, Global Health, Environment, Non-cigarette Tobacco Products.

## I. Introduction

The recent epidemiological transition from communicable to non-communicable diseases due to rise in tobacco use may pose a serious challenge on the health care systems and force hard decisions on the allocation of scarce national resources. The prevalence of smoking has been slowly declining in the developed countries over the past 20 years, smoking prevalence rates have been steadily increasing in developing countries. It is projected that tobacco-attributable deaths will rise from 5.4 million in 2005 to 8.3 million in 2030 with 80% of these additional deaths will be occurring, essentially, in developing nations [1]. It is causing new morbidity patterns of coronary artery diseases, cancers and chronic obstructive pulmonary diseases (COPDs), which is the major result of smoking in adults. There is a dose dependent relationship of many of these diseases with smoking [2]. Tobacco-attributable deaths are projected to further decline by 9% between 2002 and 2030 in high-income countries, but expected to double from 3.4 million to 6.8 million in low- and middle income countries [3]. A rise in tobacco use by young schoolgirls is an alarming signal because those who start as children find it hardest to quit. The factors for initiating smoking include peer approval, low socio-economic status, poor academic achievement, poor self-image, and susceptibility to influence of others, while the advertising images project smoking as pervasive and glamorous.

There is no entirely safe way to use tobacco, regardless of whether it is smoked, chewed, applied on gums, or mixed with other ingredients. Among all types of tobacco use, cigarettes account for the largest share of manufactured tobacco products in the world (96% of total value of sales) [4]. Apart from smoke forms, smokeless tobacco is now being consumed by increasing numbers of young women and men. Because quitting is so difficult, any real chance to achieve a smokeless society rests on our ability to persuade young people not to take up smoking. As with other forms of substance abuse, prevention may be our best line of defense [5].

It is estimated that 22% of women in developed countries and 9% in developing countries smoke tobacco. Cigarette smoking among women is declining in developed countries but is still increasing, in many Asian and Eastern European countries. Compared with earlier decades, the number of young women with smoking habit in several Asian countries is alarmingly increasing, recently (Mackay and Eriksen, 2002). The low rate of tobacco use among women in many countries reflects social traditions and women's limited economic resources rather than health awareness (Brundtland, 1998) [6].

Women have specific health risks and consequences of smoking that is unique pertaining to their reproductive function. The health risks of smoking among women are mainly osteoporosis, infertility, cervical cancer and pregnancy related problems (miscarriage, low birth weight, ectopic pregnancy, perinatal mortality and Sudden Infant Death Syndrome (SIDS)) [7]. As smoking is a major cause of coronary heart disease, among women who are below 50 years, the majority of coronary heart disease is attributable to smoking [8]. Cigarette smoking is a primary cause of chronic obstructive pulmonary disease (COPD) among women, and the risk increases with the quantity and the duration of smoking [9]. Moreover, maternal smoking has also been found to be strongly associated with SIDS, which is the leading cause of death in children 1 to 12 months old. Babies exposed to cigarette smoke also incur an increased risk of bronchitis and pneumonia [10].

The two ethnographic studies conducted in 2 consecutive years in 2000 to 2001 and 2002 to 2003 in Southwestern university, USA, found that females who engage in other risky behaviors—including

marijuana use, binge drinking, and having multiple sex partners—have been found to be more likely to smoke than males [11].

The health consequences of tobacco use by women also encounter major oral health problems like change in the color of tooth, toothache, loss of teeth, etc. Incidences of tuberculosis (TB) and lung cancer have been strongly proved to be correlated with the history of smoking habits of the patients. Occurrence of other cancers like mouth, oesophagus and stomach cancers are more among tobacco consumers. The global evidence reported by International Agency for Research on Cancer (IARC) states that tobacco smoking is the major cause of cancer and in particular associated with lung cancer, cancers of oropharynx and hypopharynx, oesophagus, stomach, liver, pancreas, larynx, nasal cavity, urinary bladder, kidney and cervix, and myeloid leukemia [12].

Globally, the ten leading sites of cancer in females mentioned are lung, stomach, cervix uteri, breast, rectum, liver, oesophagus, thyroid, ovary and colon. While the ten leading sites of females' cancer in Aizawl district, India, are cervix, uteri, lung, stomach, breast, rectum, Non Hodgskin lymphoma (NHL), liver, thyroid, and pancreas. The total incidences of tobacco related cancer (TRC) among the females in Mizoram are occurring at three major loci viz. lung (69.8%), oesophagus (9.3%) and mouth (6.1%) [13].

In India, the study on *beedi* smoking, smokeless tobacco use, and cancer incidence has confirmed that both *beedi* smoking and smokeless tobacco use are no less hazardous than cigarette smoking [14]. Similarly, *beedi* smokers are reported to have higher death rates compared to non-tobacco users. The case-control study conducted between 1995-2000 consisting of 43,000 adult male deaths with 35,000 living controls, from urban Chennai and rural areas – (Viluppurum district) of Tamil Nadu, South India. In the urban study area, 59.6% of the men between 25 and 69 years of age who died had been smokers along with 52.2% in the rural areas as against to 39 % of non smokers of corresponding age [15].

In addition, tobacco use especially smoking is related to cardiovascular diseases (CVD) such as chronic heart disease (CHD-heart attack), angina (chest pain), sudden cardiac death (SCD), arrhythmias (electrical disturbances) are the largest contributor to tobacco related deaths besides it accounted for 29.2% of total global deaths according to the World Health Organization Report (2003) and also accounted for 80% of death that has taken place in low and middle income countries. The major constituents of tobacco smoke which are responsible for the CVD are combustion products of nicotine and carbon monoxide. In women below the age of 50 years, the majority of CHD is attributable to smoking and the risk increases with the number of cigarette smoked and the duration of smoking [16].

COPD, bronchial asthma, respiratory infections and these problems are reported by non smokers who are exposed to second hand smoke. The relationship of COPD with tobacco smoking seems to be independent of the type of smoking product like cigarette and *beedis or chuttas* (cheroot). The prevalence of asthma and its relationship to smoking is being studied by ICMR and the analysis of the records of 51,504 individuals has revealed an increased risk of asthma in smokers [17].

In India, pulmonary tuberculosis (TB) is a highly prevalent disease and one of a major cause of death. TB occurs predominantly among the socially and economically disadvantaged people. Smoking decreases the immune defenses and increase susceptibility to pulmonary TB. It is found that the heavier the smoking, cigarettes or *beedis*, the greater the prevalence of TB among smokers. The National Family

Health Survey (NFHS)-II, 2000 has conducted survey among a representative sample of 492,197 persons in 92,486 households in India. The survey results indicated that the overall prevalence of TB in India was 0.6 % in rural areas and 0.4% in urban areas. The prevalence was 0.62% among males and 0.46% among females [18].

The other important aspects of tobacco use include declining reproductive health. Smoking harms the sexual and reproductive health of both men and women. The effects of maternal smoking during pregnancy encompass decreased foetal growth, spontaneous abortions, foetal death, and pregnancy related complications including preterm delivery [19]. Cigarette smoking by pregnant women has resulted in the infant low birth weight (LBW) and women smokers are less likely to breastfeed their infants than non-smoking women. Further, maternal smoking has been found to be strongly associated with SIDS. Babies exposed to cigarette smoke also incur an increased risk of bronchitis and pneumonia [20].

The consumption of tobacco in all forms or types by women is globally increasing and women from India have contributed small yet an increasing fraction of the total. In some parts of India, tobacco use by women is not socially sanctioned. While, for traditional Mizo society in North-Eastern India, tobacco and women have been associated with the social custom which requires the housewife to serve 'tobacco smoke saturated aqueous solution' (known locally as *tuibur*) to the husband besides visitors. *Tuibur* has been in use since the nineteenth century; definite recording of its use is available since 1907. Men and women alike sip *tuibur* although, in the past, it was said to be predominantly used by women [21].

## II. Methodology

The present study on "*Health consequences of tobacco Use: Perceptions of Mizo women*" is conducted among 350 Mizo women tobacco users of reproductive age group in Aizawl District, Mizoram, India, 2012. The perceptions of the respondents on health effects of consumption of various tobacco products was assessed for the potential cause of 21 disease conditions like Cancers - oral, oesophagus, cervical, breast, stomach, and lung cancer; COPD - respiratory inflammation, respiratory infection, chronic bronchitis, breathing difficulties; cardiovascular diseases, cataract, low blood pressure, stroke, impaired reproductive attributes besides oral hygiene.

## III. Results and Discussion

The present study has shown that half of the respondents aware of the correlation between the tobacco use and tobacco related health problems of women like oral cancer, pregnancy related, respiratory infection, oesophagus cancer, dental problems, reduced memory power and COPD (Table 1). It is also observed that the respondents from the rural areas have better awareness than the respondents belonging to the urban communities.

Table 1: Perceived Health Effects Due to Tobacco Use

Sl.No	Health Effects	Locality		Total n =350
		Rural n = 105	Urban n = 245	
1	Oral Cancer	97(92.4)	198(80.8)	295(84.3)
2	Pregnancy related	87 (82.9)	172 (70.2)	259 (74.0)
3	Respiratory infection	97(92.4)	152(62.0)	249(71.1)
4	Oesophagus cancer	94(89.5)	139(56.7)	233(66.6)
5	COPD	94(89.5)	96(39.2)	190(54.3)
6	Dental problems	84(80.0)	101(41.2)	185(52.9)
7	Cardiovascular diseases	78(74.3)	92(37.6)	170(48.6)
8	High cholesterol level	55(52.4)	112(45.7)	167(47.7)
9	Still birth	80(76.2)	80(32.7)	160(45.7)
10	Stroke	70(66.7)	75(30.6)	145(41.4)
11	Disability	58(55.2)	72(29.4)	130(37.1)
12	Infertility	56(53.3)	65(26.5)	121(34.6)
13	Cervical cancer	43(41.0)	65(26.5)	108(30.9)
14	Breast cancer	30(28.6)	56(22.9)	86(24.6)
15	Stomach ulcer	14(13.3)	58(23.7)	72(20.6)
16	Stomach cancer	0(0.0)	64 (26.1)	64(18.3)
17	Lung cancer	0(0.0)	45(18.4)	45(12.9)
18	Breathing problems/asthma	26(24.8)	18(7.3)	44(12.6)
19	Low blood pressure	0(0.0)	10(4.1)	10(2.9)
20	Cataract	2(1.9)	8(3.3)	10(2.9)
21	Liver problem	1(1.0)	1(0.4)	2(0.6)

Source: Computed Figures in parentheses are percentages

Among the listed major health problems (Table 1), majority of the respondents knew the association between the tobacco use and oral cancer and further considered that it is mainly due to the consumption of various smokeless tobacco products. As high as 3/4<sup>th</sup> of the respondents knew that the use of both smoke and smokeless tobacco *leads to pregnancy related problems* like still birth, pre-mature birth, and delay of pregnancy. It is observed that, the respondents did not aware of the fact that tobacco use could also affect the reproductive health of men and can lead to infertility in men. However,

more than 2/3<sup>rd</sup> of the respondents also have knowledge on the association between tobacco use and respiratory infections while majority of the respondents believed that respiratory infections are caused alone by smoking. Also, oesophagus cancer is one of the most prevalent tobacco related cancer (TRC) among males and females in the Mizoram and two-thirds of the respondents have knowledge on the association between tobacco use and oesophagus cancer.

The relationship between tobacco use and Chronic Obstructive Pulmonary Disease (COPD) is not very well understood by the public (Table 1). The awareness on tobacco use and COPD is limited only to asthma. On the other hand, due to the prevalence of smoking in both the genders, the case of COPD is commonly registered and only half of the respondents have acknowledged the association between smoking and respiratory infection, bronchitis in adults. However, most of them thought that the incidence of asthma would be affecting only the aged person.

In contrast to its effects on the other parts and organs of the body, the effects of tobacco use and mouth cancer has increasingly drawn public attention. The uses of tobacco could cause a wide spectrum of oral mucosal alterations or lesions depending upon the types of tobacco products use, the ways of administering tobacco, the frequency of tobacco use and the entire duration of tobacco use. In India, majority of oral cancer condition is caused by the use of tobacco. However, the knowledge on tobacco use leads to diverse dental problems and the longitudinal effects on oral cancer are not much known by the respondents. Therefore, half of the respondents knew that tobacco use can lead to tooth decay, infection on the gums, shaking of teeth, staining of teeth and changing teeth colour due to smokeless tobacco use (Table 1). So, in-depth knowledge on the relationship of tobacco use and oral health is important to emphasize, though it is not known among the majority of the respondents.

Also, the association between tobacco use and cardio vascular disease (CVD) is increasingly recognized by the respondents. Yet, any death case without proper diagnostic evidence or proof was easily presumed and hence labeled as cardiac arrest (heart attack). The incidence of CVD is never correlated with the consumption of smokeless tobacco products by the respondents. Yet, nearly half of the respondents recognized that a wider spectrum of cardio vascular diseases such as ischemia (chest pain), sudden cardiac death and arrhythmia could be caused by smoking.

More than half of the respondents perceived the possibility of getting respiratory ailments, dental problems, and head & neck cancer (Table 1). In addition, less than half of the respondents perceived that tobacco use can aggravate the cholesterol level, stroke and even physical disability such as cataract. Further, the relationship between tobacco use and the risk of still birth, infertility and cervical cancer are also perceived by less than half of the respondents. Moreover, only few of the overall respondents could understand and perceive the relationship between tobacco use and breast cancer, stomach cancer, lung cancer, liver disorders, and low blood pressure. However, the impact of consumption of tobacco products on almost all internal organs of the body and the tobacco related diseases are not well perceived by the respondents.

It is also interesting to probe the perceptions on minor health complaints that could occur frequently due to tobacco use. The respondents, both from the rural and urban milieu more or less perceived that

skin problems (Table-2) mainly pimples, acne, skin rashes are highly accompanied by tobacco consumption. Some of the respondents indicated that they have developed pimples after taking smokeless tobacco products like *sahdah* (dry processed tobacco leaves as coarse powder that is mixed with lime to be applied at the lower buccal space) and *gutkha* (a mixture of areca nuts and tobacco powder) products.

**Table 2: Perception on Minor Physical Health Complaint**

Sl.No	Problem	Locality		Total n = 349
		Rural n = 105	Urban n = 244	
1	Skin Problems	104 (99.0)	233 (95.5)	337 (96.6)
2	Headaches	104(99.0)	232(95.1)	336(96.3)
3	Stomach Pain	104(99.0)	231(94.7)	335(96.0)
4	Acute Ulcer	104(99.0)	230(94.3)	334(95.7)
5	Physical weakness	104(99.0)	230(94.3)	334(95.7)
6	Cough	104(99.0)	225(92.2)	329(94.3)
7	Tiredness	104(99.0)	226(92.6)	330(94.6)
8	Body pain & Aching	104(99.0)	225(92.2)	329(94.3)
9	Constipation	104(99.0)	223(91.4)	327(93.7)

**Source: Computed Figures in parentheses are percentages**

Majority of the respondent perceived that minor health complaints such as headache, stomach pain, acute ulcer, physical weakness, cough, tiredness, body pain and aching and constipation and occurrences of these complaints are induced by tobacco use (Table 2). In addition, the ranking of occurrence of minor physical health complaints associated with tobacco use has shown that there are no great differences on the opinion of respondents belonging to, both urban and rural areas. However, using of tobacco is found to be highly significant for occurrences of the above minor health complaints.

The study has further probed the actual severity of occurrence of the listed minor physical health complaints that are encountered during tobacco use (Table 3). So, the frequency of occurrence of minor health complaints is assessed by considering 9 health problems like acute ulcer, stomach cramp, headache, physical weakness, cough, fatigue, skin problems, constipation, joint pain and body aching. The respondents were asked to rank these complaints in terms of severity. To arrive at a comprehensive order of severity of incidence of the minor health complaints the ranks 1 to 9 were reversed (RANK was assigned 9 while rank 9 was assigned 1). The items which were not ranked were assigned zero scores. The mean scores of all the items (problems) were obtained and thus the order of severity of occurrence of minor health complaints is obtained. Kendall's Coefficient of Concordance is used to assess inter ranker agreement for rural, urban and total sample. The coefficients are all significant and show low level of agreement in the ordering of severity.

Table 3: Severity of Occurrence of Minor Health Complaints: Mean Ranks

Sl.No	Health Complaint	Locality				Total n = 349	
		Rural n = 105		Urban n = 244			
		Mean	Rank	Mean	Rank	Mean	Rank
1	Acute Ulcer	5.8	2	7.1	1	6.7	1
2	Stomach Pain	7.2	1	6.4	2	6.6	2
3	Headaches	5.3	4	5.9	3	5.7	3
4	Physical Weakness	5.4	3	5.8	4	5.7	3
5	Cough	5	7	5.6	5	5.4	4
6	Tiredness	5.1	6	4.7	6	4.8	5
7	Skin Problems	2.9	9	4	7	3.7	6
8	Constipation	5.2	5	2.6	8	3.4	7
9	Body pain & Aching	3.1	8	2.9	9	2.9	8
<b>Kendall's Coefficient of Concordance</b>							
	Kendall's W	0.23**		0.33**		0.26**	
	Chi-Square	196.02		646.85		727.62	
	Df	8		8		8	
	Asymp. Sig.	0		0		0	

Source: Computed \* P < 0.05 \*\*P < 0.

While ranking the severity, few of the respondents are severely affected by acute ulcer and this condition is more common among the respondents belonging to urban community as compared to the respondents from rural community (Table 3). In addition, some of the respondents using one or more tobacco products known as dual users also experienced recurrent incidences of stomach ulcer related stomach pain. All these facts accompanied with improper dietary habits may further increase the risk. These are likely to be highly aggravating stomach ulcer apart from using tobacco. It is also important to report that the traditional Mizo food varieties depending upon the seasonal availability like sticky rice, bamboo shoot, corn, *zawngtah* (a flavorful bean), *chingit* (a herb rich with alkaloids), *bai* (a soup made with leavy vegetables along with a mixture vegetables and baking soda), *khanghu* (a pungent smelling herb with thin leaves), *thingthupui* (a pungent herb), *sa-um* (fat extract from pork meat), and *bawl* (a cooked rice meal mixed with *sa-um*, salt and baking soda) which are strongly flavoured, possessing pungent smell and mostly considered unpalatable (due to the food preparation methods) by the younger generation. Therefore, intake of all these traditional foods, in addition being a tobacco user, may leads to acute ulcer. Finally, it was reported that respondents belonging to the urban community are having much less physical activities compared with respondents belonging to the rural communities. Secondly, *stomach pain* is another severe minor health complaint and respondents assumed mainly due to high intake of *paan* (betel leaves with areca nut) and *paan* with *zarda* (betel leaves & areca nut mixed with tobacco powder) accompanied by less intake of water. The incidence is higher among the respondents belonging to the rural areas as compared to the respondents belonging to urban areas and less intake of water is also observed among the respondents from the rural areas. The greater intake of

smokeless tobacco products in urban areas could be positively associated with stomach ache. Thirdly, *headache* is prevalent among both rural and urban respondents with a mean value of 5.7 which is similar to physical weaknesses that is encountered by the respondents. These minor health complaints could have also happened due to other factors. As stated earlier, it is also interesting to note that aforementioned cultural practices could be potential determinants of the lifestyle disorders of the Mizo women, reported here.

Moreover, regular use of tobacco is strongly assumed to be highly responsible for the said health complaints. While, the mean value for *cough* is 5.4 and the urban respondents have more of this complaint which could be due to the dust produced by tobacco products. Apart from these the mean value for tiredness (4.8), skin problems (3.7), constipation (3.4) and body pain and aching (2.9) are also reflected and the relationship between tobacco use and these minor health complaints are observed.

It is relevant to understand the perceptions of Mizo women tobacco users by considering the higher intake of smoke and smokeless forms of tobacco products by Mizo women which is reflected in the national level survey like *National Family Health Survey – III (2005-2006)*, *Global Youth Tobacco Survey, India (2011)* [22], *Global School Personnel Survey, India (GSPS)* [23], *2006 and the report of Population Based Cancer Registry (PBCR) on the incidences of Female Tobacco related Cancers* and the overall mortality due to tobacco use.

In summary, the present study has explored the perceptions of the Mizo women tobacco users by assessing their knowledge on the harmful health consequences that is related to tobacco use, assessment of perceptions of the respondents specifically on minor physical health complaints which they related with regular use of tobacco. This particular attempt has been made because the respondents had an opinion that these minor physical health complaints commonly occurred among all the tobacco users and they need not consult physician. The study also explored the actual severity of occurrence of these minor physical health complaints encountered by the respondents. Therefore, the results show that the minor health complaints of the respondents are occurring with severe intensity and the quantity of tobacco products is highly responsible for it, in their opinion. The explorations on the perceptions of the respondents on the above mentioned health problems shows that there is no wide differences between the perceptions of the respondents belonging to urban communities to that of the respondents belonging to rural communities.

In conclusion, the evolving cultural practice, beliefs, perceptions and knowledge on the adverse health effects of tobacco use need to be ascertained. Hence, the minor health complaints of the respondents especially stomach pain, acute ulcer, headache, and physical weaknesses and fatigue is correlated with tobacco use. However, the respondents neglected the relationship between tobacco consumption and their physical condition while blaming their medical conditions with other mundane reasons. While ranking the major health consequences associated with tobacco use has shown that the incidences of TRC, COPD, CVD, respiratory infections and effects on reproductive health are commonly acknowledged and a limitations of awareness on tobacco use and disabilities, strokes, high cholesterol, hypertension and premature cataract is observed in the present study.

## List of Abbreviations

- IV. COPD- Chronic obstructive pulmonary diseases
- V. SIDS- Sudden Infant Death Syndrome
- VI. TB – Tuberculosis
- VII. IARC - International Agency for Research on Cancer
- VIII. NHL - Non Hodgskin lymphoma
- IX. TRC- Tobacco related cancer
- X. CVD – Cardiovascular diseases
- XI. CHD- Chronic heart disease
- XII. SCD - Sudden cardiac death
- XIII. ICMR – Indian Council of Medical Research
- XIV. NFHS -The National Family Health Survey II
- XV. LBW - Infant low birth weight
- XVI. GYTS- Global Youth Tobacco Survey,
- XVII. GSPS - Global School Personnel Survey,
- XVIII. PBCR- Population Based Cancer Registry (PBCR)

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**Note:** There are 23 references arranging in alphabetical order. The second column indicates the position of referencing in the main text and the main text is containing the same number.