

A survey on Socio-demographic and Health status of Tribal community of Bangladesh: Santals

Submitted By
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ID: 2011-3-70-005



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A survey on Socio-demographic and Health status of Tribal community of Bangladesh: Santals

A dissertation submitted to the Department of Pharmacy, East West University, in partial fulfillment of the requirements for the degree of Bachelor of Pharmacy.

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DEDICATION

This Research Paper Is Dedicated To My Beloved Parents, Who
Are My Biggest Inspirations....

DECLARATION BY THE CANDIDATE

I, Nawfel Abdullah, hereby declare that this dissertation, entitled **“A survey on Socio-demographic and Health status of Tribal community of Bangladesh: Santals”** submitted to the Department of Pharmacy, East West University, in the partial fulfillment of the requirement for the degree of Bachelor of Pharmacy (Honors) is a genuine & authentic research work carried out by me. The contents of this dissertation, in full or in parts, have not been submitted to any other institute or University for the award of any degree or Diploma of Fellowship.

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ABSTRACT

Purpose: There is lack of evidence based information particularly in Bangladesh about the status of health and disease condition of different tribal community, especially about Santals. The study was performed so that the critical aspect and condition of health of the Santals along with their socio-demographic status has been revealed.

Methods: Study was conducted at the Rajshahi Division, in the Naogaon district in six different village where the Santals lives from their ancestors. Information on their socio-demography, health, disease condition and others related matters has been collected through a pre-planned questionnaire and the collected data were analyzed to reveal the desire status through Excel and SPSS analysis.

Result: On the basis of critical analysis, the highest age of the participants were 86 and the lowest were 15, and the mean (\pm SD) age of the participants were 38.25 (\pm 15.313) years. The percentage of male and female participants were 45.9% and 54.1% respectively. There dependency on their hand made alcohol were notable 39.8%, and smoking were 43.2%, among them percent female alcoholic were 14.5%. Maximum participants were having high blood pressure 73.7% whereas the percent among male and female were 80% and 67.8% accordingly. The prevalence of diabetes were 34.1%, where the percent of male and female were 52.56% and 47.44%. In addition, percentage and frequency of other disease and disorder of Eye, Oral, Respiratory, Gastrointestinal, Genitourinary, Musculoskeletal were 31.4% (72), 22.2% (51), 24.1% (55), 41.8% (96), 31% (71), 62% (142) respectively. About 52.4% (120) were immunized and among them 13.1% were single vaccinated and 39.3% were multiple vaccinated. From 87.8% (201) married participants 35% (70) were having birth control methods, whereas most of them were dependent on pills 55.6%. On the side of female participants only, 9.7% (12) were pregnant, 16% (20) were reported painful period and 3.5% (8) were noted for breast discharge.

Conclusion: The outcome of this study will give an authentic view about the Santals current health status and will draw the attention of the authority in order to make the available public health intervention and medical care available for not only them but also for other vulnerable tribal communities.

Keywords: Santals, Health status, Tribal, Bangladesh. Disease condition.

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1. Introduction:

1.1 General Introduction

The terms "tribal group," also means ethnic minorities and indigenous people, namely a social and cultural identity that is distinct from dominant groups in society. United Nations human rights bodies, ILO (International Labor Organization), the World Bank and international law apply four criteria to distinguish indigenous people.

Indigenous peoples usually live within (or maintain attachments to) geographically distinct ancestral territories. They tend to maintain distinct social, economic, and political institutions within their territories. They typically aspire to remain distinct culturally, geographically and institutionally, rather than assimilate fully into a national society. They self-identify as indigenous or tribal. (Gregory, 2003 and Ferguson, 2011, Sandars, 1999).

In many parts of the world the majority of the population are the descendants of immigrants who arrived there within the last few hundred years. Living alongside of them, and in a minority, are the so-called indigenous (or aboriginal) people who are the descendants of people who lived there in more ancient times. Indigenous people all over the world are historically subjugated and discriminated against, which is explicitly and implicitly affecting their health status. Studies reveal that indigenous/ethnic population experience more health related problems and inequalities' than mainstream population. In particular, indigenous people or ethnic minorities are adversely affected by various health problems where Blood Pressure and Diabetes rates are significantly higher. Health of indigenous people is poorer than the non-indigenous people across the world which is also true in the Bangladesh context.

Health and nutrition are important elements in the development process. Adequate nutrition enhances physical health, thereby improves immune systems and reproductive health fitness. Both nutrition and health increases life expectancy, which is known to be important for development. (Matteo et al 2002). Although primarily health is a function of nutritional status, other factors like availability, quality and cost of health care services, living standards, sanitary conditions, quality of drinking water and economic condition are also important. (Case et al 2002). With the significant development in treatments and medical services, people have become highly aware and cautious about their health and fitness. In tribal societies the concept of health, fitness and diseases varies between different tribal groups. In a tribal habitat, a person is usually considered to be afflicted with some diseases if he/she is incapable of doing the routine work, i.e., incapacitation from work is the universal index of poor health. Thus the concept of ill health becomes a functional one and not clinical. Reproductive health is also very poor among most of the tribal communities. Health problems prevalent in tribal areas include endemic infectious diseases like malaria, tuberculosis, and diarrheal diseases, apart from malnutrition and anemia. What is worrying is that the prevalence of chronic diseases such as hypertension and diabetes mellitus, hitherto rare in these populations, is rising, and stroke and heart disease are now the leading causes of death.

In Bangladesh, the general health status of the tribal populations is known to be poor. The widespread poverty, illiteracy, malnutrition, absence of safe drinking water and sanitary and living condition, poor maternal and child health services have been traced out in several studies as possible contributing factors for miserable health conditions prevailing among tribal populations. However, little research has been done among indigenous people in Bangladesh. As a result, the present study was conducted among the Santals indigenous people to comprehend their health status and the factors associated with it. Keeping these objectives in mind, the present study has been conducted on Santals tribes of Rajshahi district of North Bengal, Bangladesh, to examine, health and disease status of Santals, focusing on Cardiovascular, respiratory, Oral, Gastrointestinal, Genitourinary and other major disease.

1.2 Introduction of Bangladeshi Tribal

A tribe is viewed, historically or developmentally, as a social group existing before the development of, or outside of, states. Different ethnic groups of Bangladesh and their colourful lifestyles have significantly enriched the entire culture of Bangladesh. Bangladesh has quite a few varieties of indigenous communities living in various parts of the country. Though the total indigenous population is about one million, or less than 1% of the total population, it consists of 45 indigenous communities using about 26 different languages. (Dalton, 2000).

The indigenous peoples of Bangladesh refer to native ethnic minorities in south-eastern, north-western, north-central and north-eastern regions of the country. These regions include the Chittagong Hill Tracts, Sylhet Division, Rajshahi Division and Mymensingh District. The total population of indigenous ethnic minorities in Bangladesh was estimated to be over 2 million in 2010. In fact, 45 smaller groups of indigenous people covering about two percent of the total population have been living in different pockets of the hilly zones and some areas of the plane lands of the country. The tribal population consisted of 897,828 persons, at the time of the 1981 census. The proportion of the tribal population in the 64 districts varies from less than 1% in majority of the districts to 56% in Rangamati, 48.9% in Kagrachari and 48% in Bandarban in the Chittagong Hill Tracts (CHT). (Basu et al 1990).

The majority of the tribal population (778,425) lived in rural settings, where many practiced shifting cultivation. They differed in their social organization, marriage customs, birth and death rites, food, and other social customs from the people of the rest of the country. They spoke Tibeto-Burman languages. In the mid-1980s, the percentage distribution of tribal population by religion was Hindu 24, Buddhist 44, Christian 13, and others 19. The four largest tribes were the Chakmas, Marmas (or Maghs), Tipperas (or Tipras), and Mrus (or Moorangs). The tribes tended to intermingle and could be distinguished from one another more by differences in their dialect, dress, and customs than by tribal cohesion. (Basu et al 1990).

Most of the tribes are living below poverty line and don't spend much on health care. They have common tendency to under report their illness and among them the rate of utilization of public

health services is very low. These tribal communities have high maternal mortality and infant mortality rates with high prevalence of infectious diseases like Dengue fever, Malaria, Pneumonia and Tuberculosis. There are historical reasons for their poor economic and societal status and their rights and demands have been progressively neglected in policy discourses.

1.3 Concept of Health:

The World Health Organization has defined health as a state of complete physical, mental and social well-being (World Health Organization 1980). However, the meanings and perceptions of health, illness and health-seeking behavior are not the same across cultures. Some scholars have reported that among tribal ethnic groups, health is seen as a functional rather than a clinical concept (Mahapatra 1994). As a cultural concept and as a part of social structure and organization, the meaning of 'health' continuously changes and adapts itself to changes in the wider society.

People living in tribal area are vulnerable to ill health due to low socioeconomic status and poor living conditions, which are unhygienic and conducive to infections. Low levels of awareness and lack of access to preventive and curative aspects of care aggravate the situation. It is hypothesized that the migrant community has been changing at a certain pace along with their concepts of health and illness. The change in the surroundings and eco-system of tribal people compounded with intrusion of non-tribal elements into tribal domain play a vital role in the changing tribal ethos, value system and worldview.

1.3.1 Concepts of Health among tribes

Every culture has its own distinct explanations of health and illness. In the Santali language, the sense of health was termed as *beskinijabe*. A person is considered as healthy if he/she is able to do the work expected as per gender and age. The physical appearance of body implies health as good or bad. Fever is the often cited example indicating bad health. According to the traditional healers, the running of nerves, pulse rate, color of the urine, color of the eye, etc. indicate whether one is healthy or ill. Weakness of the body also indicates ill health. Alcoholic intake is metaphorically cited as an illness in their community, owing to its consequences on family and community; it is also claimed that alcohol intake leads to several other diseases. They said that health is not anything other than the present condition of the body. 'Health' means the physical condition, and it is no longer linked with the mental or social condition. According to them, the absence of any disease or illness is termed as good health; if fever is present in the body, it is considered that health is not good. Thus, the concept of health refers only to physical health. Broadly, the concept of health and illness varied according to the gender owing to the physical structure of the body, in addition to gender-related roles in society. According to them, illness is attributed to more than one cause and, hence, they seek different types of treatment from different sources, depending on the type of illness. (Mishra et al 2013).

1.3.2 Concepts of Illness among tribes

The Santals described ill health as appearing dull, weak and turning dark, lack of appetite, sleepiness, the inability to walk, the inability to talk, startling movements, drowsiness, sunken eyes, pale and dry eyes, pain in the body, etc. Changes in the color of urine and faster pulse rates also imply ill health. The symptoms of ill health for children are not taking food, lack of interest in play, sleepiness, hotness of the body and frequent crying. Physical characteristics such as pale color of the body, rashes on the body, protruding belly and narrowing of buttocks also symbolize ill health. (Mishra et al 2013).

1.3.3 Causes of illnesses and the believe of tribes

Santals perceived different agents and behaviors as causes of illness. There may be single or multiple causes for a single illness. The causes of illness are summarized in three groups:

1.3.3.1 Supernatural powers as the causative agents: People have the belief that illness occurs if gods and ancestral spirits are displeased with them, and also due to the evil eye, ghosts or jealousy; and if the person is frightened with fear, then also illness can occur. Everyone is considered to be in possession of a certain amount of supernatural power. It is believed that children are more vulnerable to the evil-eye. People believe that whenever someone remarks that the child is beautiful or healthy, the child immediately develops illness and becomes weaker. The evil eye is believed to affect not only children, but also adults. For instance, if anyone sarcastically or earnestly remarks that a certain person wears fine clothing, the evil eye begins to operate. Jealousy (*hinsa*), as a form of the evil eye is attributed to cause of illnesses, and such illness can only be cured by the traditional healer.

1.3.3.2 Physical and non-supernatural sources as causative factors: In this category, illness is explained as being caused due to disobedience of natural laws. A number of physical or natural causes of diseases operate directly on the individual to produce illness. Some such causes as reported by the study population are as follows:

(i) Due to food: foods that are considered to be hot in nature (such as non-vegetarian food, spicy, sour and oily food which are believed to develop heat in the stomach) are thought to cause illnesses. It is reported that not taking food in proper time results in disturbance of the stomach, and leads to illness. Alcohol intake is reported as one of the major causes of illness. The respondents felt that using fertilizers and pesticides in vegetable crops is another leading cause of various illnesses.

(ii) Change of season: several illnesses (mainly the cold and cough) are attributed to seasonal changes.

(iii) Working conditions: working under severe hot or cold or working in rain are reported to trigger illnesses.

(iv) Change in usual daily routines: it is believed that if a person changes in usual daily routine such as changing the time of major meals, the time of bathing, improper sleeping time, etc. results in occurrence of illness. (Balgir, 2000).

1.3.3.3 Contagious agents of illnesses: Touching the clothes and food of the ill person is strongly believed to cause certain illnesses. It is also reported that vectors such as mosquitoes and flies often transmit various diseases such as malaria. In addition to these, unwanted behavior of the people is thought to be contagious in transmitting the illnesses. People stated that human behavior that is against the cultural norms as one of the major causes of illness, including measles and other illnesses. It is also reported that having sexual contact with an ill person results in illness. People also mentioned that some diseases are hereditary in nature. (Mishra et al 2013).

1.4 Overall Reason of Poor health

Research has shown that 45 per cent of Bangladeshi's tribal population defecates in the open and 33 per cent does not have access to a clean source of drinking water. Insanitary conditions, ignorance, lack of health education and poor access to healthcare facilities are the main factors responsible for the poor health of tribal. Further, displacement from their traditional forest homes and natural source of food and lack of livelihoods makes them dependent on the public distribution system (PDS) and other government handouts for survival. Most tribal groups are traditionally hunter-gatherers and not accustomed to agriculture — their diets, therefore, are now severely limited in fruits and vegetables as well as good sources of protein (including fish and meat). Polished rice and cereals available through the PDS have replaced diverse dietary food baskets. (Case 2002).

Although the government has provided for the establishment of Primary Health Centers (PHCs) in tribal areas and NGOs are working but, quality healthcare is not available to the majority of tribal. Posts of doctors and paramedics are often vacant. Additionally, the non-availability of essential drugs and equipment, inadequate infrastructure, difficult terrain and constraints of distance and time (one Auxiliary Nurse Midwife is responsible for 15-20 scattered villages), and the lack of transport and communication facilities further hinder healthcare delivery. The geographical and infrastructural challenges to public health and the lack of health-related knowledge among tribal are exploited by quacks (unqualified medical practitioners), who are often available at the doorstep. Though some traditional practices and superstitions persist, acceptance of modern medicine has increased in recent years, but access to good care is the major issue. Levels of illiteracy are high.

Another big reason behind their disease status is their changed uncontrolled lifestyle, food habit. Again Reason behind the poor health of tribal populations Scarcity of trained manpower for health is a major problem and an obstacle to the extension of health services to rural and tribal areas. Traditional healers, who are often the first point of care, can be sensitized and trained to deliver simple interventions like ORS for diarrhea and anti-malaria's as well as to refer patients to the PHC in a timely manner. Tribal boys and girls (who complete school but often have no further opportunities) could be trained as community health workers or nurses and incentivized to stay and work in their own communities.

1.5 Santals Overview:

1.5.1. Historical Background of the Santals

Since how long the Santals landed in the territory of present Bangladesh, is not precisely known. Some believe that the Kherwars reached the land of Bengal immediately after the first clashes with the invading Aryan tribes (2500 B. C.). (Duyker, 1987). With every probability the Santals landed in Bangladesh with their actual ethnic identity, not after 1000 B. C. It is probable that the Santals scattered throughout Bengal at the time of the Muslim invasion of this region during the last decades of the twelfth century or at the beginning of thirteenth century.



Figure 1: Santals and their culture

1.5.2. Name “Santals”: Regarding the name Santals, opinions differ among the scholars. For Skrefsrud, the name Santal is a corruption of Saontar, and was adopted by the tribe after their sojourn for several generations in the country around Saont in Midnapur.

Most Anthropologists agree that Santal is a name given to this tribe by non Santals. However, Santals prefer to call themselves “hor” meaning “human being or person.” For the Santals the concept hor bears a rich connotation to mean a person with qualities of intellect, of knowledge, of wisdom; they refer themselves as a tribe with dignity and full human potentiality. The Santals are proud of their identity that defines the traits of solidarity and uniqueness as a group. (Ali, 1998).

1.5.3. Origin, Race, and Language: The Santals have no recorded history. Like other ancient societies, Santals have tried to explore the mysteries of creation, history and life by means of myths and legends. Following the anthropological data, some authors classify Santals as Pre-Dravidian and others as Proto-Austroloids; and others as aboriginals of the Northwest. Thus, the opinions in this respect are very discordant. The Santals do have their own mythology of creation and many believe that they all have come from Pilcu haram and Pilcu budhi, which is like Adam and Eve in the Bible. Santali is the mother tongue spoken by the Santals. (Duyker, 1987).

The Santals are of ebony colour with little growth by way of beard, are generally of stocky build and capable of undertaking hard labour. Physically the Santals are not prepossessing. The face is round and softly contoured; the cheekbones moderately prominent; eyes full and straight, nose broad and depressed, mouth large and lips full, hair straight, black and coarse. They are long-headed and of medium height.

By nature, they are very peace loving, honest, industrious and trustworthy people. They always respect their social customs and are satisfied with what they earn and what they eat. They have profound respect for the land they live in, the soil they till and the community they live with. The Santals mostly speak Santali, a member of the Munda language family.



Figure 2: Race of Santals

1.5.4. Geographical Location: In Bangladesh, the Santals are found mostly in North Bengal (Northern part of Bangladesh) especially in the then greater districts of Dinajpur, Rangpur, Bogra, and Rajshahi. According to the census of 1881, the Santals resulted present in the district of Khulna, Pabna and Chittagong in the south. Many say that the Santals, who are in Sylhet, are the ones who migrated from the districts mentioned above and came here mainly to work in the tea gardens as laborers. In recent times some of the Bangladeshi Santals also started going abroad taking employment opportunities. (Pussetto, 2003).



Figure 3: Santals geographical location in Bangladesh

1.5.5 The Santals in their Socio-Cultural Realities

1.5.5.1 The Santal-village: The Santal village is a pattern of Santal living and it is the most traditional and ancient institution, which crystallizes the whole system of social, political, and ritual structures. It comes into existence through the special dispensation of the bonga and is sanctified by their blessings. The presence of different clans in a village demonstrates the beauty of a community living and obviously the democratic character of the village administration itself is a sign of incredible richness of the Santal societal dealing and living. A Santal village is demarcated with an implicit boundary so that it may remain free from outside interference of evil spirits. The Santals believe that quarrels among families and groups in the village, natural

calamities, sickness, epidemics, etc., are caused by lack of balance between the forces of good and evil. (Murmu, 2005).

1.5.5.2 Social structure of Santal village: The primary feature of every Santal village is the “Manjhi Council” or the village council headed by a manjhi (headman). The village council is the representative body of the community consisting of seven officials, namely: Manjhi, Paranik (a deputy headman), Jog Manjhi (an overseer of the village on moral issues), Jog Paranik (assistant to Jog Manjhi), Godet’ (a messenger), Naeke (a village priest), and his assistant is Kudam Naeke. (Archer, 1974). These officials in fact are the servants, not the masters of the village and their role is purely functional. The Manjhi remains as the overall leader of the village council and presides over the village meeting but with the accepted principle that no one overrules anyone else. The functions of the council on the other hand, are categorically divided among the members in order to avoid any overlapping. The council members perform their functions in accordance with their tribal customs and traditions.

1.5.5.3 The Clans: Santals are endogamic as a people because they cannot get married outside their tribe, but they are exogamic as clan because they cannot be married between the same clan (parish). Traditionally the Santals used to have fostered a total of twelve clans but unfortunately in the course of history one has been missing.

The clans are: 1) Baskey, 2) Besra, 3) Core, 4) Hasdak, 5) Hembrom, 6) Kisku, 7) Marandi, 8) Murmu, 9) Paoria, 10) Soren, 11) Tudu, and 12) Bedea (the lost one).

Major functions of the clans are to regulate marriage, inheritance, succession and affiliation. One becomes a clan member by birth. It is said that these clans are hierarchically ordered on the basis of occupation, like: Kisku raja (king), Marandi Kipisar (wealthy or richer), Murmu Thakur (priest), Soren Sipahi (warrior), Tudu Mandariya (musician), and so on and so forth. However, according to the researcher, these occupational hierarchies of status do not have any impact on the Santals in daily lives. (Anwar, 1984).

1.5.5.4 Family and Marriage: Family is the primary unit of human society. The family among the Santals can be termed as of biological, joint, and extended. A husband, his wife and their unmarried children form part of the biological or nuclear family. A husband, his wife and his married and unmarried sons and daughters and sometimes his old parents, brother and his family form part of the joint family or extended family type.

According to the Santals, marriage is a union between a man and a woman, which is socially recognized; culturally and religiously it allows the couple to live in a family. A Santal marriage can be described also as a legal transfer of dependency of the bride, from her father’s family to

the groom's family. By this transfer, the groom's family does not only assume guardianship but also assumes control over all her affairs. (Ghosh et al 2010).



Figure 4: Family of Santals

1.5.6 Socio-Economic and Political Realities

1.5.6.1 Occupations and Living: Traditionally Santals are mainly agriculturists. They cling to their land as their principal occupation and means of subsistence. About 95% of the Santals are involved in agricultural operations. Industrious and hardworking as they are, unfortunately the scientific side of their knowledge about cultivation and managing their land has not been developed.

In the past the majority of the Santals were landowners, but due to the increase in population, exploitation by moneylenders and landlords, illegal occupation of their land, poverty and illiteracy, natural calamities etc. the vast majority of the Santals in Bangladesh have lost their land properties. At present, nearly 80% of the Santals are land-less, forcing them to earn their livelihood depending on the mercy and availability of work in the fields of their Muslim or Hindu neighbors for their mere subsistence. (Murmu, 2005).

Hunting and fishing that used to be part of Santals-living, have now become secondary importance due to the change of situation. Lack of employment opportunities in the village

areas, also forced many Santals to flock to the nearby towns and cities in search of daily wages and jobs.



Figure 5: Common house pattern of Santals

1.5.7: Food habit of the Santal people:

Their main diet consist of rice, fish and vegetables, which are supplemented with mollusks, crabs, and meat of turtles, pigs, ducks, wild cats and rabbits.

1.5.8 Beliefs and Ritual Practices

1.5.8.1 The Belief in One Supreme Being: As it has already been mentioned earlier, Santals do believe in one “supreme being” whom they call Thakur Jiu (Life Giver) or Marang Buru (Great Mountain) who is considered to be the “supreme” among all the “religious beings”. It is underneath the sun, beneath the clouds, that Santal life is challenged. Here the bonga roam around and only by coming to terms with them can Santals be happy. (Archer, 1974).

1.5.8.2 The Belief in Bonga (spirits): The Santals believe in the existence of the spirits who are called bonga. The bonga have much repercussion on daily living of the Santals. To ensure their continuing care, beside annual sacrifices, the bonga are remembered in a daily basis. Whenever a meal is taken, a small portion of the food is dropped on the floor for the bonga, or at the time whenever rice-beer is drunk, a little is spilt on the ground for Marang Buru. Thus, the Santals live

not only in their tribal society but in a greater society consisting of supernatural beings as well. (Hembrom, 1996).

1.5.8.3 Belief in witchcraft: Related to Santal belief-system, is also the existence of witches. The Santals believe that there are certain people, especially women, who possess special power and techniques to harm people, cattle, and crops. These so-called witches are involved in doing harmful activities like giving poisons, taking out human livers, sending troublesome spirits to certain families and changing themselves into black cats. Because of such belief in witchcraft practices, the Santals easily suspect one another, and are often led to fight. It is presumed that it is essential to have such a belief especially in the pagan world. However, there is also a counter-belief among the Santals that there are certain people Ojha-janguru (specialists), mainly men, who possess special power and techniques for detecting witches and nullifying their spells. Thus, whenever Santals get into trouble, they seek the help of these people who, more often exploit the society. (Archer, 1974).

1.5.8.4 The Ancestors: From the rites and rituals as practiced by the Santals, it is quite evident that ancestor-worship is a common feature among them. The dead ancestors are the real benefactors of the families or groups to which they belonged and that they are easily approachable by their living kinsmen. Hence, at all important occasions of birth, of marriage or of death the deceased ancestors are remembered and offered sacrifices.

1.5.8.5 The Jaherthan: The Jaherthan or the sacred grove is an essential part of a Santal village. It is a sacred place of special worship for the Santals. After a village has been set up, a Jaherthan is installed through ritual ceremony at the outskirts of the village. The main deity of the Jaherthan, is known as Jaher Era (the lady of the grove). According to the Santals, she resides there besides other important deities such as the Moꝛeko-Turuiko (literally means “five-six”). The Jaher Era presides over the sacred grove, tends over other bonga in the Jaherthan and looks after the interests of the villagers especially for their physical needs. (Troisi, 2000).

1.5.8.6 The “After-life” is the continuation of life that is lived in this world. The Santals believe that the spirit of the deceased goes to a shadowy world where the person requires the materials of this world. This is well expressed with the ritual practices done at the time of burial and during the bhandan, the last ceremony done in honor of the dead.

1.5.9: Ethanomedicinal culture of Santal Tribe and their present condition:

Though nowadays the Santali people are developing, they did not forget their traditions and culture. Many of them have converted to Islam and Christianity. But many of them are still dependent on their traditional healers mainly because of its cheaper. The traditional medicinal practitioners use age old formulations for the herbal preparation. The traditional medicinal practitioners are known locally as “kaviraj” or “ojha”. During our visit we observed some of them really have knowledge about medicine. Some of the plants they are using now have established therapeutic properties. Their ethanomedicine is really rich with age old knowledge.

We were really surprised to know that most of them are actually really helpful. Though some of them may contain toxic effect and awareness must be created.

At present, a large portion of them are now dependent on allopathic medicine and their ethnomedicinal culture is at the verge of extinction.

1.5.10 The Santals in Search of “new identity”

Every ethnic group or society has its own unique characteristics, value-systems, language, religious belief, mores, life-attitudes, culture, customs and traditions. It has its own approach to life and death, disease and sickness, individual and community, and above all, a sense of identity. Anyone visiting a Santal village or an area with vast majority of Santal inhabitants will easily realize the difference and the identity that applies to the Santals. This sense of identity or cultural self-image defines the traits of solidarity, uniqueness, and also seeks differences with other groups in the larger society around. Yet, in many ways, the Santals of Bangladesh today can be seen going through an identity crisis for a variety of reasons. They have not been able to make concerted efforts to face the rapid changing situation. Whatever changes seem to have taken place due to the outside pressure, promotion of education and some initiatives taken by the Church, do not reach out to the bulk of the Santals living in the rural villages scattered around the countryside. As the time passes, Santals are more and more becoming marginalized—struggling for survival without having proper direction to move forward to improve their life situation. (Orans, 1965).

There is clearly a confrontation between the ritual-based sense of traditional culture and the forces of change and modernization represented by the socio-political and socio-economic factors allied to these changes. In fact, the Santals are badly caught up between the mythological past of glorious traditions and the present with its ever degrading and desperate poverty caused by ignorance, exploitation and oppression by their neighbors.

Moreover, Santals are found to be more divided than being united due to the fact that there are Santals who have already embraced the Christian faith belonging to different church denominations while the vast majority still remains following the old traditional pattern of culture and religious practices. The gap among these groups has been widening in the course of history. Until now the Santals have not been converted to any other religion like: Islam or Hinduism, except Christianity. This issue is important for the reason that whether the Santals in the near future would be ready to accept Islam or to be converted to other religions as it happened in the past when many low caste Hindus were converted to Islam.

1.6 Reason behind this study

It has often been said that indigenous people in Bangladesh have worse health than other Bangladeshi, though no figures have been compiled to confirm these claims. The researchers wanted to establish whether it is simply an issue of indigenous people being poorer than other Bangladeshi—poverty being well known as a cause of disease—or whether being indigenous is, in itself, a health risk.

The activities implemented by the NGOs in the name of development of Health for indigenous peoples, have failed to bear much fruit, because indigenous peoples had no access or involvement in the health planning and policy formulation of the organizations. In some areas health development activities have created adverse impact, where the plan was too far removed from the local social, cultural and natural situation.

Among 70 distinctly recognizable indigenous nationalities in Bangladesh, Santals are one of the most disadvantaged and vulnerable indigenous communities. Land-grabbing, threats, evictions and killings have marginalized them to such an extent that their existence in Bangladesh is currently at stake. Recently a study was conducted in order to assess the problems and needs of the Santals and to initiate development intervention for improving their life situation.

1.7 Importance and scope of this study

Due to a combination of societal attitudes, varying belief systems, and governmental neglect, tribal populations throughout Bangladesh have long been denied basic healthcare. As a result, gaping disparities in health status of tribal, when compared to general population living in the same area, are evident. To assess health status of tribal population and their current disease condition not only reveal the exact quantitative statistics of it but also will give a clear vision and direction to the health authority where to focus according to priority basis.

And the researchers also wanted to establish whether there are health inequalities within indigenous groups, and if these differences also followed a socioeconomic patterning, will have an idea for elaborate study on them and will have a guideline to step forward for upgrading their current health status.

2. Literature Review

2.1 Cultural and socio-economic factors in health, health services and prevention for indigenous people

In 2010 Md. Rakibul Islam and his co-workers studied on the “Cultural and socio-economic factors in health, health services and prevention for indigenous people” in Chittagong hill region and showed that along with commonplace factors, indigenous peoples’ health is affected by some distinctive factors such as indigeneity, colonial and post-colonial experience, rurality, lack of governments’ recognition etc., which nonindigenous people face to a much lesser degree. In addition, indigenous peoples around the world experience various health problems due to their varied socio-economic and cultural contexts. Finally, this paper recommends that the spiritual, physical, mental, emotional, cultural, economic, socio-cultural and environmental factors should be incorporated into the indigenous health agenda to improve their health status. Indigenous people all over the world are historically subjugated, seceded and discriminated, which is explicitly and implicitly affecting their health status also. Studies reveal that indigenous/ethnic populations experience more health related problems and inequalities, as compared to their mainstream populations. (Islam, M.R. et al. 2010)

2.2 The effects of ill health on the livelihoods of extremely poor Adivasis in Bangladesh

In 2013 an organization name “Shiree” studied on “The effects of ill health on the livelihoods of extremely poor Adivasis in Bangladesh” and showed that to the extent to which extremely poor Adivasis become vulnerable as a result of poor health and provides examples of the ways this takes place. The prevalence rate of ill health among extreme poor Adivasis is very high. They are the minority in the research area, but outnumber the majority in terms of general disease contraction rates, especially infectious diseases. The diseases they are susceptible to are influenced by various factors including poor living conditions, remoteness, poor nutrition, low incomes, low levels of education and health awareness, and reluctance to seek effective treatment in early stages of illness. Lack of access to government health services was a particularly serious problem. The medical staff available to them had very limited training and there was a general lack of confidence in government health services – which was often justified. The ability of extremely poor Adivasis to move out of poverty with the help of income generating activities depends on maintaining good health and avoiding the kinds of ill health that will lead to further impoverishment. Improved health awareness and information and easy access to affordable, quality health services, would improve the health of the extreme poor, and reduce the negative impact of ill health on livelihoods. Current coping mechanisms, such as distress sales of productive assets, taking advances on wages, and high-interest borrowing was a common cause of impoverishment. The provision of alternative ways of protecting productive assets is therefore important for extremely poor people. (SHIREE 2013).

2.3 Nutritional Status of Three Ethnic Communities in Hilly Area: anthropometry is the key

In 2015 Md. Monoarul Haque and his co-workers has worked on “Nutritional Status of Three Ethnic Communities in Hilly Area: anthropometry is the key” and showed that among most of the respondents from 20-39 years age group, Half of the participants completed primary level education. Most of the respondents were housewife and farmer. About 66.7% respondents earned >10000 BDT per month. Underweight, normal and overweight was 4.70%, 78% and 17.30% respectively. About 30%, 36.7% and 11.3% respondents had normal nutritional status that completed no education, primary and SSC level education. This study also concluded that malnutrition among tribal people in Bangladesh is on a decreasing trend. (Haque, M.M et al. 2015)

2.4 Diabetes and Impaired Fasting Glycaemia in the Tribes of Khagrachari Hill Tracts of Bangladesh

In 2004 M. Abu Sayeed and his co-researcher studied on “Diabetes and Impaired Fasting Glycaemia in the Tribes of Khagrachari Hill Tracts of Bangladesh” and showed that the prevalence of diabetes in the tribal population was higher than that of the nontribal population of Bangladesh. Older age, higher central obesity, and higher income were proven significant risk factors of diabetes. The crude prevalence of type 2 diabetes was 6.6% and IFG was 8.5%. The age-standardized (20–70 years) prevalence of type 2 diabetes (95% CI) was 6.4% (4.96 –7.87) and of IFG was 8.4% (6.48 –10.37). Both tribesmen and women had equal risk for diabetes and IFG. Compared with the lower-income group, the participants with higher income had a significantly higher prevalence of type 2 diabetes (18.8 vs. 3.1%, $P < 0.001$) and IFG (17.2 vs. 4.3%, $P < 0.001$). Using logistic regression, we found that increased age, high-income group, and increased central obesity were the important risk factors of diabetes. High prevalence of diabetes among these tribes indicates that the prevalence of diabetes and its complications will continue to increase. (Sayeed, M.A. et al. 2004).

2.5 The Santals in Bangladesh: Problems, Needs and Development Potentials

In 2006 Dr. Muhammad Samad studied on “The Santals in Bangladesh: Problems, Needs and Development Potentials” and showed that There are about 70 distinctly recognizable indigenous nationalities in Bangladesh. Among them, Santals are one of the most disadvantaged and vulnerable indigenous communities. Land-grabbing, threats, evictions and killings have marginalized them to such an extent that their existence in Bangladesh is currently at stake. Recently a study was conducted in order to assess the problems and needs of the Santals and to initiate development intervention for improving their life situation. This article presents the predicaments of Santal community and provides recommendations for the well-being of this disadvantaged indigenous community based on the findings of the study conducted. The Santals do not have any say about what kind of 'development' they require. Very few organizations work with the Santals, but even there they do not have meaningful participation in the programs undertaken. There is a significant lack of understanding among both the government officials and the NGOs about the needs of the Santals as a nation and as a community. The major issues are thus unidentified, ignored, and finally, unheard by the 'development' agencies led by representatives of

majority Bengali population. It is not just a case of ignorance; a basic change of attitude is required. (Samad, D.M. 2006).

2.6 Knowledge and Practice of Oral Hygiene, and Oral Health Status of Tribal (*Orao*) People in Northern Region of Bangladesh

In 2014 Dr. Md. Abdullah Al-Mamun and his co-researcher worked on “Knowledge and Practice of Oral Hygiene, and Oral Health Status of Tribal (*Orao*) People in Northern Region of Bangladesh” and showed that most (87.6%) children brush their teeth regularly; about half (52.8%) children brush their teeth once and about one-third (32.6%) children brush twice daily; most (87.6%) of children brush their teeth after awake at morning and least (1.1%) children brush at bathing. It also found that, children aged ≤ 10 years have DMFT (mean \pm SD) 1.17 \pm 3.31; children aged 11-17 years have DMFT (mean \pm SD) 1.29 \pm 3.05; and children aged ≥ 18 years have DMFT (mean \pm SD) 0.33 \pm 0.58. It is found that, children aged ≤ 10 years have OHI (mean \pm SD) 2.87 \pm 1.80; children aged 11-17 years have OHI (mean \pm SD) 2.96 \pm 1.47; and children aged ≥ 18 years have OHI (mean \pm SD) 1.00 \pm 0.00. (Al-Mamun, D.M.A. et al. 2014).

2.7 Association of periodontal disease with lifestyle, diabetes mellitus and oral health care practices in an indigenous Bangladeshi population

In 2015 K. Zaman and his co-workers worked on “Association of periodontal disease with lifestyle, diabetes mellitus and oral health care practices in an indigenous Bangladeshi population” and showed by examined all teeth except the third molars were examined at 6 sites for gingival colour and swelling, bleeding on probing, probing pocket depths (PPD) and clinical attachment level (CAL). Gingival Index (GI) was recorded according to Loe and Silness. The greatest score for each of the 6 sites was used for assessing the PPD and CAL. Of 240 subjects, 64% were female. The mean number of teeth present was 26, and the mean number of affected teeth was 8.9 (PPD ≥ 3 mm). The mean \pm standard deviations of GI, PPD and CAL of the community were 0.43 \pm 0.70, 2.34 \pm 0.47 and 2.70 \pm 0.77 respectively. Betel-leaf was chewed by 75%, 57.5% were tooth brush user and remaining 42.5% used traditional ways. A statistically significant difference in PPD and CAL was found between smokers and non-smokers; tooth-brush users and non-users; diabetics and non-diabetics. PPD and CAL were significantly high among frequent betel-leaf chewers and in older age-group. Without having an access to a professional dentist or part of any oral health care awareness program, the relatively low prevalence of periodontal diseases can possibly be attributed, in part, to the traditional eating habits of the indigenous “Garo” population. (Zaman, K. et al. 2015).

2.8 Spectrum of Alcoholic Liver Disease in Tribal Alcoholics of Chittagong Hill Tracts of Bangladesh

In 2011 Sarmistha Biswas and her co-workers studied on “Spectrum of Alcoholic Liver Disease in Tribal Alcoholics of Chittagong Hill Tracts of Bangladesh” and showed that among the 50 cases, 47 patients were male and 3 were female cases. Both regular and irregular drinkers were included. The common symptoms

of liver disease among tribal alcoholics were yellow coloration of sclera (24%), nausea & vomiting (20%) and weight loss (14%). The common findings were jaundice (24%), anemia (20%), ascites (10%), edema (10%) and hepato-splenomegaly (20%). Liver function tests revealed only 17 patients had mild to severe form of hepatocellular damage. Hyper-bilirubinemia was found in 34% participants. AST/ALT ratio more than 2 was found in 32% subjects. Ultrasonography was done in 46 out of 50 subjects: 29 cases reported as normal (63.04%), fatty liver in 5 (10.87%), acute hepatitis in 5 (10.87%) and chronic liver disease in 7 (15.22%) cases. Liver biopsy was possible in 4 suspected cases (clinically and biochemically) of alcoholic liver cirrhosis and histology supported the clinical diagnosis in these cases. So, alcohol induced liver damage was noticed only in 17 cases. Nearly two-thirds of the participants were free from any form of liver disease. (Biswas, S. et al. 2011).

2.9 Awareness and Significance of Health, Sexual Diseases, Genetic Disorders and Dietetic Issues among Tribal Women of India

In 2011 Holenarsipur Sathyanarayana Shivaprasad and his co-researcher worked on “Awareness and Significance of Health, Sexual Diseases, Genetic Disorders and Dietetic Issues among Tribal Women of India” and showed that there are 635 tribes located in India. Present, health is a prerequisite for human development and is an essential component for the well-being of the mankind. India is characterized by the presence of a large number of endogamous castes, tribes and religious communities with several types of marriage practices and the age at which the girl gets married will depend on social values. Tribal people are known to have sexual practices that differ from those of mainstream cultures and a high prevalence of HIV and AIDS have been reported. Lack of data is a constraint when it comes to tracking the health indicators of the tribal population. Tribal communities in general and primitive groups in particular are highly disease prone. Maternal malnutrition which is quite common among the tribal women is also a serious problem, especially for those having quite a few pregnancies too closely spaced, and reflected the complex socioeconomic factors that affects their overall situation. (Shivaprasad, H.S. et al. 2011).

2.10 Health status and disease in Tribal dominated villages of central India

In 2012 Manish Mishra studied on “Health status and disease in Tribal dominated villages of central India” and showed that today tribes at large, especially those who are exposed to outside world, are no more dependent on their traditional healing practices in the case of most of the diseases. Only for snake bite, which is rare, they are still dependent on traditional system. Villagers’ dependence on state initiated health management mechanisms like PHC and CHC have significantly increased. Efforts and initiatives taken by CHC are very popular among them. More or less similar situation is PHC. The ever increasing number of patients registered for treatment at both the centres is a testimony to this observation. Also, number of schemes managed by CHC is very popular in tribal villages. Villagers do not hesitate to consult these formal institutions in need. But this is one side of the coin. The other side needs introspection and overhauling of the total health and disease management mechanism especially in the light of the scattered and poorly connected geographical space where tribes are located and their limited psychological and economic carrying capacity. (Mishra, M. 2012).

2.11 The Health of Indigenous People

In 2014 A thematic Paper towards the preparation of the 2014 World Conference on Indigenous Peoples presented a study on “The Health of Indigenous People” As part of its Health of Indigenous Peoples Initiative, PAHO/WHO uses a “socio-cultural analysis approach to harmonize indigenous health systems with state health systems based on allopathic medicine.” This approach seeks to encourage recognition, respect and an understanding of the social and cultural differences between peoples, their knowledge and their resources to improve health strategies by incorporating their perspectives, medicines, and therapies into the national health systems. This process requires the application of a legal framework that facilitates social participation, indigenous practices, and the protection and conservation of indigenous knowledge and resources. It similarly requires the generation of knowledge and paradigms that expand conceptual frameworks and facilitate an understanding of indigenous knowledge, and its incorporation into the training and development of human resources. There is an urgent need to develop comprehensive and relevant health strategies that enjoy the full participation of indigenous peoples. At the same time, an international priority is to reposition health from a structural social determinants perspective, promoting the collective human rights of these peoples, eliminating discrimination, and redistributing political and economic power toward a more diverse and equitable world. (World Conference on Indigenous Peoples 2014)

2.12. Indigenous health in Latin America and the Caribbean

In 2006 Raul A Montenegro and Carolyn Stephens worked “Indigenous health in Latin America and the Caribbean” and conclude that Indigenous health cannot be viewed as uniquely an issue of health systems, nor can people be viewed in isolation of their ecosystem and sociopolitical context. People in Latin America and the Caribbean have lived for centuries in close contact with their environment. Indigenous peoples faced an even greater threat than armed invasion—disease. Within 100 years, the estimated total Indigenous populations dropped from up to 150 million (before European invasion in 1492) to 11 million. This massive demographic collapse was mainly due to foreign bacterial and viral diseases introduced by Europeans. Smallpox and measles were among the most deadly diseases introduced, but influenza, yellow fever, and typhus also arrived during this time. The effect of these diseases was enormous. Denevan estimates that, in many regions, particularly the tropical lowlands, populations fell by 90% or more in the first century after contact. One of the first regions to be contacted by the Spanish in 1492 was the Caribbean, and mortality rates in the Indigenous communities were as high as 900 per 1000 people.³⁰ In tropical lowlands, Indigenous populations fell by more than 99%, in Peru from 9 million in 1520 to 670 000 (92%) in 1620, and in the Basin of Mexico from 1.6 million in 1519 to 180 000 (89%) in 1607. Four centuries later the total Indigenous population had diminished to 220 000 individuals. (Montenegro, R.A. et al. 2006).

2.13 Association between BMI, Blood Pressure, and Age: Study among Tangkhul Naga Tribal Males of Northeast India

In 2011 N. K. Mungreiphy and other co-researcher studied on “Association between BMI, Blood Pressure, and Age: Study among Tangkhul Naga Tribal Males of Northeast India” and showed that Mean systolic,

and diastolic BP was higher among subjects with elevated BMI and among older subjects. Minimum BP was found among underweight and maximum among obese. BP was found lowest among the youngest age group and higher among the elderly subjects. BMI was also found to be associated with age independently. Although the magnitude of correlation differed, there was significant positive correlation among BMI, age, systolic and diastolic BP. Odd ratios showed overweight/obese subjects to be more likely to have hypertension than those with normal BMI. Changing socioeconomic environment intensifies the prevalence of overweight/obesity and hypertension among the Tangkhul Nagas. (Mungreipphy, N.K. et al 2011).

2.14 The health and welfare of Australia's Aboriginal and Torres Strait Islander people

According to Australian Institute of Health and welfare 2015 study about , "The health and welfare of Australia's Aboriginal and Torres Strait Islander people", During 2007–09, Indigenous Australians were hospitalized for cardiovascular diseases at 1.7 times the rate for other Australians. The age-standardized rate for Indigenous Australians with diabetes was 12%, compared with 4% for non-Indigenous Australians. More than one-quarter of Indigenous Australians reported some form of respiratory disease in 2004–05. The hospitalization rates for respiratory diseases among Indigenous children aged 0–4 years were almost twice the rate for other Australian children. The incidence rate for end-stage renal disease for Indigenous Australians more than doubled between 1991 and 2008, from 31 to 76 per 100,000 population. Although Indigenous Australians were significantly less likely to have been diagnosed with cancer than non-Indigenous Australians in 2003–2007, they were 3 times as likely to have been diagnosed with cervical cancer, and 1.6 times as likely to have been diagnosed with lung cancer. The rate of hospitalization of Indigenous Australians for mental health problems was nearly twice that for other Australians. Injury and poisoning combined was the main cause of hospitalization (excluding dialysis) for Indigenous Australians. The most common injuries were those inflicted by another person and accidental falls. (AIHW 2015).

3. Methodology

3.1. Study Site

The study was conducted at the Rajshahi Division, in the Naogaon district of rural Bangladesh. It was located about 279 km north of Dhaka. We have studied on different villages of Naogaon like Jwanpur, Khursher, Shongpur, Durgapur, and Khishi where the Santals lives. To facilitate the Health and disease based study, a questionnaire was established in June 2015. Through this questionnaire we have collected information on socio-demographic, epidemiologic and clinical status.

3.2. Study Population

From June 2015 through April 2016, a total of 229 tribal population both Female and Male was observed on their own area for this analysis.

3.3. Specimen Collection and Laboratory Procedures

Glucose level is tested by the trained volunteer. After cleaning the area properly with anti-septic and prick the finger with a lancet (a very short, fine needle). Then putting a drop of blood on a test strip and place the strip into a special measuring device known as a glucose meter. This then displayed the blood sugar level. We have used a device of “accu-chek”. (Accu-check, 2014). This can also calculate an average blood glucose level over a period of time. Some also feature software kits that retrieve information from the meter and display graphs and charts of your past test results. Meters and test strips are collected through university from the Drug stores.

3.4. Variable Derivation

Information on socio-demographic status (age, sex, marital status, birthplace, number of children, and family members, occupation), clinical features (Weight, habit, addiction, immunization, blood Pressure, glucose Level, disease and condition of oral health, eye, cardiovascular, integumentary, integumentary, respiratory, gastrointestinal, musculoskeletal system were collected for analysis.

3.5. Inclusion Criteria:

The participants having age over 13 has been included and the data that bears significant impact specifically on the socio-demographic and health of the Santals has been included.

3.6. Exclusion Criteria:

In this survey the data that didn't bear any significant status to the health of Santals tribe has been excluded.

3.7. Data Analysis

After data collection, all the filled in questionnaires were checked and crosschecked in order to correct inconsistency in information and coding. Data were analyzed using Statistical Package for Social Sciences (SPSS) for Windows (Version 17; Chicago, IL) and Office excel (Version 2013). Initially Participants were categorized into two groups based on sex. Both the groups were subsequently assessed by considering all the variables.

3.8. Ethics

This study was done in a manner without conflicting the ethical issues. Ethical consideration was checked by the research supervisor with the research policy of the East West University. Oral consent was taken prior to study from the participants.

4. Results

4.1 Socio-demographic profile

The number of total participants was 229. Among them the highest age was 86 and the lowest age was 15. The mean (\pm SD) age of the participants was 38.35(\pm 15.313) years. Most of the participants were from Mohadebpur (29.7%) and lowest participants were from Durgapur (0.9%). Among them most of the person earn their livelihood by farming (62.9%) and the rest were labor (23.1%) and others.

Details of the socio-demographic profile of the participants were:

4.1.1 Distribution of participants according to sex

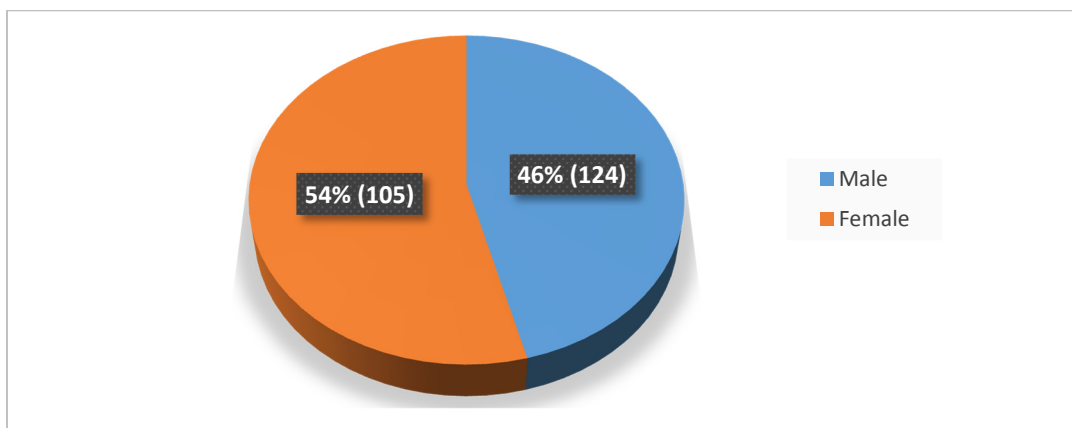


Figure 6: Percentage of male and female.

4.1.2. Marital status of the participants

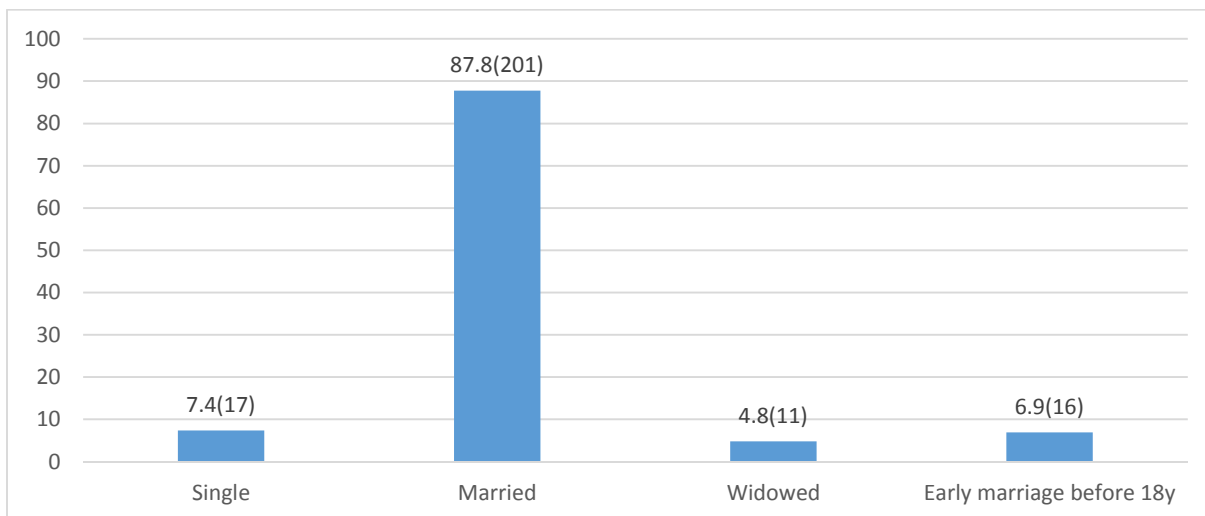


Figure 7: Percentage of marital status of the participants.

4.1.3 Birthplace of the participants

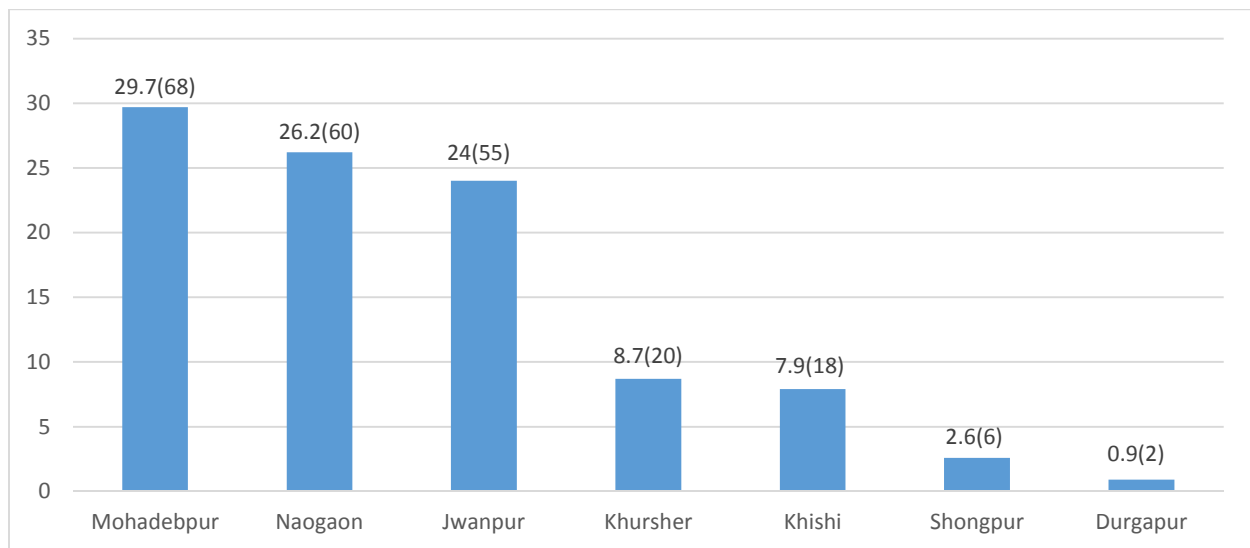


Figure 8: Percent of distribution pattern according to birth place.

4.1.4 Occupation of the participants

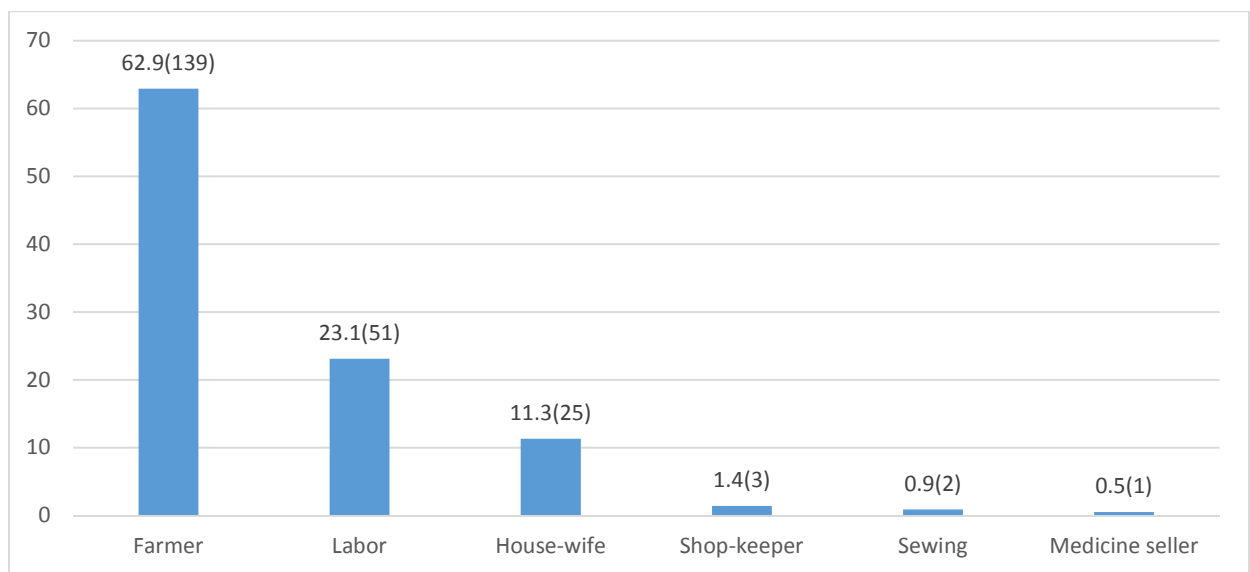


Figure 9: Percentage of occupational status of the participants.

4.2 Addiction of the participants:

Most of the participants were highly habituated to tea (48.9%) and then addicted to smoking and alcohol respectively. For this high percentage of alcohol consumption among them their social and culture background was one of the major reasons.

The frequency and percentage of addiction were as below:

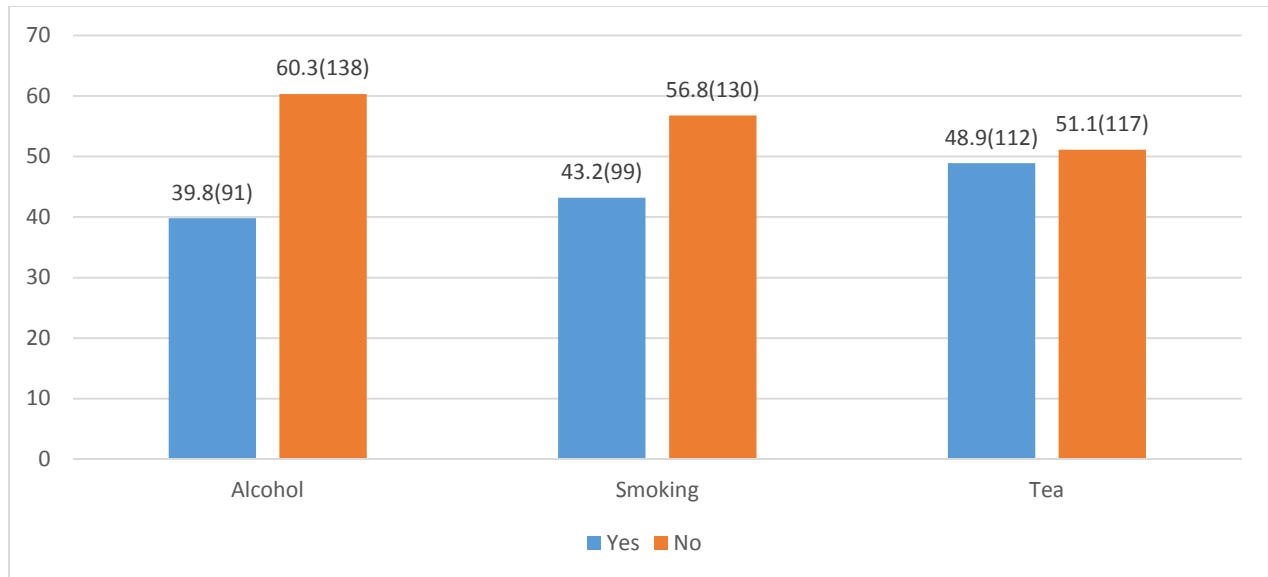


Figure 10: Frequency of dependency on alcohol, tobacco and tea.

4.3 Immunization

Of all participants 52.4% (120) people were vaccinated. Out of 120 vaccinated participants 13.1% (47) were single vaccinated and 39.3% were Multiple vaccinated. The frequency of different vaccine profiles of immunized participants were given below:

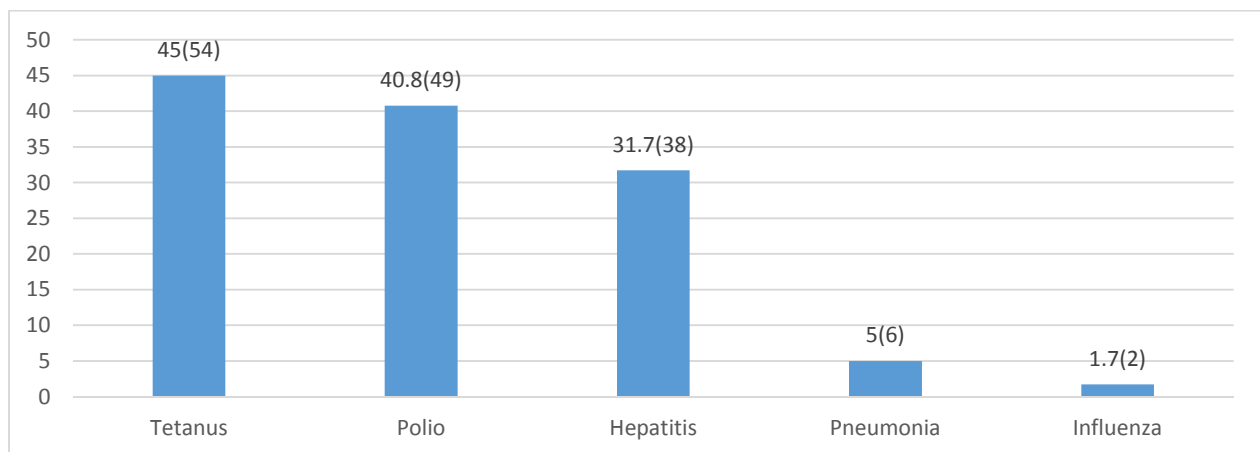


Figure 11: Frequency of immunization profile of the participants.

4.4 Blood Pressure:

Maximum participants (73.7%) were having a high blood pressure. It can be predict that this may be due to their changing, uncontrolled lifestyle and food habit. The overall blood pressure profile of the participants were:

4.4.1 Frequency of Blood Pressure among male and female

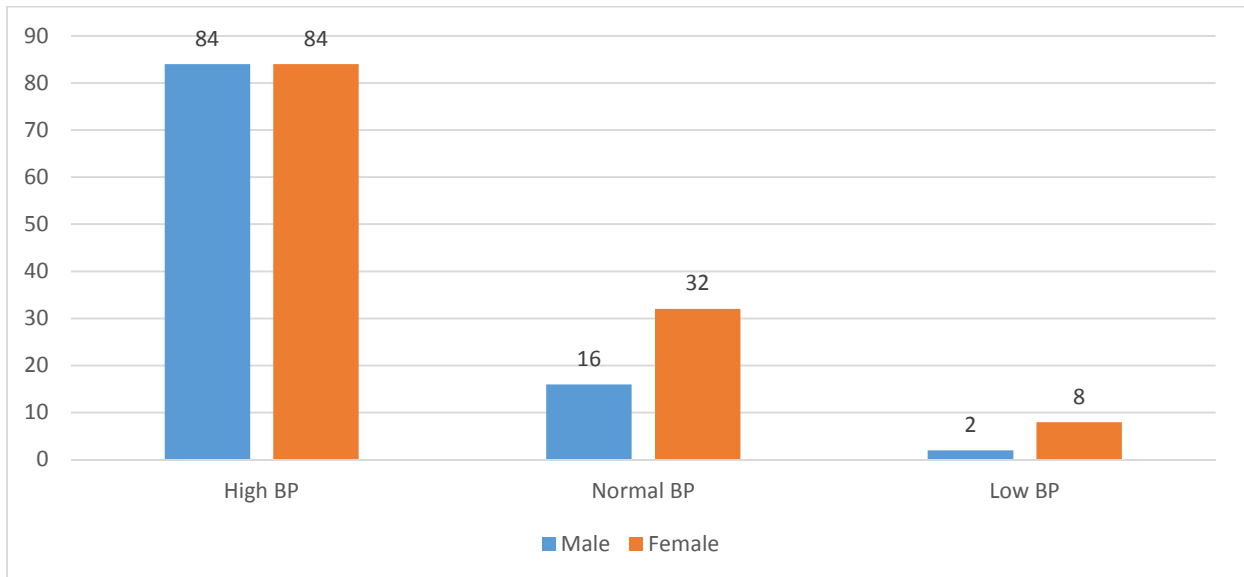


Figure 12: Frequency of blood pressure profile of the participants according to sex.

4.4.2 Blood Pressure according to age group

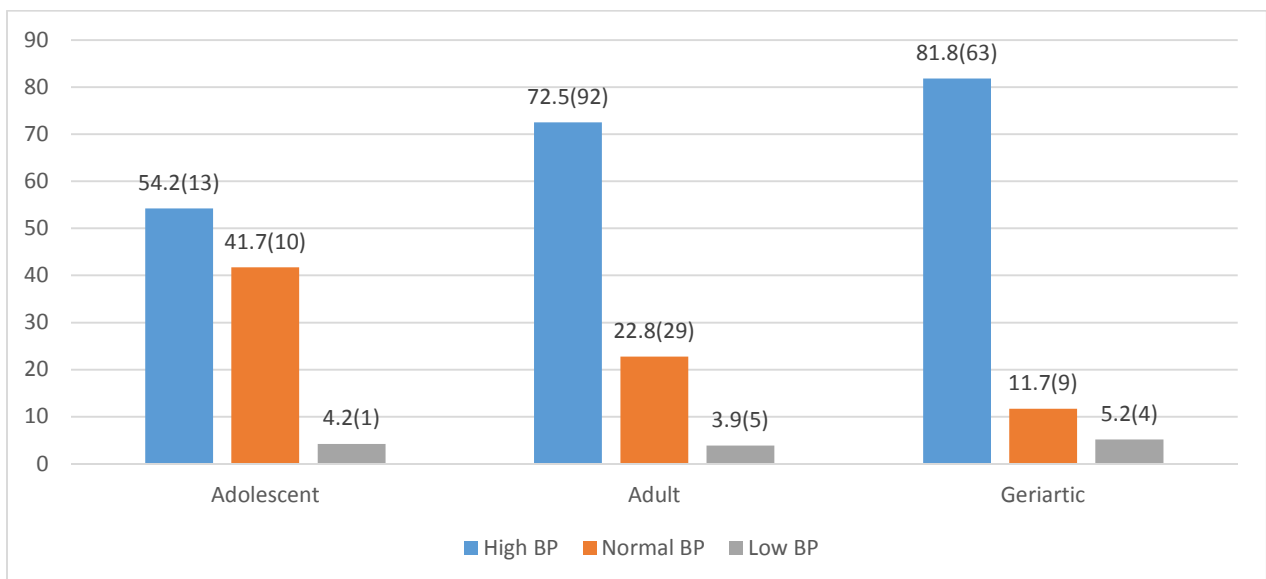


Figure 13: Percentage of blood pressure profile of the participants according to age groups.

4.5 Diabetes:

The frequency of diabetes in the tribal population was higher (34.1%) than that of the nontribal population of Bangladesh. Both tribesmen and women has equal risk for diabetes. We have missing data of 1.7% (4). The percentage of prevalence of diabetes were given below:

4.5.1 Diabetes profile of the participants

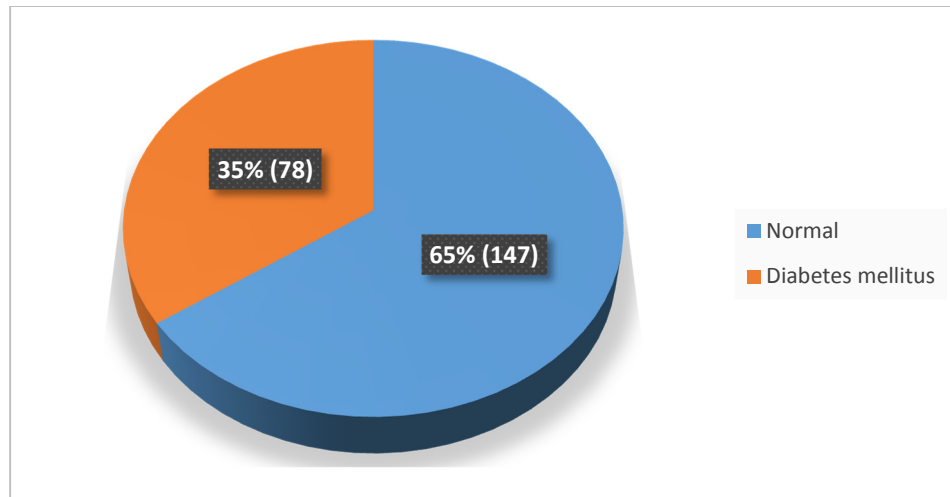


Figure 14: Percentage of diabetes status of the participants.

4.5.2 Prevalence of diabetes according to sex

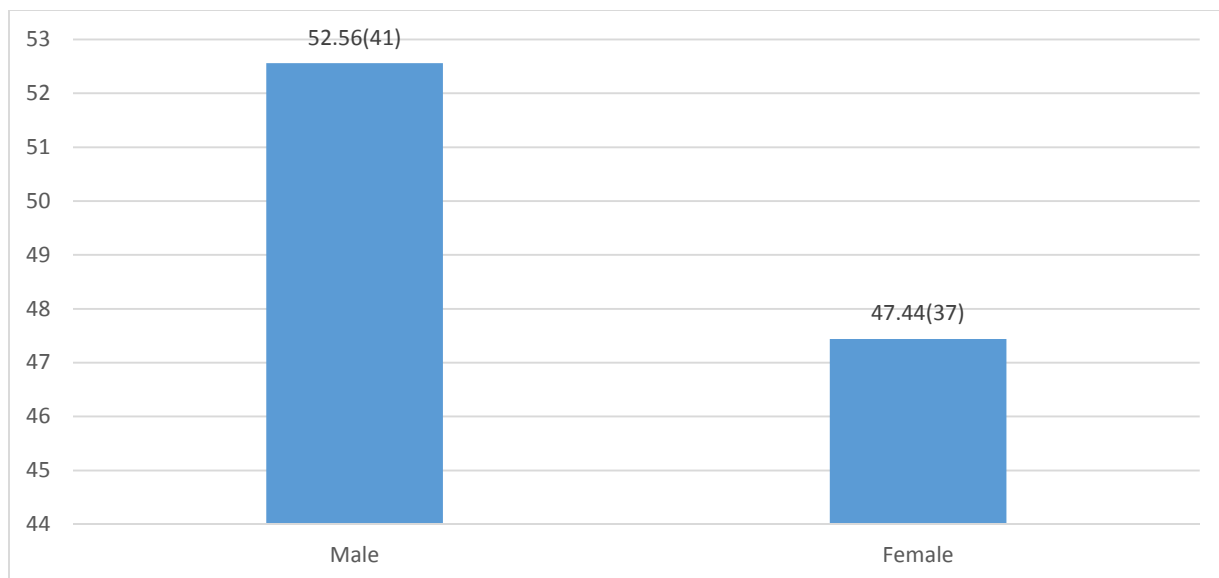


Figure 15: Prevalence of diabetes according to sex.

4.6 Eye Disease:

Among the participants the percent of eye disease was 31.4% (72). The frequency of eye disease among the participants were:

4.6.1 Frequency of Eye disease (ED) among participants.

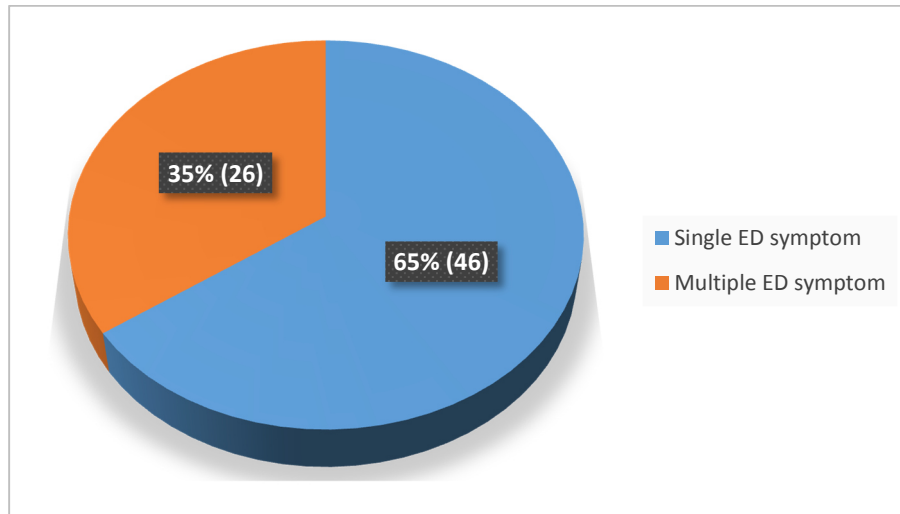


Figure 16: Frequency of Eye disease (ED) among participants.

4.6.2 Percentage of Eye disease symptom

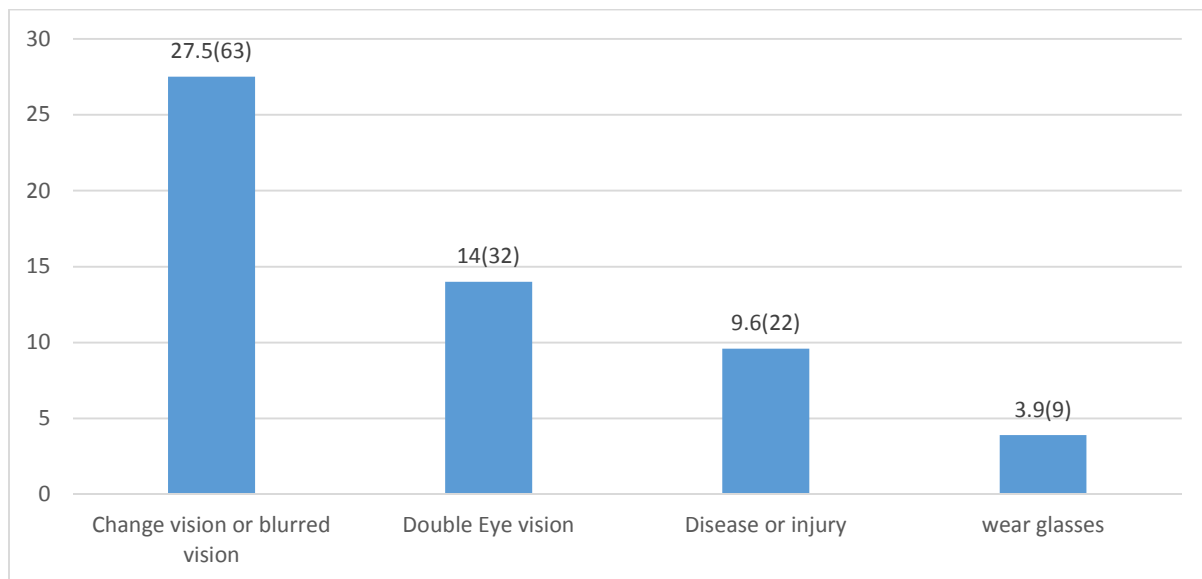


Figure 17: Percentage of Eye disease symptom of the participants.

4.7 Oral Health:

Of all the research participants the percentage of oral health was 22.2% (51). The oral health condition of them were given below:

4.7.1 Frequency of Oral health problem

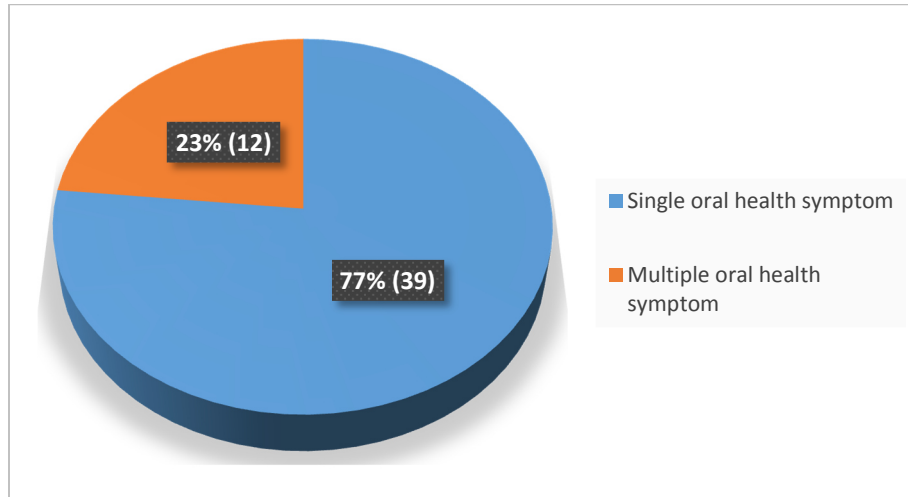


Figure 18: Frequency of Oral health problem.

4.7.2 Percent of Oral health related symptom

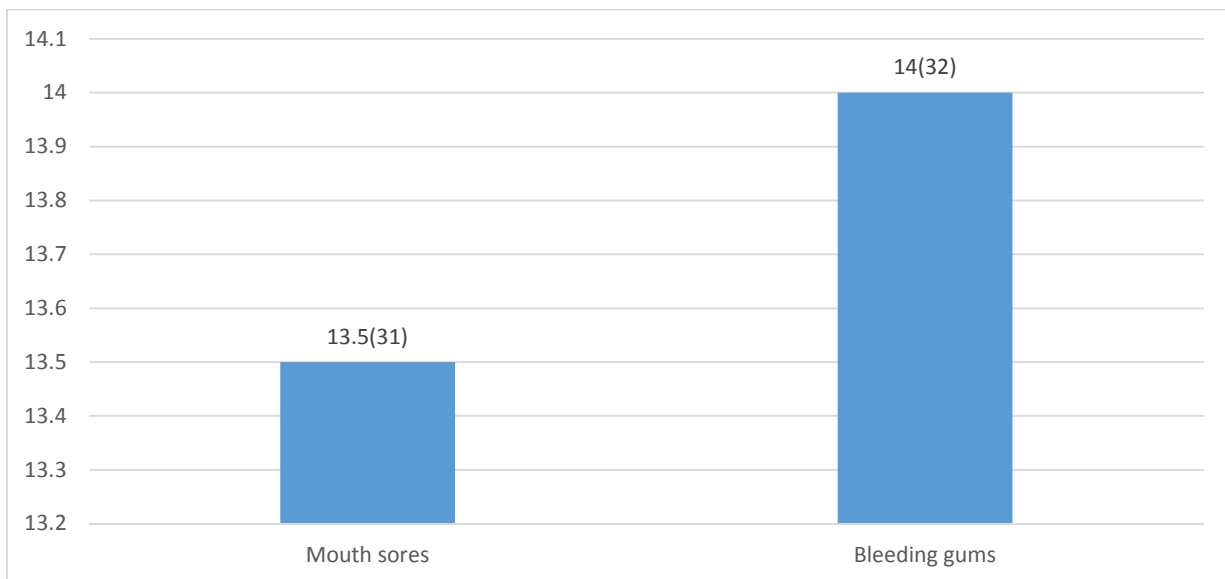


Figure 19: Percent of Oral health related symptom among participants.

4.8 Respiratory disease:

Among the research participants the percentage of Respiratory disease was 24.1% (55). The condition of respiratory disease of them were given below:

4.8.1 Frequency of Respiratory disease (RD)

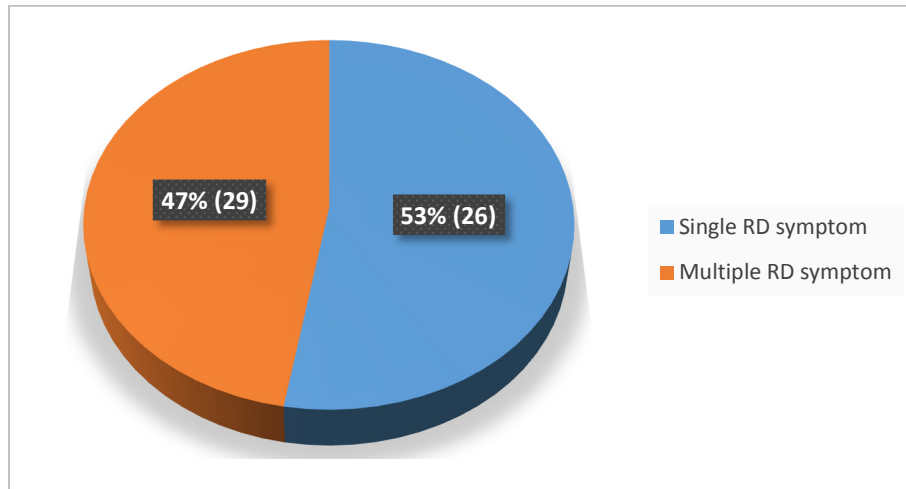


Figure 20: Frequency of Respiratory disease (RD).

4.8.2 Percentage of Respiratory disease symptom

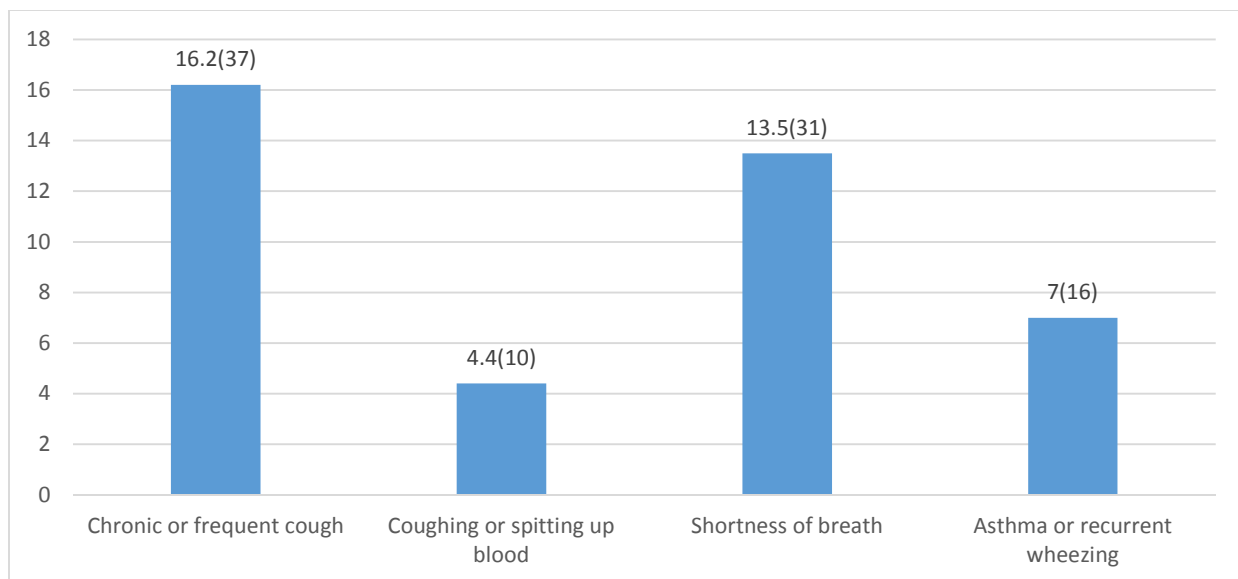


Figure 21: Percentage of Respiratory disease symptom among participants.

4.9 Gastrointestinal Problem:

Among the research participants the percentage of gastrointestinal problem was 41.8% (96). The status of gastrointestinal problem of them were given below:

4.9.1 Frequency of Gastrointestinal (GI) disease

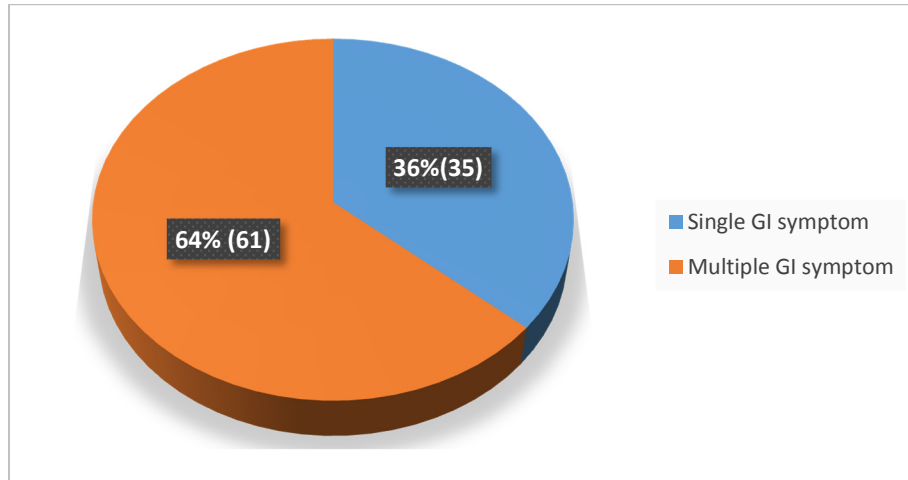


Figure 22: Frequency of Gastrointestinal (GI) disease.

4.9.2 Percentage of Gastrointestinal (GI) symptom

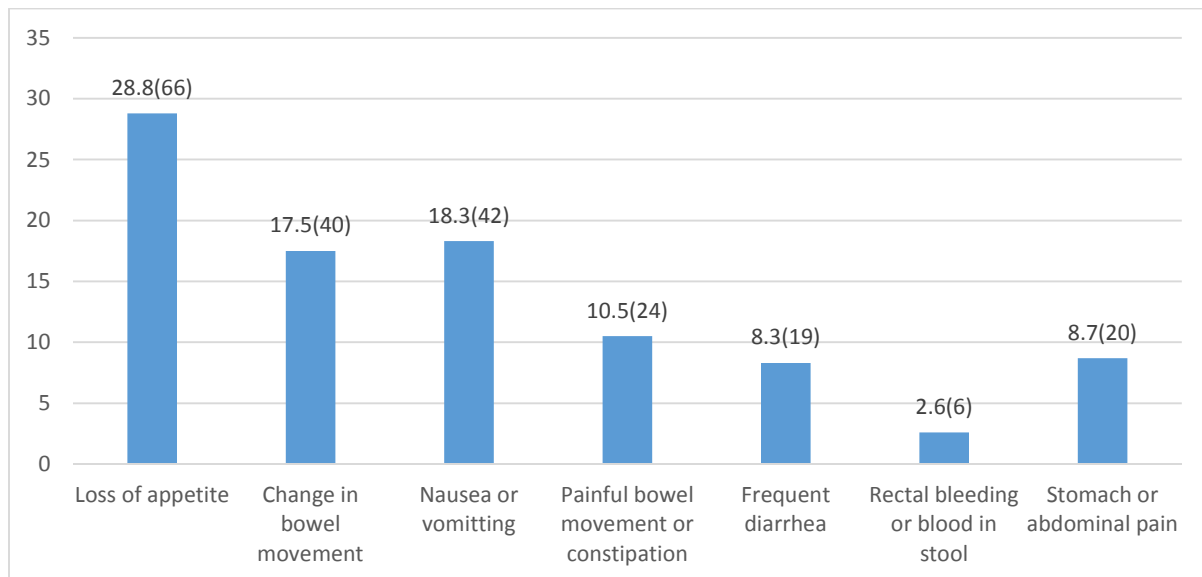


Figure 23: Percentage of Gastrointestinal (GI) symptom among participants.

4.10 Genitourinary Problem:

Among the research participants the percentage of genitourinary problem was 31% (71). The genitourinary problem of them were given below:

4.10.1 Frequency of Genitourinary (GU) problem

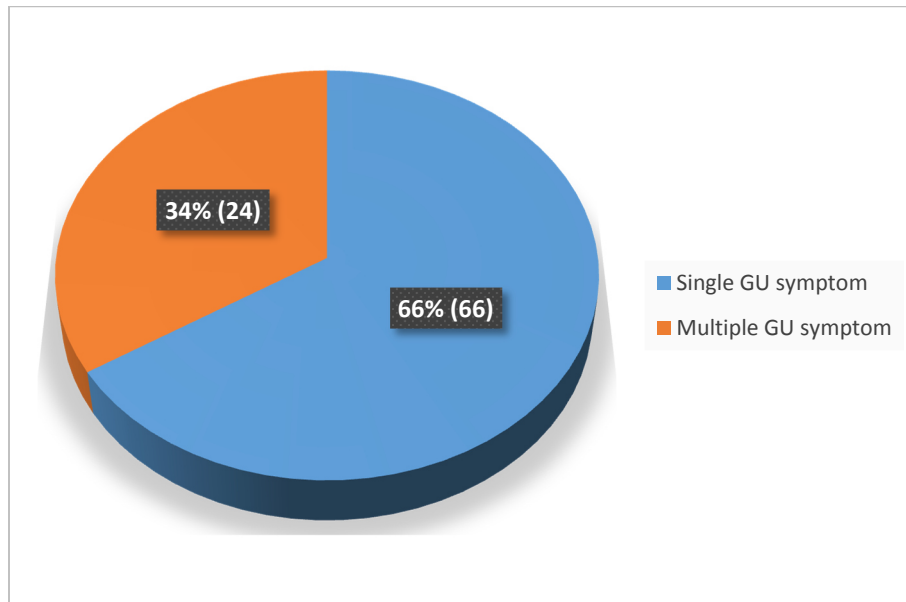


Figure 24: Frequency of Genitourinary (GU) problem.

4.10.2 Percentage of Genitourinary (GU) related symptom

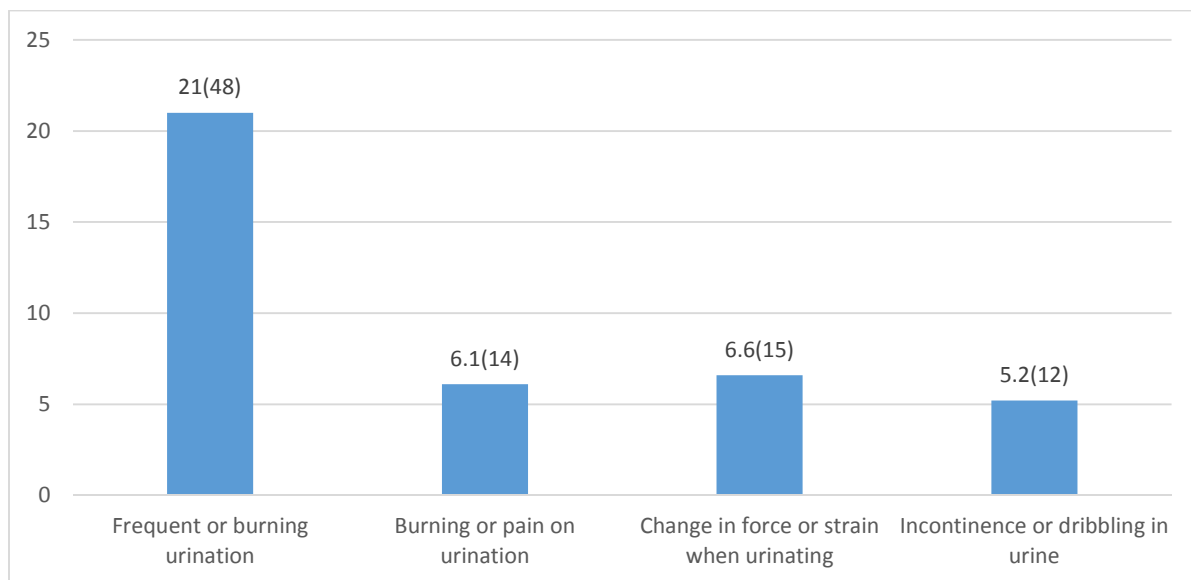


Figure 25: Percentage of Genitourinary (GU) related symptom among participants.

4.11 Musculoskeletal Problem:

Among the research participants the percentage of musculoskeletal problem was 62% (142). The musculoskeletal problem of them were given below:

4.11.1 Frequency of Musculoskeletal (MS) problem

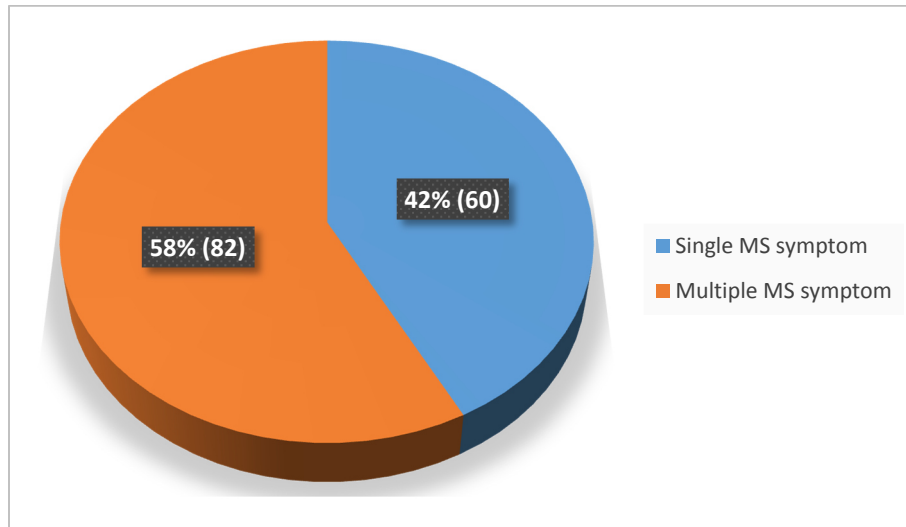


Figure 26: Frequency of Musculoskeletal (MS) problem.

4.11.2 Percentage of Musculoskeletal related symptom

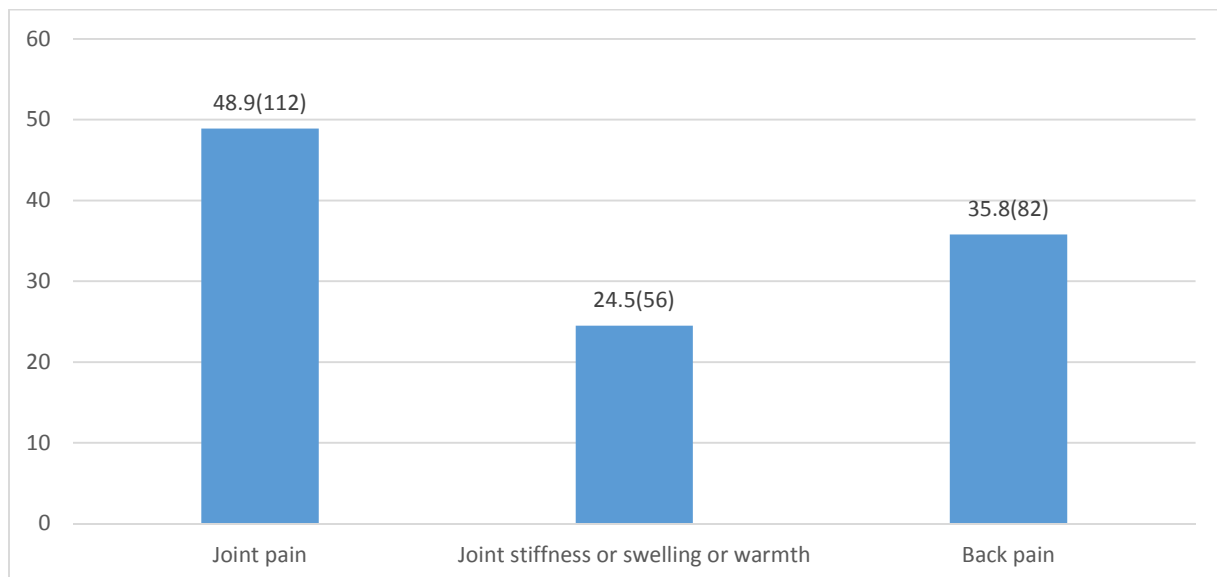


Figure 27: Percentage of Musculoskeletal related symptom among participants.

4.12 Overall Status of Woman Health:

Among 54.1% (124) woman different important aspects of health has been identified which has given below

4.12.1 Female specific disease and disorder

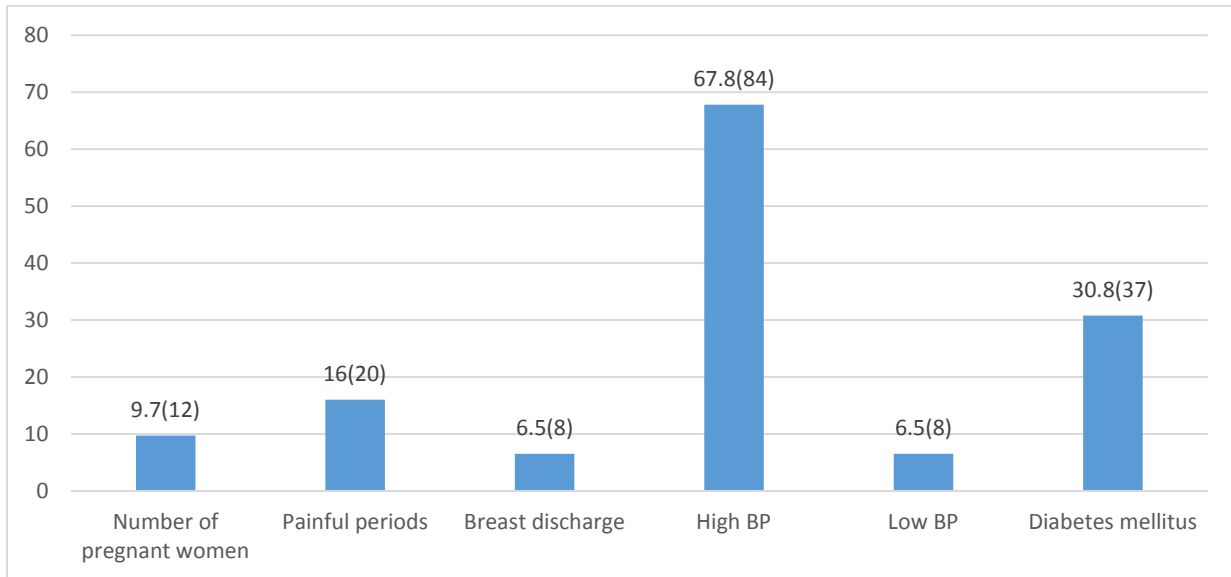


Figure 28: Female specific disease and disorder among female participants.

4.12.2 Percentage of alcohol consumption, smoking and immunization among female.

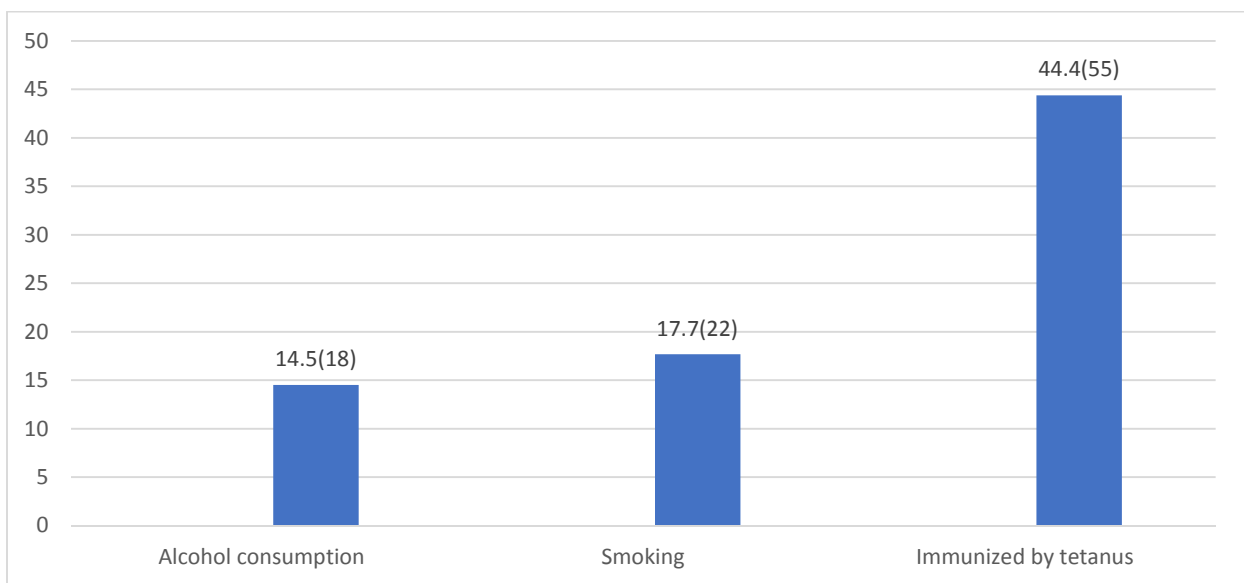


Figure 29: Percentage of alcohol consumption, smoking and immunization among female.

4.13 Method of Birth Control:

Of all the participants 87.8% (201) were married and among them having birth control method was 35% (70). The frequency of different birth control method among them were given below:

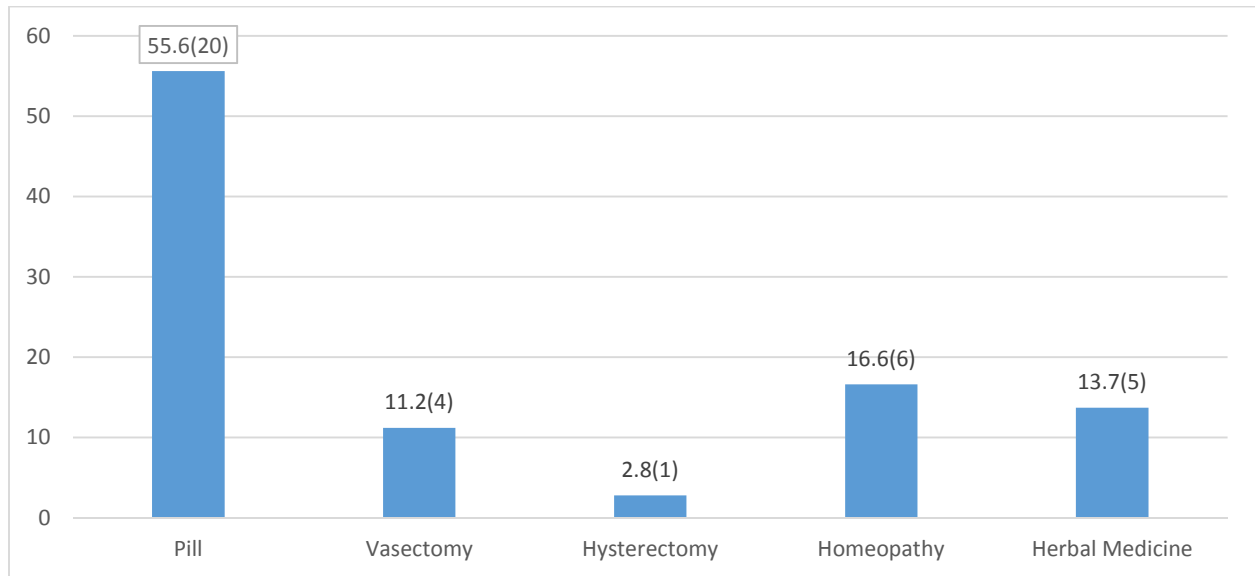


Figure 30: Frequency of birth control method among participants.

5. Discussion:

Indigenous people all over the world are historically subjugated, seceded and discriminated, which is explicitly and implicitly affecting their health status also. Studies reveal that indigenous populations experience more health related problems and inequalities, as compared to their mainstream populations (Ahmed 2001; Ahmed et al. 2003; Altman 2003; Fiscella 2004; Hansen et al. 2008; Harris 2006; Ohenjo et al. 2006; Subramanian et al. 2006; Williams et al. 2003).

Indigenous people or ethnic minorities are adversely affected by reproductive health problems in places where maternal mortality and infant mortality rates are relatively higher. By and large, indigenous peoples experience more mortality relative to non-indigenous peoples (Subramanian et al. 2006). More specifically, maternal mortality rates are significantly higher among vulnerable groups, particularly among the indigenous, ethnic or other minorities groups. (UNFPA 2005).

Indigenous peoples' health status and outcomes are embedded within the specific socioeconomic, political and cultural contexts, which they are brought up in. This study is broadly an attempt to highlight the health and disease status of the tribal community "Santals" on the context of Bangladesh.

We performed our study on 229 participants from different living area of Santals in Rajshahi district of Bangladesh. Of all, 105 participants are male and 124 participants are female. The highest age of the study group was 86 and lowest was 15. The mean age of the participants was 38.35 (± 15.313).

Among the participants most of them were from Mohadebpur which was 68. Others were from different areas of Naogaon, Jwanpur, Khursher, Khishi, Shongpur, Durgapur and the number of participants were 60, 55, 20, 18, 6, and 2 respectively. Most of the participants were farmer (62.9%) and others who don't have their own land are mainly labor (23.1%). The percent of housewife was low (11.3) as in their community most of the woman take part in outside work with male to earn their livelihood.

A study was performed by Rahman et al (2012) performed a study on 218 tribal participants where 72 men, 71 women, 19 adolescent boys, and 56 girls and showed that among tribal due to poor access to health information, girls are a vulnerable group in the tribal community that lacks ample opportunities to discuss their health and well-being. It was found that, among the participating adolescent females, the majority (77%, n=56) lacked information on modern healthcare and access to treatments; however, adolescents belonging to the Mandi, Manipuri and Rakhaine tribes had a comparatively better understanding of health and health-related practices.

Whereas in our study the percent of adolescent, adult and geriatric were 10.5, 55.5, 34.1 respectively. We have identified the oral, cardiovascular, genitourinary, eye, gastrointestinal and other major disease condition focusing on Blood pressure and Diabetes.

Different study has performed on alcohol consumption and its effects on tribal community such as, a study by Biswas et al. (2011); Thekaekara (2011) and Corraya (2015) is notable. Study by Biswas and his research group showed that among the 50 cases, 47 patients were male and 3 were female cases. Both regular and irregular drinkers were included. The common symptoms of liver disease among tribal alcoholics were yellow coloration of sclera (24%), nausea & vomiting (20%) and weight loss (14%). The common findings were jaundice (24%), anemia (20%), ascites (10%), edema (10%) and hepatosplenomegaly (20%). Liver function tests revealed only 17 patients had mild to severe form of hepatocellular damage. Hyperbilirubinemia was found in 34% participants. AST/ALT ratio more than 2 was found in 32% subjects. Ultrasonography was done in 46 out of 50 subjects: 29 cases reported as normal (63.04%), fatty liver in 5 (10.87%), acute hepatitis in 5 (10.87%) and chronic liver disease in 7 (15.22%) cases.

In our study we have found that among the participants 39.8 (91) are alcohol addicted. Among them 8.3% were adolescent, 37.8% were adult and rest 43.6% were geriatric. We have also noted their smoking and tea habit. Among them 43.2 (99) were smoker where female smoker were 17.7% (22). In terms of their tea habit about 48.9% (112) were habituated to tea and tea habit is higher in adolescent (54.2%) and then rest adult (50.8%) and geriatric (43.6%).

Some research across the world, from the poorest to the richest countries showed that indigenous peoples today experience chronic high cardiovascular risk. (Sachdev 2011, Mishra et al 2014, North et al 2003, Kshatriya 2014, Saquib et al 2012).

Specifically, Fatema et al (2011) performed research on Cardiovascular risk factors among Santal population in Bangladesh and 316 Santal participants (135 male and 181 female, aged ≥ 20 years) were screened and they indicated that the age (M \pm SD) of the subjects was 39 (± 11) years, BMI 18.7 \pm 2.8; WHR 0.85 \pm 0.17. Using BMI for Asian 61.3% found underweight of whom 35%, 12% and 14% were in chronic energy deficiency stage I, II and III respectively; for WHR females were in risk (70%) which not corresponding with male (within range 94%). Among males & females alcohol habits (≥ 3 serves/day) had 93% and 64%; prevalence of hypertension were 15.6% and 7.2%; dyslipidemia 49% and 29% respectively. Males had high (77%) smoking habits. The prevalence of diabetes and pre-diabetes among the participants were 4.4% and 11.1%. Hypertension showed significant association with age, cholesterol, LDL and dyslipidemia with BMI, 2HBG and SBP on logistic regression analysis ($p < 0.05$).

Hypertension is a major health problem, especially because it has no clear symptoms. Many people have hypertension without knowing it. It is now well proved that modifier factors like obesity, overweight that is measured by BMI, visceral adiposity measured by waist

circumference, increasing age, are associated with the high prevalence of hypertension. (Low et al 2009, Jafar et al 2006, Tassaduq et al 2004).

Our study has reported that the prevalence of hypertension and associated risk factors are in the increase among the Santals Tribes. In current study group the population had high prevalence rate of hypertension which is 73.7% (169). Among male the percentage of high BP, normal BP and low BP were 84%, 16% and 2 % respectively. On the other among female 84%, 32% and 8 % were accordingly. One of the reasons might be that now a days tribal population residing mostly in and around villages and cities and adapt the lifestyle similar to them, that is why they had almost similar risk factors associated with the prevalence of hypertension as rural and urban population had, as shown in other studies. (INCLLEN, 1996, Okosun et al 2001).

The prevalence of diabetes in the tribal population was higher than that of the nontribal population of Bangladesh. Older age, higher central obesity, and higher income were proven significant risk factors of diabetes. High prevalence of diabetes among these tribes indicates that the prevalence of diabetes and its complications will continue to increase. (Saqib et al 2013, Sayeed et al 2004, Bhowmik et al 2013, MA et al 2004).

A study on the tribes of Khagrachari Hill Tracts of Bangladesh has showed that the crude prevalence of type 2 diabetes was 6.6% and IFG was 8.5%. The age-standardized (20–70 years) prevalence of type 2 diabetes (95% CI) was 6.4% (4.96 –7.87) and of IFG was 8.4% (6.48 –10.37). Both tribesmen and women had equal risk for diabetes and IFG. Compared with the lower-income group, the participants with higher income had a significantly higher prevalence of type 2 diabetes (18.8 vs. 3.1%, $P = 0.001$) and IFG (17.2 vs. 4.3%, $P = 0.001$). Using logistic regression, we found that increased age, high-income group, and increased central obesity were the important risk factors of diabetes. (Sayeed et al 2004).

A study was performed by Upadhyay et al in 2013 to see the burden of diabetes mellitus and prediabetes in tribal population of India. A total of seven studies were retrieved. The prevalence of diabetes mellitus ranged from 0.7% to 10.1%. The final estimate of diabetes prevalence obtained after pooling of data from individual studies, was 5.9% (95% CI; 3.1-9.5%). The prevalence for impaired fasting glucose (IFG) varied from 5.1% to 13.5% and impaired glucose tolerance (IGT), from 6.6% to 12.9%.

In our study population the prevalence of diabetes in the tribal population was higher 34.1% (78). Both tribe's men and women has equal risk of diabetes. The frequency of diabetes in male and female were 52.56% (41) and 47.44% (37) respectively. This large proportion of diagnosed cases of pre-diabetes and diabetes reflects the lack of public awareness of the disease. Smoking along with DM causes an extra risk for macro and micro vascular complications which further increases cardiovascular morbidity and mortality. Rapid urbanization is also association with the emergence of non-communicable diseases. Evidences demonstrated that there was a positive

association of rural urban gradient to the emergence of environmental risk factors (Fezeu et al 2008).

It had been evident that the Asian are more susceptible to risk factors like age, adiposity (based on BMI), and central obesity (WHR). (Ramachandran et al 2004). Despite the low BMI among tribal as compared to other non-tribal groups, BMI was strongly associated with glucose tolerance (Ramachandran et al 2001). Effect of alcohol consumption onto the development of DM showed ambiguous conclusions.

A study has been done by Dhake et al in 2011 on prevalence and causes of avoidable blindness and severe visual impairment in a tribal district of Maharashtra, India. The showed the prevalence rates of bilateral blindness, severe visual impairment (SVI), and moderate visual impairment (MVI). They examined 2,005/2,300 persons (response rate 87.2%). The prevalence of blindness, SVI, and MVI for the BCV was 1.63% (95% CI 1.11–2.15), 5.93% (95% CI 4.96–6.90), and 14.6% (95% CI 13.2–16.1), respectively. The prevalence of blindness, SVI, and MVI for the presented vision was 1.87% (1.32–2.42), 6.72% (95% CI 5.70–7.74), and 19% (95% CI 17.4–20.6), respectively. Unoperated cataract was responsible for 77% of different visual disabilities. The coverage of existing cataract surgery service was 9.4%. Lack of knowledge about cataract surgery was the main cause of unoperated cataract among 41% of interviewed participants with cataract and SVI.

Our study was designed to determine prevalence of visual impairment and various eye diseases. Of all, the participants the frequency of eye disease were 31.4% (72) and we have also identified participants with single eye symptom was 64.2% and more than one eye symptom was 34.1%. Among them who has change vision or blurred vision was 50% (63), Double vision eye was 25.5% (32), disease or injury 17.5% (22) and wear glasses 7% (9). The magnitude of visual disabilities and unattended curable eye conditions are therefore high among this tribal population. We conducted a cross-sectional survey to determine the magnitude and causes of blindness and low vision of Santals. This would help estimating cataract blind and suggest public health measures to address avoidable blindness in future.

Historical evidence suggests that dental disease was rare among tribal in the early 20th century. Today, they have more untreated tooth decay and gum disease than any other population group, due to socioeconomic status, changes in diet, lack of preventive programs, and simply not enough dental professionals to meet the huge backlog of untreated disease. (Kumar et al 2009, Philip et al 2013, Mandal et al 2015).

Debris, calculus and oral hygiene index scores increased with age. The overall mean DMFT and DMFS scores were 5.34 ± 6.48 and 18.94 ± 35.87 respectively. Extraction was the most required treatment (1.74 ± 3.66 teeth) followed by one surface fillings (1.34 ± 1.65 teeth). Shallow periodontal pockets were prevalent (40%) among the 35 – 44 years age group whereas deep

pockets were most common (11.6%) in the oldest age group. More than half the sextants (3.15) were excluded amongst the oldest study group. All the independent variables namely age, frequency of cleaning teeth, substance used for cleaning teeth and visiting habits were statistically significantly related to caries and periodontal status. (Kumar et al 2009).

From our study, the percent of oral health problem was 22.2% (51) and the frequency of mouth sores among them was 49% (31) and bleeding gum was 51% (32). The participants who has single symptom of the above was 76.6% (39) and multiple symptom was 23.4% (12). Due to their minority status, hill tribes are not fully recognized in governmental resource allocation for public health services. Treatment of dental and periodontal disease is expensive and has been inaccessible to these tribes. Generally, the oral health of them was quite poor. Periodontal disease was a major oral health problem though they did not request any dental care. The data could be used as base-line information for health authorities and dental professionals for planning strategies for oral health promotion, prevention, and treatment in this group of people.

The prevalence of tribal respiratory disease especially asthma and associates factors has been identified in different separate study on them. The prevalence of self-reported asthma was 1.8% (95%CI 1.6–2.0) among men and 1.9% (95%CI 1.8–2.0) among women, with higher rates in rural than in urban areas and marked geographic differences. After adjustment for known asthma risk factors, women were 1.2 times more likely to have asthma than men. Daily/ weekly consumption of milk/milk products, green leafy vegetables and fruits were associated with a lower asthma risk, whereas consumption of chicken/meat, a lower body mass index (BMI; <16 kg/m², OR 2.08, 95%CI 1.73– 2.50) as well as a higher BMI (>30 kg/m², OR 1.67, 95%CI 1.36–2.06), current tobacco smoking (OR 1.30, 95%CI 1.12–1.50) and ever use of alcohol (OR 1.21, 95%CI 1.05–1.39) were associated with an increased asthma risk. (Agrawal et al 2013).

Our study indicated that 24.1% (55) participants of the study group are having respiratory disease. Among them having chronic or frequent cough were 39.4% (37), coughing or spitting up blood were 10.7% (10), shortness of breath were 32.9% (31) and asthma or recurrent wheezing 17% (16). The results of this present study suggest that respiratory disease is not a major health problem amongst this tribal community at the present time. However, the situation may change if appropriate control measures are not taken. At present, this population generally lives in inaccessible low land areas, with poor access to health delivery systems. With the developmental activities in the area, they are now in a phase of transition with major changes in their life-style occurring. If this change does not go hand-in-hand with improved health care delivery, diseases such as respiratory could increase due to various factors such as increased migration to other areas.

Of all the research participants the frequency of gastrointestinal problem was 41.8% (96). Among them various symptom has been identified, which are- loss of appetite 30.4% (66), change in

bowel movement 18.5% (40), nausea or vomiting 19.3% (42), painful bowel movement or constipation 11.0% (24), Rectal bleeding or blood in stool 2.8% (6), stomach or abdominal pain or heart burn 9.2% (20), diarrhea 8.8% (19). The most often reported disease associated with drinking water is gastroenteritis and the attack rates for these infections can reach over 50% of the exposed population. (Phillips 1975). Working habit and physical activity plays very important role in human health. Sedentary lifestyle tends to suffer from obesity because of less physical activities subsequently leading to a wide range of disease, including gastrointestinal diseases, gastro-esophageal reflux disease, Barrett's esophagus, erosive esophagitis (El-Serag 2007, Van-Soest et al 2005).

Further, the preparation of fermented foods is usually done within the household. Hence, the lower standards of hygiene might also lead to increased growth of pathogenic bacteria and thus increased GIT infections. Alcohol consumption is the world's third risk factor for diseases; in middle income countries, it is the greatest risk factor. (WHO 2011). In our study, we found that 36% (83) of respondents who consume alcohol regularly get GIT problems. Alcohol-induced digestive disorders and mucosal damage in the GI tract can cause loss of appetite and a multitude of abdominal complaints, such as nausea, vomiting, feelings of fullness, flatulence, and abdominal pain.

A study was performed by Vinod et al in 2012 on the prevalence of urinary tract infection among tribes of India. The report of physical parameters reveals that 85% of the urine was pale yellow, white, red and yellow of 5% each. This indicated that about 40 % of the patients have renal disease and haemoglobinuria. About 40% of the patients passed only a small amount of urine, which indicated their symptoms for UTIs.

Our study revealed that 31.0% (71) participants have genitourinary problem. Study also indicated that among them frequent urination 54% (48), burning or pain on urination 15.6% (14), change in force or strain when urinating 17% (15) and incontinence or dribbling in urine 13.4% (12). Participants having single genitourinary symptom 20.5% (47) and multiple genitourinary symptom 10.5% (24). Among them maximum patients can be easily treated with antibiotics or other medication and can prevent recurrent UTI. This study also reveals that the people of Santals tribe were far away from the use of antibiotics. Knowledge, attitude, awareness and practice study of Santals tribe reveals that they were lack of knowledge about predisposing factor for the development of UTI.

Musculoskeletal pain is reported more commonly by South Asians. This may result from a variety of factors, including cultural differences and thus they investigated the extent to which differences in the prevalence of pain within the South Asian population could be explained by differences in acculturation (the extent to which immigrants take on the culture of their host population). Widespread pain is more commonly reported in South Asians though there are

interesting differences depending on how the symptom is ascertained. (Palmer et al 2005). From our study population we have found that about 62% (142) participants have musculoskeletal problem. Among the sufferer having joint pain 48.9% (112), Joint stiffness or swelling or warmth 24.5% (56) and back pain 35.8% (82). Among female participants reported back pain 38% (47), joint pain 21.8% (27) and joint stiffness or swelling 21.8% (27). The percentage of musculoskeletal problem among geriatric participants were high 80.8% (63) then adult 56.7% (72) and adolescent 29.2% (7).

The frequency of immunization among them were 52.4% (120). Out of 120 vaccinated participants 25% are single vaccinated and 75% were multiple vaccinated. Among them the percent of different vaccination profile were- Tetanus 45% (54), Polio 40.8% (49), Hepatitis 31.7% (38), Pneumonia 5% (6) and Influenza 1.7% (2).

Among the research group 87.8% (201) were married. And from this 201 participants 35% (70) people are having birth control procedure. Most of them are dependent on birth control pill 55.6% and rest of them are dependent on Vasectomy 11.2%, Hysterectomy 2.8%, Homeopathy medicine 16.6% and Herbal medicine 13.7%.

6. Conclusion

The present study throws light on the unexplored aspects in relation to habit and live hood so far untouched tribal population of Santals of Northern part of Bangladesh. This study has revealed that the present Santals community has been changing at a certain pace along with their poor health and illness. Changing lifestyle, food, cultural values show a profound impact on illness and treatment profile among this community. Social, habitation, cultural exchange with the non-tribal people brings some change in their concepts and views. The situation is even worse among their rehabilitated counterparts who are unable to collect food from the forest and medical plants to use in their unique healthcare system. They live in unhygienic micro-environmental conditions and suffer from severe gastrointestinal problems, which are compounded by excessive alcohol intake and related under nutrition. They also suffer from a high incidence of a range of diseases like hypertension, diabetes etc. and adverse health conditions, including tuberculosis, diarrhea, intestinal parasitic infection, musculoskeletal pain and other diseases. Thus, this community, with their traditional perception along with modern facilities, is attempting to adapt to the modern world, i.e. urban culture. However, the avoidance or delay in seeking medical care in some cases needs an approach that considers their perception about health and illness. Present-day health education has also been heavily influenced by research of illness perceptions and health-seeking behavior. We feel that a targeted approach to address the healthcare needs of such migrant communities is necessary in order to make the available public health interventions and medical care available, accessible and acceptable to these vulnerable communities.

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