

Demographic characteristics and Prevalence of Diseases: A case study of Chapagaun, Godavari Municipality, Lalitpur

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Abstract

Sound health is the main property of each people so first priority should be given to the healthy life. Now, people are gradually becoming conscious about their health because of the various awareness program of Government and non-governmental agencies. Nepal is committed to access to quality health care for all its citizens. So, Government has encouraged the governmental and non-governmental sectors to provide the effective health service for hard to reach people living in the remote areas through different techniques. Health camp is one technique to provide the health service to remote people. The study was conducted among the 98 patients visited health camp organized in Chapagaun, Godavari Municipality, Lalitpur. The health camp had managed many health facilities: General checkup, screening of heart disease and cancer, orthopedic cases, Lab check in to creatinine, blood sugar, TFT, Vit D, Vit B 12 etc.

The data was collected from the patient record file of health screening desk. The result shows that the female participation was higher than male attending the health camp for their health checkup. Similarly, age-wise, 41 to 60 years were more than other age group. It is interesting that the health problem was similar between the male and female so statistically there was no significant association between the male and female regarding the prevalence of different types of diseases because the p value is .927 which is greater than .05 significant level. The further study can be done to identify the causative factors of increasing the risk of disease prevalence.

Keywords: Cardiology, Demographic, Disease, ENT, Kidney, Ortho, TFT

Introduction

Nepal is a developing country so it has still no adequate health facilities in the hard to reach areas. Though, Nepal is committed to access to quality health care for all its citizens. The main institutions that delivered basic health services in 2074/75 were the 125 public hospitals including other ministries, and 1,822 non-public health facilities, the 198 primary health care centres (PHCCs) and the 3,808 health posts. Primary health care services were also provided by 11,974 primary health care outreach clinic (PHCORC) sites. (Department of Health Services (DoHS), 2017/2018). Nepal Government, Private hospitals and Non-governmental organizations are organizing the Health camps to provide the health service for hard to reach people. Health Camps is the basic and important ways as to check the health status of the patients who are not able to visit health facilities in time due to various reasons. Health camps are organized to help the poor to get healthcare in free of cost. It is important especially in developing countries like ours where infrastructures are very poor or inadequate. It is the mobile camp and is conducted in different parts of the country especially in remote areas by qualified doctors, nurses, pharmacists, paramedics and community health workers (where there is not regular access of health personnel and equipment). These health camps are funded by NGO's, Trusts or renowned hospitals or on the voluntarily basis. The main objective of this study is to analyze the types of diseases based on the demographic characteristic of patients. Basically, following types of health problems were reported by the patients:

High Blood Pressure

Blood pressure (BP): the term "blood pressure" refers to the pressure exerted in the arteries. Blood pressure is usually expressed in terms of the systolic pressure and diastolic pressure. Systolic blood pressure means the maximum pressure during one heartbeat whereas diastolic pressure indicates the minimum pressure between two heartbeats. The Unit of blood pressure is in millimeters of mercury (mmHg) e.g. Blood pressure of patient Ram Karki is 140/80 mmHg.

The symptoms of blood pressure include severe headache, nasal bleeding, confusion, Fatigue, Vision problems. Chest pain, irregular heartbeat, Difficulty breathing, Blood in the urine etc.

<i>Blood pressure category</i>	<i>Systolic mm Hg (upper member)</i>		<i>Diastolic mm Hg (Lower member)</i>
<i>Normal</i>	<120	and	<80
<i>Elevated</i>	120-129	and	<80
<i>High blood pressure (Hypertension) stage I</i>	130-139	or	80-89
<i>High Blood pressure (Hypertension) stage II</i>	140 or higher	or	90 or higher
<i>Hypertensive crisis (consult your doctor immediately)</i>	Higher than 180	And/or	Higher than 120

Source: American Heart Association (AHS)

Normal blood pressure in adult is supposed to approx."120 / 80 mmHg"

According to the Prof Majid Ezzati (2017), there is the more risk of being the cardiovascular disease (CVD) and chronic kidney disease (CKD) as a complication, if raised blood pressure is not controlled in time where raised blood pressure of systolic and diastolic blood pressure denotes the 140mmHg (or higher) and 90 mm Hg (or higher) respectively. This is as per word wide estimated trends of systolic and diastolic (mean) and the prevalence of, including with the number of people. Effective management of high blood pressure is possible only after identifying the magnitude of the problem as well.

Thus, hypertension (HTN) is an enormous health problem and is one of the biggest health challenges in the 21st century. If there is proper diagnosis in time and detectable, it is treatable. But If Untreated in time, it leads to kill as a silent killer (Kasper, et al., 2005). The prevalence of hypertension was 43.3%. (Study of Coastal Karnataka, India). In India, the prevalence of HTN ranges between 20%–40% in urban areas and 12%–17% among rural adults (Reddy, Shah, Varghese, & A. Ramadoss, 2005).

ENT (Ear, Nose and Throat Problems)

The prevalence of middle ear infections was 5.8%. Middle ear infections remain a public health problem in Nepal. The prevalence of the disease is becoming higher. A many parents are not aware of the ENT problems. When they find some disorders in ear (external/internal), nose and throat, they usually go to retail shops and make the self-medication. It means that most individuals manage their problem in the community without seeking help of doctors (Hannay, 1979; White, Williams, & Greenberg, 1961).

Self-medication brings a lot of problem to the patients, no doubt. Many children swim in polluted river and pond with not taking even the minimum precaution. Low education levels, smoking, household smoke were in an urban area, brings the ENT problems in men, women

and children. Most of the patients consult GPs taking the problems of ENT. Even though ear, nose or throat (ENT) symptoms are common reasons for consulting GPs (ISD Scotland: Scottish Health Statistics, 1998; McCormick, Fleming, & Charlton, 1992–1993).

ENT Disorders

<i>Ear disorders</i>	<i>Supportive otitis media, Otitis media with effusion, Injures, Foreign body ear, Ear wax</i>
<i>Nose disorders</i>	Rhinitis, Allergic rhinitis, chronic sinusitis. Epistaxis, nose polyp, foreign body nose, deviation of nasal septum, injuries
<i>Throat disorders</i>	Tonsillitis, Pharyngitis, Cervical lymphadenitis, Adenoid hypertrophy, Foreign body

Source: Incidence of various ENT diseases, Raju MRK et al

Among many disorders of ENT, otitis media, tonsillitis and rhinitis are the most common ENT problems in pediatric population (Raju & Fareeduddin, 2020). In Nepal (also patients of Health camp) shows the lot of cases of tonsillitis and rhinitis as a common problems of ENT in children. If Tonsillitis in children is not cure in time, s/he may suffer from RHD (Rheumatic heart disease) as a complication of tonsillitis in children. So antibiotics are to be prescribed in tonsillitis patients as well.

Chronic Kidney Disease

The full form of CKD is chronic kidney disease. It is also called chronic kidney failure. In CKD there will be the gradual loss of kidney function as our kidneys filter wastes and excess fluids from your blood, which are then excreted in urine. The cases of CKD are increasing day by day. There are lots of CKD patients in Nepal. Many patients are admitted in most of hospitals for their hemodialysis. Government of Nepal is also providing some financial and managerial contribution to the patients. Symptoms of CKD include leg swelling, feeling tired, vomiting loss of appetite, and confusion whereas complication Complications include heart disease, high blood pressure, bone disease and anemia (Liao, et al., 2012). Chronic kidney disease (CKD) is non communicable disease and it contributes the morbidity and mortality.

CKD is the 9th leading cause of death in the U.S. 1 in 3 American adults (approximately 80 million people) is at risk for CKD. Kidney disease is associated with the tremendous economic burden to the country. Even the developed countries spend more than 2-3% of the annual health care budget on the treatment of terminal care (end stage) of kidney disease. In 2010, about 2.62 million people received the dialysis services and by the end of 2030, it is estimated that, such patients will be doubled (Luyckx, Tonelli, & Stanifer, 2018).

Regarding to the prevalence of chronic renal disease, “The global all-age mortality rate from CKD increased 41.5% (95% UI 35.2 to 46.5) between 1990 and 2017, although there was no significant change in the age-standardized mortality rate (2.8%, –1.5 to 6.3). In 2017, 697.5

million (95% UI 649.2 to 752.0) cases of all-stage CKD were recorded, for a global prevalence of 9.1% (8.5 to 9.8)” (Vos & Bikbov, 2020).

Orthopedic Cases

Orthopedic is the branch of medical sciences which deals with dealing with the correction of deformities of bones or muscles. The different disorder of it includes Osteoarthritis. Rheumatoid Arthritis. Cubital Tunnel Syndrome. Lateral Epicondylitis (Tennis Elbow) Medial Epicondylitis (Golfer's or Baseball Elbow), Carpal Tunnel Syndrome, Ligament Injuries to the Knee and Torn Meniscus. Road Traffic accident also includes under the orthopedic cases. As per the study titled “Epidemiology of orthopedic trauma admissions in a multispecialty hospital in Warangal-A retrospective study”, The prevalence of orthopedic finds With a prevalence of 63.6% and 39.1%, studies have shown that Road Traffic Accidents (RTAs) are the most common determinant of traumatic orthopedic injuries (reported by some researchers)

It is the 10th leading cause of death universally and the number one cause of mortality of the young population between the ages of 5 and 29. Only few studies have been conducted on the severity of road traffic injuries in Ethiopia hence the need for the study. This study showed road traffic accident is predominantly affecting the economically active, male young population (Gebresenbet & Aliyu, 2019)

Thyroid Problems

Nepal is a mountainous landlocked country which is situated far away from the sea. The height of Mt. Everest is 8848 meter, top of the world. Because of this kind of geographical distribution or placement, including a high annual rainfall of Nepal leads to a low soil iodine content.

The most common cause of goiters worldwide is a lack of iodine in the diet. In the United States, where the use of iodized salt is common, a goiter is more often due to the over- or underproduction of thyroid hormones or to nodules in the gland itself. Ultimately, makes the high incidence of iodine deficiency disorders. In these regards, thyroid dysfunction is a major public health problem among the Nepalese population. Regarding to the incidence of the disease, “Hypothyroidism (2.26%) and subclinical hypothyroidism (10.50%) had higher prevalence as compared to hyperthyroidism (1.59%) and subclinical hyperthyroidism (3.05%) in the western region of Nepal. A higher prevalence of the thyroid dysfunction was observed in the subjects who ages were above 41-50 years” (Yadav, Magar, Poudel, Yadav, & Yadav, 2013)

Prevalence of Cancer

Cancer is the second leading cause of death globally. Cancer is the non-communicable diseases. It is a group of diseases involving abnormal cell growth with the potential to invade or spread to other parts of the body. There was about 9.6 million deaths in 2018 by cancer (*WHO 2018*). The burden of disease is higher in low and middle income countries like Nepal as compared to developed countries. The treatment of cancer is very expensive. Nepal Government is also providing one lack each cancer patient after approvals of Office of public Health. The main

factors of cancers are radiation, exposure of physical and chemical, chemical of colors, rapid urbanization with unplanned settlement, food and air pollution etc.

By 2020 the incidence rate of cancer per 100,000 is estimated to be 41.4 in female and 38.5 in male. 10 Annual report published by Department of Health Services (DoHS), Nepal in 2018 depicted the morbidity of various cancers in all seven provinces between 2016 and 2017 (Saud, Adhikari, & Awasthi, 2018).

The full form of CML is Chronic myelogenous leukemia (CML), also known as chronic myeloid leukemia, is a cancer of the white blood cells (blood cancer). It is a form of leukemia characterized by the increased and unregulated growth of myeloid cells in the bone marrow and the accumulation of these cells in the blood.

In Patan Hospital (GIPAP centre /Glivec international patient assistance programme), there are about 800 number of CML and GIST (Gastrointestinal stromal tumors) patients. The treatment of CML (blood cancer) is very expensive. The drug of choices for CML are Imatinib, Nilotinib, Dasatinib and Ponatinib etc. One box of Imatinib (GLIVEC) cost about Rs.1.50,000 (Almost one-month course/each patient). Fortunately, all forms of drugs are being dispensed to CML patients free of cost from Patan Hospital and B.P. Koirala Memorial Cancer Hospital (about again more than 650 patients are enrolled), Bharatpur, Nepal as it is being donated from MAX foundation, USA.

The Max foundation is a global health organization that believes that all people living with cancer have the right to access the best treatment and support. The Mission of foundation is to increase global access to treatment, care and support for people living with cancer.

Materials & Methods

The study had collected the data from the Health campaign organized in Kalika pathology Lab, as to provide the free health services to community people. The total 98 people had visited the health camp for their health checkup. The health person had diagnosed the all types of health problem and provided the appropriate suggestion and treatment to the visitors. The study is based on the descriptive design so it has only analyzed the prevalence of diseases based on the demographic characteristic of patients. The data was collected from the recorded information of health screening desk. The collected data are analyzed from the statistical software (SPSS v. 20) by using the

Results & Discussion

Demographic information of Respondents

The data presented in below Figure 1 shows the distribution of demographic information of respondents who were participated in the health camp for the checkup of their health problems. The data shows that there were 57.1% female patients and rest (42.9%) were males. Similarly, majority (42.9%) patients were from 41-60 years old followed by 31.6% were from 21-40

years, 13.3% were from 61-80 years, 10.2% were under 20 years and 2% were more than 80 years.

N = 98

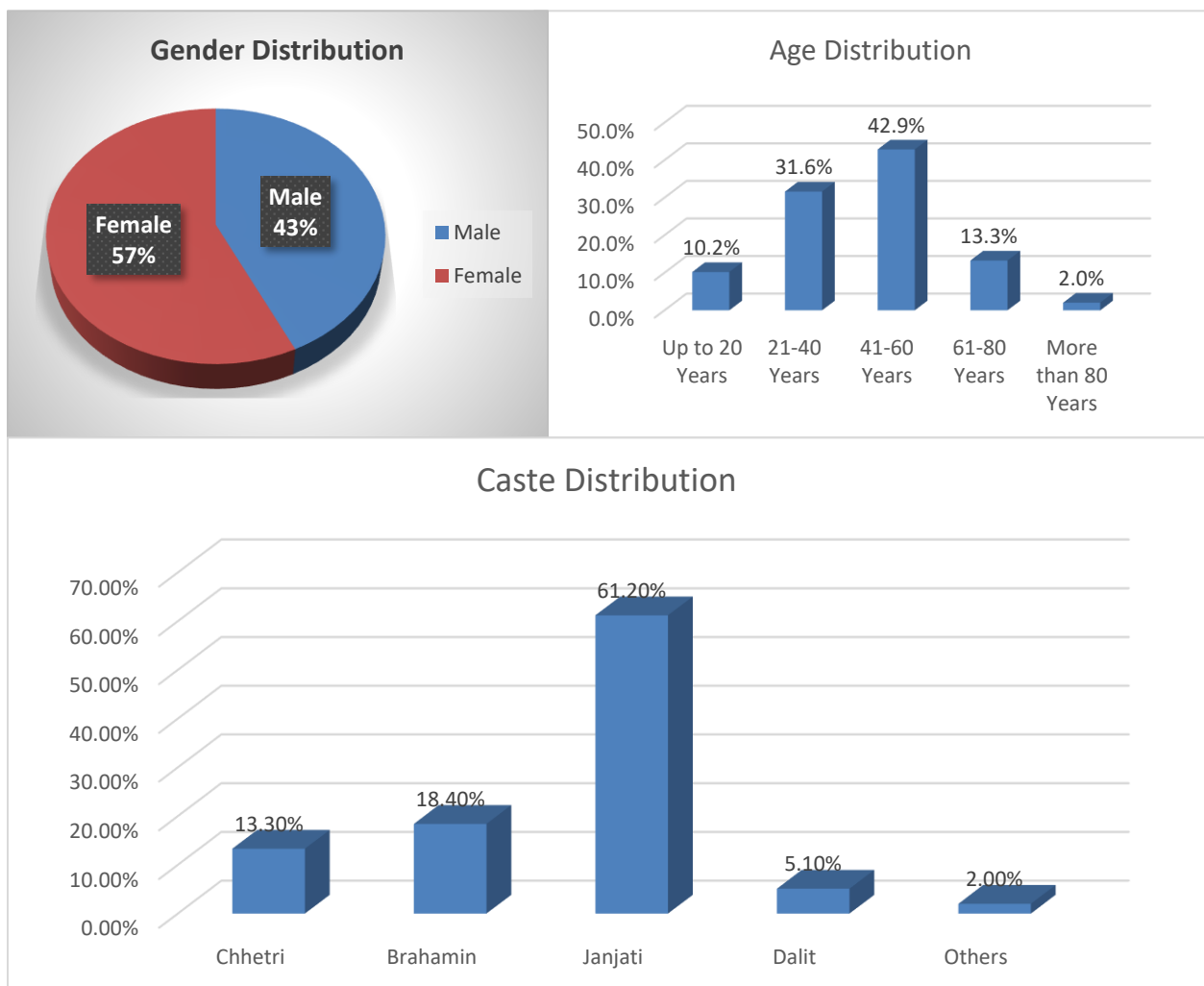


Figure No. 1: Demographic Information of Patients

The data also shows the caste distribution of patients. There were 61.2% from the Janjati (ethnic community) followed by 18.4% from Brahamin, 13.3% from Chhhetri, 5.1% from Dalit and rest 2% were from other different caste groups.

Sex wise prevalence of diseases

The study team has explored the prevalence of diseases on the basis of sex of respondents. The data presented in the below Table 1 shows that in total prevalence of general health problem was higher (37.8%) followed by 24.5% Ortho and 17.3% ENT. The prevalence of Cardiology was 7.1%, prevalence of Kidney was 5.1% and prevalence of TFT was 3.1% whereas the 5.1% patients came with multiple health problem.

Table 1: Age wise disease types

Sex	Types of Diseases							Total
	Cardiology	ENT	General health checkup	Kidney	Multiple Problem	Ortho	TFT	
Male	7.1%	21.4%	38.1%	2.4%	4.8%	23.8%	2.4%	100.0%
Female	7.1%	14.3%	37.5%	7.1%	5.4%	25.0%	3.6%	100.0%
Total	7.1%	17.3%	37.8%	5.1%	5.1%	24.5%	3.1%	100.0%
Chi-Square Tests								
			Value	df	Asymp. Sig. (2-sided)			
Pearson Chi-Square			1.916 ^a	6	.927			

Source: Field Survey, 2020

The statistical analysis of Chi-Square test shows that there was no significant association between the male and female regarding the prevalence of different types of diseases because the p value is .927 which is greater than .05 significant level. The disease types and its prevalence was mostly similar in male and female.

Gender wise ranking of disease shows that General health problem, Ortho and ENT were the main three diseases. It is interesting that the health problem was similar between the male and female (figure 2).

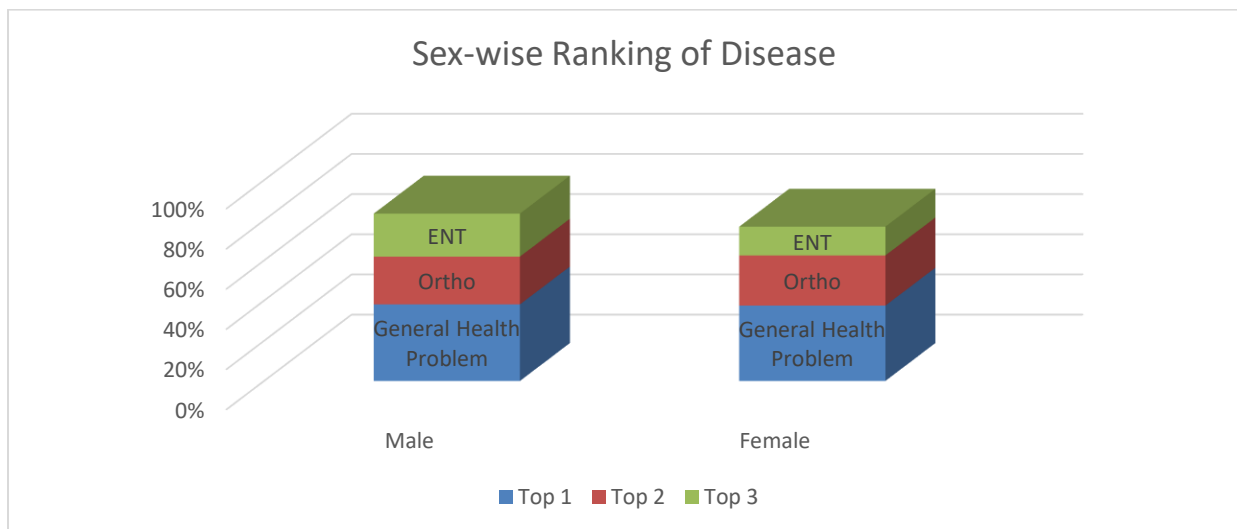


Figure 2: Sex-wise Ranking of Disease

Age wise prevalence of disease

Age is also one determinants of prevalence of disease. There is high possibility to suffer from the different types of diseases with the growing of age but it is not common to all. The prevalence of disease depends upon the health status, food habit, exercise and mental health of a person. The study had collected the data based on the age groups. The following Table 2 shows the age wise disease prevalence. The data shows that majority of patients (37.8%) visited for general health checkup where 100% people of more than 80 years visited for the general health checkup.

The age wise prevalence of disease shows that majority (60%) people of up to 20 years suffered by ENT, majority (35.5%) people of 21 to 40 year’s age group suffered by General health problem, majority (38.1%) people of age 41 to 60 years were suffering from general health problem followed by 33.3% from Ortho. Similarly, 30.8% reported ENT, 30.8% reported general health problem and 23.1% reported among the 61 to 80 year’s age group.

Table 2: Age wise disease types

Age_groups	Types of Diseases							Total
	Cardiology	ENT	General	Kidney	Multiple Problem	Ortho	TFT	
Up to 20 Years		60.0%	40.0%					100.0%
21-40 Years		16.1%	35.5%	12.9%	9.7%	22.6%	3.2%	100.0%
41-60 Years	14.3%	4.8%	38.1%		4.8%	33.3%	4.8%	100.0%
61-80 Years	7.7%	30.8%	30.8%	7.7%		23.1%		100.0%
More than 80 Years			100.0%					100.0%
Total	7.1%	17.3%	37.8%	5.1%	5.1%	24.5%	3.1%	100.0%

Source: Field Survey, 2020

In summary, it can be observed that people from 21 to 60 were suffering from multiple health problem. 9.7% people of 21 to 40 years old and 4.8% of 41 to 60 years’ group reported their multiple health problem. The following Figure 3 shows the age wise ranking of disease. The ENT problem was higher followed by general health problem in up to 20 years’ people. Similarly, General health problem, Ortho, and ENT were the top 3 problem of 21 to 40 years’ people. Similarly, General health problem, Ortho and Cardiology were the top 3 problem of age 41 to 60 years’ group. The ENT, General health problem and Ortho were the top 3 problem of age 61 to 80 years’ people, whereas general health problem was reported by all people of age more than 80 years who visited the health camp. Only 2% people of age more than 80 years visited the health camp for their health checkup which may cause the only prevalence of general health problem.

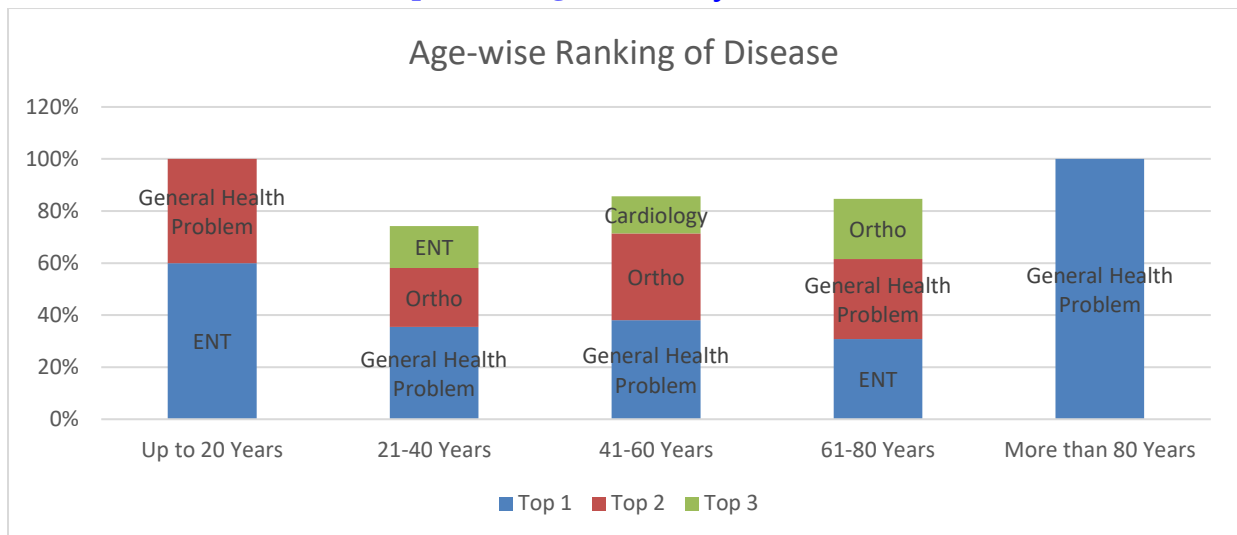


Figure 3: Age-wise Ranking of Disease

A previous review article had reviewed relevant changes of normal aging, diseases, and syndromes common in people over age 85, cognitive and psychological changes, social and environmental changes, and found that some hearing and vision loss are a part of normal aging as is decline in immune function. Cardiovascular disease and osteoporosis and dementia are common chronic conditions at age 85 (Jaul & Barron, 2017). The prevalence of hearing loss increases as a function of age and accumulating risk factors and has a high association with reduced quality of life (Davis, et al., 2016). Approximately one-half of adults over age 85 have hearing impairment (Desai, Pratt, Lentzner, & Robinson, 2001).

Caste wise prevalence of diseases

There are different cultural practices and value system in different caste groups. The cultural practices and belief system effects the health seeking behavior of particular cultural groups. A **caste system** is a class structure that is determined by birth. The children carries the same caste as their parents. Caste also determines the occupation and their personality development. The health seeking behavior is also affected from the specific caste, culture and geographical region. The following table shows the prevalence of disease based on the caste. The prevalence of Cardiology disease was found in Janjati and Dalit, ENT problem was found in Chhetri, Brahamin, and Janjati. Similarly, the general health problem was found in all types of caste group, and problem of Kedney was reported by Chhetri, Brahamin, Janjait and Dalit whereas multiple problem was reported by Brahamin and Janjati caste. The problem of Ortho was very common in all types of caste group. The causes may be injuries, rheumatoid arthritis, disorder of uric acid etc. The study also discussed on the prevalence of TFT. The problem of TFT was reported by Janjati caste only.

Table 3: Caste wise disease types

Caste	Types of Diseases							Total
	Cardiology	ENT	General	Kidney	Multiple Problem	Ortho	TFT	
Chhetri		7.7%	46.2%	15.4%		30.8%		100.0%
Brahamin		16.7%	61.1%	5.6%	11.1%	5.6%		100.0%
Janjati	10.0%	21.7%	28.3%	1.7%	5.0%	28.3%	5.0%	100.0%
Dalit	20.0%		40.0%	20.0%		20.0%		100.0%
Others			50.0%			50.0%		100.0%
Total	7.1%	17.3%	37.8%	5.1%	5.1%	24.5%	3.1%	100.0%

Source: Field Survey, 2020

The study had ranked the top 3 types of disease found in different caste group. The General health problem was common to all types of caste which was in first ranking. Similarly, Ortho was reported by Chhetri, Janjati and Other caste in second ranking whereas ENT was second disease found in Brahamin and Cardiology in Dalit. In the case of 3 ranking of disease, the Kidney problem was in third ranking for Chhetri, Multiple problem in Brahamin, ENT in Janjati and Kidney and Ortho in Dalit.

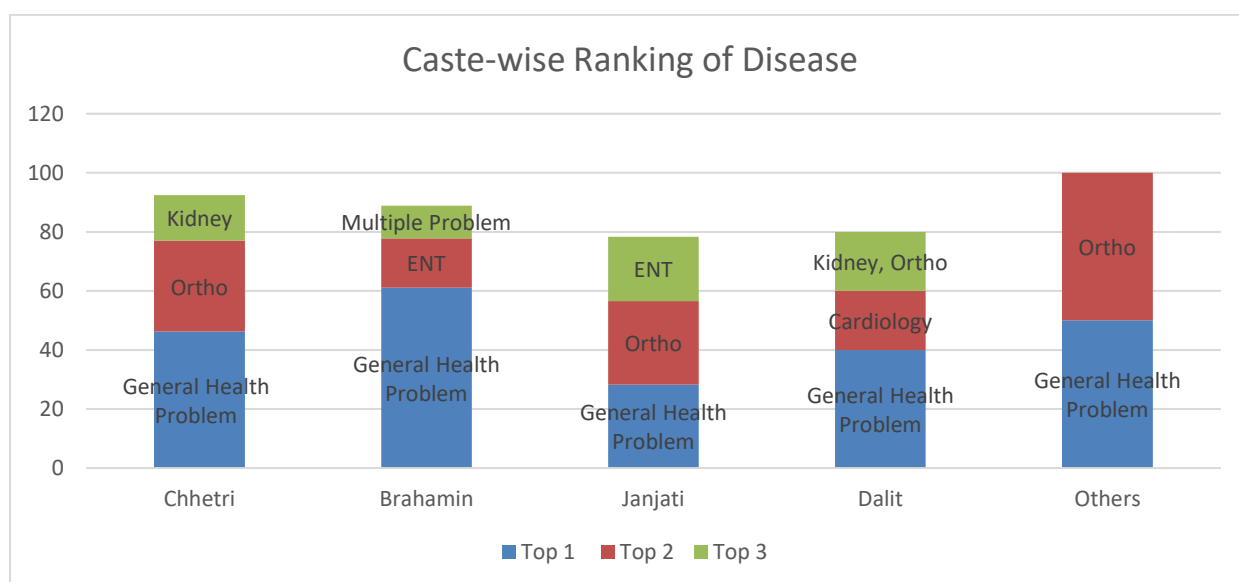


Figure 3: Caste-wise Ranking of Disease

Conclusion

The female participation was higher than male attending the health camp for their health checkup. Similarly, age-wise, 41 to 60 years were more than other age group. It is interesting that the health problem was similar between the male and female so statistically there was no significant association between the male and female regarding the prevalence of different types

of diseases because the p value is .927 which is greater than .05 significant level. Cardiology problem was high among the 41 to 60 years' age group, ENT was higher among up to 20 years' age group, Kidney problem was higher among 21 to 40 years' age group, orthopedic problem was higher among 41 to 60 years' age group and TFT problem was higher among 41 to 60 years' age group. The problem of Ortho was found very common in all types of caste group whereas the General health problem was in first ranking in all caste group, and Ortho was in second ranking in majority caste (Chhetri, Janjati, Others caste). The further study can be done to identify the causative factors of increasing the risk of disease prevalence.

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