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Shayada Khatoon
Kamla Nehru Institute of Physical & Social Science, Sultanpur, Uttar Pradesh, India.

Dr. Mamta Jaiswal
Head, Faculty of Home Science, Kamla Nehru Institute of Physical & Social Science, Sultanpur, Uttar Pradesh, India.

Kiran Agrahari
Assistant Professor, Kamla Nehru Institute of Physical & Social Science, Sultanpur, Uttar Pradesh, India.

Archana Singh
Kamla Nehru Institute of Physical & Social Science, Sultanpur, Uttar Pradesh, India.

Correspondence
Shayada Khatoon
Kamla Nehru Institute of Physical & Social Science, Sultanpur, Uttar Pradesh, India.

A study on the nutritional assessment of cancer patient in Lucknow city

Shayada Khatoon, Dr. Mamta Jaiswal, Kiran Agrahari, Archana Singh

Abstract
To study was carried out with the objectives nutritional assessment of cancer patient. An exploratory research design was adopted for the study where Lucknow city was selected purposively for the research. Survey method was used for the sample size of respondent where from general profile, Anthropometric assessment Gibson (1990) in which height (m^2) and weight (kg) were taken and body mass index (BMI) was calculated. Shows that minimum 13(%) number of respondents were suffering from obesity and maximum 87(%) number of respondents were not suffering from obesity. Maximum 98(%) number of respondents were know type of cancer and minimum 2(%) number of respondents were not know type of cancer. Maximum 90(%) number of respondents were used any type of therapy and minimum 10(%) number of respondents were not used any type of therapy. Shows that maximum 29(%) number of respondents were used surgery and 26(%) number of respondents were chemotherapy and minimum 6 (%) hormone therapy and 14(%) radiation therapy and 25(%) other therapy used. Shows that maximum 66 (%) number of respondents were take high red meat in your diet and minimum 44(%) number of respondents were not take high red meat in your diet. Maximum 56(%) number of respondents were tobacco chewing and minimum 44(%) number of respondents were not tobacco chewing.

Keywords: Cancer, Neoplasms, tumours, cell, nutrition

1. Introduction
Cancer is a general term used to refer to a condition where the body's cells begin to grow and reproduce in an uncontrollable way. These cells can then invade and destroy healthy tissue, including organs. Cancer sometimes begins in one part of the body before spreading to other parts.

According to B Srilakshmi," Cancer is a term used to refer malignant neoplasms or tumours. Neoplasms means cells in a tissue proliferate without the normal controls on growth. In malignant neoplasm the cells spread to adjacent tissues and interfere with the function and often has undesirable systemic effects. Benign tumours represent the accumulation of cell which have been transformed to reproduce in abnormal numbers but remain within the tissue of origin.

Cancer is caused by mutation or abnormal activation of cellular genes that control cell growth and cell mitosis. The abnormal genes are called oncogenes. It is now recognised that there exists regulatory genes known as tumour suppressor genes whose normal function is to prevent malignant transformation. The latter might be triggered by exposure to a carcinogen or by a spontaneous mutation. Conversely normal cells contain growth promoting genes known as proto-oncogenes where inappropriate activation to produce oncogenes that could result in malignant transformation. The probability of mutations can be increased manifold when a person is exposed to certain chemical, physical or biological factors.

Cancer is not a single disorder. There are many different kinds of cancer which take different courses and require different treatment. Among the various cancers, the uterine cervix, breast, ore-pharyngeal, large bowel, stomach, ovarian, oesophageal, endometrium and prostate gland are the most likely to be influenced by diet. These are also common type of cancers. About 1/3 of all cancers are directly or indirectly related to diet.

India is undergoing demographic, epidemiology and nutrition transition fuelling an epidemic of chronic disease and obesity especially in urban areas. Some of these may lead to cancer. The nutritional transition to a more 'western' diet would in future alter the frequencies of the

organ affected with prostate and colon being more frequent in men and breast, uterine and colon being more frequent in women.

Cancer is a group of diseases characterized by the uncontrolled growth and spread of abnormal cells. If the spread is not controlled, it can result in death. Cancer is caused by External factors, such as tobacco, infectious organisms, and an unhealthy diet, and internal factors, such as inherited genetic mutations, hormones, and immune conditions. These factors may act together or in sequence to cause cancer. Ten or more years often pass between exposure to external factors and detectable cancer. Treatments include surgery, radiation, chemotherapy, hormone therapy, immune therapy, and targeted therapy.

When cancer develops, however, this orderly process breaks down. As cells become more and more abnormal, old or damaged cells survive when they should die, and new cells form when they are not needed. These extra cells can divide without stopping and may form growths called tumours. Many cancers form solid tumours, which are masses of tissue. Cancers of the blood, such as leukaemia, generally do not form solid tumours. Cancerous tumours are malignant, which means they can spread into, or invade, nearby tissues. In addition, as these tumours grow, some cancer cells can break off and travel to distant places in the body through the blood or the lymph system and form new tumours far from the original tumour. Unlike malignant tumours, benign tumours do not spread into, or invade, nearby tissues. Benign tumours can sometimes be quite large, however. When removed, they usually don't grow back, whereas malignant tumours sometimes do. Unlike most benign tumours elsewhere in the body, benign brain tumours can be life threatening.

Cancer is a common condition and a serious health problem. More than one in three people will develop some form of cancer during their lifetime. Excluding non-melanoma skin cancer, there are around 7,000 new cases diagnosed each year in Northern Ireland.

Cancer cells differ from normal cells in many ways that allow them to grow out of control and become invasive. One important difference is that cancer cells are less specialized than normal cells. That is, whereas normal cells mature into very distinct cell types with specific functions, cancer cells do not. This is one reason that, unlike normal cells, cancer cells continue to divide without stopping. In addition, cancer cells are able to ignore signals that normally tell cells to stop dividing or that begin a process known as programmed cell death, or apoptosis, which the body uses to get rid of unneeded cells. Cancer cells may be able to influence the normal cells, molecules, and blood vessels that surround and feed a tumour—an area known as the microenvironment. For instance, cancer cells can induce nearby normal cells to form blood vessels that supply tumours with oxygen and nutrients, which they need to grow. These blood vessels also remove waste products from tumours. Cancer cells are also often able to evade the immune system, a network of organs, tissues, and specialized cells that protects the body from infections and other conditions. Although the immune system normally removes damaged or abnormal cells from the body, some cancer cells are able to "hide" from the immune system.

Tumours can also use the immune system to stay alive and grow. For example, with the help of certain immune system cells that normally prevent a runaway immune response, cancer cells can actually keep the immune system from killing cancer cells.

The genetic changes that contribute to cancer tend to affect three main types of genes—proto-oncogenes, tumour suppressor genes, and DNA repair genes. These changes are sometimes called "drivers" of cancer. Proto-oncogenes are involved in normal cell growth and division. However, when these genes are altered in certain ways or are more active than normal, they may become cancer-causing genes, allowing cells to grow and survive when they should not. Tumour suppressor genes are also involved in controlling cell growth and division. Cells with certain alterations in tumour suppressor genes may divide in an uncontrolled manner. DNA repair genes are involved in fixing damaged DNA. Cells with mutations in these genes tend to develop additional mutations in other genes. Together, these mutations may cause the cells to become cancerous. As scientists have learned more about the molecular changes that lead to cancer, they have found that certain mutations commonly occur in many types of cancer. Because of this, cancers are sometimes characterized by the types of genetic alterations that are believed to be driving them, not just by where they develop in the body and how the cancer cells look under the microscope.

A cancer that has spread from the place where it first started to another place in the body is called metastatic cancer. The process by which cancer cells spread to other parts of the body is called metastasis. Metastatic cancer has the same name and the same type of cancer cells as the original, or primary, cancer. For example, breast cancer that spreads to and forms a metastatic tumour in the lung is metastatic breast cancer, not lung cancer. Under a microscope, metastatic cancer cells generally look the same as cells of the original cancer. Moreover, metastatic cancer cells and cells of the original cancer usually have some molecular features in common, such as the presence of specific chromosome changes.

There are more than 100 types of cancer. Types of cancer are usually named for the organs or tissues where the cancers form. For example, lung cancer starts in cells of the lung, and brain cancer starts in cells of the brain. Cancers also may be described by the type of cell that formed them, such as an epithelial cell or a squamous cell.

Carcinoma

Carcinomas are the most common type of cancer. They are formed by epithelial cells, which are the cells that cover the inside and outside surfaces of the body. There are many types of epithelial cells, which often have a column-like shape when viewed under a microscope. Carcinomas that begin in different epithelial cell types have specific names:

Adenoma carcinoma is a cancer that forms in epithelial cells that produce fluids or mucus. Tissues with this type of epithelial cell are sometimes called glandular tissues. Most cancers of the breast, colon, and prostate are adenoma carcinomas. Basal cell carcinoma is a cancer that begins in the lower or basal (base) layer of the epidermis, which is a person's outer layer of skin.

Squamous cell carcinoma is a cancer that forms in squamous cells, which are epithelial cells that lie just beneath the outer surface of the skin. Squamous cells also line many other organs, including the stomach, intestines, lungs, bladder, and kidneys. Squamous cells look flat, like fish scales, when viewed under a microscope.

Sarcoma

Sarcomas are cancers that form in bone and soft tissues, including muscle, fat, blood vessels, lymph vessels, and fibrous tissue. Osteosarcoma is the most common cancer of

bone. The most common types of soft tissue sarcoma are leiomyoma sarcoma, Kaposi sarcoma, malignant fibrous histiocytoma, lip sarcoma, and derma to fibro sarcoma protuberance.

Leukaemia
Cancers that begin in the blood-forming tissue of the bone marrow are called leukaemia. These cancers do not form solid tumours. Instead, large numbers of abnormal white blood cells build up in the blood and bone marrow, crowding out normal blood cells. The low level of normal blood cells can make it harder for the body to get oxygen to its tissues, control bleeding, or fight infections. There are four common types of leukaemia, which are grouped based on how quickly the disease gets worse (acute or chronic) and on the type of blood cell the cancer starts in (lymphoblastic or myeloid).

Lymphoma
Lymphoma is cancer that begins in lymphocytes (T cells or B cells). These are disease fighting white blood cells that are part of the immune system. In lymphoma, abnormal lymphocytes build up in lymph nodes and lymph vessels, as well as in other organs of the body.
Hodgkin lymphoma – People with this disease have abnormal lymphocytes that are called Reed-Sternberg cells. These cells usually form from B cells.
Non-Hodgkin lymphoma – This is a large group of cancers that start in lymphocytes.
The cancers can grow quickly or slowly and can form from B cells or T cells.

Risk Factors
Two components are invariably involved in the aetiology of cancers. They are a genetic and environmental factors. In the vast majority of the population, the two have to synergise to induce cancer.
Different cancers have different risk factors.

Heredity
In many families there is a strong hereditary to cancer. This probably results from the fact that most cancers require not one mutation but two or more mutations before cancer occurs.

Environmental Factors
Ionising radiation
X-rays, gamma rays and particle radiations from radio-active substances, even ultraviolet rays can predispose to cancer by rupturing DNA strands, thus causing mutations.

Chemical substances
Chemical substances that can cause mutation are called carcinogens. Benzene and asbestos are considered as carcinogen. The carcinogens that cause by far the greatest number of deaths are those in cigarette smoke.
Tobacco is the most clearly identified cause of cancer. Cancers associated with tobacco are lung, mouth, larynx, oesophagus and bladder.

Dietary factors
Foods may cause cancer by being direct carcinogen or carcinogen may be produced by cooking. Sometimes microorganisms may produce carcinogen in stored foods. Food stuff may also act as substrate for the formation of carcinogen in the body or food stuff may alter the bacterial flora of the bowel thereby producing carcinogen.

Meat
Meat intake has been positively associated with risk of digestive tract cancers and breast cancer. Intake of red meat, and processed meat increase the risk of colon cancer.

Alcohol
Epidemiologic studies indicate that alcohol has a causal role in carcinogenesis, especially for cancers of the mouth, throat, breast, pharynx and oesophagus.
Alcohol, especially beer consumption, has been associated with an increased risk for colorectal cancer.

Aflatoxins
The fungi which grows on cereals and groundnuts can cause liver cancer.

β -carotene supplements
Research has shown that when lung cancer patients are supplemented with β-carotene, severity of disease increases.

Symptom
Malignant disease manifest themselves in a variety of ways resulting in general symptoms like fever, loss of appetite, fatigue or malaise. Specific cancers give risk to symptoms different for each one.

- **Oral Cancer:** Ulcers, white or red patches inside the oral cavity or difficulty in swallowing or opening the mouth wide, thickening of the tongue.
- **Lung Cancer:** Persistent cough, chest pain, blood in sputum, shortness of breath, weight loss or loss of appetite, hoarseness, repeated bouts of pneumonia or bronchitis, difficulty in swallowing.
- **Stomach Cancer:** Early satiety, indigestion or heartburn, pain in the abdomen, bloating of stomach after meals, loss of appetite, weakness tiredness, diarrhoea or constipation, blood in vomit.
- **Colon Cancer:** Diarrhoea, constipation or any other change in bowel habits, frequent gas pains, blood in faeces.
- **Bladder Cancer:** The need to urinate frequently, painful urination, blood in urine. Prostate Cancer: Urination problems.
- **Skin Cancer:** Change in size, shape or colour of a mole or wart.

Treatment
Treatment option depend on the size and location of the cancer, result of lab tests, and the stage of extent, of the disease.

Surgery
Surgery can be used to diagnose, treat, or even help prevent cancer in some cases. Most people with cancer will have some type of surgery. It often offers the greatest chance for cure, especially if the cancer has not spread to other parts of the body. Learn more about surgery here.

Chemotherapy
Chemotherapy (chemo) is the use of medicines or drugs to treat cancer. The thought of having chemotherapy frightens many people. But knowing what chemotherapy is, how it works, and what to expect can often help calm your fears. It can also give you a better sense of control over your cancer

treatment.

Radiation Therapy
Radiation therapy uses high-energy particles or waves to destroy or damage cancer cells. It is one of the most common treatments for cancer, either by itself or along with other forms of treatment. Learn more about radiation therapy in this section.

Targeted Therapy
Targeted therapy is a newer type of cancer treatment that uses drugs or other substances to more precisely identify and attack cancer cells, usually while doing little damage to normal cells. Targeted therapy is a growing part of many cancer treatment regimens. Find out more about it here.

Immunotherapy
Immunotherapy is treatment that uses your body's own immune system to help fight cancer.

Hyperthermia
The idea of using heat to treat cancer has been around for some time, but early attempts had mixed results. Today, newer tools allow more precise delivery of heat, and hyperthermia is being studied for use against many types of cancer.

Stem Cell Transplant (Peripheral Blood, Bone Marrow, and Cord Blood Transplants)
Here we offer a review of bone marrow transplants and other types of stem cell transplants that are used to treat cancer. We outline what a transplant is like for most people, and discuss some of the issues that come with it.

Photodynamic Therapy
Photodynamic therapy or PDT is a treatment that uses special drugs, called photosensitizing agents, along with light to kill cancer cells. The drugs only work after they have been activated or "turned on" by certain kinds of light.

Objective
1. To study about nutritional assessment of cancer patient
2. To know the possible causes of cancer patient.
3. To suggest them optimal nutritional support for recovery.

2. Material and Methods
Scientific methodology is necessary for a successful study as it directly indicates words the authenticity of the research and attempt has been made to provide the detail of techniques employed to attain this objective of a present investigation. Methodology includes techniques, devices and procedure applied for conducting the research, in this study, the respect concerning the research methodology have been categorized in the following.

Research Design
Simple random sampling was taken for sampling. Primary and secondary data would be collected through interview schedule questionnaire.

- **Selection of area-**Lucknow city of Uttar Pradesh and Lucknow Cancer Institute was selected for the study.
- **Selection of Sample Size -** Total 100 cancer patient was selected for the study.

Method of study
A statistical figures in dispensable for scientific work in this study was primarily based on the data collection and well developed scheduled to make each interview as comprehensive as possible. The open ended questionnaire in which rigid ticking of respondent every opportunity to speak in a natural and uninhibited way.

Analysis of data
The data will be analysed using talk mark method the finding have been presented form of labels tabulation of data will be make comparison of each attribute in the different attributes study each group in the table express in term of frequency & percentage. The selected samples would be interviewed personally.

Statistical analysis

$$(\%) = \frac{N}{\text{Total number of patient}} \times 100$$

(%) = Percentage
N = Number of frequency
T.N. = Total number of patients

3. Result and Discussion
The empirical result & discussion have been presented the purpose of convenience. The collected data were categorized, analysed, tabulated & interpreted as per objective of the study.

Table 1: Distribution of respondents on the basis of age group

Age (Years)	Frequency (N=100)	Percentage (%)
1-30	12	12
31-60	62	62
61- above	25	25

shows that distribution of cancer patients according to age 12 (%) respondents belonged up to 1-30 year age, whereas 62 (%) in to 31-60 years age group. 25 (%) patients in study are belonged to 61- above age group.

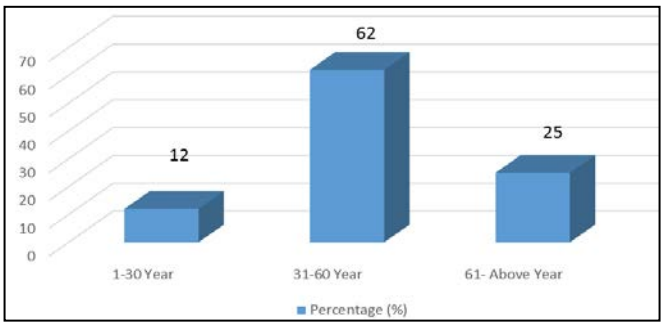

Table 1 Distribution of respondents on the basis of age group.

Table 2: Distribution of respondents on the basis of gender.

Gender	Frequency (N=100)	Percentage (%)
Male	54	54
Female	46	46

Table 2 shows that maximum54 (%) number of respondents were male and minimum 46 (%) number of respondents were female.

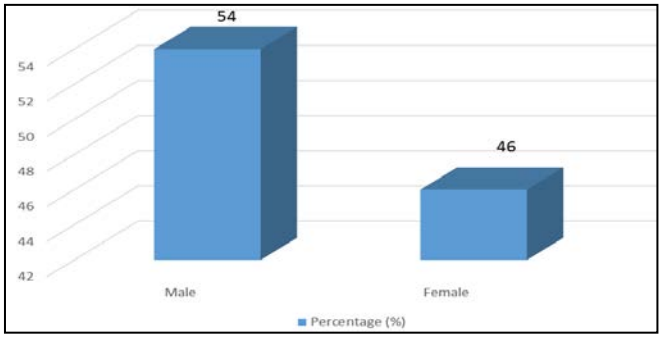

Table 2 Distribution of respondents on the basis of gender.

Table 3: Distribution of respondents on the basis of religion

Religion	Frequency (N=100)	Percentage (%)
Hindu	66	66
Muslim	30	30
Other	4	4

Table 3 shows that maximum 66 (%) number of respondents were Hindu and minimum 30(%) number of respondents were Muslim and 4 (%) other.

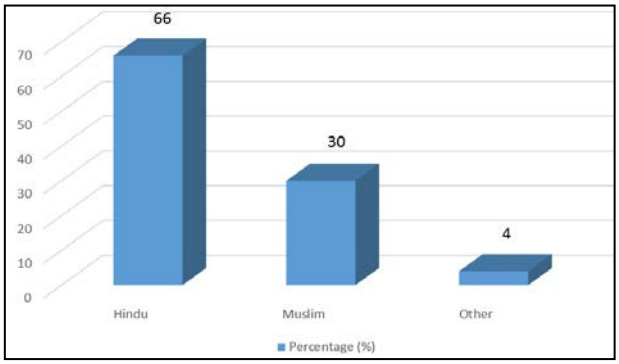

Table 3 Distribution of respondents on the basis of religion.

Table 4: Distribution of respondents on the basis of education.

Education	Frequency (N=100)	Percentage (%)
Primary	20	20
High School	20	20
Higher education	30	30
Illiteracy	30	30

Table 4 shows that in 20 (%) of respondent were belonged to primary & 20 (%) of respondent were belonged to high school, whereas mostly 30(%) of respondent were belonged to higher education & 30 (%) of respondent were belonged to illiteracy.

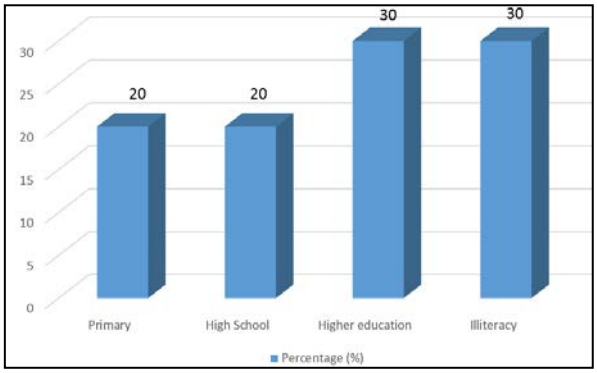

Table 4 Distribution of respondents on the basis of education.

Table 5: Distribution of respondents on the basis of occupation.

Occupation	Frequency (N=100)	Percentage (%)
Service	26	26
Other	74	74

Table 5 shows that minimum 26 (%) number of respondents were service and maximum 74 (%) number of respondents were other occupation.

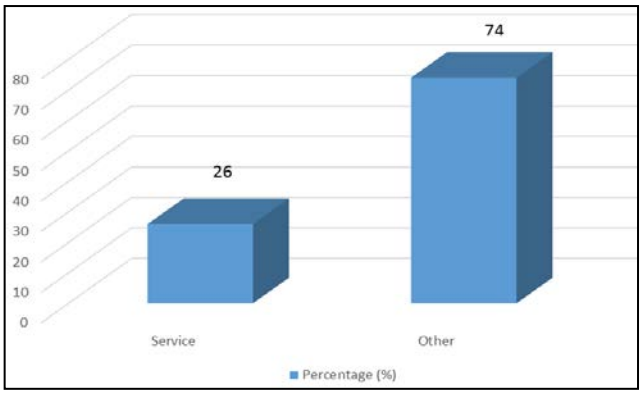

Table 5 Distribution of respondents on the basis of occupation.

Table 6: Distribution of respondents on the basis of family type.

Family type	Frequency (N=100)	Percentage (%)
Joint	75	75
Nuclear	25	25

Table 6 shows that maximum 75 (%) number of respondents had nuclear family and minimum 25 (%) number of respondents had joint family.

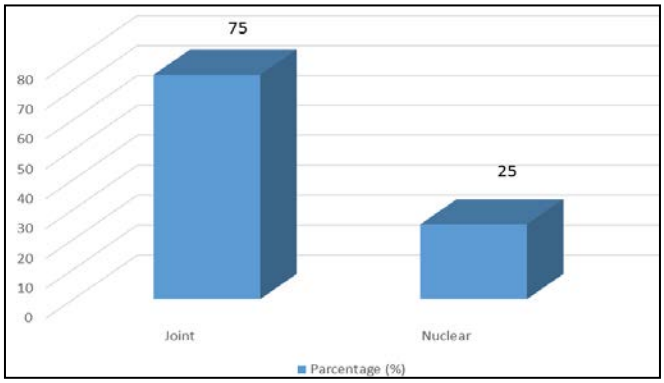

Table 6 Distribution of respondents on the basis of family type.

Table 7: Distribution of respondents on the basis of income group.

Income group	Frequency (N=100)	Percentage (%)
Below 20000	35	35
20000 – 50000	45	45
Above 50000	20	20

Table 7 shows that maximum 45 (%) number of respondents families had a monthly income of 20,000 to 50,000, and 35 (%) number of respondents families had a monthly income of below 20000 and minimum 20 (%) number of respondents families had a monthly income of above 50000.

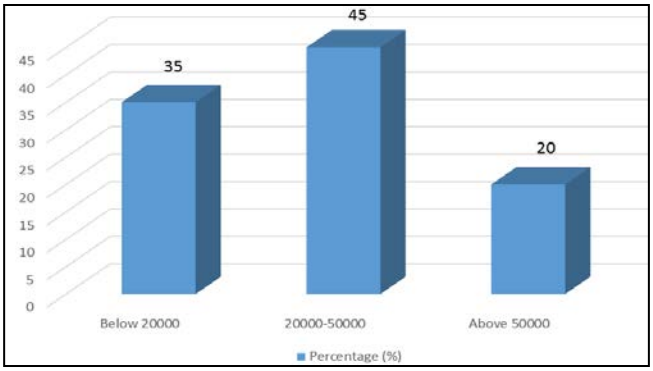

Table 7 Distribution of respondents on the basis of income group.

Table 8: Distribution of respondents on the basis of BMI.

BMI	Frequency (N=100)	Percentage (%)
Undernourished	69	69
Normal weight	18	18
Overweight	13	13

Table 8 shows that maximum 69 (%) number of respondents were suffering from under weight and 18 (%) number of respondents were normal and minimum 13 (%) number of respondent suffering from overweight.

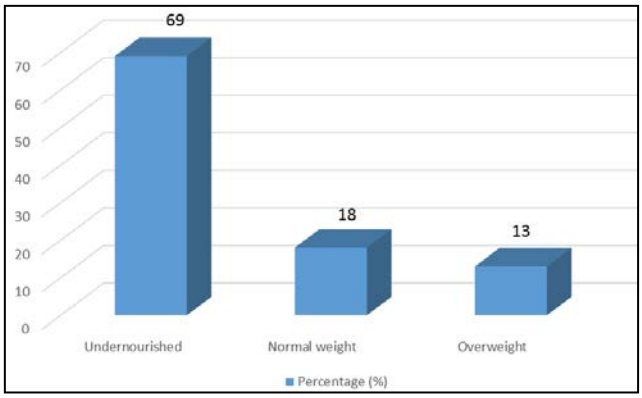

Table 8 Distribution of respondents on the basis of BMI.

Table 9: Distribution of respondents on the basis of suffering from obesity.

Suffering from obesity	Frequency (N=100)	Percentage (%)
Yes	13	13
No	87	87

Table 9 shows that minimum 13 (%) number of respondents were suffering from obesity and maximum 87 (%) number of respondents were not suffering from obesity.

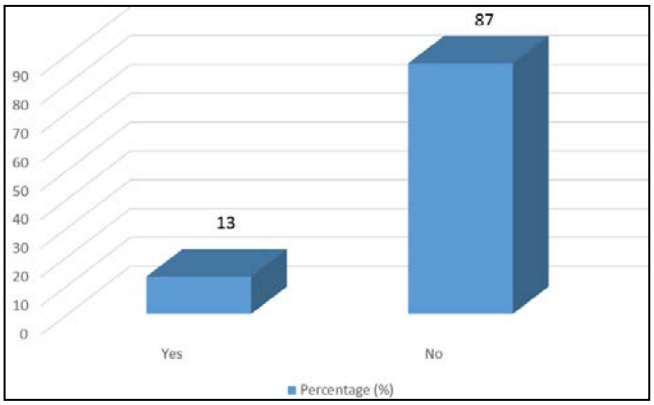

Table 9 Distribution of respondents on the basis of suffering from obesity.

Table 10: Distribution of respondents on the basis of type of cancer.

Your know type of cancer	Frequency (N=100)	Percentage (%)
Yes	98	98
No	2	2

Table 10 shows that maximum 98 (%) number of respondents were know type of cancer and minimum 2 (%) number of respondents were not know type of cancer.

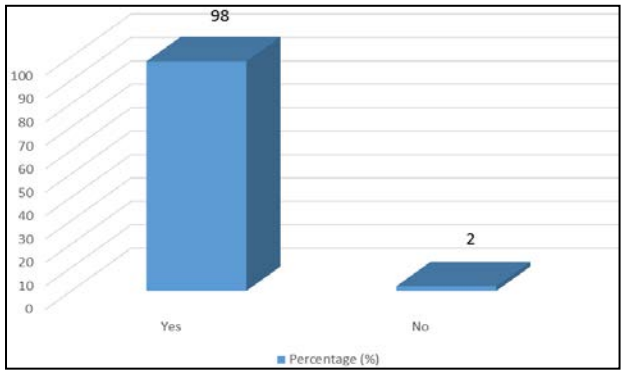

Table 10 Distribution of respondents on the basis of type of cancer.

Table 11: Distribution of respondents on the basis of type of therapy.

Used any type of therapy	Frequency (N=100)	Percentage (%)
Yes	90	90
No	10	10

Table 11 shows that maximum 90(%) number of respondents were used any type of therapy and minimum 10(%) number of respondents were not used any type of therapy.

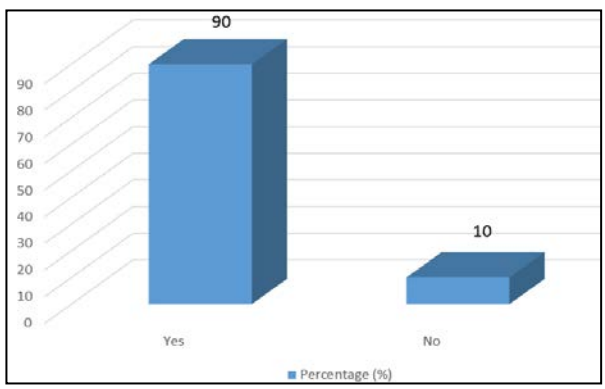

Table 11 Distribution of respondents on the basis of type of therapy.

Table 12: Distribution of respondents on the basis of type of therapy you used.

Type of therapy you used	Frequency (N=100)	Percentage (%)
Surgery	29	29
Chemotherapy	26	26
Hormone therapy	6	6
Radiation therapy	14	14
Other	25	25

Table 12 shows that maximum 29 (%) number of respondents were used surgery and 26 (%) number of respondents were chemotherapy and minimum 6 (%) hormone therapy and 14 (%) radiation therapy and 25 (%) other therapy used.

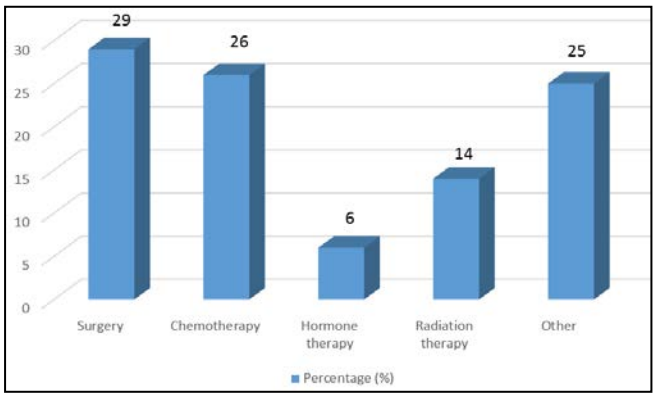

Table 12 Distribution of respondents on the basis of type of therapy you used.

Table 13: Distribution of respondents on the basis of drinking alcohol.

Drinking alcohol	Frequency (N=100)	Percentage (%)
Yes	21	21
No	79	79

Table 13 shows that minimum 21 (%) number of respondents were habitual to drinking alcohol and maximum 79 (%) number of respondents were not habitual to drinking alcohol.

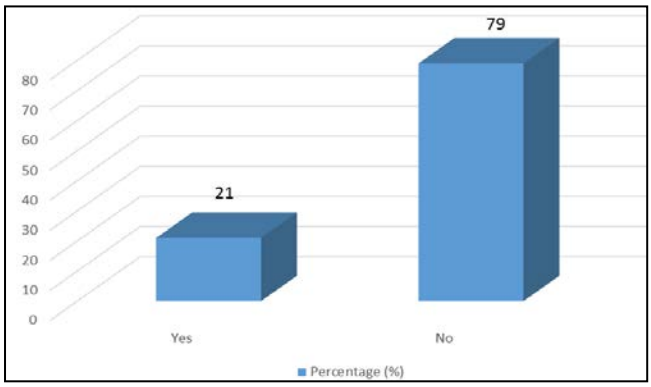

Table 13 Distribution of respondents on the basis of drinking alcohol.

Table 14: Distribution of respondents on the basis of fruits and vegetables intake.

Diet is low on fruits and vegetables	Frequency (N=100)	Percentage (%)
Yes	46	46
No	54	54

Table 14 shows that minimum 46 (%) number of respondents were diet is low on fruits and vegetables and maximum 54 (%) number of respondents were not diet is low on fruits and vegetables.

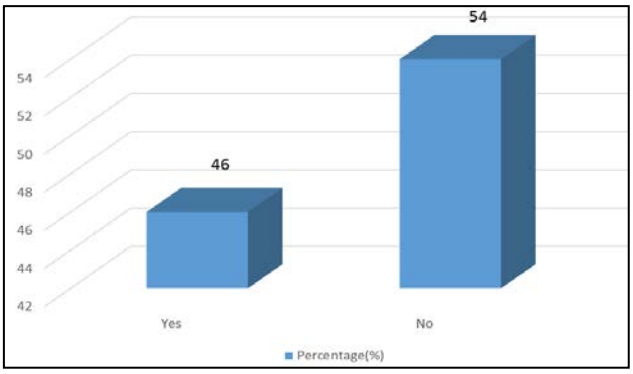

Table 14 Distribution of respondents on the basis of fruits and vegetables.

Table 15: Distribution of respondents on the basis of consumption of high red meat in your diet.

Take high red meat in your diet	Frequency (N=100)	Percentage (%)
Yes	66	66
No	44	44

Table 15 shows that maximum 66 (%) number of respondents were take high red meat in your diet and minimum 44 (%) number of respondents were not take high red meat in your diet.

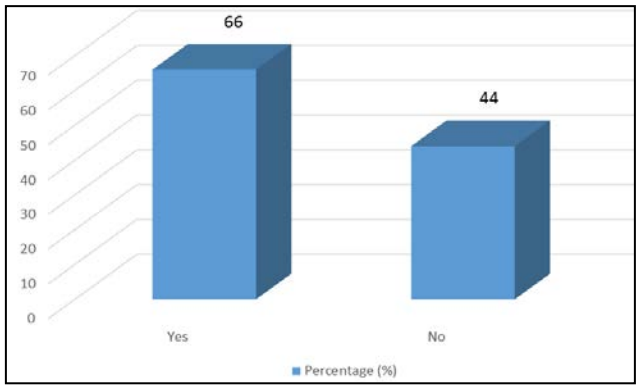

Table 15 Distribution of respondents on the basis of consumption of high red meat in your diet.

Table 16: Distribution of respondents on the basis of cooked at high temperature.

Cooked at high temperature	Frequency (N=100)	Percentage (%)
Yes	100	100
No	-	-

Table 4.16 shows that maximum 100 (%) number of respondents were cooked at high temperature and minimum 00 (%) number of respondents were not cooked at high temperature.

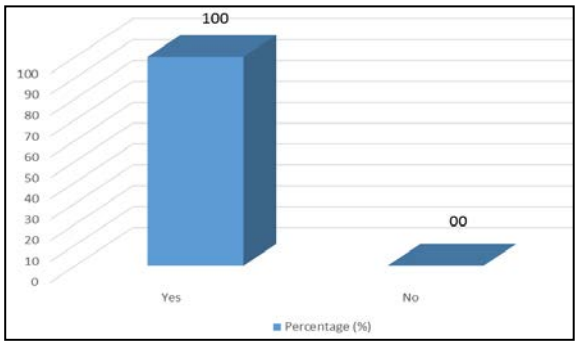

Table 16 Distribution of respondents on the basis of cooked at high temperature.

Table 17: Distribution of respondents on the basis of smoke habit.

Smoke habit	Frequency (N=100)	Percentage (%)
Yes	38	38
No	62	62

Table 17 shows that minimum 38(%) number of respondents were smoke habit and maximum 62(%) number of respondents were not smoke habit.

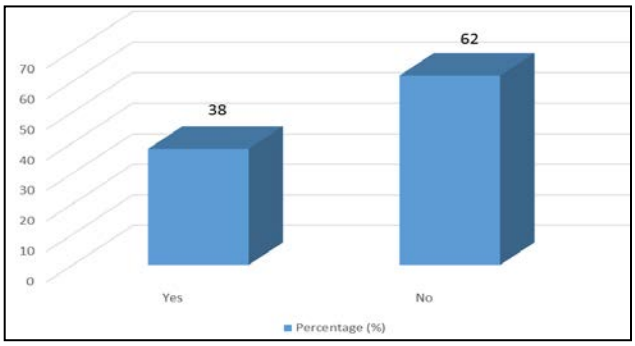

Table 17 Distribution of respondents on the basis of smoke habit.

Table 18: Distribution of respondents on the basis of tobacco chewing habit.

Tobacco chewing habit	Frequency (N=100)	Percentage (%)
Yes	56	56
No	44	44

Table 18 shows that maximum 56 (%) number of respondents were tobacco chewing and minimum 44 (%) number of respondents were not tobacco chewing habit.

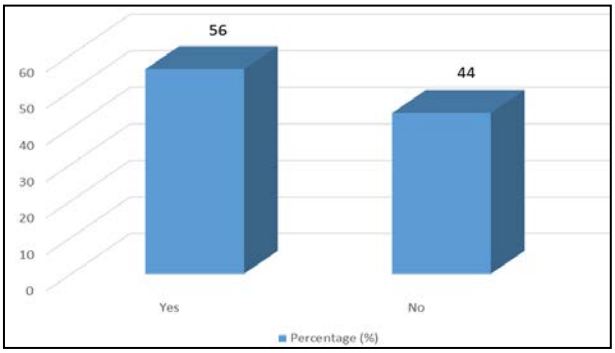

Table 18 Distribution of respondents on the basis of tobacco chewing habit.

Table 19: Distribution of respondents on the basis of high salt diet.

Consume high salt diet	Frequency (N=100)	Percentage (%)
Yes	77	77
No	23	23

Table 19 shows that maximum 77 (%) number of respondents were consume high salt diet and minimum 23 (%) number of respondents were not consume high salt diet.

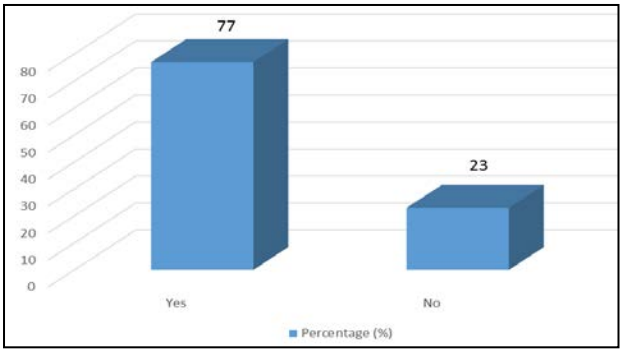

Table 19 Distribution of respondents on the basis of high salt diet

Table 20: Distribution of respondents on the basis of whole grain intake.

Whole grain intake	Frequency (N=100)	Percentage (%)
Yes	24	24
No	76	76

Table 20 shows that minimum 24 (%) number of respondents were diet consist of whole grain intake and maximum 76(%) number of respondents were not diet consist of whole grain intake.

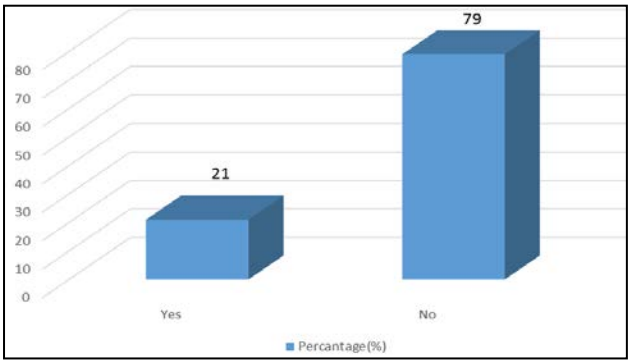

Table 20: Distribution of respondents on the basis of whole grain intake.

Table 21: Distribution of respondents on the basis of fish intake regularly.

Fish intake regularly	Frequency (N=100)	Percentage (%)
Yes	18	18
No	82	82

Table 21 shows that minimum 18 (%) number of respondents were fish intake regularly and maximum 82 (%) number of respondents were not fish intake regularly.

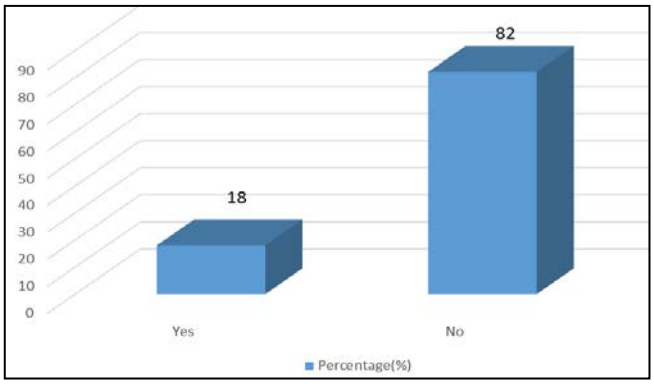

Table 21 Distribution of respondents on the basis of fish intake regularly.

Table 22: Distribution of respondents on the basis of sugar intake in your food items.

Refined sugar intake in your food items	Frequency (N=100)	Percentage (%)
Yes	-	-
No	100	100

Table 22 shows that minimum 00 (%) number of respondents were refined sugar intake in your food items and maximum 100 (%) number of respondents were not refined sugar intake in your food items.

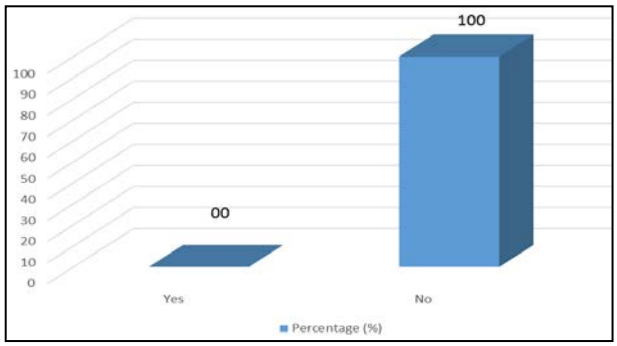

Table 22 Distribution of respondents on the basis of sugar intake in your food items.

Table 23: Distribution of respondents on the basis of mushroom consumption.

Mushroom consumption	Frequency (N=100)	Percentage (%)
Yes	46	46
No	54	54

Table 23 shows that minimum 46 (%) number of respondents were refined mushroom consumption and maximum 54 (%) number of respondents were not mushroom consumption.

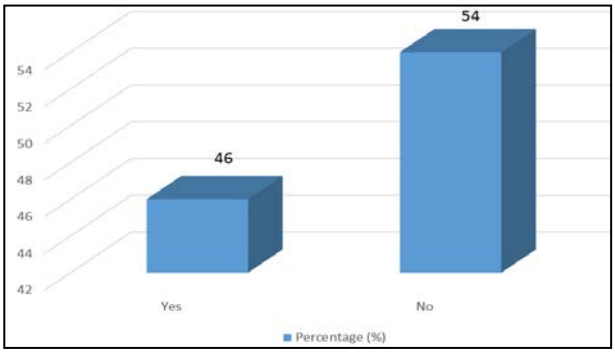

Table 23 Distribution of respondents on the basis of mushroom consumption.

Table 24: Distribution of respondents on the basis of soybean consumption.

Soybean consumption	Frequency (N=100)	Percentage (%)
Yes	68	68
No	32	32

Table 24 shows that maximum 68 (%) number of respondents were soybean consumption and minimum 32 (%) number of respondents were not soybean consumption.

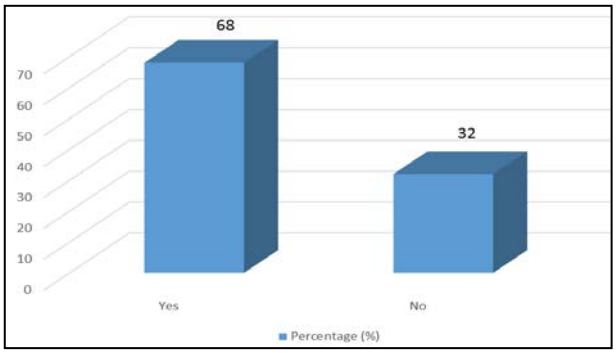

Table 24 Distribution of respondents on the basis of soybean consumption.

Table 25: Distribution of respondents on the basis turmeric intake.

Intake turmeric in your diet	Frequency (N=100)	Percentage (%)
Yes	100	100
No	-	-

Table 25 shows that maximum 100 (%) number of respondents were use turmeric in our diet and minimum 00 (%) number of respondents were not use turmeric in our diet.

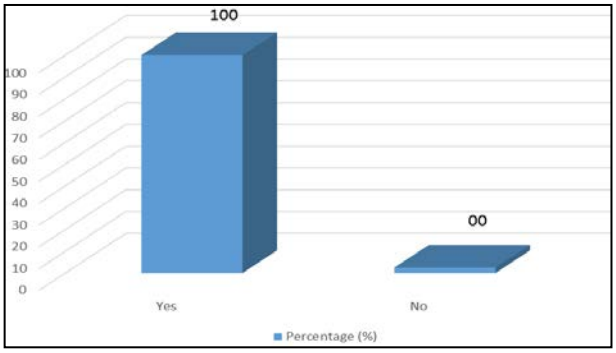

Table 25 Distribution of respondents on the basis turmeric intake.

Table 26: Distribution of respondents on the basis of green tea intake.

Green tea intake	Frequency (N=100)	Percentage (%)
Yes	22	22
No	78	78

Table 26 shows that minimum 22 (%) number of respondents were green tea intake and maximum 78 (%) number of respondents were not green tea intake.

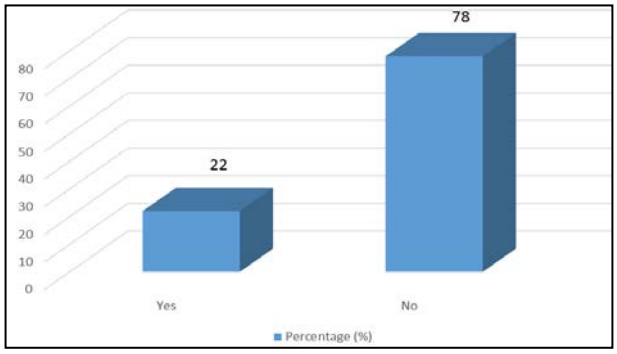

Table 26 Distribution of respondents on the basis of green tea intake.

Table 27: Distribution of respondents on the basis of vitamin C supplements intake.

Vitamin C supplements intake	Frequency (N=100)	Percentage (%)
Yes	51	51
No	49	49

Table 27 shows that maximum 51 (%) number of respondents were vitamin C supplements intake and minimum 49 (%) number of respondents were not vitamin C supplements intake.

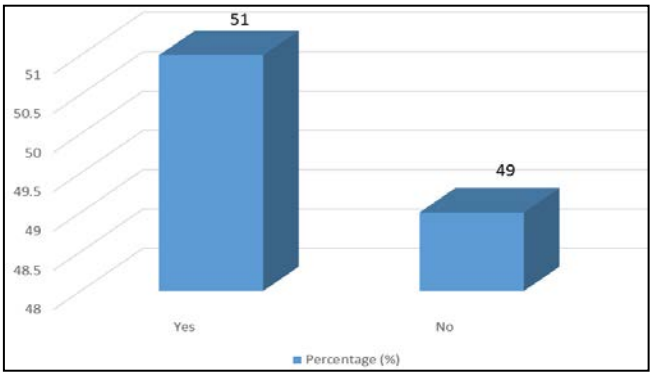

Table 27 Distribution of respondents on the basis of vitamin C supplements intake.

Table 28: Distribution of respondents on the basis of consume beverages.

Consume beverages	Frequency (N=100)	Percentage (%)
Yes	92	91
No	8	8

Table 28 shows that maximum 92 (%) number of respondents were consume beverages and minimum 8 (%) number of respondents were not consume beverages.

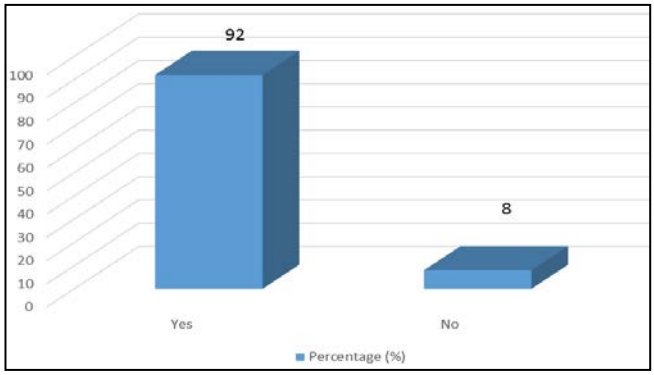

Table 28 Distribution of respondents on the basis of consume beverages.

Table 29: Distribution of respondents on the basis of salt preserved food items.

Salt preserved food items	Frequency (N=100)	Percentage (%)
Yes	36	36
No	64	64

Table 29 shows that minimum 36 (%) number of respondents were salt preserved food items and maximum 64 (%) number of respondents were not salt preserved food items.

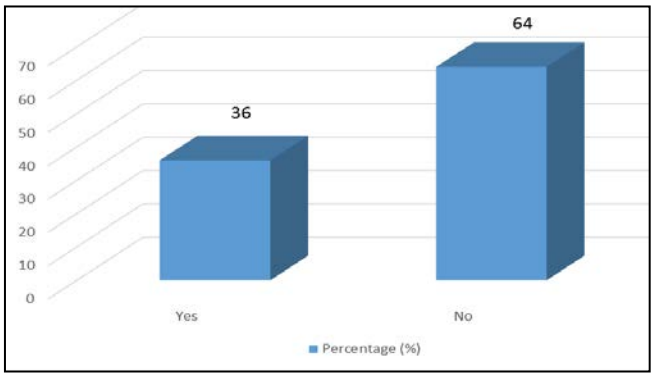

Table 29 Distribution of respondents on the basis of salt preserved food items.

4. Conclusion

The present study entitled "A study on the nutritional assessment of cancer patient in Lucknow city" was undertaken in Lucknow city. The survey was carried out in the Lucknow city. The sample size of 100 cancer patient was randomly selected from Lucknow city.

Oral questionnaire or interview method was chosen for the research purpose which include the set of cancer patient. Result obtained from the statistical analysis revealed the cancer patient in Lucknow city. The nutritional status assessment must be carried out on each patient at the beginning and during the treatment. The cancer patients who are receiving chemotherapy are at risk of malnutrition. It raises awareness that unless public health efforts are taken broadly and comprehensively. Result shows that distribution of cancer patients according to age 12 (%) respondents belonged up to 1-30 year age, whereas 62 (%) in to 31-60 years age group. 25 (%) patients in study are belonged to 61-above age group. Found that maximum 69 (%) number of respondents were suffering from under weight and 18 (%)

number of respondents were normal and minimum 13 (%) number of respondent suffering from overweight.

5. Abbreviation

- M- Meter
- Kg- Kilogram
- %- Percent
- BMI- Body mass index

6. Reference

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