INTRODUCTION
1. INTRODUCTION

The present chapter of introduction discusses the concept of the study entitled “Effect of Mental Health, Life Style And Nutrient Intake On The Health Of Adolescents”. It talks about adolescents and their health, mental health, nutrition and life style. It introduces the study and forms the background for the related review and research later. It provides the platform for the objective significance and importance of the study. The chapter proceeds under six heads, which includes;

1.1. Adolescence
1.2. Health
1.3. Mental health
1.4. Nutrition
1.5. Lifestyle
1.6. Significance
1.7. Objective of the study
1.8. Hypotheses

1.1 ADOLESCENCE

Adolescence is a period of transition between childhood and adulthood. It occupies a crucial position in the life of human beings. These transitional beings are the shapers of the future who are moulded by the environment. Adolescence is the most challenging and complicated period of life. It is a time during which many developmental changes take place that are not only physical but psychological too. The individual experiences change in the way he thinks, looks and behaves. It is also a period of transition from the secure and dependent life of a child to the insecure and independent life of an adult. The individual establishes its own identity and in the
process, they face with many questions. This is the formative period, when young men and women make important choices about life style, behaviour which include their eating habits, physical activity that influences their health and well being throughout life.

The biological landmark of adolescence during which sex organs begins to function and sexual features begins its appearance is called puberty. As a result of puberty, the adolescent undergoes major and rapid body changes that include a growth in height and changes in body proportion, as well as sexual differentiation which involves the appearance of secondary sexual characteristics and the growth of sex organs. These changes are important in themselves and they are also significant in their potential impact on psychological development. To emerge "or to achieve identity", is relatively a new concept for defining adolescence especially in development of thinking. The origin of the term comes from the Latin word ‘Adolescere’ meaning to grow, to mature, indicate the defining features of adolescents.

Adolescents age between 10-19 years account for more than one fifth of the world’s population. In India, this age group forms 21.4 percent of the total population (National Youth Policy, 2000) characterized by distinct physical and social changes. The health education, economic and employment needs of adolescents cannot be ignored. Adolescents are also entitled to enjoy all basic human rights which includes, economic, social, political and cultural. Moreover it is necessary to invest in the quality growth of adolescents, as the future leaders and guardians of the nation’s development.
WHO (2010) defines adolescence both in terms of age (spanning the ages between 10 and 19 years) and in terms of phase of life marked by special attribute, which include-

- Rapid physical growth and development
- Physical, social and psychological maturity, but not all at the same time.
- Sexual maturity and the onset of sexual activity.
- Experimentation
- Development of adult mental processes and adult identity
- Transition from total socio-economic dependence to relative independence.

Adolescent’s period can be divided into number of stages. According to Pandey et al, 1999, the main stages of adolescence include -

Early adolescence (9-13 years): Characterized by a spurt of growth and the development of secondary sexual characteristics.

Mid adolescence (14-15 years): This stage is distinguished by the development of separate identity from parents, establishment of new relationships with peer groups and the opposite sex. Experimentation is also the character feature of this stage.
Late adolescence (16-19 years): At this stage adolescence has fully developed physical characteristic (similar to adult) and have formed a distinct identity and with well formed opinions and ideas.

Erik Erikson (2002) has drafted various stages of development during the life span. These stages are characterized by specific features unique to the stage.

1. **Infancy** (Birth to 18 months): Erikson also referred to infancy as the oral sensory stage, where a baby puts everything in his/her month. During this stage the major emphasis is on visual contact and touch.

2. **Early Childhood** (18 months to 3 years): During this stage the child learns to master skills for selves. Not only do the child learns to walk, talk and feed one selves, but also learns finger motor development as well as the much appreciated toilet training.

3. **Play Age** (3 to 5 years: During this period a child experience a desire to copy the adults and take initiatives in creating play situations such as stories with Barbie’s and Ken’s, toy phones and miniature cars, playing out roles in a trial universe, experimenting with the blueprint for what one believes etc.

4. **School Age** (6 to 12 years): This stage is emphasized by capability of learning, creating and accomplishing numerous new skills and knowledge thus developing a sense of Industry.

5. **Adolescence** (12 to 18 years): According to Erikson, up to this stage, development mostly depends upon what is done to us.
From here onwards development depends primarily upon what we do. While adolescence is a stage, at which we are neither a child nor an adult, life is definitely getting more complex as we attempt to find our own Identity, struggle with social interactions and grapple with moral issues.

6. *Young Adulthood* (18 to 35 years): In the initial stage of being an adult we seek one or more companions and love. As we try to find mutually satisfying relationship, primarily though marriage and friends, we generally also begin to start a family.

7. *Middle Adulthood* (35 to 55 or 65 years): Now work is most crucial, Erikson observed that middle-age is when an individual is occupied with creative and meaningful work and with issues surrounding family.

8. *Late Adulthood* (55 or 65 years to Death): Erikson felt that much of life is preparing for the middle adulthood stage and the last stage is recovering from it. Perhaps that is because as older adults often look back on lives with happiness and are content, feeling fulfilled with a deep sense that life has meaning. According to Erikson, a feeling of integrity is experienced during this stage.

Out of the eight stages of Erikson, adolescence has been identified as the major stage of changes - physical, physiological, emotional and psychological etc. It can be said that one of the purpose of adolescence, within the total developmental line of the individual, is the achievement of a firm sense of self. The greater danger of this period has been termed as either role confusion or diffusion. As one enters into late stage of
adolescence an identity struggle carries with it a sense of mastery on childhood issues and an increasing readiness to face the challenges of the adult community.

According to Havighurst (1973) some of the developmental tasks of adolescence periods include the following:

- Achieving new and more mature relation with age-mates of both sexes.
- Achieving a masculine or feminine social role.
- Achieving emotional independence from parents and other adults.
- Accepting one’s physique and using the body effectively.
- Preparing for marriage and family life.
- Preparing for economic career.
- Desiring and achieving socially responsible behaviours.
- Acquiring a set of values and an ethical system as a guide to behaviour.
- Developing an ideology.

1.2 HEALTH

Health is a common theme in most cultures. Among definition still used, probably the oldest is that health is the “absence of disease.” Adequate health should mean not simply the absence of some physical disability but rather the bio-medical well-being required for effective satisfying living. The widely accepted definition of health is -

“Health is a state of complete physical, mental and social well being and not merely on absence of disease or infirmity.”
A WHO study group (1997) defined health as “Health can be seen as a condition or quality of the human organism expressing the adequate functioning of the organism in given condition or environment. Health means that there is no obvious evidence of disease and that a person is functioning normally and the several organs of the body are functioning adequately in themselves and in relation to one another”.

The beginning of adolescence brings various changes in physical development that leads to the transformation of the individual from child to adult. These changes affect the health of adolescents. The health and well-being of adolescents is closely inter linked with their physical, psychological and social development which is put at risk by sexual and reproductive health hazards which are increasing in the world. Adolescents age group is more, particularly vulnerable to risk-taking behaviour than other human groups. At this age they may endure minor physical ailments that may become major later on.

The increased rate of growth during puberty is coupled with a natural increase in appetite. During this time, the adolescents not only take more calories but also additional amounts of protein and specific minerals and vitamins including calcium, iron and vitamins. For healthy adolescents, good nutrition is must.

In west obesity is a common problem, while in tropics; people are often underweight due to poverty or lack of dietetic knowledge. Sometimes poor physique is due to debilitation disease like tuberculosis, mal absorption syndrome, diabetes or cancer, on the other hand, an underweight person is especially liable to tuberculosis and acute infectious diseases. There are some peculiar health problems related to
adolescents e.g. No one knows why some people get ache while other do not, but heredity play a role, ache runs in families. The hormone of adolescence also plays a role by stimulate the gland in the skin. The skin natural oil is made in deep glands and is supposed to flow out through tiny ducts the skin’s surface. In acne the ducts become clogged and oily secretion build up in the ducts. Acne may or may not be related to certain foods such as fats and chocolate. Some scientists suggest that a low zinc intake and increased consumption of alcoholic beverages may be responsible for acne.

Dental carries are also common among adolescents. A strong attraction for the taste of sugar and its availability has detrimental consequences for the adolescent’s dentition. Numerous factor combine to contribute to the demineralization and corrosion that predispose the enamel from the consumption of too much fermented carbohydrate (sugar, sweets, chocolates etc.) and from poor hygiene (inadequate brushing and flossing).

1.3 MENTAL HEALTH OF ADOLESCENTS

Mental health indicates psychological well being. It is the ability of person to balance one desire and emotions with effective psycho-social adjustment. Hadfield (1952) reports mental health as the harmonious functioning of the whole personality. Bhatia (1982) stated that “Mental health means the ability to balance feelings, desire, ambitions and ideals in ones daily living. It means the ability to face and accept the realities of life”.

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Mental health problems in India affect approximately 10-12 per 1000 of population and approximately 10 million people in the country are suffering from serious mental illness. The prevalence of common mental disorders such as depression, anxiety and somatoform disorders is 2-3 times higher among adolescent (Patel et.al., 1998).

Socio-economic and other inequalities are significantly related to mental health. Psychiatric disorders are more common in people from lower socio-economic group (Mohammed, 2004). Exposure to excessive noise (80 decibels or greater) on a recurring, prolonged basis been well documented as a potential cause of stress.

According to Eysenck (1985) an individual learns through conditioning by different socialization standards and his/her nature of conditioning depends absolutely upon his/her personality predispositions. Many studies suggest that different personality dimensions play an important part in the development of Psychopathology.

Adolescence is also a peak age of onset for serious mental illness. Mood disorders such as depression and bipolar disorder and psychotic disorders such as schizophrenics are two types of mental illness for which early recognition and intervention is critical to a successful and long-lasting recovery.

Adolescents feel all kinds of pressures to do well in school to be popular with peers, to gain the approval of parents, to make the team etc. Despite these pressures, it is important to remember that most teenagers develop into healthy adults. The various mental health issues that the adolescents might face during this transition period are as follows:
Eating disorders: Over eating related to tension. Poor nutritional habits and food fads are relatively common eating problem in adolescents. In addition to psychiatric eating disorders, anorexia nervosa and bulimia are on the increase especially among adolescent girls. According to one recent study as many as 10 out of 100 young women in U.S. suffer from eating disorder. These eating disorders may also occur in boys but its prevalence is less often.

Alcohol and Drug abuse: Nowadays young people during the phase of their puberty and adolescence often show symptoms of grave crisis of identity which particularly dispose them to drug abuse. Use and abuse of drugs and alcohol by adolescent is very common and can have serious consequences. According to a study in United States, among 15-24 years is the age of 50% of death from accidents, homicides suicides involve alcohol or drug abuse. Drugs and alcohol also contribute to physical and sexual behaviour such as assault or rape. Possible stages of teenage experience with alcohol and drugs include abstinence (non-use) experimentation, regular use (both recreational and compensatory for other problems) abuse and dependency. Repeated and regular recreational use can lead to other problem like anxiety and depression. Avoidance and school failure, isolation from peers, family and other emotion relationship or the inability to keep one’s disappointment in perspective.

Adolescent sexual behaviours: Adolescents are often engage in behaviours that put their health at risk. Risky sexual behaviours are of particular concern in that they can lead to serious consequences both for the adolescent involved and with any number of unseen partners. Adolescent like adults, may be prone to engaging in risky sexual behaviour due to perceptions of personal invulnerability and their
tendency to focus on the immediate, rather than long term, consequences of their behaviour. Due to the lack of appropriate knowledge adolescents are not able to prevent unwanted pregnancies and also spread sexually transmitted infections. Sexually transmitted diseases (STD) are responsible for a variety of health problems and can have especially serious consequences for adolescents.

Conduct disorders: Adolescents with conduct disorder have repetitive and persistent pattern of behaviours in which they violate the rights of others, or violate norms or rules that are appropriate to their age. Their conduct is more serious than the ordinary mischief and pranks of children and adolescents. Severe difficulties at home in school and in the community are common and frequently there is very early sexual activity. Self esteem is usually low, although the adolescent may project an image of “thoroughness”. Teenagers with this disorder have also been described as “deliquent” or “antisocial”. Some teenagers with conduct disorder may also have symptoms of other psychological disorders. Adolescents living in the U.S. are fifteen or twenty times more likely to die from homicide than adolescents living in other developed countries (Baron and Richardson, 1994).

Adolescent Depression: Depression presents in adolescents with essential the same symptoms as in adult, however, some clinical shrewdness may be required to translate the teenagers symptoms into adult terms pervasive sadness may be exemplified by wearing dull clothes, writing with morbid themes or a preoccupation with music themes. Sleep disturbances may manifest as all night television watching, difficulty in getting up for school or sleeping during the day. Lack of motivation and lowered energy
level is reflected by missing classes. A drop in grade averages can be equated with loss of concentration and slowed thinking.

**Suicide Risk in adolescents:** It is not uncommon for young people to be preoccupied with issues of mortality and to contemplate the effects of their death would have on close family and friends. Suicide acts are generally associated with a significant acute crisis in the adolescent’s life and may also involve concomitant depression. The loss of boy friend or girl friend, a drop in school marks or a negative attitude by a significant adult, especially a parents or teacher, may be precipitant to a suicidal act. Significant stressor include divorce of parent, family discord, physical or sexual abuse and alcohol or substance abuse.

In Eleventh five year plan (2007-2012), documents, the commission says “There is currently no budgetary allocation for child and adolescent mental health. The mental health of children is an issue the eleventh plan will fund and take up on a priority basis. Counselors will be appointed in all schools and helpdesks will be set up, especially during exams. (Hindustan times, 2008).

The national mental health programme was initiated into the central scheme in 1982 considering the magnitude of the problem in the country. As had been recommended by the central council of health and family welfare in October, 1995 and as resolved in the workshop of health administrators held in February, 1996 the district mental health programme with the community based approach was launched in four districts, one each in the states of Andhra Pradesh, Assam, Rajasthan and Tamilnadu was launched in 1996-97 on a pilot basis under the national mental health programme. The district Mental Health Programme was
further extended to seven more district in 1997-98. One each in the states of Arunachal Pradesh, Haryana, Himachal Pradesh, Madhya Pradesh, Maharastra, Punjab and Uttar Pradesh. During 1998-99, the programme is proposed to be extended to five more additional district states in the country. The annual meeting of the central mental health authority was held 12 December 1998 to review the implementation of the mental health act, 1987 in all states and union territories in the country. The authority also reviewed the implications arising due to inclusion of mental illness as a disability in the persons with disabilities. (Ministry of Health and Family Welfare, 1998-99)

Adolescence is also a peak age for onset of serious mental illness. Mood disorders such as depression, bipolar disorders and psychotic disorder such as schizophrenia, are the types of mental illness for which early recognition and intervention is as critical to successful and long lasting recovery (World Health Organization, 2002).

1.4 NUTRITION

The word “nutrition” is often paired with the word ‘food’ because the two go together. Food might be defined as any edible substance that provides nourishment when consumed. While nutrition is defined as the science of foods, the nutrients and other substances as there in, their action, interaction and balance in relationship to health and disease. It includes the process by which the organism ingests, digests, absorbs, transport and utilise nutrients and disposes off their end products.

**Dietary Nutrient:** Healthy eating is an important part of a healthy life style and is something that should be taught at a young age. Irregular
meals, snacking, eating away from home and other alternative dietary patterns determines the food habits of adolescents. Chemical components that provide nutrition are called nutrients. The nutrients found in food are proteins, carbohydrate, fats, vitamins, minerals and water. These different nutrients together perform the function of effective action in an healthy person. Individually each nutrient has its value in diet and has specific function to play in maintenance of health.

**Protein:** are very complex nitrogenous compounds built up out of smaller units called amino acid. All proteins contain carbon hydrogen and nitrogen. Most of them contain sulfur and some also contain phosphorus. Lipids combine with protein to form lipo-protein. Protein contain an average of 16 percent nitrogen. Based on physical and chemical properties. Protein is necessary for tissue synthesis and supply the materials for building and continuous replacement of the cell protein throughout life. Many body processes are regulated by certain proteins. Haemoglobin, an iron bearing protein is the chief constituent of RBC, performs a vital role in carrying oxygen to the tissues. Some enzymes and hormones like insulin and thyroxin are also protein in nature. Protein yield 4 calories per gram if oxidized in the body to provide energy. Excess of protein is convert into fat and stored in the body. Protein supply raw materials for the body to synthesis enzymes like trypsin and pepsin. According to ICMR (2000), adolescent boys need 70 gm protein and adolescent girls need 65 gm protein, in growing phase. Moreover, there are many physiological and physical changes during this period, which requires continuous replacement health protein.

**Carbohydrates:** These are most abundant organic compounds in nature and the chief source of energy. These are made up of carbon, hydrogen
and oxygen. The energy value of carbohydrates is 4 calories of energy per gram. Carbohydrates are chemically known as saccharides. Based on the number of single carbohydrate units found in each chemical structure carbohydrates are divided into three types monosaccharides, disaccharides and polysaccharides. Small amounts are stored as glycogen in the liver and muscles and some are stored as adipose tissue for later energy needs. Glucose is the sole form of energy for the brain and nervous tissue. Carbohydrate is used as a source of energy thus sparing protein for tissue building. For the normal oxidation of fats some carbohydrates are necessary. In the absence of adequate carbohydrate large amounts of ketone bodies are produced. The accumulation of ketone bodies increases the acidity of blood. This condition is called ketosis, may result in coma if the alkalinity of blood is reduced considerably. Ketosis may occur in diabetes where the cells cannot utilize carbohydrates. Carbohydrates play an important role in the gastro-Intestinal functions of Mammals. They also add variety, flavor and bulk to the diet.

Lipid: The term lipid includes fats and fat like substance and oils. These substances are insoluble in water but are soluble in organic, solvents like ether, alcohol and benzene. Fats (solids) and oils (liquids) are esters obtained from the higher fatty acid and glycerol, these esters are commonly referred to as glycerides. Fats are the richest source of energy. One gram of fat gives 9 calories of energy which is more than double the amount obtained from equal amounts of carbohydrates and protein. Some of the fat-soluble vitamin like A, D, E and K need fats for their proper utilization in the body. A body can suffer from deficiency of this vitamin if enough fat is not present in the diet. Essential fatty acids help to maintain tissues their normal structure and efficiency. Adipose tissue-
storage area of fat acts as an insulation material in infancy and for sensitive part of the body. Moreover fat also provides flavor and palatability to food.

**Vitamins:** Vitamins are necessary for metabolic reactions in the body. Vitamins are generally classified into fat soluble and water soluble ones. Fat soluble in fats and fat solvents, e.g., vitamins A, D, E and K. Water soluble vitamins are soluble in water hence they cannot be stored in the body. These are B complex vitamin and Vitamin C. Vitamins requirement is increased during adolescence, increased quantity of thiamine, riboflavin and niacin are required for the release of energy from carbohydrates, with tissue synthesis there is an increased demand for vitamin B6, folic acid and vitamin 12. There is also an increased requirement for vit D (for rapid skeletal growth) and vitamin A, C and E are needed for new cell growth.

**Mineral Elements:** Minerals may be defined as those elements which remain largely as ash when plant or animal tissues are burned. The body contains more than 19 minerals all of which must be derived from foods. Minerals are required for the growth and development of the body and for the formation of bones and teeth e.g. calcium phosphorus, magnesium. Iron is necessary for formation of blood cells. Minerals and iron is also responsible for maintaining the acid alkali balance in the body and hence are grouped as the alkali forming elements (calcium, potassium, sodium, iron and manganese) and the acid forming elements (phosphorus, sulfur and chlorine). Due to accelerated muscular, skeletal and endocrinal development calcium need is greater during puberty and adolescence than in childhood or during adulthood. At the peak of the growth spurt daily need of calcium can be twice as much as the average than during the rest
of adolescence period. During peak adolescents growth calcium requirement is on an average about 200 mg/day in girls and 300 mg/day boys. Both male and female adolescents have high requirements for iron. In the male adolescents, the built up muscle mess in accompanied by greater blood volume. In female adolescents iron is lost monthly with the onset of menses.

**Nutritional Requirement of Adolescents:** The nutritional requirement of young people is influenced primarily by the spurt of growth that occurs at puberty. Since it is the period of physical development, hence good nutrition and healthy eating habit plays a significant role in the life style of the adolescents. There is a significance of certain nutrients in their diet.

### Table 1
*Recommended Dietary Allowances (RDA) For Selected Nutrients During Adolescence*

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Female</th>
<th>Male</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>11-14 years</td>
<td>15-18 years</td>
</tr>
<tr>
<td></td>
<td>11-14 years</td>
<td>15-18 years</td>
</tr>
<tr>
<td>Energy (KCal)</td>
<td>2200</td>
<td>2200</td>
</tr>
<tr>
<td>Protein (gr)</td>
<td>46</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>59</td>
</tr>
<tr>
<td>Iron (Mg)</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Calcium (Mg)</td>
<td>1200</td>
<td>1200</td>
</tr>
<tr>
<td></td>
<td>1200</td>
<td>1200</td>
</tr>
<tr>
<td>Zinc (Mg)</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Vitamin A (uq RE)</td>
<td>800</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>1000</td>
</tr>
<tr>
<td>Vitamin D (uq)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Vitamin C (mg)</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Folic Acid (MCg)</td>
<td>150</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>200</td>
</tr>
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Table 2
*Recommended Dietary Allowances For Adolescents*

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13–15 years</td>
<td>16–18 years</td>
</tr>
<tr>
<td>Energy (KCal)</td>
<td>2060</td>
<td>2060</td>
</tr>
<tr>
<td>Protein (gr)</td>
<td>65</td>
<td>63</td>
</tr>
<tr>
<td>Calcium (Mg)</td>
<td>600</td>
<td>500</td>
</tr>
<tr>
<td>Iron (Mg)</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>Vitamin A (uq R)</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>Vitamin C (mg)</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

*Source: Indian council Medical Research (ICMR) Reprint 2007.*

According to Healt et.al. (1976) there are three characteristics that influence directly the nutritional requirements and vulnerability of adolescents are;

- Body mass nearly doubles during the adolescent spurt.
- Energy and protein needs are closely related to the growth spurt, thus the amounts needed are at their peak in the whole life span (except during pregnancy and lactation).
- The increased rate of tissue synthesis raises the demand for energy to carry out the process and adolescents become highly restive to caloric restriction.

This dramatic increase in energy and nutrient requirements coincides with a time when many children develop irregular eating habits because they are frequently eating away from home. They are also more subjective to
outside influence such as their friends during adolescence, than when they were younger.

**Factors responsible for food choices of adolescents:** There are some important factors, responsible for food choices of adolescents.

*Physiological Factors:* The physical characteristics age and sex of person affect one’s food habits. Allergies to certain food, physical handicaps, chronic illness may prohibit inclusion of certain foods in diet.

*Psychological Factor:* Food habits are an important part of human behaviour. Food is often eaten to alleviate nervous tension and burden. Food provides a sense of security. Emotional ups and down may create deep interest or aversion to certain foods. Individuals are motivated to act in terms of what they perceive as being relevant to meet their needs.

*Social Factors:* If one recognizes that individual belongs to various social groups, the effect of group behaviour can not be over looked when considering factors that influence food habits. The organization of society, with its many structure and accompanying value systems, play an important part in the acceptance or rejection of food pattern. Food has been used since antiquity as a measure of wealth, religion, caste, traditions and inherited attitudes may play an important role in furnishing the food habits of individual. Food sharing with friends, offering food to guests to eat together also effects one’s food consumption.

*Role of Family:* Family is the most powerful institution. Role of mother is prime importance as food selection and meal preparation are often in her per view. Parent supply and guide their children’s intake of food while the child is growing. Parents shape their children’s eating environment.
Parents feeding practices can exert a major influence on children’s eating environment. Childhood practices persist into late adolescence, and play an important role in determining the food choices. Nutrition education during childhood can have long range of positive impact on eating habits.

Role of Peer Group: Young children and teenagers are generally influenced by their peer group. In adolescents eating disorders are common whose food choices are often influenced by social pressures to achieve cultural ideals to gain peer acceptance or assert independence from parental authority.

Role of Economic Factors: Income influences the variety of food from which people can choose and also the amount of food that may purchased from various food groups. Economic factors for adolescents pocket money, parental income etc. limit the quality and quantity of food purchased. Rising food cost and food storage have had their impact on the food pattern of many Indian families.

Environmental Factors: Geographical area, local climate and season etc. influence food habits. Sudden change in environment, housing, household equipment may affect food behaviour. Jellifee (1966) suggested that environmental influences especially nutrition is one of greater importance than genetic background or other biological factor in influencing the physical dimensions of body.

Religious and Culture Factors: Different religions have their own culture, tradition and food habits. Culture may be defined as “The way or life of a group of people usually of one nationality or from a particular locality.” Culture is the sum total of ways of living built up by a group of human beings and transmitted from one generation to another. The culture may
affect the food habits by the types of belief about foods. Dietary intake that originates from culture has an impact on the growing adolescent.

**Other Factors:** Other factors like TV, Nutritional knowledge and Meal pattern also have an impact on dietary intake of adolescent.

Television viewing can contribute to obesity through lack of exercise and over consumption of snacks. Food varies considerably in nutritive value. Some foods that cost little may be nutritionally rich and vice versa. Knowledge of food which can give adequate nutrition at low cost is necessary for a worker and his family which are to be properly fed on a limited budget. Fast/Junk food items - burger, pizza etc. are becoming the life style dietary intake of adolescent. Nutritional planning is usually based on a three meal pattern. Today’s adolescent are practicing irregular meal patterns.

**Nutritional disorder/abnormality during adolescents:**

Eating disorders are common among teens, whose food choices are often influenced by social pressure to achieve cultural ideals of thinness, gain peer acceptance or assert independence from parental authority. At this age they start eating out and take snacks in between meals. The snacks they eat are full of fats, carbohydrates and sugar. Some of them try to use food as a way to establish their identity perhaps by over eating or going on a crash diet. Their faulty eating habits can lead to different nutritional deficiencies under or over nourishment, dental caries or eating disorders.

Anorexia nervosa and bulmia are the emotional disorders characterized by severely disordered eating pattern, an obsession with food and weight and the relentless pursuit of excessive thinness. (Bruch 1979). The major
Symptom of anorexia is extreme weight loss (approximately 20 to 25% of body weight) through self starvation, which is tied to fear of becoming fat. When weight loss is sustained for a long period, a number of harmful physical symptoms occur including lack of energy, paleness of skin, brittle nails, constipation, difficulty in urinating, tingling sensations in arms and legs, the appearance of fine hair all over the body, thinner hair and loss of hair and extreme sensitivity to cold etc.

**Bulimia** a related eating disorder, frequently involves a recurrent “Binge-purge” syndrome in which an individual eat as much as 4,800 calories at a time and then purges the calorie intake by forced vomiting, fasting, laxatives and other cathartics. Approximately half of all individuals with anorexia also have bulimic eating patterns. People with bulimia often have an over concern with their body weight and shape and may feel a lack of control.

**Obesity**, also a common problem in both sexes of adolescents, can be influenced by excess caloric intake, decreased physical activity and metabolic and endocrine abnormalities. An improper balance between energy intake and expenditure precedes most obesity, for most otherwise healthy adolescents sacking on high-starch food and sitting in front of a computer or television have contributed to the deposition of excess body fat. Weighing 20% or more above the recommended weight poses a significant health risk.

**Anaemia** is one of the most common dietary deficiency diseases among adolescents. Both male and female are particularly susceptible to iron deficiency anaemia in view of their increased blood volume and muscle mass during growth and development. In the male adolescents
population, the built up of muscle mass is accompanied by greater blood volume. In female adolescents, iron is lost monthly with the onset of menses. During adolescence anaemia may impair the immune response and decrease resistance to infection.

1.5 LIFE STYLE OF ADOLESCENTS

Life style can be defined as “A manner of living that reflects the person’s value and attitude”.

These popular sayings and many more denotes life style in simple words.

“The way of person or group of people live, including the place they live in, the things they own, the kind of job they do and the activities they enjoy”.

Or

“Early to bed and early to rise, makes a man healthy wealthy and wise.

And

“An apple a day keeps the doctor away”.

It is the manner in which we make our life move or go ahead. It develops our likes and dislikes. Adolescent being the period of growth and change has a significance impact on life style adoption and the life style adopted shows its implication on their nutrition intake and physical and mental health.

Teenager they recall constantly having a hectic schedule. There was all day endowment of their classes and then followed by some type of extracurricular activity such as basketball, softball or cheerleading. In the off season, after school they would work a couple of hours to earn extra
spending money. Once off to home, needed to eat then do home work. Their typical day began around 6 A.M and end around 10 P.M.

This affects their food habits. These conflicts may have nutritional consequence as the teenager eats away from home more often and develops a snack pattern of personal peer group food choice due to changing life style -

- Skipping meal is common, specially breakfast is most frequently skipped by adolescents.
- Fast food like pizza, burger, sandwich etc are consumed by adolescents. These foods contain no calcium and vitamin A and are too high in calories, saturated fat and sodium.
- Teenagers like to eat any type of food at any time of day like chocolates, ice-cream etc. which is often not considered important in their food assessment.

Some other changes which are more common in adolescents are;

- Day’s routine.
- Eating pattern and choice of food.
- Choice of clothing and appearance.
- Sleeping pattern.
- Physical/recreational activities

Many researchers have founded that teens seem to develop the late night/late morning sleeping routine because their circadian rhythms changes. Circadian rhythms are our body’s natural 24 hour metabolic rhythm. This rhythm affects things such as sleep/wake patterns.
According to national sleep foundation (NSF) adolescent should get between 8.5 to 9.5 hours of sleep.

In a 2006 poll on teens and sleep conducted by NSF, they found more than one half of adolescents reported that they feel too tired/sleepy during the day (5.1%) and or had difficulty in falling asleep (51%) at least once a week within the past two weeks.

Medical research shows that there is a direct connection between lack of sleep and the inefficient information processing like forgetfulness, increased irritability, anxiety, depression, temporarily lowered IQ (While sleep deprived), falling asleep in class, poor athletic performance, slow reaction time in driving.

Physical activity has a well known role in preventing and reducing obesity and also exerts a beneficial influence upon insulin metabolism. Furthermore increased level of physical activity has positive impact on virtually all chronic disease. Physical activities such as walking, gardening, bicycling and swimming can elicit improved health and reduce all causes of morbidity and mortality. Sports training physical activity should include daily training program in preparation for competition. Health promoting physical activities aim at promoting growth, improving body function and protecting from illness.

Exercise prescription as a means of treating or reversing various diseases should be considered as an essential therapeutic component.

To adolescent clothes serve a wide variety of functions. Adolescent’s clothes are to express themselves and to obtain social approval. It is also part of their self image and a means to declare their self importance.
Further, clothing is a key way to identify with and compare oneself to peers. Of all age groups adolescents are most likely to devote a disproportionate amount of time and attention to clothing and appearance. This is because adolescents are extraordinarily sensitive to the opinion of their peers. Generally they want to be accepted by, or belong to a group. Physical appearance is an integral part of this process. Adolescents worry constantly about their physical appearance. It is not uncommon for the tiniest detail to become a major concern. So while the eight year old younger brother may dress quickly and run out the door, the sixteen year old older brother takes the time to select just the right clothing and he may carry a comb to ensure that his hair remains exactly where it should throughout the day.

1.6 SIGNIFICANCE OF THE STUDY
The present study entitled “Effect of mental health life style and nutrient intake on the health of adolescent” is an effort to conceptualize the relationship between life style, nutrient intake and health specially, the mental health of the target of group of adolescent boys and girls. Adolescent being the period of change has always been the area of interest to study by various researchers in the past and present. The study not only highlights the nutritional pattern of the group but also bring forth the practices of life style and nutrient consumption. What are their likes and dislikes who play the major role in their choice of food and many other related issues. The study also takes about the effect of life style on their mental health and much more.

Various studies have been done with adolescent on various aspects of their growth and developmental changes and perception. Present study will be an additional documentation in the field of research with special
focus on change appearing and effecting small towns in India. India being a developing country will be intensely affected by its adolescent population, who has the power to bring positive and negative changes in the national development. Towns are slowly moving towards city in terms of life style and nutrition due to media and the urge of the individual to adopt change especially by the growing population i.e. adolescent.

The life style and eating pattern of adolescent assume significance while studying their nutrient intake. Eating pattern of urban affluent adolescents reveal higher portions of food being consumed away from home may lead to obesity among both girls and boys. Who have been reported to be physically less active, more home bound, spending more time on internet, playing video games as well as having easy ass to fast food. Some of the micro nutrient deficiencies like anaemia rampant among adolescent girls and other generalize malnutrition due to eating disorder arising out of psychological conditions. Addiction of smoking, gutka consumption etc. in this age group, are quite common.

The study specially focuses its finding and relationships in small town ‘ETAH’ of Uttar Pradesh. The change in eating patterns and the emerging life style of the adolescent of today in these towns can have the long term implications on the population of the nation in later stages. A mentally & physically healthy population is a boon for a nation.

**OBJECTIVE OF THE STUDY**

**General Objectives:**

1. To study the socio economic and demographic characteristics of the adolescents.
2. To assess the mental stress, life style and nutrient intake of the adolescents.

3. To assess the health status of the adolescents through anthropometric measurement.

**Specific Objectives:**

1. To compare the mental health, life style and nutrient intake between the normal and diseased adolescents.

2. To compare the mental health, life style and nutrient intake between the adolescent boys and girls.

3. To correlate the health status with mental health, life style and nutrient intake among the adolescent boys.

4. To correlate the health status with mental health, life style and nutrient intake among the adolescent girls.

1.7 HYPOTHESES

The following hypotheses will be tested -

1. There is no significant difference regarding mental health, life style and nutrient intake between the normal and disease adolescents.

2. There is no significant difference regarding mental health, life style and nutrient intake between the adolescent of boys and girls.

3. There is no relationship between the health with mental health, life style and nutrient intake among the normal and diseased adolescents.

4. There is no relationship between the health with mental health, life style and nutrient intake among the boys and girls adolescent.