DISCUSSION

The salient findings in the study are discussed under the following headings:

1. Socio-demographic Profile

The socioeconomic and demographic characteristics of selected respondents of rural and urban areas analysed which depicts that majority of subjects (41.8%) were of the age groups 31-45 years followed by younger age group in both type of localities. The average age was (38.01 ± 12.51) in urban respondents and it was (38.74 ± 11.43) in rural. There is no significant difference in average age of urban and rural respondents. Out of total respondents, half (49.7%) were male and remaining 50.3% were females. In urban community, male respondents (59.2%) were selected in more proportion than the rural male respondents (40.1%) whereas it was just in reverse proportion in female respondents. The difference in proportion of male and female respondent between urban and rural community is found to be statistically significant.

The area had Hindu dominant so more than 98.7% were Hindus and remaining only 1.3% were Muslims. Among Hindu religion maximum were OBC followed by general caste. Majority of adults were married. It is also noted that about 40.1% respondents belong to nuclear type of family whereas 59.9% from nuclear. The average family size was observed to be 5.98 in which 5.55 and 6.41 among urban and rural respondents respectively. Majority of respondents were residing in paccoka houses out of which the proportion of urban respondents was significantly more than the rural respondent. The educational status was found to be significantly higher in urban respondents than rural areas. (Table No.1.1 (a, b) - 1.2 and Graph No.1-3).
Graph :1: Region wise distribution of respondents according to their age

Graph :2 : Region wise distribution of respondents according to their Sex

Graph:3: Region and educational status wise distribution of study subjects
Occupational status wise distribution projects that among male respondents heavy worker were significantly more among rural than urban while there is no significant difference among female regarding type of work. The proportion of male engaged in heavy type of work may be due to agricultural work in rural. The socioeconomic status was found to be significantly low and medium in urban than rural respondents while just reverse trend was observed in high socioeconomic status. It clearly indicates that majority of rural respondents were below poverty line (Table No. 1.3 & 1.4). The author Andrew et al. (2013) interpreted in their study that mean age of respondents were 39.3% years and 49.9 years in urban and rural areas respectively which is more in rural areas as compare to the study. Likewise Sadasivam S.et al. (1980) in their study also reported that majority of the respondents were having 4-5 family members and one third of the population were illiterate and 42% of the families depend upon the income of one individual which is similar to the present study.

2. Food consumption pattern:

(Table No. 2.1-2.4) It is found majority 50.3% were vegetarian out of which the proportion was more in urban than rural subjects. It is also observed that about 58% of total subjects were taking their meals two times among which the proportion was significantly more among rural subjects than urban while just reverse trend was observed in taking meals three times during 24 hours. The average liquid intake per day was 4.62 and 3.74 in urban and rural subjects respectively and this difference is statistically highly significant. Bhanot S.and Chauhan G.(2003) studied on women of Sultanpur district reported that maximum respondents were vegetarian and a less no. of women were non-vegetarian. Religion and also low purchasing power of people were the major factors for being vegetarian. Kumari S. & Singh S. (2002) found that tradition of preparing food only twice a day was prominent in rural areas due to which maximum adults of rural areas take meal two times in 24 hours.
It is also observed that out of total respondents about 13.6% were in habit of paan masala, 12.4% tobacco, 11.2% smoking, and 12.4% drinking alcohol and majority 71.6% subjects were taking tea/coffee respectively. National adult nutrition survey (2011) reported that 8.9% of 18-64 years old men 92% and women 86% were alcohol consumers, 22% of males and 23% of females involved in smoking while 53% of males and 52% of females never smoked, which is significantly higher than the present study might because of socioeconomic and cultural factors which vary from area to area. Andrew et al. (2013) reported more alcohol consumption in rural area than urban similar to the present study. Addiction habit was also studied by the Vasanthamani G. & Sushmitha (1997).

In Table (2.5-2.10) it is projected that in the study area 45.1% of total respondents never visited to hotel or restaurant for the purpose of taking food in which the proportion of rural adult was significantly higher than the urban adults may be due to non-availability of hotel or restaurant or low socioeconomic status which verifies that the average expenditure on food item in rural areas was noted to be Rs. 2356/- which is highly significantly less as compare to the urban adults. (Rs. 4407/-). Iza et al. (2014) found that there was a reduction of consumption of household’s foods in urban area which requires longer preparation time and accessibility to a wider variety of food stuffs outside.

It is also observed that majority 38.5% and 27.0% were using only one or two type of oils in which the proportion was significantly higher in rural area than urban while in case of using more than two type of oil the proportion was significantly more in urban than rural . It is noted that the use of mustard oil and dalda was significantly more in rural than urban while just reverse trend is observed in case of refined and desi ghee might because of easy availability of mustard oil and cheap cost of dalda in rural area. Choudhary S et al. (2010)
observed that mustard oil consumption was universal by rural people, besides this refined oil and pure ghee was used by 0.74% and 1.11% respectively.

Table (2.11) on considering frequency of fast food consumption it is depicts that about one forth (24.0%) were never consuming fast foods in which the proportion of rural subject are significantly more than the urban, whereas maximum 48.7% were consuming sometimes out of which proportion of urban is more than rural. It is also observed that 7.9% and 16.4% of urban respondents and only 1.3% and 3.9% of rural respondents were consuming fast food daily and weekly respectively because of urban people have better access to a variety of food items. Andrew et al. (2013), the intake of noodles, fast foods and pastries were higher in urban than rural areas. About 37.8% in urban area consumed it at least four times in a week as against 36.1% in the rural areas, which is also somehow in higher proportion as compare to the present study might because of variation in socioeconomic status and regular food habit, and as well as their type of work engagement and lifestyle.

Prabhavathi Y. et al. (2014) reported in study of Coimbtore city i.e. taste, convenience and alternate to home food were found to be major reasons for consuming fast food by the respondents. It was also reported that 45 per cent of the sample respondents were consumed fast food three times in a month, 34 per cent of them were consumed fast food for about once in a month and 13 per cent of the respondents consumed fast food occasionally. It is also observed that only 9 per cent of them consumed fast food, once in a week regularly. study done by Steyn and Marais (2010) in South Africa showing that 11 per cent of the participants ate fast food daily, 27.6 per cent ate two to three times a week and 20.8 per cent ate fast food at least once a week. Only 3.8 per cent of the participants had fast food less than once per month.

It is also observed that out of total subjects 94.4% were taking pickles daily or sometimes whereas its proportion was 91.4% in taking oily materials
(butter, ghee), 97.4% of sweet products whereas 88.8% of salad in their daily food consumption. The proportion of using various types of food materials between urban and rural respondents was highly significant may be due to lack of awareness of importance of salad in their diet among rural people, (Table No. 2.12). Andrew et al. (2013) found that more respondents of urban area consume sweets, chocolates daily than rural people. In the Household Budget Survey (2008-2009) it was observed that in urban area a tendency to decreasing intake of fruits and vegetables and an increase in daily consumption of foods with high sugar and fat quantities such as soft drinks, bread, pizza, and cookies which supports the present study.

The respondents who were consuming different types of vegetables as salad in their foods majority 50.7% of urban and 66.7% of rural region were in habit to consume both type of salad. It is also observed that maximum 46.7% of urban and 63.8% of rural adults were consuming green vegetables along with roots and tubers. Statistically, difference in proportion between urban and rural is found to be highly significant. The consumption of seasonal vegetables was in higher proportion in rural may be due to easy availability in their fields in different seasons. It is also noted that out of total 44.7% of respondents reported consumption of all types of seasonal fruits in their meal while only 5.3% preferred juicy fruits. (Table No. 2.13-2.15). Rout (2009), Olayiwola et al. (2004) also reported the variation in consumption pattern according to season, culture, SES, food cost, education and income.

It is depicted from the Table (2.16 & 2.17) that maximum 82.9% of total respondents were consuming cereals twice daily while majority of respondents 87.5% were consuming pulses, 61.2% green leafy vegetables, 31.3% of other types of vegetables once daily. It is also observed that the frequency of different types of food consumption between urban and rural adults is found to be significantly different with the exception of the frequency of consuming pulses in their daily meal. It is also observed that once daily consumption of
roots and tubers reported by 63.2% and 50.7% of urban and rural subjects followed by 20.4% and 21.7% twice daily respectively. Likewise majority of respondents 46.7% were reported to take milk and milk products once daily followed by 13.8% and 18.5% twice daily and occasionally respectively. It is also noted that only 29.6% of total respondents were in habit of taking fruits once daily while only 7.2% were taking fruits twice daily and 41.2% occasionally. There is significant variation in proportion of taking frequency of fruits between urban and rural. It may be due to the daily consumption of healthy food such as fruits and vegetable is related to availability, accessibility, cost and quantity of the foods and rural people can’t afford the costly fruits due to low purchasing power of these people. They consume fruits produced in their home or purchased due to some health problems. The use of sugar/jiggery, once daily was observed to be in 35.5% of respondents followed by 17.1% twice daily and 21.4% occasionally. Likewise once daily consumption of fats and oils reported by 48.7% of subjects once daily out of which the proportion of rural adults was significantly higher than urban. Such type of study done by Kumari S. and Singh S. (2000) who observed that 42% of respondents were consuming pulse daily, about 23% were consuming milk daily and 52% were consuming milk occasionally and 45% have fleshy food occasionally but in the present study the proportion of taking pulse daily in their meal is higher, and the consumption of milk/milk product was nearer to that study might because of easy availability of the milk in rural area of Varanasi District. Iza et al. (2014) also reported that frequency of food consumption is associated with several socioeconomic, demographic, personal and environmental factors such as gender, age, economic status, and place of residence nutritional knowledge, attitude, perceived barriers, family size and structure. Bhanot S. and Chauhan G. (2003) also reported the poor dietary intake can be attributed to their low socioeconomic status as SES directly affects the food consumption and nutritional status. Mishra et al. (2002) also found that the gender and SES has
an impact on dietary consumption pattern as lower SES adults consume traditional vegetables, cereals and mixed foods.

3. Health, Hygiene and Cooking Practice

In Table no. (3.1-3.2) it is found that majority of respondents of urban 98.7% and rural 96.1% always kept their cooked food covered. Likewise 76.3% respondents of urban 91.4% of rural adults practiced sieving of flours with the reasons maximum for removing husk and undesired elements. It is observed that 71.1% of urban subject and 59.9% of rural subjects were in habit of peeling vegetables for cooking. Majority 58.9% of respondents cut the vegetables in medium pieces in which proportion of urban adults is significantly higher than the rural. Likewise 69.9% and 95.4% of total respondents were washing vegetables before cutting and cooked vegetables to cover with lid. The proportion of urban adults was significantly more than rural in case of washing vegetable before cutting may be due to more nutritional knowledge and precautions taken by them. Choudhary et al. (2010) found that majority (82.59%) of rural subjects used flour without choker which is little lower than the present study. Gothankar J. S. et al. (2012) reported that more than one third women i.e.35% of women in present study washes fruits and vegetables after cutting 15% of women wash rice 3-4 times in water while 5.5% of women wash rice till water is clear. Eighty five women i.e. 64% use lid while cooking vegetables and 13 % of women cook vegetable in pressure cooker while equal number of women i.e.13% cook vegetable in vessel without the lid. According to Dietary guidelines for Indians: a manual NIN (2010), foods should be washed well before cooking and consumption to remove contaminants like pesticide residues, parasites and other extraneous material however certain precautions need to be taken while washing and cutting to minimize the loss of nutrient. Vegetables and fruits should be washed thoroughly before cutting. Vegetables should be cooked on low heat using just
adequate water in a covered vessel to preserve flavour and nutrient to reduce cooking time.

Out of total urban respondents 54.6%, 33.6% and 11.8% respondents were using unsaturated, both type of oils (saturated & unsaturated), and saturated oils and fats respectively, whereas it was found to be 21.1%, 38.8% and 40.1% in rural respondents. In most of the respondents’ family the process of cooking food was frying (53.9%) followed by steaming 25.0% and boiling 21.1%. Emmanuel et al. (2006) concluded that boiling and then discarding the water used for boiling reduces the oxalate content of leafy vegetables (Table No. 3.3)

Majority of respondents reported to wash their hands before taking meal (91.8%) and cutting their nails timely (87.8%). Tiwari et al. (2007) reported that significant difference were found between proportion of rural and urban families and carefulness about personal hygiene which support the pattern of present study (Table No. 3.4).

It is observed that maximum 83.6% of urban and 37.5% of rural adults used drinking water from tape facility, while 16.4% and 58.65% of urban and rural people reported to take drinking water from Hand pump and this difference is statistically highly significant. It clearly indicates that the facility of tape water is significantly higher in urban and facilities of government Hand pump was significantly more in rural areas which may be due to different types of government programme provided to the urban and rural community. Similar type of results has been also reported by Prasad (2013). He observed that majority of respondents 89.0% of urban respondents were fetched water from municipal tap (Public Distribution System) and rest of the respondents from Hand Bore Pump (9.0%) and open well (2.0%). Drawing water from a public distribution system will stimulate greater use of water for hygiene purposes and proven to yield the greatest health benefits (Table No. 3.5).
In Table no. (3.6 & 3.7) it is also observed that in majority 67.8% of urban and 38.8% of rural subjects, the sanitation of house was good. The cleanliness of cookware was good and satisfactory in 73.0% and 25.7% in urban locality and 44.0% and 47.4% in respondents of rural areas. Likewise cooking practices in clean environment was among in 86.8% and 77.6% among urban and rural subjects respectively. Statistically, the difference in the proportion of hygiene and sanitation of house, cleanliness of cookware as well as cooking practices in clean environmental is found to be significantly higher in urban than rural locality. Likewise presence of toilet facilities as well as hygiene practices after visiting toilet are also significantly higher in urban than rural locality might because of lack of awareness regarding importance of hygiene as well as effect of hygiene on health among rural people. Bhanot S. and Chauhan G.(2013) studied on rural women and clearly indicate that prevailing sanitary and hygienic conditions and many misconceptions are directly related to the poor nutritional status of women. Observation results show that 29% of participants washed their hands after contact with faeces, using soap 14% of the time. Regarding risk behaviours of handling food, twenty-percent of the individuals observed washed their hands before coming into contact with food, using soap only 6% of the time observed in a report done by Prisma (2004).

More than one third of respondents reported not to do any type of physical exercise while 41.8% and 19.1% respondents were doing daily or sometimes physical exercise and difference is found to be statistically significant between urban and rural region (Table No. 3.8).

4. Nutritional knowledge

In table (4.1-4.5), the knowledge of rural and urban respondents about various types of nutrient is assessed which reveals that 59.9% and 75.0% of total respondent had correct knowledge about calories and functioning as well
as sources of protein in which proportion of urban adults is significantly higher than the rural. It is also observed that 66.5%, 70.4% and 10.5% of total respondents had correct knowledge about major nutrients presents in pulses, about the presence of fat in food items and about type of fat which is good for health respectively, in which proportion of urban respondents is found to be significantly higher than the rural respondents. The correct knowledge regarding anaemia and source of iron was observed to be among 53.9% and 75.0% in urban adults and it was 36.8% and 61.8% among rural adults respectively. It clearly indicates that the urban adult have significantly more knowledge about these matter than rural adults. It is also observed that 57.9% and 43.4% respondents in urban and rural area reported that they consume salads for nutrients. In case of knowledge regarding fibre rich foods and presence of fibre in food materials was noted to be 69.7% and 63.8% in urban whereas it was 53.9% and 51.3% in rural adults which is also signifies the fact that urban subjects significantly had more knowledge as compare to the rural subjects.

In Table no. (4.6 & 4.8) knowledge about presence of vitamin in lemon, mango and papaya is assessed which projects that 53.6% and 42.8% of total respondents had correct knowledge in which also the proportion of urban respondents are significantly more than the rural respondents. Likewise 69.1% and 60.5% of respondents had correct knowledge about major source of calcium and presence of nutrient in fruits and vegetables. In these matters also the urban adult had significantly more awareness than the rural adults. It is also observed that 73.7% of urban adults and 53.9% of rural had correct knowledge about vitamin deficiency disease, 25.7% and 14.5% of urban and rural respondents had correct knowledge about deficiency causes of white spot on face whereas about scurvy caused due to the deficiency of vitamin C is reported by only 45.4% and 31.5% of adults belong to urban and rural community. In above mention subjects the proportion of urban subjects
significantly had more knowledge than the rural subjects. It is also observed that only 30.6%, 37.2%, 57.9% and 67.8 of total respondents had correct knowledge about the disease having symptoms of bleeding gums and late healing of abscess, vitamins help in blood clotting, presence of mineral in bone and teeth and concept of under nutrition respectively. Statistically, it is found that in all these matters, the proportion of urban had significantly more knowledge than the rural.

It is also observed in (Table No. 4.9) that 62.8% of total respondent had correct knowledge about balanced diet, 76.0% were aware about precautions taken for prevention of goitre, 69.7% had correct awareness regarding symptoms of diabetes and precaution for prevention of blood pressure is known by 69.1% of total respondents. Statistical test refers the fact that the difference in proportion between urban and rural adults about knowledge for balanced diet, precaution for preservation for goitre, blood pressure and symptoms of diabetes are found to significant. Poor nutrition knowledge is one of the main factors in the development of malnutrition and needs to be addressed, concluded by Briggs F. & Mueller (2010). One of the factors influencing nutritional status is a lack of education and nutritional knowledge. Other factors are inappropriate nutrition education, misconceptions and passing on of harmful diet traditions and poor nutritional practices reported by Vorster, Love & Browne (2001). Shaaban et al. (2014) reported that 43% females have correct knowledge about the constituent of balanced diet in Egypt.

Table (4.10) depicts the total nutritional knowledge level of subjects which is quantify into three major groups and its association is projected in accordance to socioeconomic and demographic background of the subjects which reveals that out of the total subjects, 22.7% had low knowledge, 60.9% had medium and remaining only 16.4% had high knowledge about nutrients. It is also observed that low level of knowledge regarding nutrients is found to be more among rural respondents as well as in female adults too. According to age
The proportion of low knowledge is found to be in increasing order and in high level of knowledge is found to be in decreasing as age advanced. Similar type of result is also seen in case of caste status i.e. minimum 11.1% among the SC/ST and maximum 20.2% among general caste. The respondents who have low level of knowledge, majority 44.7% among low educational status and minimum 12.6% in higher educational status of subjects. There is no significant association between family type as well as type of work with knowledge level of respondents. It is also found that a decreasing trend is observed with increase of the subject’s monthly per capita income among those who had poor knowledge about the nutrient while a just reverse trend is observed among these who had medium level of knowledge. Similar type of trend is also seen with respect to socioeconomic status of the respondents. Statistically, it is found that there is a significant or highly significant difference exist among various groups of region, sex, age status, caste, educational status, monthly per capita income as well as socioeconomic status in relation to various level of knowledge regarding nutrient and insignificant association exist among different category of family as well as work type.

Azemati B. et al. (2013) indicated in their study that malnutrition is mostly due to lack of nutritional knowledge rather than food insufficiency. Lin W. et al (2010) observed that adult’s knowledge in relationship between diet and disease and comparison of foods in terms of specific nutrients was acceptable, but they lack knowledge on daily serving requirement, weight and weight loss. Keeping the views in mind the importance of nutritional knowledge it is try to assess the nutritional knowledge in the study subjects. Parmenter K. et al. (2000) a nutritional knowledge survey carried out on a cross-section of the adult population of England looking at knowledge relating to current dietary recommendations, sources of nutrients, healthy food choices and diet–disease links. Serious gaps in knowledge about even the basic recommendations were discovered, and there was much confusion over the
relationship between diet and disease. Significant differences in knowledge between socio-demographic groups were found, with men having poorer knowledge than women, and knowledge declining with lower educational level and socio-economic status. Azizi et al. (2010) reported that the mean nutritional knowledge score was higher in women than men. All these studies fully support to the present study regarding nutritional knowledge and its association with various socio-economic and demographic characteristics of respondents.

5. Stone Related Information

The occurrence as well as knowledge related to stone formation is also discussed which reflects that in only 10.5% of urban respondents and 7.9% of rural had occurred stone disease, out of which 87.5% and 100% of rural respondents reported that the occurrence of stone was detected after check-up of doctors. In majority of respondents pain in abdomen was the signs of the stone disease. It is also observed that 52.6% and 45.4% of urban and rural subjects reported to gall bladder, kidney, and urinary tract, all are the parts of body in which stone formation may occur. Majority 32.6% respondents reported to less water intake whereas 34.8% told the cause of formation of stone to heredity, life style along with the type of food. It clearly indicates that specific cause of stone formation related knowledge was more in urban whereas knowledge about combine together about all the risk factors in rural people is high might because of more consciousness regarding stone formation. It is also observed that majority 63.2% of rural and only 28.9% of urban subjects did not have any knowledge about the compound which forms the stone in the body. It is also noted that 71.7% and 39.5% of urban and rural respondents had knowledge about the harmful effect of food intake rich in calcium, oxalate, phosphorus which clearly projects that urban people significantly had more knowledge than rural regarding compound form of stone may be due higher educational status of urban respondents. (Table No.5.1-5.3).
Nutritional profile

6. Clinical Observation

It found that in majority of respondents (65.8%) general appearance was good while among 23.7% and 10.5% respondents it was fair and poor respectively. The clinical feature of hairs and eyes was observed to be normal among 82.3% and 88.5% of respondents. There is no significant difference between urban and rural adult. It is also observed that the clinical features of tongue, lips, teeth, gums, nails and skin was noted normal among 85.5%, 79.3%, 73.0% 79.6% 96.1% and 76.3% respectively. The proportion of urban respondents is found to be significantly more than the rural respondents in all type of features may be due to more consciousness about personal hygiene & grooming which may because of good facilities (related health & hygiene) in the urban area. It is also noted that out of total selected subjects 69.1% of urban area and 53.9% of rural area had not suffer any type of disease at the time of survey whereas occurrence of diabetes (9.2%) obesity (6.6%) high blood pressure (6.6%) pain in joint (8.6%) in urban subjects and it was 10.5%, 3.4%, 4.6% and 27.6% in rural subjects respectively. It clearly projects that the rural people are more sufferer than urban by any of disease might because of poor socioeconomic status, lack of knowledge related to nutrition and hygiene and non availability of health related facilities. According to Rao Mallikarjun K.et al. (2010) the prevalence of bitot spots a sign of vitamin A deficiency was 0.3% among rural women. The prevalence of angular stomatitis, a sign of B complex vitamin was 0.8%, dental caries in 12% and prevalence of goitre among 0.8% of rural women was observed (Table No. 6.1- 6.3).

7. Anthropometric profile

Anthropometric measurements such as (height, weight) are used to construct indices for malnutrition and BMI is the most established anthropometric measurement in adult nutritional status. Keeping the
importance of anthropometric measurement in adult population a comparative information regarding height, weight, BMI, MUAC, waist circumference (WC), Hip circumference (HC) and waist hip ratio (WHR) are consider for the present study with the help of the Table no. (7.1-7.7). It was observed that the average height weight and BMI of male subjects in urban locality was 166.68 cm, 63.32 kg and 23.04 while it was 162.02 cm 61.08 kg and 23.26 in the rural areas respectively. Likewise in female respondents the average height, weight and BMI was little less in rural areas than urban but no significant difference is observed. Several researchers, have done study on height, weight, and BMI in different parts of the country some of them are given. (Brett G. et al. 2008) reported that average height, weight, for men was 56.6 kg, 165.4 cm and for women was 49.3 kg, 152.6 kg, (Mandal et al. 2011) found in the area of West Bengal, Midnapore that the average weight, height, and BMI for women, were 48.96 kg, 154.79 and 20.05 kg respectively. Likewise according to (Venkaih K. et al. 2011) the average weight, height and BMI was 61.31 kg, 155.21 cm and 23.38. Hussain et al. (2011) in their study of urban area of Varanasi, the average height, weight and BMI was 160.0 cm, 57.38 kg, 19.84 respectively which follow the similar pattern with the pattern of the present study. The result is also supported by Rao S.G. and Puttaraj S. (2009) of adult women in age group of 21-60 years residing at different locals of mysore city of Karnataka state.

The BMI index is categorized into three major groups which depicts that 60.3% of total male respondents had normal BMI whereas only 10.6% were underweight and remaining 29.1% were obese. Likewise in female normal BMI was found to be among 50.3% underweight 28.8%, and obese were observed in 20.9% respectively. There is no significant difference in BMI level of male as well as female respondents between urban and rural community (Graph No.4 & 5). There is no significant difference in average BMI between nuclear and joint type of family, among different type of work, different level of SES and
various income level in male respondents of urban as well as rural community. It is also observed that in rural males the average BMI was found to be significantly higher in high socioeconomic status in comparison to the low and medium SES, might because of better life style and better food consumption with rich nutrient. Bhanot S. and Chauhan G. (2003) indicated that in rural area, among agricultural sectors and lower income group malnutrition is more prevalent which supports the present study in which more no. of rural women were malnourished. Same trend was observed in NFHS-2 report (1998-99).

Graph:4: Region wise distribution of BMI level in male respondents

Graph:5: Region wise distribution of BMI level in female respondents
Likewise in female respondents there is no significant difference between nuclear and joint family, type of work and educational status but significant difference in average BMI is observed among different level of SES and per capita monthly income group in urban as well as rural females. Hussain M.A. et al. (2008) in the study of Varanasi district found that about 42.11% of men and 15.5% of women were underweight while 13.53% men and 24.13% women were overweight (Obese) which is higher in male and lower in females in present study this may be due to the variation in food consumption pattern as they consume. The present study is supported by the Brett G. et al. (2008) that largest percentage of male 60.1% and of female 55.1% were found to be in normal BMI classification, (Ismail et al. 1995) indicated that prevalence of underweight of male and females were 7.0% and 11.0% in urban area and 11% and 14% in rural area respectively, the association between socio-demographic and nutritional status was also studied and it was noted that it vary according to the age, family size, educational status, which is also consider in the present study. A high prevalence of overweight women 20% even in rural area should be viewed us a potential health problem of the future and according another report like NNMB rural report (2002) among adults the prevalence of underweight was about 35% each in men and women and overweight was 10.0% and 13.5% respectively. Rao Mallikarjun K.et al. (2010) the prevalence of CED was 36% in rural women. Sen. et al. (2013) observed in West Bengal that 33.33% male and 49.67% of female were overweight-obese.

The waist hip ratio (WHR) of male and females is categorized into two main groups i.e. normal and abdominal obesity. In urban 32.2% male have normal (≤0.9) WHR and 67.8% have (≥0.9) WHR, abdominal obesity while 39.3% and 60.7% of rural male and have normal WHR and abdominal obesity respectively but statistically this difference is not significant. In urban females
the normal (≤ 0.85), WHR and abdominal obesity (≥0.85) was noted to be 38.7% and 61.3% whereas it was 48.4% and 51.6% in rural females respectively. The proportion of abdominal obesity was higher in urban area than rural but statistically this difference is not significant. Prabhat A. and Begum K. (2012) observed that 83.4% females have WHR >0.91 which is higher than the present study in case of central obesity of females WHR. It is may be due to socioeconomic cultural and nature of working pattern, also due to variation in life styles in the females.

Out of total male respondents the average waist, hip, WHR and MUAC (mid upper arm circumference) circumference was reported to be 89.03 (cm) 93.74 cm, 0.95 and 33.89 cm among males whereas it was noted to be average WC (86.23cm), hip circumference, (94.74cm), WHR (0.90) and MUAC (28.24cm) respectively. There is no significant difference among WC, hip circumference, WHR and MUAC between rural and urban males as well as females. Iyer et al. (2011) conducted study on urban women of Badodara city and found that WC and HC both were slightly higher than the present study i.e. the average WC 88.86 cm, HC 103.00 cm, and WHR 0.86 of urban females. Likewise Kaur G. et al. (2012) WC, HC, WHR according to the age of the female which support the present study. Ebrahim S.et al. (2010) stated that the average WHR in urban males 0.92 and females 0.91 where it was in rural males 0.90 and females 0.81 respectively which is near about in similar pattern presented in the study. Such type of study is also conducted by Banik S D (2009). Prabhat A. and Begum K. 2012) indicated the mean MUAC was 29.05 cm and 24.74 cm in male and female respectively.

About 57.8% of urban male and 57.4% of rural had normal WC whereas 42.2% and 42.6% respectively in central obesity group. Statistically the difference in proportion between urban and rural male subject was not
significant. According to WC 56.5% and 64.8% of urban and rural females fall in obese category while 43.5% and 35.2% in normal group but statistically, the difference in proportion between urban and rural females is not significant. In (NNMB report 2002) among adults the prevalence of abdominal obesity (WC ≥ 90 cm for men and ≥ 80-90 for women) among men and women was 13.6% and 30.0% respectively which is lower than the present study may be due to socio-demographic and cultural differences.

8. Nutrient Intake

Calorie consumption

Table No. (8:1.1) the percent intake of calories of RDA of male and female projects that near about 80% of urban and 90% of rural males were taking energy less than RDA whereas it was noted to be about 55% among urban and about 62% among rural females respectively. It is also noted that there is highly significant difference in proportion of taking calories to RDA in male between urban and rural area but among females it is not significant. Mahapatra S.C. et al. (2009) in the study of Varanasi urban and rural area on elderly population found that 65.3% of rural and 50.9% of urban male respondents were taking energy less than RDA while 36.4% of rural 17.7 of urban women were taking energy less than their RDA which is somehow smaller than the present study might because of poor socioeconomic status and lack of awareness regarding balanced diet. Bhanot S. and Chauhan G.(2013) found that mean intake of calorie in rural women was 1350 Kcal which was only 60.67% of the RDA. Thimmayamma et al. (1982) also supported the findings of the present study. The more calorie intake of urban male and female than the rural male and female.
Graph:6: Region wise Distribution of average calories intake (in kcal.) by male and Female respondents

It is observed in (Graph No.: 6 and Table no. 8:1.2 -8:1.4) that the average intake of calories was 2206.60 Kcal and 1986.56 Kcal among male and females. It is also found that the average calories intake was significantly higher in urban among male, females as well as total, than rural adults. The average calories intake was 2298.78 Kcal in urban and 2070.59 in rural adults and the difference is highly significant. There is an increasing trend observed in average calories intake with increase of their work done i.e. sedentary to heavy and a decreasing trend is observed with increase of socioeconomic status, educational status and monthly per capita income group urban adults but this increase or decrease is not found to be statistically significant. Likewise in rural adults also there is no significant association exist according to the socioeconomic and demographic background. Likewise among female adults there is significant increasing trend in average calories is observed among urban and rural areas from sedentary to heavy work, but in all other variables like as family type, SES, educational and economic status there is no significant association exist among urban and rural females. The average calories intake was significantly less in rural females than the urban females. Padmavathi C. & Ramadas V.S. (2012) in her study found that the mean intake by the tribal
female was 1830.0 Kcal. Jose et al. (2014) reported the average Kilo calories of female & males 1888 Kcal and 2083.00 Kcal in rural area who supports the present study. Rahman et al. (2002) observed the more intake of calorie in male than female.

**Carbohydrate Intake**

In Table (8:2.1-8:2.3) It is found that the average intake of carbohydrate was 277.16 gm and 285.50 gm among male and females of urban area whereas it was 267.14 and 300.01 in rural area respectively. There is no significant difference of average carbohydrate consumption among male, females as well as total adults between urban and rural localities but significant difference is observed between male and female in rural community not in urban community (Graph No.:7).

**Graph: 7: Region wise Distribution of average carbohydrate intake (in gm) in male and female respondents**

It is also seen that there is increasing trend observed in average carbohydrate intake according to the type of work from sedentary to heavy, in both urban and rural area and this increase or decrease is not significant. It is also noted that there is a decreasing pattern in average carbohydrate consumption with increase of different level of SES, educational status and
monthly per capita income in urban area and such type of variation is seen in males of rural community but in both the area the average carbohydrate intake is not statistically significant may be due to as the SES increases the consumptions of carbohydrate rich food items such as cereals, roots and tubers, sugars etc. decreases and they are more conscious about calorie consumption which increases with carbohydrate rich food items intake. Likewise among females there is no significant association exist among different level of age family type, type of work and different level of SES, educational status and economic status of females in both urban and rural community with the exception of types of work in rural area in which females engaged in moderate type of work were consuming average more carbohydrate as compare to the sedentary and heavy work. Bowen et al. (2011) found that mean carbohydrate intake 234 gm in rural male and 344 gm in rural female while 501 gm in urban male and 413 in urban female which is near about same to the present study of rural area but slightly higher in urban area.

**Protein Intake**

Table (8:3.1-8:3.4) present study throws light on the fact that about 19.2% of male and 23.5% of females were taking protein less than RDA among which the proportion of urban male and females is found to be 18.9% and 21.0% and 19.7% and 25.4% among rural areas respectively but no significant difference is observed between rural and urban male adults as well as female adults respectively as Andrew et al. (2013) also reported that the consumption pattern of protein rich foods was similar in both the residential settings. It is also found that the average protein consumption was 71.59 gm among male63.01 gm among females whereas it was in urban area 73.76 gm in males and 67.82 gm in females as well as in rural areas among male and females it was 68.39 and 59.74 gm respectively (Graph No.: 8). Statistically the difference in average protein intake between male and female subject is found to be significant in urban as well as in rural community. Likewise in male and
female subject also the average protein intake between urban and rural region is significant

**Graph:8: Region wise Distribution of average protein intake (in gm) between male and female respondents**

There is no significant pattern exist among male respondents according to the age, family type, type of work, various level of SES, educational and economic status in urban as well as rural localities with the exception of SES, in rural region in which the average protein intake was significantly more in low than medium SES group might because of excess consumption of easy available food such as milk & milk product soybean, (nutri- nugget) & high consumption of cereals and pulses which are cheapest main source of protein. Likewise among female respondents also there is no significant association exists with reference to their various age group, family type, type of work, SES, educational and economic status in both urban and rural community except monthly per capita income group in which females below poverty line is consuming on an average significantly more protein than other economic group. It may be due to easy availability of milk from self tamed animal and cheap food product like soybean, meat and chicken which are main source of protein. Bhanot S. and Chauhan G.(2013) reported protein consumption in
rural women was only 77.46 percent of RDA. Thimmayamma et al. (1982) also supported the findings of the present study that more intake of urban male and female than rural male and female respectively. The more intake of urban male and female than the rural male female. Rahman et al. (2002) also said that socioeconomic and demographic factors play an important role on the pattern of food consumption and nutrient intake and indicate more intake of iron in men than women similar to the present study. Mahapatra SC et al. (2009) reported that male subjects 74.6% in urban area and 69.3% in rural area took protein less than 80% of RDA whereas in female subjects this percentage was found to be much lower than the male subjects in both the areas. Average protein intake in urban was 48.74 gm in urban and 47.52gm in rural respectively which is less than the present study. Protein intake is also higher than the Prabhat A et al. (2014), Kaur et al. (2012), but less than than the Bowen et al. (2011).

**Fat Intake**

Table no.(8:4.1-8:4.4) reflects out of total male respondents about 66.9% and of total female respondents 39.9% were consuming, fat intake less than RDA. The male subjects who were consuming less than RDA, the proportion of urban males 78.9% is significantly higher than the proportion of rural males (49.2%) but among females it was just in reverse order i.e. the proportion in rural community (57.2%) is significantly higher than the urban (14.5%) the less consumption of fat than RDA in males of urban may be due to variation in their life styles, job nature, and food consumption pattern while it was less in female than rural may be due to their life style, and social customs of rural areas in taking food. Out of total male and females the average fat consumption among male was 28.59 gm and 25.99 gm respectively. It is also noted that in urban community, the male adults were consuming average fat intake significantly is in less amount (26.20 gm) than females (28.37gm) but a reverse trend is observed in rural adults i.e. average fat consumption was significantly more among male (32.09 gm) in comparison to the female subjects (24.37 gm). It is
also observed there is a significant difference between urban and rural area among male and female subjects regarding average fat consumption (Graph No.:9).

**Graph :9 : Region wise Distribution of average fat intake (in gm) between male and female respondents**

![Graph showing region wise distribution of average fat intake](image)

There is increasing pattern is observed in average fat intake in male respondents of urban area accordance to increasing type of work, educational status but decreasing trend is observed with increase of age status, SES and economic status but this increase or decrease is not statistically significant. In rural region there is no significant association is found in various level of socioeconomic and demographic characteristic. In female adults the average fat intake is found to be significantly in increasing order with increase of type of work from sedentary to heavy and educational status in urban area but in rural region there is no significant association among various level of socioeconomic and demographic variable with the exception of different level of type of work in which insignificantly increasing trend is observed with increase of work type from sedentary to heavy work. The proportion of average fat consumption was more in females who were engaged in heavy work than sedentary and moderate might because of consuming more quantity of fat rich food products to

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maintain the energy expenditure. Prabhat A. and Begum K. (2012) found that fat intake by male and female respondents were 32.4 g and 20.94 g respectively. Rahman et al. (2002) found more fat intake i.e 76.16 in male and 78.69 in female which is more higher than the present study may be due to socio-demographic variation. Bowen et al. (2011) found that mean fat intake was 73 gm, 59 gm in rural male and female while in urban area it was 92 and 76 respectively which is much more than the present study.

**Calcium Intake**

In Table no. (8:5.1 & 8:5.2) It is observed that out of total subject 66.2% of males and 77.1% of females consume calcium less than of RDA in which the proportion of male was 67.8% in urban and 64.0% in rural area whereas among females it was 82.3% and 73.7% in urban and rural localities respectively. There is no significant difference in proportion between urban and rural subjects in connection to calcium intake of RDA in male as well as female subjects. It is also found that the average calcium intake was found to be more 609.04 mg in males is higher than females of urban 517.56, mg whereas in rural area it was 621.82 mg and 529.56 mg among males and females respectively. There is significant difference in average consumption of calcium between male and female in both urban and rural areas but no significant difference is observed between urban and rural males and females (Graph No.:10). Harinarayan, C.V., et al. (2007) observed that the dietary calcium intake of both the urban and rural populations was lower than the RDA. Dietary calcium and phosphorus were significantly lower in rural adults than in urban adults which is similar to the present study. Bhanot S. and Chauhan G.(2013) reported that mean consumption of calcium was 177.71 in females of rural area which was only 44.43 percent of RDA.
Thimmayamma et al. (1982) reported that male adults of both the urban and rural area have high calcium intake than the women of both locality. Adults male consumption of calcium was 90% of RDA while in female it was 73 % of RDA. Rahman et al. (2002) reported higher intake of calcium in both male and female of Hyderabad than the present study may be due to Rahman included in their study only employee and students of colleges. Mahapatra S.C. et al. (2009) found that about 74.0% of urban people were found to be calcium deficient whereas 73.0 % of rural subjects taking calcium less than RDA which follow the same pattern to the present study. Calcium intake was higher in both male and female of rural area because they consume green leafy vegetables, which are excellent sources of calcium which is similar to the study of Vasanthamani G.& Sushmitha (1997).

Table No. (8:5.3 & 8:5.4) The association of average calcium intake with various level of socioeconomic and demographic characteristics is seen in urban and rural areas in male as well as female subjects which shows that there is decreasing pattern is observed in average calcium intake with increase of
type of work in males of urban community and an increasing pattern in rural area but difference is not significant. The average intake of calcium found to be in increasing order with increase of their SES, educational and economic status in urban area but in rural area no significant association exist in various level of demographic and socio economic variables. It is also noted that among females there is no significant association exist among different levels of age groups, family type, type of work, SES, educational status and economic status in both urban and rural community with the exception of among SES in which average calcium intake was significantly higher in high SES than low and medium. Likewise there is no significant difference is observed between urban and rural females according to different level of socio demographic characteristics.

**Iron Intake**

It is found that out of total male subjects 23.2% were consuming iron less than to RDA whereas the consumption of iron less than RDA was 51.0% in females. It is also found that no significant difference in proportion of taking iron to RDA between urban and rural areas among male as well as females subjects. It is observed that the average iron consumption was 26.64 mg in male and some less 22.02 mg in females. It is also determine that the average iron consumption is found to be significantly higher in urban areas than rural areas among both male and female subjects. It is also noted that in urban as well as in rural community also there is significant difference in average iron consumption between male and female subjects, it is also clear from (Graph No: 11 and Table no. 8:6.1- 8:6.2). Choudhary et al. (2010) found that while staple food items (i.e. rice, pulse, bread, etc.) are distributed fairly equally between male and female members of family in rural area but side dishes usually containing a higher proportion of micronutrients (i.e. vegetables, meat, yogurt, ghee, etc.) are often preferentially allocated to valued household
members, including adult males and small children rather than female. Jethi R. and Chandra N. (2013) also indicated that iron intake by women was 16 mg to 18 mg which is 40-46.6% less than the RDA. In India nearly 70 percent of women are estimated to be iron deficient. Bhanot S. and Chauhan G. (2013) found that mean iron intake of rural women was 12.15 mg which was 40.5% of RDA.

**Graph:11 : Region wise Distribution of average iron intake (in mg.) between male and female respondents**

![Graph showing region wise distribution of average iron intake](image)

Mahapatra S.C. et al. (2009) reported that male subjects 81.4% in urban and about 81.3% in rural area took less than RDA respectively whereas female 61.3% in urban and about 60.0% in rural areas took less than RDA respectively. The mean intake of iron was 33.18 gm in urban and 32.15 in rural which is little higher than the present study.

In Table no. (8:6.3 to 8:6.4) it is found that there is increasing trend in average iron intake is observed among males in urban community with increase of type of work and SES whereas decreasing trend is observed with increase of educational and economic status of male subjects. It is also seen that there is no significant difference is observed in average iron intake among
various group of age, family type, type of work, SES, educational as well as economic status in both urban and rural males. Likewise among females also the average iron intake was more in middle age group, nuclear type of family in urban and rural community while decreasing trend is observed with increase of the type of work and increasing trend is depicted with increase of SES, educational and economic status in urban community. It is determined that there is no significant difference in average iron consumption among females in urban and rural areas according to various levels of studied variables. According to Thimmayamma et al. (1982) study, the nutrient intake of urban and rural population Hyderabad of same pattern of mean iron intake (urban male and female 26 mg and 21.6 mg while in rural it 23.0 mg & 19.7 mg respectively) was observed to the present study. Among adults males the adequacy was more than 75 per cent of RDA however in females it was 69 per cent of RDA. Rahman et al. (2002) observed the mean iron intake in male was 20.44 and in women it is 19.76 mg it indicate higher intake in male than female supporting the present study.

**Oxalate Intake**

The average intake of oxalate was found to be 113.03 mg among male which is significantly higher than the female subject (94.35 mg). It is also found that the average consumption of oxalate among male was 111.20 mg and among females it was 111.58 mg in urban whereas in rural areas a just reverse pattern is observed i.e. maximum 115.75 mg among males and minimum 82.61 mg among females. There is a significant difference observed between male and female subject in rural area only (Graph No: 12). It is found the average intake of oxalate is significantly different between urban and rural females (Table No. 8:7.1).
It is determined by the observation that there is no significant association exist in average oxalate intake in relation to different specified group of variables in both urban and rural males with the exception of monthly per capita income in which a significant increase in average oxalate consumption is seen with increase of their economic status. Similarly in females subjects the average consumption of oxalate is not found to be significantly different among various age group, family type, type of work, SES, educational status as well as monthly per capita income group in both urban and rural localities. It is also seen that the average oxalate consumption among females of age groups (31-45) years, nuclear type of family, sedentary type of work, medium SES and below poverty line in urban community is significantly higher than the rural females (Table No. 8:7.2 & 8:7.3). The consumption of tomato, cabbage, tea, coffee, cocoa, and green leafy vegetables, cereal grains and some roots increases oxalate intake to great extent Vasanthamani G.& Sushmitha (1997) , reported the same..The mean daily intake of oxalate by the individual tested was 152±83 mg/day ranging from 44 to 352 mg/day according to Holmes R.P. and Kennedy M. (1999) Variability in oxalate intake caused by food processing, food preservation, and factors that
influence the bioavailability of the food oxalate after its ingestion. Taylor E.N. & Curhan G.C. (2007) reported in their study that mean oxalate intake were 214 mg/day in men 185 mg/day in older woman, 183 mg /day in younger woman and were similar in stone formers and non-stone formers. P.P Singh et al. (1972) also reported in their study that among urban population oxalic acid intake is comparatively high in upper income group. It has been observed that in this group tea intake is higher and green leafy vegetables are liberally supplemented to enhance the mineral, vitamin and roughage value of the diet which is also rich source of oxalate. The rural diet is low in oxalate but oxalate content rises sharply in the season when amaranth, spinach is abundant because these leafy vegetables are either free or available at relatively low cost. The crystallization of stone forming salt is higher in presence of promoters like oxalate and calcium indicated by Paul M. & Brinda S. (2001). According to American Dietetic Association foods containing 10 mg of oxalate per serving are considered high oxalate foods.

**Phosphorus Intake**

In Table no. (8:8.1-8:8.4) it is found that 33.1% of male respondents took phosphorus less than of RDA in which the proportion in rural area (42.6%) is significantly higher than the urban males (26.7%). Out of total females 39.2% consume phosphorus less than of RDA in which also the proportion of rural females (47.3%) is significantly higher than the urban female (27.4%) may be due to less intake of all type of nutrient than urban male and females. The average intake of phosphorus among male and female subjects are higher 723.70 mg and 679.81 in urban community than rural as it was 634.03 mg and 605.26 mg respectively. There is significant difference between male and female subjects in urban community but insignificant in rural. It is also determined that there is significant difference in average phosphorus intake between urban and rural males and female respondents (Graph No: 13).
Graph: 13: Region wise Distribution of average phosphorus intake (in mg) between male and female respondents

There is no significant difference in average phosphorus intake is observed among various level of age group, family type, different type of work, various level of SES and different status of education and monthly per capita income of male subjects in both urban and rural community. It is also seen that urban male respondents were consuming on an average significantly more amount of phosphorus than rural males among various groups of specified variables except sedentary and heavy type of work, among low SES, among low and higher educational status as well and low and high monthly per capita income respectively. Rahman et al. (2002) reported that phosphorus intake in both male and female was near about same of Hyderabad which is also reported similar in rural area of the present study. Harinarayan C.V. et al. (2007) also indicated the same pattern of phosphorus intake i.e lower in rural area than urban. Likewise male respondents among female respondents also there is no significant association exist in average consumption of phosphorus among various group of studied variables in both urban and rural community with the exception of type of work in which moderate type of female workers were significantly taking average phosphorus in large amount as compare to the sedentary type of workers in urban area. The analysis clearly shows that
average phosphorus consumption among urban females is significantly higher than rural females.

In Table (8:9), a comparative assessment regarding nutrients related to stone formation is done in urban as well as rural adults on the basis of occurrence of stone disease which reveals that average consumption of calcium (602.81 mg), oxalates 106.47 mg, and phosphorous 676.61 mg is found to be higher in those subjects who suffered from stone disease in their life as compare to those subjects were not suffered from disease but statistically, the differences are not significant. Likewise it is also observed that the average intake of calories, carbohydrate, and protein are also in high amount among those subjects suffered from stone disease than those not suffered from the stone disease. Likewise the average fat and iron intake is noted to be in less amount among subjects suffered from stone dieases in comparison to the subject who had not any type of stone disease. Vijay Bharti & Amirthaveni, (2008) found in his study that stone formers have mean intake of carbohydrate (517.1 g.), protein (54.6 g), calcium (343.4 mg), iron (24.2 mg), and calorie (2502 kcal). Only the mean intake of carbohydrate was high than the RDA and this may be one of the reasons of stone formation. Sharma et al. (2006) indicated that intake of calories, carbohydrate, fats, and calcium was comparatively higher in the subject suffering from cholelithiasis than the control group similar to the present study. Gupta et al. (2011) also indicated calcium and oxalate as stone promoter. Basavaraj et al. (2007) concluded that approximately 85% of the stones in human are calcium stone comprising oxalate and phosphate either alone or combine, though super saturation of stone forming salt in urine is necessary abundance of these salts will not always result in stone formation but they act as a risk factors. Kumari R. and Dahiya, S. (1999) indicated in their study that consumption of calcium, phosphorus, purines and oxalate rich diet are the risk factors for stone disease. Gupta M. et al. (2011) concluded that in addition to recognized dietary factors a complex combination of inhibitors and
promoters influence stone formation. Deficiency of inhibitors and an abundance of promoters (calcium, oxalate, urate etc.) in the urine facilitate stone formation. Vijayabharathi P.S. et al. (2008), observed the mean nutrient intake in stone formers as mean calorie intake was 2502 kcal, carbohydrate 517.1 gm, protein 54.6 gm, calcium 343.4 mg, iron 24.2 mg, which is somehow similar to the present study. Same study was also carried out by Siener et al. (2003) about nutrient intake in stone former and non stone former.

In Table (8:10.1-8:10.3) the correlation coefficient within various types of nutrients consumed by the adults is determined which shows that the intake of calories is found to be significantly and positively correlated with all specified nutrients except consumptions of fat and calcium. It is also found that there was significant and positive correlation of iron intake with consumption of calcium and phosphorus but no significant correlation exists with the oxalate consumption in the present study.

Table No. (8:11.1-8:11.3) It is depicted from the analysis that the correlation coefficient between socio-economic and demographic variables and different types of specified nutrient intake of adult in urban and rural community have insignificant positive or negative correlation but significant positive or negative correlation of age with fat (-0.169*) in urban, of caste with iron (-0.192*) in rural, of family size with intake of protein (-0.185*) in urban, educational status with fat (0.161*) in urban and (0.192*) in rural and negative significant correlation exist between mpci and carbohydrate (-0.185*) in rural and of SES with consumption of fat (-0.219**) in urban area respectively. It is also noted that among urban adults, type of work is significantly and positively correlated with energy (0.270**) and with phosphorus (-0.184**) whereas among rural adults it is positively and significantly correlated with energy (0.279***), with protein (0.279***), with fat (0.419*) and with intake of iron (0.161*).
In Table (8:12.1-8:12.3) the correlation coefficient between anthropometric measurement and various nutrients intake of urban and rural adults is determined which projects that there is insignificant positive or negative correlation exists of various type of anthropometric measurement and various specified nutrients intake with the exception of weight with protein (0.175*), calcium (0.165*) and iron (0.185*) in urban and with carbohydrate (-0.161*) in rural adults, of BMI with iron intake (0.167*) in rural, of WC with energy (0.271**) in urban, as well as of hip circumference (2.260**) with calories consumption in urban and with protein (0.219*) in rural adults. It is also seen that there is significantly positive correlation exist between energy and MUAC (0.287***) in Urban with oxalate (0.176*) in rural adults respectively.