DISCUSSION
This chapter discusses the observations of the study, the results, and findings from the field. Not much rather very little work has been done in dealing with mental health, life style and nutrient intake among the adolescents. The present discussion goes into the depth of analysis and the interpretation in the light of earlier works. Interpretation and analysis of data may be called the heart of research. The process of interpretation is essentially a way of stating what results shows, what they mean, what is their significance, what is the answer to original problems that all limitations of data enter into and become a part of interpretation of results. Interpretation of results may be understood as the main part or the body of the research. It may be considered as the wheels of the whole research machinery without which data and other material have no specific function to perform. It involves breaking down of existing complex factors into simple and putting the parts together in new arrangement for the purpose of interpretation.

Appropriate analysis and interpretation is necessary to make selection, administration and scoring worthwhile. Interpretation needs critical examination of results of the analysis of data which means the study of the tabulated material in order to determine facts of meanings. It involves breaking down of existing complex factors into simple form and putting parts together in new arrangement for the purpose of tabulation. The process of analysis and synthesis of the collected data is the foundation stone of specific methods. Thus analysis and interpretation gives shape and forms to the study. All the results obtained from the present study are discussed under the following heads:
5.1 GENERAL HEALTH OF ADOLESCENTS

The mean weight of the selected adolescents was 54.14 kg which was found to be more among the male adolescents (59.48 kg) as compared to female adolescents (48.13 kg) (Table 4.2.1). This result has been substantiated by Diejmah et.al. (1982) as they observed that the mean weight of the population studied were 49.4 Kg ± 7.9 respectively. Prabhakaran (2003) found that the mean weight was 50.6 kg against the NCHS reference standard of 56.6 kg weight. 46% of the adolescent girls recorded normal BMI values. Varma and Bajaj (1984) observed that girls were found to be taller and heavier than boys at 10-11 years age. Thereafter, the boys caught up with the growth of the girls and finally surpassed them at the age of 14-15 years. Patchimalla (1992-93) observed that the mean weight was highest, i.e. 39.5 kg and least was 37.5 kg observed in middle income group.

The mean height of the selected adolescents was 158.07 cms which was found to be more among the male adolescents (163.62 cms) as compared to female adolescents (151.80 cms) (Table 4.2.2). Rao et.al. (1984) observed that mean height of selected girls were significantly lower than those to the upper income group. In the low income group 34.35% of girls had height less than ICMR standards while it was only 6.3% in the higher income group. A similar trend was reported for weight. The height of girls in high and low income groups with less than I.C.M.R. standard was 83.6 cms and 92.2 cms respectively. Patchimalla (1992-93) observed the marginal difference between the mean height of adolescent’s girls in the three income groups, i.e. 153.7 cms, 151.42 cms and 150 cms. as compared to standard mean height i.e. 152.7 cm given by ICMR. In contrary to the finding of the present study, Prabhakaran
Prabhakaran (2003) found that 46% of the adolescent girls recorded normal BMI values. The mean body mass index of the selected adolescents was 21.54 which was found to be more among the male adolescents (22.14) as compared to female adolescents (20.85) (Table 4.2.3). In contrary to the finding of the present study, Jondhale and Jaishree (2001) found in their study on the basis of body mass index that 89.0% adolescent girls were undernourished of different grads. De Bate et.al. (2001) found in his study that 64% of the students had acceptable BMI levels, 16% of African American females and 15% of African-American males had BMI level indicating obesity (30 or above). Kamble and Rajkumar (2003) found in his study that more than fifty percent of the adolescent girls were found to have below normal values in all of the indicates of anthropometry.

General health of the respondents were found to be good in the families having income Rs. 20,000-40,000 per month and 40,000 per month and
above as compared to diseased respondents while diseased adolescents were found to be more in the family having income below Rs. 20,000 per month as compared to healthy adolescents (Table 4.3.2). This difference might be attributed due to the reason that medical facilities were more and easily available for the rich families as compared to adolescent from low income families. The study conducted in slum area of Agra city by Alpi et.al. (2007) is contrary to the finding of the present study. This may be because of some exceptional reasons pertaining to that particular slum of Agra, however in general the health status is linked to the income group as mentioned before.

5.2 MENTAL HEALTH

Among the adolescents, majority (48.33%) did not have stress followed by personal stress (29.33%) and minimum (2.67%) had financial stress. There was no variation found among healthy and diseased adolescents (Table 4.6.1). Patel et.al. (1998) reported that mental health problems in India affected approximately ten million people in the country who were suffering from serious mental illness. Gupta and Gupta (1980) observed that social, personal and school problems were found to be the most prominent problem among urban adolescence. Mohamed (2004) observed that socioeconomic and other inequalities were significantly related to mental health and psychiatric disorders were more common in people from lower socio-economic group.

Majority of adolescents (41.67%) liked intelligent friends, followed by smart friends and only few liked other type of friends. Among healthy adolescents, large no. (45.87%) of adolescent liked intelligent friends, followed by honest friends and minimum (6.18%) liked other type of
friends. Among diseased adolescents, large no. (35.84%) of adolescent liked honest friend, followed by good behaviour friend and very few liked smart friends (Table 4.5.7). Elizabeth Vaquera (2009) stated that social scientists have long suspected that friendships are not always reciprocated and those that reciprocated are likely to be more intelligent.

Mean scores of emotional stability, overall adjustment, autonomy, self-concept and total mental health were found to be high among the diseased adolescents as compared to healthy adolescents while mean scores of security-insecurity and intelligence were found to be high among healthy adolescents as compared to diseased adolescents (Table 4.7.2). Body & Weissman (1985) indicated in epidemiologic studies that 8-12% of men and 12-26% of women had experienced a major depressive episode in their life time. Anderson et.al. (1987) found that phobias are more common in girls than in boys.

Mean score of over-all adjustments, autonomy, security-insecurity, self concept and total mental health were found to be high among the adolescent girl as compared to adolescent boy while mean scores of emotional and intelligence were found to be high among the boys as compared to adolescent girl. Statistically, significant differences regarding mean scores of autonomy, security, insecurity and intelligence were observed between adolescent boys and girls (Table 4.7.1). Jamuna, et.al. (1991) reported lower incidence of psychological distress and less problems of adjustment among backward caste when compared to their high caste counterparts. Also, there was a positive association between mental health and adjustment, which indicates that a mentally healthy person has better adjustment quality.
The health status of the adolescents in ‘Etah’ city is reported well, this is probably due to better access to health care. The neighborhood is a key setting that can be used for intervention. It encompasses the walking network (footpaths and trails etc.), the cycling network (roads and cycle paths). Although the wider community space plays an important role in shaping adolescent’s physical activity, the smaller scale of the home environment is also very important in relation to shaping adolescent eating behavior and physical activity patterns.

5.3 LIFESTYLE

Out of the three hundred adolescents, majority (66.67%) were conscious for figure. Healthy and diseased adolescents were found same as total adolescents while diseased adolescents were more conscious for figure in comparison of healthy adolescents (Table 4.5.11). Figure consciousness among adolescents may attract to opposite sex may be one of the reason for difference. Michael et.al (2010) reported that strong correlation of drive for thinness and disturbed pattern of eating were related to teasing and criticism by family for weight or shape. Further, they stated that some young adolescent girls live in a subculture of intense weight and body shape concern that places them at risk of disordered eating behaviour.

Out of three hundred adolescents, majority (60.33%) wore clothes according to personality and remaining were wore clothes according to fashion. Similar pattern regarding clothes were observed among the healthy and diseased adolescents. Wearing cloths according to personality appeal more to opposite sex that is why they wore clothes according to personality (Table 4.5.5). Michael et.al (2010) reported that majority of adolescent girls receive clear message from fashion magazine and peer
group or family members that slenderness is important and attainable through dieting and other methods. Sarah Danielsson (2009) founded that adolescents do not look on to their favorite actors for fashion choices and they do not prefer to shop at designer stores.

Out of three hundred respondents majority (73%) attended the parties with friends and rest (27%) with parents. Among the healthy and diseased adolescents similar pattern regarding attending parties were reported (Table 4.5.6). Adolescents attended parties with friends is due to the thought of being grown up enough to attend party without parents. Whereas Alpi et.al (2007), reported in their study that majority of the adolescents attended the party with their parents.

Regarding the sleeping habit, majority (52.67%) slept for 8 hours, followed by 25.33% for 10 hours sleep and remaining 22% for 6 hours sleep. Both healthy and diseased adolescents liked 8 hours sleep. Due to less stress and more consumption of carbohydrates, mostly adolescents slept 8 hours (Table 4.5.3). Ellin Holohan (2010) stated that teens sleep less than 8 hours a night were more likely to eat a high fat diet that puts them at risk for obesity and many health problem connected with it.

Out of three hundred adolescents, majority (55.66%) were travelling by walking, followed (15.67%) by bus and 8.33% were using auto rikshaw. Among the healthy and diseased adolescents, similar pattern were followed (Table 4.5.13). All the schools in Etah city are situated in nearby area so the adolescents go school by walking. Astrid and Frode (2010) reported that the median distance walked or cycled to the bus stop or school by the urban adolescents was three times more than the rural adolescents.
Out of three hundred adolescents, mostly (76.33%) liked interaction. Similar pattern regarding the interaction were noted among healthy and diseased adolescents (Table 4.5.8). Interaction with friends might be more due to their education and urbanization of the selected adolescents in the present study. William and Melissa (2010) investigated that the dialectic of historical perspective and contemporary experience regard opposing temporal orientation by parents and friends towards adolescent activities.

Out of three hundred adolescents, majority (76.00%) were bold in their views. Similar pattern regarding the boldness were noted among the healthy and diseased adolescents (Table 4.5.9). For attaining independence as an adolescent, being bold is essential. Similar finding was also reported by Alpi et.al (2007) as they observed that majority of the adolescents were strong in taking decision about their education.

Majority (50.00%) of the adolescents faced their problems boldly, followed by (22.00%) lightly and minimum (12.67%) faced the problems with the help of friends. Similar patterns regarding facing the problems were recorded among the healthy and diseased adolescents (Table 4.5.10). Adolescents get boldness from their families and environment of the area may be the cause to face the problem boldly.

Among the adolescents, majority (63.67%) of them were engaged in moderate work, followed by (27.33%) sedentary work and remaining (9%) were engaged in heavy work. Healthy adolescents were engaged in sedentary work while diseased adolescents were engaged in moderate and heavy work (Table 4.5.12). This difference is due to the fact that diseased adolescents were economically poor and engaged as labour. Alpi et.al. (2007) observed that majority of the respondents were engaged in
moderate work, followed by sedentary work and minimum were engaged in heavy work.

Among the study sample, only thirty six percent liked sports, 9.33% liked watching television, while rests were engaged in other activities. The healthy adolescents showed same pattern while among diseased adolescents, large no. of adolescents (47.17%) liked reading books, followed by 12.26% respondents liked painting and 4.7% liked being engaged in other activities which includes watching television for their most favorite serials and cartoons (Table 4.5.4). www.healthyofchildren.com observed that American school children watched on average 4-5 hours of television a day repeated studies have shown that children who watch a lot of television perform more poorly in school. The eating habits of children who watch a lot of television are influenced by this advertising. Rosemary Hopper (2005) reflected on adolescent reading choices, influences on those choices and the importance of validating all reading experience including the new illiteracies.

An epidemic like increase in eating disorder and obesity would be less attributed to the transformation in lifestyle of adolescent from being physically active and consuming more of home cooked food to being more and more home bound, spending time on the sports, as well as less accessibility of fast food with growing prosperity.

5.4 FOOD HABIT

Among the respondents, majority (70.67%) liked vegetarian and remaining 29.33% liked non-vegetarian foods (Table 4.3.1). This
difference might be due to higher cost of non-vegetarian food as compared to vegetarian food. The main reason of their choice for non-vegetarian food was their custom and believes and family eating pattern. Dahiya (2003) study showed that out of total selected subjects, majority of rural and urban respondents were vegetarians and non-vegetarian respectively due to the religious reasons and customs.

Vegetarian food was preferred more by healthy adolescents, while non-vegetarian food was consumed more by diseased adolescents as per the advice of the doctors and family members (Table 4.3.1). De Bate et.al. (2001) found that majority of the students consumed fruits and vegetables. Nagi, et.al. (1993) observed that the intake was low for all the foods. However, the consumption of fruits, milk and milk products, sugar and jaggery, fats and oils by the subjects.

Among the adolescents, majority (65.33%) of them were regular in taking meals. Regularity in meal was more by healthy adolescents as compared to diseased adolescents (Table 4.3.2). The irregularity in taking meals by diseased adolescents can be attributed due to bad taste and poor digestive system because of medicine. Moreover due to their illness they show irritation in meal consumption. Diseased adolescents skipped meal more as compared to healthy adolescents (Table 4.3.4). Maria G. Grammatikopoulos et.al. (2006) also reported in the study that healthy adolescents were regular in taking meals.

The skipping of meals by the adolescents may be one of the fact that they want to be slim and they observed more deiting by skipping meals. Whereas Bhatt (2010), observed that adolescents skip their meal and were not healthy.
Among the sample, large no. of adolescents (34.33%) liked spicy food, followed by light food (28%) and minimum (7%) liked junk food. Similar pattern regarding liking of food were noted among healthy and diseased adolescents (Table 4.3.3). Awasthi et.al. (2008) also reported that most of the respondents liked spicy food, in her study.

Among the sample, majority (55.00%) liked tea/coffee. Tea and coffee were liked more by healthy adolescents as compared to diseased adolescents (Table 4.4.2). This difference can be attributed to the advice of doctor and also due to bad taste because of medicine. Healthy adolescents used more tea with their friends by accompanying them to hotel and road side dhabas. Sarojini and Vijayalakshmi (1989) observed that milk was included in the diet of every day but only small amount were taken as a part of tea. A study conducted on coffee addictors, observed that younger respondents were found more addicted. (Coffei.com, 2006-2008).

Homemade food was consumed more by healthy adolescents while market made food was consumed more by diseased adolescents (Table 4.4.1). Adolescents liked more market made food, junk products (maggi, cold drink etc.) and snacks but in Etah city, there are not so many restaurants and hotels, so both girls and boy’s adolescent group cannot consume snacks and market made foods. They liked to use them because they are aware about them through mass media. Health of the adolescents is very much affected by their food habits. The present finding is also supported by Piyushi et.al (2008). Out of 300 respondents more were found good in health.
5.5 NUTRITIONAL STATUS

Mean intake of protein, calcium, vitamin B1, vitamin C, iron, riboflavin and niacin were found to be more among the diseased adolescents as compared to healthy adolescents while mean intake of calories, vitamin A and fat were found to be more among the healthy adolescents as compared to diseased adolescents. Statistically, significant differences regarding mean intake of protein, calcium, vitamin B1, riboflavin and niacin were observed between healthy and diseased adolescents (Table 4.8.2). Tseny et.al. (1988) observed that the mean intake of vitamin A, riboflavin and calcium consumed low in Taipei children as compared to California children whereas California children consumed less iron than their Taipei counterpart. Kanani (1990) reported that the mean intake of calorie, protein, iron and retinol was 88%, 93%, 88% and 68% of RDA of the well to do adolescent girls (10-18 years) respectively. Butley (1992) observed that the evaluation of the nutrient contents of the diet showed short fall in the energy and iron contents and marginal deficits in the protein and calcium consumption. In nearly 70% of the girls, energy consumption was less than 70% of the RDA. The mean energy intake was only about 1300 Kcal against a requirement of 2060 Kcal. Nearly 35% of the study group had intake of protein which was less than 70% of the RDA. Statistically satisfactory calcium intakes (79% of RDA) was noted in about 30% of the girls. The dietary contents of more than 85% of the girls were (<60%) of the RDA. Anjla, et.al. (1981) observed that intake of protein, iron, calcium and phosphorus was much higher than the recommended allowances in all the income occupation and family size groups but the intake of vitamin A was below the recommended level in
Mean intake of vitamin A, vitamin C and iron were found to be more among the girls as compared to boys while mean intake of calories, protein, calcium, vitamin B1, fat, riboflavin and niacin were found to be more among boys as compared to girl adolescents. Statistically, significant differences regarding mean intake of calories, protein, calcium, Vitamin A, vitamin B1, vitamin C, iron, fat, riboflavin and niacin were observed between boys and girls even at 5% level of significance (Table 4.8.1). Anjla (1981) revealed that the intake of protein, energy, calcium, phosphorus, iron and vitamin A were more among the adolescents in the family of high socio-economic groups. The percentage of adolescent girls with below normal nutritional status was higher in the families of below poverty line groups. Devadas, et.al. (1973) observed that the subjects were not able to consume the quantities of cereals, pulses and green leafy vegetables, prepared according to the I.C.M.R. allowances but quantities of these foods consumed by the subject were thus less than the allowances suggests, the consumption met the calories & nutrients allowances. Qamra, et.al. (1990) reported that 64 percent of school age girls had inadequate intake of energy. The lower intake of foods and nutrients may be due to poor socio-economic condition leading to poor purchasing power, illiteracy and ignorance. Seshadri and Kanani (1992) revealed that the low income group girls had lower intakes of calories, iron, calcium and vitamin A, when compared with those of the higher income group girls. The average intake of protein of 13-15 years for low income group girls was near to the RDA, while that of 10-12 years old substantially lower. Sungararaj (1972) observed that the diets of the adolescents were found adequate
protein, however the calories intake were low. Nagi, et.al. (1993) observed that the mean daily intake of energy, protein, iron, calcium, vitamin A and vitamin C was inadequate while the intake of fibre was adequate by the subjects as compared to ICMR recommendations. Hassapidou and Fatiadau (2001) was found that boys had higher energy intake as compared to girls. Dahiya (2003) concluded that the consumption of cereals, pulses, green leafy vegetables, fat and oils and sugar and jaggery was significantly lower than RDA in both rural and urban adolescents. Tatia and Taneja (2003) reported that dietary intake of the tribal girls was insufficient with particular reference to all the nutrient. Almeida and Soares (2003) found in their study that diets consisted of high energy and protein intake and low carbohydrate intake. The consumption of calcium, folate and vitamin E was below the recommendations. Sztainer et.al. (2003) found that both males and females involved in weight related sports had higher mean protein, calcium, iron and zinc intakes than non sport involved peers. However adolescent females had low calcium intake regardless of sports involvement.

The nutritional status of adolescents of ‘Etah’ city representing that the food intakes of cereals and proteins are better. This could be the reason for lack or unavailability of junk food like pizza, burger etc. which is energy rich food.

The development of healthy eating practices and physical activity can prevent diseases and support a life time of good health. The present study reveals that there is significant impact of good nutrition on adolescent behavior, performance and overall quality of development.
5.6 NUTRIENT INTAKE AND HEALTH

Positive and significant correlations were observed between body mass index with calories, calcium and vitamin among adolescent girls. Positive and insignificant correlations were observed between body mass index with protein, vitamin C, riboflavin and niacin among adolescents girls. However, insignificant and negative correlations were observed between body mass index with vitamin B1, iron and fat among adolescent girls even at 5% level of significance.

Positive and insignificant correlations were observed between body mass index with vitamin C and fat among adolescent boys (p>0.05). Significant correlations were observed between body mass index with calories, protein, vitamin A and niacin among selected body (p<0.05). However insignificant and negative correlations were observed between body mass index with calcium, iron and riboflavin at 5% level of significance (Table 4.9.1). Bhatti et.al. (2010) observed in their study a positive and significant correlation was observed between BMI with intake of calories among the respondents who belonged to high socio-economic status i.e. as the body mass index increases, nutrient intake of calories also increases and vice-versa while positive and insignificant correlations were observed between BMI with nutrient intake of vitamin A, vitamin B1, iron and niacin among the respondents in high socio-economic status even at 5% level of significance. Negative and significant correlation was observed between BMI with intake of protein among the respondents belonging to high socio-economic status i.e. as the body mass index increases, nutrient intake of protein decreases and vice-versa while negative and insignificant correlations were observed between BMI with intake of
calcium, vitamin fat and riboflavin among the respondents belonged to high socio-economic status even at 5% level of significance.

Significant and negative correlation was observed between body mass index with Autonomy, Security-Insecurity, Self-concept, Intelligence and Total Mental Health among the male adolescents. Negative and insignificant correlations were observed between body mass index with emotional stability and over all adjustment among the male adolescents. Positive and insignificant correlations were observed between body mass index with autonomy, security-insecurity and self concept. While significant and negative correlations were observed between body mass index with emotional stability, over-all adjustment and intelligence (Table 4.9.3 and 4.9.4). Serra et.al. (2003) found that most individuals consumed mineral at home. The consumption of vegetables (90.4 gm.), cereals (181.1 gm) and potatoes (69.7 gm) was low, the consumption of red meat (71.6 gm) and fish consumption were low (47.7 gm). Girls had insufficient intake of milk (280.9 gm).

Study reveals that good status of adolescents in ‘Etah’ city with easy access to health care. Additionally, social environment of city having neighborhood settings are encouraging healthy eating & life style among adolescents in ‘Etah’ city. Preference of home cooked food & physical activity like cycling helps adolescents of ‘Etah’ to remain fit and healthy. Outdoor games have been found in spite of growing trend of social networking & junk food in cities in India especially among adolescents. But ‘Etah’ city still have less exposure to modernity like cyber cafes, malls, coffee shops, confectioneries, that keep adolescents of the city ‘Etah’ away from junk food.