Food consumption has an eminence role in health and understanding the process of food choice is fundamental to health support. Concept in nutrition are growing from focus on the use of food for survival and need fulfilment to promote the use of food to encourage a state of wellbeing, better health and to diminish the risk of disease.

Foods contain therapeutic benefits is a conventional concept. Hippocrates, the father of medicine developed it about 2,500 years ago. He said “Let food be thy medicine and medicine be thy food.” History of many cultures showed the medicinal uses of foods to prevent and treat diseases. There are documents evidencing that the Indians, Egyptians, Chinese, and Sumerians are a few civilizations who used many foods for medicinal purposes for thousands of years. The Ancient Indian health science, Ayurveda 5000 year old, have based on benefits of foods for therapeutic purposes. (Wildman, 2001)

This “food as medicine” philosophy fell into relative gloom in the 19th century with the dawn of modern medical drug therapy. Later on in 20th century, interest in the medicinal effects of foods was revived when diseases related to dietary habits such as diabetes, obesity and cardiovascular diseases, became an alarming health concern. Scientists began to recognize components in foods from plants and animals sources that were physiologically active. These components could potentially decrease risks for various chronic diseases (Martirosyan 2011).

In 1990’s these developments, coupled with changes in food regulations, technological advances, and a marketplace rise for the health-promoting products, for an aging and health-conscious population thus created the trend known as “functional foods.” Functional Foods have been demonstrated health benefits if consumed regularly in sufficient amount as part of a well-balanced and healthy diet. The American Dietetic Association (ADA) issued a position statement in 1999. ADA described Functional Foods as “any potentially healthful food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains”. The following points are important regarding the functional food:

• Functional Foods can be whole, fortified, enriched, or enhanced foods.
• A Functional Food should be consumed as part of a mixed diet regularly, at adequate levels to have a beneficial effect on health.
• At some physiological level all foods are functional. (Shibamoto et al., 2008)
1.1 Origin of the Functional Foods Concept

The concept of functional foods originated in China as far back as 1000 BC, where specific foods were being used in traditional Chinese medicine (Bogue & Mairead, 2000). The term “functional food” was initially conceived in Japan in 1985, where the food industry used the term to describe foods fortified with specific ingredients that provided greater health benefits than traditional products (Heller et al., 1999). The Ministry of Health and Welfare launched a regulatory system for approval of certain foods with documented health benefits. These foods recognized as 'Foods for Specified Health Use (FOSHU)'. As on September 2001 about 271 food products had been granted FOSHU status in Japan. “FOSHU” are distinguished from foods simply fortified with vitamins or minerals and from dietary supplements sold in pill or capsule form that are marketed as aids to ensure increased intakes of such nutrients. The FOSHU system is unique because it focuses on health claims for specific products" (FOSHU, 1995).

Functional Foods were introduced to the Japanese market mainly due to the concerns of the Japanese Government. They were concerned about Japan’s ageing population and the resultant high health care costs. The Japanese Government actively set out to increase people’s awareness of the link between diet and health in the hope of making extensive savings in health care. Functional Foods were also seen playing a significant role in balancing the intake of “junk foods” from western countries, which were increasingly enjoyed by the Japanese consumer (Heller et al., 1999).

The nutraceuticals industry has developed with the discovery and extension of modern technology in alongside to the natural herbs and spices applied as country medicine for centuries in Asia (Shibamoto et al., 2008).

The functional foods market has also developed in the US and Europe over the past two decades. The first use of functional foods in the US and European markets was the fortification of basic foods such as breakfast cereals and drinks. Today their use and distribution is more widespread, with a wide range of Functional Foods ingredients being created and used to enhance foodstuffs (Kuhn, 1997). Functional Foods ingredients include proteins, dietary, fibre, lactic acid bacteria, vitamins, minerals, fish oils and plant extracts such as garlic, liquorice and celery (Regan, 1999).
1.2 Definitions of Functional Foods

There is no unanimously accepted definition of functional foods. Functional Foods have defined by experts in several ways in fields of nutrition and health. ‘Committee on Opportunities in the Nutrition and Food Sciences’ of The Institute of Medicine of the National Academy of Sciences prefers to limit the term “functional foods” to “The foods in which the concentrations of ingredients have been modified or manipulated, to improve their contribution to a healthy diet” (Thomas and Earl, 1994).

According to the International Food Information Council (IFIC) Functional Foods are “foods that provide health benefits beyond basic nutrition” (IFIC, 1998).

International Life Sciences Institute of North America (ILSI) has defined “Functional Foods as foods which, by virtue of physiologically active food components, provide health benefits beyond basic nutrition” (ILSI, 1999). In this definition “functional foods” term prefers only to the foods that may be beneficial due to the presence of a physiologically active component.

According to FOSHU “all Functional Foods must meet three established requirements: foods should be (i) present in their naturally-occurring form, rather than a capsule, tablet, or powder; (ii) consumed in the diet as often as daily; and (iii) should regulate a biological process in hopes of preventing or controlling disease” (Hardy, 2000).

Traditionally, the role of whole diet has been emphasised in place of specific food item. The value of food has been related to a healthy and nutritious diet. With the development of functional foods, a novel approach was claimed to the healthy eating by relating a single active component with a specific health effect in a single food item. (Urala & Lähteenmäki, 2003)

Health Canada defines Functional Foods as “similar in appearance to a conventional food, consumed as part of the usual diet, with demonstrated physiological benefits, and/or to reduce the risk of chronic disease beyond basic nutritional functions” (Health Canada 1998, 2004).

An official definition of Functional Foods was lacking in both Europe and US till 2004. According to an action project FUFOSE (Functional Foods Science in Europe) coordinated by ILSI (International Life Sciences Institute), “A food can be regarded as functional if it has been satisfactorily demonstrated to affect beneficially one or more target functions in the body beyond adequate nutritional effects in a way
that is relevant to either an improved state of health and well-being and/or a reduction of risk of disease” (ILSI, 2002; ADA Reports, 2004).

According to the American Dietetic Association (ADA) “functional foods, including whole foods and fortified, enriched, or enhanced foods, have a potentially beneficial effect on health when consumed as part of a varied diet on a regular basis, at effective levels” (ADA Reports, 2009).

Besides providing scientifically proven health effects, Functional Foods should have food-like quality and could be easily included into the daily diet: “a Functional Food must remain food and it must demonstrate its effects in amounts that can normally be expected to be consumed in the diet: it is not a pill or a capsule, but part of the normal food pattern” (Diplock et al. 1999 & ILSI, 2002).

1.3 Categories of Functional Foods

According to all these definitions, there are wide varieties of foods which represent the natural whole foods. All these would be considered as Functional Foods because they contain physiologically active components in sufficient amount like phytochemicals, lycopene and lutein, beta-carotene, sulforaphane etc. Foods that have been modified or fortified with nutrients or enriched with phytochemicals or botanicals also fall within the range of functional foods. There are varieties of functional food which are commonly grouped in two categories:

Conventional foods: Natural or conventional foods like citrus fruits, vegetables, tomatoes, carrots, broccoli garlic, soy products, dairy products, dietary fibre, oat meals, tea, chocolate, cocoa and animal products like fish etc. are powerful, health-enhancing conventional foods. These foods contain bioactive components related to health promotion and are mostly preferred by consumers.

Fortified foods: These foods are consumed for specific purpose to reduce disease or increase health benefits by including in a daily diet i.e. calcium-fortified orange juice, eggs and pasta with high levels of omega-3 fatty acids, cereals enriched with folate or stanol or sterol ester-enhanced margarine, beverages with added vitamin E, salad dressings with n-3 fatty acids etc.

1.4 Health Claims about Functional Foods

Some countries, such as Canada, Sweden, and the United States, have specific
laws concerning the labelling of health claims of Functional Foods and their benefits. A health claim is declaration about the relationship between a food or its components and any ailment or health-related state. The best way to find out whether a food has any scientifically established health benefits further than basic nutrition is to appear for a special type of statement called a “health claim” on the food label.

**FDA-Approved Health Claims**

Food and Drug Administration (FDA) in the United States supervise and regulate the health claims. Health claims projected for use on food labels must be pre-approved by the Food and Drug Administration (FDA) prior the marketing. In order for a health claim to earn approval, there needs to be significant scientific agreement that claim is factual. Varieties of Functional Foods are sold in global markets. Food and Drug Administration had approved health claims for Functional Foods which generally are supported by clinical trials. The following Functional Foods like whole oat products, soy protein, garlic, spinach, green leafy vegetables, cruciferous vegetables, tomatoes and processed tomato products, dairy products, fermented dairy products and Probiotics, nuts, black tea, green tea, fortified margarines, fatty fish, grape juice or red wine, eggs with omega-3 fatty acids etc. all have carry FDA-approved health claims (Hasler, 2002, Yang & Landau 2002).

**Whole Oat Products:** Whole oat products such as oat bran, rolled oats and oat flour are naturally rich in soluble fibre. Soluble fibre beta-glucan is the active component of oats. Oat bran which has been associated with reduced incidence of coronary heart disease is basic example of Functional Foods (Brown et al., 1999)

Scientific evidence indicates that whole oats products, if consumed regularly in appropriate amounts can lower the blood cholesterol levels and thus reduce the risk of cardiovascular diseases. The FDA has approved a health claim on food labels concerning consumption of whole oat products to diminish the risk of heart disease from 1997.

**Soy Protein:** Many Asian cuisines include soy Foods and they are also popular among vegetarians of U.S. Commonly consumed soy foods are soymilk, tofu, soy nuggets, soy nut butter, tempeh, baked goods made with soy flour, soy-based meat substitutes (such as soy burgers, sausages, and crumbles). These soy foods contain between 6 to 20 grams of soy protein per serving. Scientific studies have shown that consumption of sufficient amount of soy protein about 25 grams daily can help to reduce cholesterol
levels. The soy health claim is relevant simply to whole soy foods and made with soy protein. Soy protein (Messina, 2003) and the sterol and stanol esters (Hallikainen, 1999) are additional examples for which final (FDA, 1999) and interim final (FDA2000) health claims regarding cholesterol reduction or cardiovascular disease risk reduction have been approved. (US FDA2011)

Garlic: Garlic has been used for its medicinal properties for thousands of years. The medicinal properties of garlic are due to the presence of compound "allicin", which improves the immune system, useful in prevention of cancer, control of hypertension and platelet aggregation. Several studies in human subjects have demonstrated its potential ability to reduce blood cholesterol levels (AHRQ, 2003).

Fruits and vegetables: Fruits and vegetables are another example of Functional Foods which are showing the association between increased consumption and reduced risk for cancer (AICR, 1997 & Cohen et al. 2003) or coronary heart disease (Howard & Kritchevsky, 1997).

Citrus fruits like lemons, limes, oranges are rich source of vitamin C, folate, fibres and limonoid. These components give protections against the variety of cancers. Flavanones present in orange juice may be beneficial for the heart. Presence of phenolics in black seedless grapes and red wine which prevent the LDL oxidation, an important step during the process of atherogenesis. Polyphenolics from red grape skins have antioxidant and anticoagulant properties

Dark-green leafy vegetables such as spinach contain phytochemicals and lutein. Lutein is a type of carotenoid shows antioxidant activity. It is important carotenoid in the macula of the retina and useful for central vision. Major cause of blindness among older people is macular degeneration. Some facts indicate that lutein could favour to protect against this age-related eye disease. (Seddon et al., 1994).

Cruciferous group of vegetables includes cauliflower, broccoli, cabbage, Brussels sprouts, mustard greens, radishes, turnip, turnip greens, and water-cress. Active components present in this group are phytochemicals, indoles, isothiocyanates which may protective against cancer. (AICR, 1997; Cohen et al., 2003; Thomson, & Green, 2003). These vegetables also contain vitamin A-precursor carotenes, vitamin C folic acid, calcium, iron and fibres.

Tomatoes and tomato products contain the pigment lycopene (carotenoid). Lycopene act as a strong antioxidant. Lycopene helps in strengthening the immune system and has disease fighting ability. It has been found that consumption of tomato products in
large amounts or high levels of lycopene in blood may be associated with reduced risks of various types of cancer, especially prostate cancer (Giovannucci, 1999, 2002; Chen et al., 2001).

**Black and Green Tea:** Black and green tea contains compounds polyphenols such as catechins. Some studies indicated that active component of green tea acts as antioxidant and helps in reducing cholesterol and LDL and also protective to cancers (Yang & Landau 2002; Davies et al. 2003).

**Prebiotics & Probiotics:** Probiotics are the fermented dairy products in which viable micro organisms are present. Acidophilus milk is an example of "probiotics" which contains Lactobacillus acidophilus bacterium. These products are considered as Functional Foods because they support the gastrointestinal health and boost immunity. (Sanders, 1999)

Some foods contain non digestible components which support the favourable bacterial growth in the gastrointestinal tract. These foods are termed as prebiotics for example fructans (non digestible oligosaccharides).These Functional Foods may potentially provide health benefits for cardiovascular disease, type 2 diabetes, and intestinal infectious diseases. (Roberfroid 1998; Bouhnik, et al., 1999). Symbiotic are the mixtures of prebiotics and probiotics.

**Nuts:** Nuts are excellent food for brain health, specially walnuts are rich source of DHA which is essential for brain development in the newborns; maintain good cognitive performance in adults and helps to control cognitive decline of the old-age. Daily requirement of DHA can be fulfilled by a quarter-cup serving of walnuts. Hazelnuts and almonds are best sources of vitamin E that prevents age-related cognitive decline. Fifty percent of the recommended daily allowance for vitamin E can be fulfilled by quarter-cup serving of hazelnuts and almonds. Almonds, Walnuts, and hazelnuts have cholesterol-lowering effects. Nuts may have a qualified health claims Functional Foods (Feldman 2002; Coulston 2003).

**Chocolate:** Dark Chocolate contains polyphenolics. Dark chocolate improves the blood flow within the brain which helps with better human’s memory. Epicatechin is present three times more in coco as compared to green tea and 2 times as compared to red wine. Epicatechin is flavonoid which acts as antioxidant. It has insulin mimic action which is good for the cardiac health (Vinson, 1999; Gu 2006; Taubert, 2007; Francis, 2006; Bisson, 2008). Consumption of foods rich in cocoa may reduce blood pressure. Consumption of dark chocolate and milk altogether lowers the beneficial
effects of the chocolate. The actual benefits are due to cocoa so the darker the chocolate, more beneficial it is.

**Fatty Fish:** Omega-3 or n-3 fatty acids are essential for cellular membranes and their normal functioning, specifically for brain and retina of the eye. Omega-3 fatty acids play an important role in the process of blood clotting and inflammatory responses as well as to reduce serum cholesterol levels in subjects with elevated levels. (Erkkilä et al., 2003). Fatty fish like salmon, tuna, herring, sardines, rainbow trout, and mackerel contain these fatty acids. Researches are going on their possible benefits in a variety of chronic diseases, like cancer, rheumatoid arthritis, Crohn’s disease, cognitive dysfunction, and especially cardiovascular diseases. The American Heart Association "recommends two servings of fatty fish per week" under dietary guidelines for a healthy heart (Krauss et al. 2000).

The consumption of fish oil supplements are not recommended by the American Heart Association to lower the cholesterol levels, as warning against extra intake of rich sources of fatty acids. But according to FDA the consumption of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) n-3 fatty acids is related to lower risk of coronary heart disease (USFDA 2000). These fatty acids can also be synthesized from precursors found in foods such as canola oils and soybean within body.

**Animal Products Containing Conjugated Linoleic Acid:**

Initial researches conducted mostly in experimental animals indicated that Conjugated Linoleic Acid (CLA), might help to inhibit breast cancer, may alter carcinogenesis (Belury, 1995, 2002). It also decreases body fat; increases muscle mass, and bone density. CLA is found primarily in meats from ruminant animals like lamb and beef and in dairy products.

### 1.5 Active Components in Functional Foods

Functional Foods in each of above categories contain at least one physiologically active compound which has health enhancing properties. These active ingredients may control or prevent some diseases (ADA 2013; David 2004). Technological advances have facilitated the isolation of active components like allylicsulfides from garlic, isoflavones from soy, anthocyanin from berries, omega-3 fatty acids from fish and flaxseeds, etc. The antioxidant and anti-inflammatory benefits of these components as vitamins, minerals, antioxidants, and fibres are too great to ignore. Fruits and vegetables contain a variety of active components that are
known as "phytochemicals" along with vitamins and minerals. These components have
different physiological effects (FSTB, 2006; Coca-Cola Company 2006;
Lycopene.org. 2007; phytochemicals.info.)

I. Carotenoids
These pigments are present in tomatoes and tomato products along with chilli sauce,
watermelon, seafood cocktail, sauce etc. Several studies have suggested that
consumption of tomatoes and tomato products help in reducing the risk of cancers of
lungs, bladder, cervix, skin, breast and colorectal cancers due to their anti-oxidant and
anti-proliferative properties. They may inhibit cholesterol synthesis and enhance
LDL (bad cholesterol) degradation hence helpful in prevention of cardiovascular
diseases. The processing of tomatoes and its products like sauces, soups and juices,
accounts for the large availability of lycopene (Heber 2004).

2. Isothiocyanates
The cruciferous vegetables like, cauliflower, cabbage, turnips, radish, broccoli and
brussel sprouts has been found to decrease risk of lung, stomach, colorectal cancer as
well as coronary heart disease. These effects have been proposed due to the
isothiocyanates which can reduce toxic effects of carcinogens. Sulforaphane is found
in Broccoli and Broccoli sprouts that are more potent than antibiotics against the
bacteria Helicobacter pylori, which causes peptic ulcers. Also mice testing have shown
that this compound offers great protection against stomach cancer (Marc, 2002).

3. Antioxidant vitamins
Vitamin A, beta-carotene, vitamin C, and vitamin E are vitamins which act as
antioxidants. They help to control oxidative damage caused by free radicals in the
body. The risk of cancer, cardiovascular disease, diabetes, pulmonary function
problems, asthma, and weight loss can be alleviated by antioxidant vitamins.
Antioxidants may also promote eyesight, brain, and gastrointestinal health. Varieties
of antioxidants are present in fruits & Vegetables like oranges, limes, strawberries,
Mango, Apple, Apricot, Papaya tomatoes, broccoli, lettuce, spinach & other leafy
greens. Researchers have found that dark green leafy vegetables contains carotenoids
that reduce the growth of certain types of breast and skin cancer cells, and also inhibit
lung stomach cancer (AICR 1997).

Apples have high antioxidant activity that lower cholesterol levels, inhibit
proliferation of cancer cells & reduce lipid oxidation thus accounts for lower risk of
some cancers, asthma, diabetes & cardiovascular disease. Apples contain a variety of
strong antioxidants (Boyer & Liu 2003). The total antioxidant activity of 100 grams of apples was found to be equivalent to the effect of about 1500 mg of vitamin C. Though the vitamin C content in 100 g of apples is about 5.7 mg. The antioxidant activity in apples is due to presence of variety of other compounds (whfoods.com).

4. Flavonoids

Flavonoids have lots of benefits. They boost cellular antioxidant defences, counteract free radicals, add to the maintenance of brain function, heart health and urinary tract health. Flavanoids are found in major groups of fruits and vegetables, like broccoli, berries, cherries, cranberries, red grapes, apples, citrus, and some spices such as cinnamon. The blue-red pigments, anthocyanins improve the vascular system. Blue berries contain a phytochemical called anthocyanidins that can counteract free radical damages to the cellular collagen which leads to glaucoma, peptic ulcers, varicose veins, cataracts, heart disease and cancer. (Karen, 2006).

Following table indicates a few of these functional components, their foods sources, and their health benefits:

<table>
<thead>
<tr>
<th>Class/Components</th>
<th>Source*</th>
<th>Potential Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cartenoids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta-carotene</td>
<td>carrots, pumpkin, sweet potato, cantaloupe</td>
<td>neutralizes free radicals, which may damage cells; bolsters cellular antioxidant defences, can be made into vitamin A</td>
</tr>
<tr>
<td>Lutein, Zeaxanthin</td>
<td>kale, collards, spinach, corn, eggs, citrus</td>
<td>may contribute to maintenance of healthy vision</td>
</tr>
<tr>
<td>Lycopene</td>
<td>tomatoes and processed tomato products, watermelon, red/pink grapefruit</td>
<td>may contribute to maintenance of prostate health</td>
</tr>
<tr>
<td>Flavonoids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthocyanins-Cyanidin,</td>
<td>berries, cherries, red</td>
<td>bolsters cellular antioxidant defences; may contribute to maintenance of proper brain</td>
</tr>
<tr>
<td>Compound Type</td>
<td>Food Sources</td>
<td>Function</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Flavanols-Catechins,</td>
<td>tea, cocoa, chocolate, apples, grapes</td>
<td>may contribute to maintenance of heart health</td>
</tr>
<tr>
<td>Epicatechins,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epigallocatechin,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procyanidins</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flavanones-Hesperetin,</td>
<td>citrus foods</td>
<td>neutralize free radicals, which may damage cells; props up cellular antioxidant defenses</td>
</tr>
<tr>
<td>Naringenin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flavonols-Quercetin,</td>
<td>onions, apples, tea, broccoli</td>
<td>neutralize free radicals, which may damage cells; bolster cellular antioxidant defenses</td>
</tr>
<tr>
<td>Kaempferol,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isorhamnetin,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myricetin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proanthocyanidins</td>
<td>cranberries, cocoa, apples, strawberries, grapes, wine, peanuts, cinnamon</td>
<td>may contribute in proper health of heart and urinary tract</td>
</tr>
<tr>
<td>Isothiocyanates</td>
<td>cauliflower, broccoli, broccoli sprouts, cabbage, kale, horseradish</td>
<td>may enhance detoxification of undesirable compounds; increases cellular antioxidant defences</td>
</tr>
<tr>
<td>Minerals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium**</td>
<td>sardines, spinach, yogurt, low-fat dairy products, fortified foods and beverages</td>
<td>may reduce the risk of osteoporosis</td>
</tr>
<tr>
<td>Magnesium</td>
<td>spinach, pumpkin seeds, whole grain breads and cereals,</td>
<td>may help in proper functioning of normal muscle, nerve function, immune function and bone health</td>
</tr>
<tr>
<td><strong>Potassium</strong></td>
<td><strong>Selenium</strong></td>
<td><strong>Phenolic Acids</strong></td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>halibut, brazil nuts</td>
<td>potatoes, low-fat dairy products, whole grain breads and cereals, citrus juices, beans, bananas</td>
<td>may reduce the risk of high blood pressure and stroke with a low-sodium diet</td>
</tr>
<tr>
<td>fish, red meat, grains, garlic, liver, eggs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Examples are not an all-inclusive list.
** FDA approved health claim established for component.
*** Preformed vitamin A is found in foods that come from animals. Provitamin A carotenoids are found in many darkly colored fruits and vegetables and are a major source of vitamin A for vegetarians.

1.6 Need of Awareness

Awareness is the aptitude to recognize, to sense, or to be aware of events, matter or sensory patterns. In this level of perception, sensible data can be confirmed by an observer. Awareness is the status or feature of being responsive of something.

In biological psychology, awareness is defined as a perception and cognitive reaction to a condition or event. Awareness creation aims at promoting understanding and acceptance of the significance of various population problems. It brings facts and issues to the attention of large audiences or specific groups, such as decision-makers and opinion leaders. “Active learning process refers to a method of education which involves the learner in different activities that contribute to the acquisition of skills and knowledge. Active learning involves three aspects: the cognitive, the emotional and the psycho-motor. In this process, the learners are not passive listeners; instead they ask questions, discuss, practice, read and do other activities. This implies that the learner is involved in making decisions regarding the learning process” (Freire, 1973).

Now a day’s consumers’ interests in taking “self-care” is increasing whereas unhealthy life styles accounts for many health problems. In the United States, tens of billions of dollars are spent annually on dietary supplements (Bethesda, 1998). The rapid growth in dietary supplements marketing shows the food industry’s response to marketing of nutraceuticals in the name of functional foods. These products supply nutrients and active components like proteins, vitamins, minerals, antioxidants and phytochemicals. But their concentration is highly unbalanced and different from the form used in research studies. In natural foods, different nutrients and active components supports the physiological health benefits. The intake of whole foods should be promoted in place of dietary supplements. The Office of Dietary Supplements at the National Institutes of Health had developed a strategic plan for the research in this field (Fairfield & Fletcher, 2002). Functional Foods can be an element of a health-conscious lifestyle. However, the consumer must not be exploited in the name of potential benefits of functional foods, thus awareness among consumer is essential.
1.7 Awareness through Nutrition Education

Malnutrition is the major problem in human nutrition. There are two categories of malnutrition; one is due to insufficient intake of food and others owing to extra and inappropriate intake of nutrients or a particular dietary component. Main objective of nutrition education is to enrich people with knowledge, and motivate to consume proper foods. Nutritional awareness must be directed to irradiate ignorance, correct selection of food, and proper consumption to such segments of community where health related problems are growing. In modern era health related problems and degenerative diseases are increasing tremendously. It is very essential that people should be familiar about the nutrients and active components present in specific foods along with nutritious diets. They must be aware about physiological importance of foods. Awareness through the nutrition education plays important role in creation of basic concept about the nutritional wellbeing and modifying the knowledge, food habits, and intake of the particular foods. Through nutrition education people can enrich their information about the proper intake of foods. This can create attitudes not only for the fulfillment of daily requirements but also for preventive and therapeutic uses of varieties of foods.

According to UNESCO 1987, assessment of knowledge, attitudes and practices of consumers are basics of the planning and implementation of nutritional awareness programme. Personal interaction, multimedia and printed matters facilitate the fulfilment of goals of awareness programme. According to Food and Nutrition Division of “Nutrition education programs should have at least three components which should be directed at the various social groups. First increasing the nutrition knowledge and awareness of the public and of policy-makers: to fulfill this object it is necessary to provide information on the relationship between diet and health; nutritional needs of individuals; the causes and results of nutritional disorders. Secondly promoting desirable food behavior and nutritional practices. This can be achieved by giving information on the nutritive value of foods, the composition of an balanced diet, motivating suitable food choices and selection from available resources, preparation and handling of food, and equitable intra-house hold food distribution according to the nutritional needs of family members. Thirdly increasing the diversity and quantity of family food supplies. To achieve this, it is essential to make information available for improvement of food production; choices and diversification of good storage, and preservation of nutrients during food production.
processing. Each of these components makes a special contribution to nutritional improvement. All three are important and need to form part of nutrition education and training programmes” (FAO 1997).

According to Food and Nutrition Division (FAO 1997) “The goal of nutrition education is to reinforce specific nutrition-related practices or behaviors to change habits that contribute to poor health; this is done by creating a motivation for change among people, to establish desirable food and nutrition behavior for promotion and protection of good health. People are given help to learn new information about nutrition and to develop the attitudes; skills and confidence that they need to improve their nutrition practices. Successful nutrition education goes beyond the simple accumulation of knowledge, towards positive action. A change in behavior leading to desirable nutrition practices Successful nutrition education often entails the active participation of the people, their awareness of their nutrition problems and their willingness to change and should be based on a well-planned communication strategy, often using a multimedia approach.”

Community based awareness programme is essential for the improvement of health and nutritional status. Awareness programmes give opportunities for the personal communication between the nutrition educator and participants and creates positive atmosphere for learning. These types of programmes boost the assessment capacity for the best selection and use of available resources. Similar view was expressed by (Cerqueira, 1992). “The community-based approach to nutrition education, which encompasses the best elements of the two approaches, emphasizes the importance of active community participation in making decisions and finding solutions for nutritional problems”.

1.8 The Role of Women in Healthy Nutrition

Women’s participation is indispensable for the progress of any society. Women are caretaker of entire population of the society specially children who are future generation. Indian women have participated in every sphere of life with complete dedication. In nutrition education the primary group is group of people whose behaviour is to be modified during the educational programme. The success of nutrition education programme depends on the involvement of the persons who participate in the care and feeding of family. Women play a special role in health and nutrition of the community. There are significant importance of Women as the mother
for child rearing and as the food manager of family. Professionally majority of 
employees are women in field of education both primary and higher education, health 
and fitness, public catering, food trade and industry. Nutritional awareness among 
women helps the implementation of nutrition policy at the family level as well as 
community level. Women can impart in improvement of public nutrition as target 
groups of community, mediators in families and sub groups of population and 
initiators for the change in their fields as leaders. If they are given the correct 
information, women can educate their children, husbands and relatives. 
Implementation of a healthy nutrition programme remains virtually unused due to lack 
of knowledge, availability of and access to healthy foods and economic difficulties 
faced by families.

Ghassemi, (2000) WHO Consultant stated “if we all wanted to join forces in 
promoting the health and well-being of those who deserve it the most and receive it 
the least, we should concentrate on young women. It is simply because when women 
become healthier, better nourished and rise above poverty, and when their status in 
society improves, the world will be a better place, our children will have a better 
future and development and peace will have a better chance”.

1.9 Aims and Objectives

Objectives of the study are as follows:

(i) To collect information on demographic profiles of the subjects.

(ii) To assess the pre existing knowledge related to Functional Foods.

(iii) To identify the sources of their knowledge about Functional Foods.

(iv) To assess the extent of usage of Functional Foods in terms of types and 
frequency

(v) To create awareness for Functional Foods using suitable module and 
audio- visual aids.

(vi) To study the impact of awareness creation on knowledge & 
consumption of Functional Foods.
1.10 Limitations of the study

(i) Study will be limited only to the women subjects of Raipur city.
(ii) Women subjects from different range of income will be included in study.
(iii) The number of subjects will be limited to 240 subjects.

1.11 Hypothesis

Hypothesis-I

It was assumed that there would be no relation between knowledge of Functional Foods and Educational level.

Hypothesis-II

It was assumed that there would be no relation between knowledge of Functional Foods and Working status of women.

Hypothesis-III

It was assumed that Source of information would be mainly electronic media.

Hypothesis-IV

It was assumed that there would be no relation between Consumption of Functional Foods and Educational level.

Hypothesis-V

It was assumed that there would be no relation between Consumption of Functional Foods and Working status of women.

Hypothesis-VI

It was assumed that there would be great need for Nutritional Counseling in terms of Functional Foods.

Hypothesis-VII

It was assumed that there would be a great improvement in Knowledge status and Consumption of Functional Foods through awareness programme.