Impact of Consumption of Fruits and Vegetables to Improve Nutritional Quality of Diet of Adolesent Girls. (A Comparative Study in Various Economic and Educational Groups in Hazaribag)

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ABSTRACT

Adolescence age under goes in a journey from the world of the child to the world of the adult. Most importance of this stage due to growth and development as a major issue in the life span. To improve the nutritional quality of diet of adolescent girls, it is necessary to add colourful fruits and vegetables and their product because they contain phytonutrients. Phytonutrients protects them from chronic diseases. The main objective was to know the dietary pattern, nutritional knowledge and likes and dislikes of adolescent girls and addition of colourful fruits and vegetables and their product in their dietary consumption. Under the present study addition of fruits and vegetable found in very less amount especially in low economic groups. It was seen that the overall dietary quality was better of children of high educated and middle-income group because they add better number of fruits and vegetables and their product in their dietary consumption. Hence, the education is main factor to influence nutritional quality of diet compared to income.

Keywords: ***Fruits, Vegetables, Phytonutrients, Nutritional Quality***

Introduction:

The origin of adolescence from the Latin root's adolescence means "to grow up" or "to grow to maturity" (Golinko ,1984). Adolescence age under goes in a journey from the world of the child to the world of the adult. Adolescence age mainly reported between 10-20 years, in this age all the body dimensions, development and maturation are completed. This is based on proper function of hormones in body and social surrounding designed to foster the transition from childhood to adult hood. The nutritional quality of diet recorded as the quality based on presence and absence percentage of micro and macro nutrients in the diet. In general, for balance diet required for age and height, quality of diet mainly based on if more percentage of cereals food stuffs and with very less amount of other nutrients may called as poor quality of diet, which not fill full the body requirement. The good nutritional quality of diet based on including the all-essential nutrients in adequate proportion also helps for proper growth and development which satisfies nutritional need of the body. To improve the nutritional quality of diet of adolescent girls, it is necessary to add colourful fruits and vegetables and their product because they contain phytonutrients. Phytonutrients protects them from chronic diseases.

2. Review of Literature:

Wrong eating habits of adolescents are the main problem of adolescents, the worst eating habits, which are false diet pattern, irregularity and usually skip a meal particularly breakfast or generally their lunch. (Srilakashmi, 2004)Girls choice of eating have more unhealthy eating habits or wrong choice of eating than boys and they spend more time dieting than boys (Thomsen et al, 2002).Many studies have justified that the most frequent method adopted by boys to change their body is exercise but according to change in demand of adequate food they never change their eating pattern as girl do (McCabe, 2001) ,Now a days for health advisors ,these factors

represent great challenges for the public health and therefore it is important to focus on take care of dietary habits in adolescence. Despite the necessity of healthy eating in this period, studies have shown that due to the influence of above factors as starting of this period or as the individual enters adolescence, they start changing their eating pattern and dietary habits often get unhealthier (Rasmussen et al.2006). Adolescence, one of the nutritional stress periods of life with profound growth, comes with increased demands for energy, protein, minerals and vitamins (Gopalan al al. 2001).

Many individuals in such as undergo changing food habits which affects their nutrition as also demanded by the body. Many individuals specially girls for acceptance among the peers start to dieting which becomes common and widespread. Siege et al (2011) Studied that in year 1999, 59% of high school girls and 26% of high school boys reported trying to lose Weight Almost 20% of girls had gone without eating for 24 hours or more to lose weight. (add country and location). Does this lead to healthy body and mind is subject to question and parents should be worry of this.

Soumyajit (2011) suggests that age group needs special attention because of the turmoil of adolescent which they face due to the different stages of development that they undergo, different circumstances that they come across, their different needs and diverse problems. Rural showed that adolescent girls have been considered a low-risk group for poor health and nutrition.

3.Methodolgy: -

(i) Objectives:-

The main objective was to know the dietary pattern, nutritional knowledge and likes and dislikes of adolescent girls and addition of colourful fruits and vegetables and their product in their dietary consumption.

(ii) Hypothesises:

I. The dietary pattern of adolescent girls is better of high economic and high educational group compared to other groups.

II. Economic and educational status affects the addition of colourful fruits and vegetables and their product in their dietary consumption.

The present research is related to study the dietary pattern, nutritional awareness, knowledge, likes, addition of colourful fruits and vegetables and their product in their dietary consumption which all influences the nutritional quality of diet of adolescent girls which is of vital importance.

In this chapter the analysed data were been presented in tabular forms followed by discussion. A sample of 270 girls from Hazaribagh had been selected for assessing the dietary pattern and nutritional quality of diet of adolescent girl with the impact of economic status and educational level. The sample of 270 girls was divided into three main groups as High educated (90), Middle educated (90), Low educated (90). These three main groups were further divided into -three subgroups based on high income, middle income, low-income . The high educated group was constituted with parents having B.A/B. Sc/ or equivalent level of education and above degree obtained. Middle educated belongs to metric/ inter mediate or equivalent level of education. Low educated belongs to having education between 5th class to 7th class pass. Income range of high-income family was above 1 lakh monthly income, middle-income family Rs30000 to 1 lack/ monthly and lastly the low-income family constitute income below Rs 30000 per month. A complete sample design has been given in chapter. The frequencies /% of subgroups and comparison made within the subgroups, regarding consumption of all cereals, pulses, non-veg items, Fruits, vegetables and other colored food stuffs and their product contain the nutrients protects them from chronic diseases.

4. Results and Discussion: - The result of data shown in various tables. Systematically and in scientific basis for analysis and to find out conclusion followed.The overall survey work

was analysed in three main sections in this chapter

A. Detail general information of respondents such as religions and type of family.

B. Detail of dietary consumption of fruits and vegetables of respondents.

C. Detail of dietary consumption of respondents of various food groups.

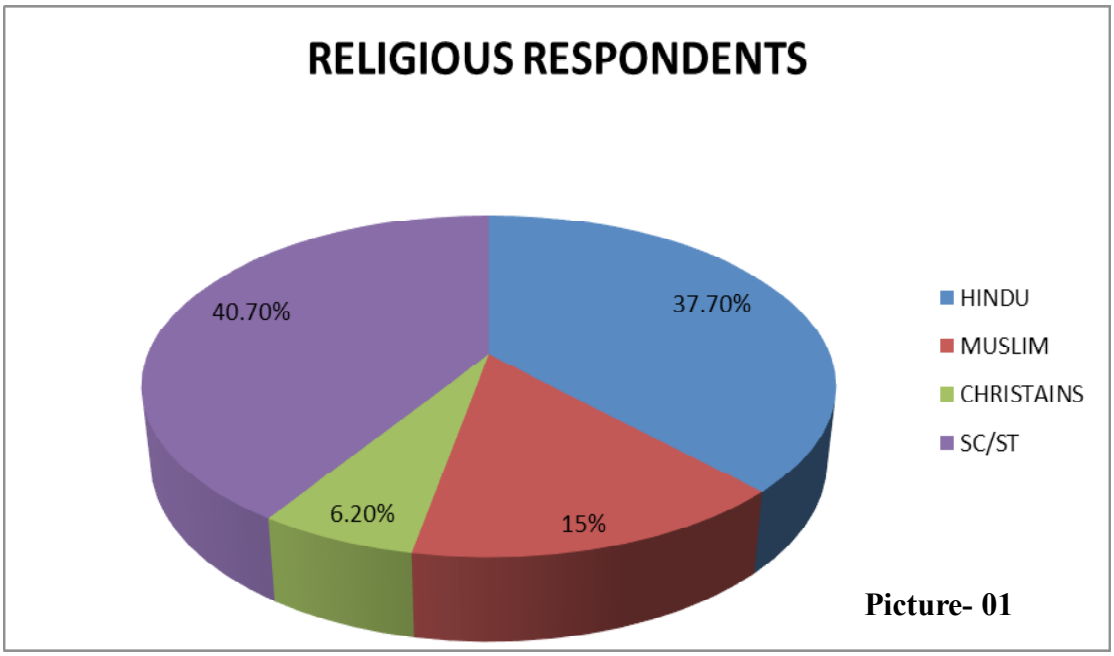
General Information Of Respondents

Section-A

Table No-1

Detail of Religion of Respondents

Sl.no.	Group	Sample Size	Hindu	Muslim	Christains	SC/ST
1	I	1-30	21	2	1	6
2	II	31-60	18	3	0	9
3	III	61-90	15	6	3	6
4	IV	91-120	20	1	1	8
5	V	121-150	5	5	2	18
6	VI	151-180	8	0	0	22
7	VII	181-210	6	12	6	6
8	VIII	211-240	8	2	4	16
9	IX	241-270	1	10	0	19
10	**TOTAL**	**270**	**102**	**41**	**17**	**110**
11	**Percentage**	**100%**	**37.7%**	**15.1%**	**6.2%**	**40.7**



Picture- 01

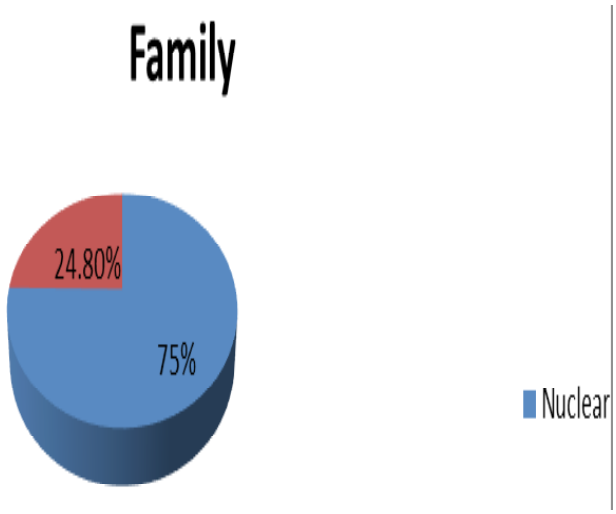
Table No-4.1 and Pic.-01 Shows the percentage of religions of respondent Hindu, Muslim, Christains, and sc/st were respectively 37.7%, 15.1%, 6.2% and 40.7%.In Which maximum numbers of respondents were Hindu.

TABLE NO-4.1 Shows the percentage of religions of respondent Hindu, Muslim, Christians, and s .c \s. t were respectively 102%, 41%, 6.2% and 40.7%.In Which maximum numbers of respondents were Hindu.

Table No -02

Details Of Types Of Family Of Respomdents

S.no	Group	Sample Size	Nuclear	Joint
1	I	1-30	26	4
2	II	31-60	22	8
3	III	61-90	28	2
4	IV	91-120	18	12
5	V	121-150	20	10
6	VI	151-180	27	3
7	VII	181-210	11	19
8	VIII	211-240	21	9
9	IX	241-270	30	0
10	**Total**	**270**	**203**	**67**
11	**Percetage**	**100%**	**75%**	**24.8%**



Pic. -02

Table No.-4.2 and Pic. - 2 Shows the types of family of respondents. 203(75.1%) Girls respondent were of nuclear family system and 67(24.8%) girls' respondent were of joint family system.

B.Detail of dietary consumption of fruits and vegetables of respondents.

Table N.-03

Consumption Details of Vegetable (Green vegetables/Root and Tubers / Fruits) in a week.

S.N.	G-I	G-II	G-III	G-IV	G-V	G-VI	G-VII	G-VIII	G-IX
Vegetable Above100g D.N.	G/RT/FN/ %25/28/-	G/RT/FN %28/29/-	G/RT/FN/ %21/23/2	G/RT/FN/ %22/23/-	G/RT/FN/ %21/24/0	G/RT/FN/ %10/28/2	G/RT/FN/ %21/28/-	G/RT/FN %8/30/-	G/RT/FN %7/30/0
%	83/93/-	93/97/-	73/77/7	73/77/-	70/80/-	33/90/7	70/90/-	27/100/	23/100/-
4-6days N.	4/2/2	2/2/9	4/2/18	3/2/18	6/2/18	8/4/2	8/2/2	7/—/21	4/0/2
%	13/7/7	7/7/30	13/7/60	13/7/60	20/7/60	27/13/7	27/7/7	23/-/70	13/-/7
1-2 days N.	2/2/-	2/2/0	3/2/25	2/2/8	3/5/2	13/0/24	2/2/23	9/-/3	2/0/28
%	7/7/-	7/7/—	13/7/83	3/3/27	13/18/7	3/-/7	7/7/73	30/-/10	7/-/93
Below100g.									

Table.No.- 03 Shown in the Consumption of Various Food Constituents as Vegetables(Green Veg./Root and Tubers/Fruits.) by Various groups daily/4-6 days and 1-2days in a week in n./%83/93/-,13/7/7 ,7/7 /-,G-II93/97/-,7/7/30,7/7/-,G-III70/77/7,13/7/60,13/7/83,G-IV,73/77/-,13/7/60,83/3/27,G-V70/80/-,20/7/60,10/17/-,G-VI13/90/78,27/ 13 /7 ,13/0/ 24,G-VII70/90/-,27/7/7, 7/7/73 ,G-VIII8/30 /-27/100/-7/-/2123/-/709/-/3,G-IX7/30/023/100/-4/0/213/-/72 / 07/-/93 respectively. Hence the results of Table shown the better consumption pattern by G-II 0f all types of vegetables which was G-II(Middle Income and High Educated group.

C- Detail of dietary consumption of respondents of various food groups.

Daily Consumption Of All Food By All Groups Cereals (100-200 G) Pulses*(50g -60g) Vegetables+Fruts(100-200) Non-veg Items (100-200g)Milk(100-200ml)/Fafs (25-35g) /Sugar(40-50g)

Table N0-04

S.N.	G	Cereals g W+R+M	Pulses g. M+C+A+M	VegetableG. V.+R.T+O.V/	Non-Veg. Items E+F+P+M	Milk+Fat +Sugar
		N(%)	N(%)	Fruits (.N%)	(N%)	N(%)
1.	I	25(83)	20(67)	27(90)	10(33)	20(67)
2.	II	23(76)	23(76)	30(100)	17(57)	24(80)
3.	III	27(90)	19(63)	23(76)	19(63))	17(57)
4.	TotalAverage	25(83)	21(70)	27(90)	15((50))	20(67)
5.	IV	24(90)	19(63)	27(90)	15(50)	20(87)
6.	V	23(76)	21(83)	25(83)	17(57)	19((63)
7.	VI	26(97)	17(57)	25(83)	13(50)	15(50)
8.	TotalAverage	27(90)	20(67)	27(90)	15(50)	18((60)
9.	VII	23(76)	17(57)	27(90)	14(47)	19(63)
10.	VIII	22(87)	20(67)	28(93)	16(53)	15(50
11.	IX	25(83)	15(50)	23(76)	12(40)	10(33)
12.	TotalAverage	23(76)	17(57)	26(87)	14(47)	13(43)

*W-wheat, R-rice, M-maze, M-mung , C-channa, M-mung, A-arhar, M-masoor, Gv-green Vegetables, R.t-roots Tubers, Ov-othervegetables, E-egg, F-fish,Poultry, M-meat, M-milk, F-fats, S-sugar , F-fruits ,

T.no.-4 Shown Daily Consumption Of Cereals (100-200 G) Pulses* (50g -60g) Vegetables/Fruits (100-200) Non-veg Items(100-200g) Milk(100-200ml)/ Fafs (25-35g) / Sugar (40-50g)

G-i 83,67,90, 33, and 20 respectively. G-ii 76,76,100,57 and 80respectively.

G-iii 90,63,76, 63 and 57 Respectively. G-iv 63,90,50 and 87 respevtiely.

G-V 76,83,83, 57 And 63 Respectively. G-Vi 97,57,83,50, And 50 Respectively G-v, G-vi, G -vii 76, 57 ,90 ,47 And 63 respectively.

G-viii 87,67,93,53 And 50 Respectively G-ix50,76, Respectively.

Table N.-05

Daily Consumption Of All Nutrients By Various Groups Of Adolescents Of Various Educatinal And Econmic Groups.

S.N	G	Calories g. (2000-2300) N(%)	Protein g. (20-35) N(%)	Fat g. (!0-25) N(%)	Iron g. (20-35) N(%)	Calcium g. (0.4-0.7) N(%)	Others Vitamins & Minerals
1.	I	25(30)	20(67)	25(83)	21(83)	24(80)	
2.	II	23(76)	23(76)	26(87)	22(87)	28(93)	
3.	III	27(90)	19(63)	19(63)	9(300)	17(57)	
4.	Total Average	25(81)	21(70)	27(90)	17(67)	23(76)	
5.	IV	24(80)	19(63)	24(80)	18(60)	20(67)	
6.	V	23(76)	21(83)	22(87)	15(50)	24(80)	
7.	VI	26(87)	17(67)	20(67)	7(25)	15(50)	
8.	Total Average	27(90)	20(67)	22(87)	13(43)	20(67)	
9.	VII	23(76)	17(57)	24(80)	18(60)	18(60)	
10.	VIII	22(87)	20(67)	25(83)	12(40)	12((40)	
11.	IX	25(83)	15(50	19(63)	4(14)	8(28)	
12.	**Total Average**	**23(76)**	**17(57)**	**22(87)**	**11(37)**	**13(43)**	

W-wheat	M-mung	Gv-green Vegetables	E-egg	M-meat	F-fats	F-fruits
R-rice	C-chana	Ov-other Vegetables	F-fish	M-milk	S-sugar	M-maize
A-arhar	P-poultry					

T.No.5 Shown The Daily Consumption Of Various Nutrients By Various Adolescents Of Various Educatinal And Econmic Groups. -in %Calories g.(2000-2300), Protein g. (20-35), Fat Iron g.(20-35 ,Calcium g.(0.4-0.7), Other Vitamins and Minerals Varies G-I were in %30,67,83,83, and80 respectively .G-II were in % 76,76,8787and93 respectively .G-III were in % 90,63,63,30and 57 respectively. G-IV were in %80,63,80,60and67 respectively. G-V were in %76,83,87,15,and 24respectively.G-VIwere in % 87,67, 67,25 and50respectively.G-VIIwere in %76,57,80,60,and 60respectively.G-VIIIwere in %83,50,63,14and 28 respectively.

From the Table no.5 it was seen that the over all dietary quality was better of group II, which was high educated -middle income group. Hence, the last hypothesis did not support.

Therefore the hypothesis the diet of high educated groups and high economic groups more better compare to other groups do not shows the reality it was seen that the overall dietary quality was better of group II ,which was high educated -middle income group. Hence, the last hypothesis did not support.

5. Conclusion:

On the basis of overall study it was found that education is most powerful factor to influence the nutritional quality of diet. The second important factor income, so it is necessary to improve education level of all urgent need after that without good income diet quality may not be improved. Knowledge and awareness, likes dislikes regarding various foods also influences consumption pattern of various food items. These things may be corrected by education and good food habits.

6. Suggetions:

The main suggestions was the quality improvement of diet can be done by consumption of enough amount of all types of food groups mainly cereals ,pulses , fruits ,vegetables and other colorful food stuffs and their products which prevent from malnutrition and promote health especially in this age of children because the future development based on this age.On the basis of overall study, it was found that education is most powerful factor to influence the nutritional quality of diet. The second important factor income, so it is necessary to improve education level of all urgent need after that without good income diet quality may not be improved. Knowledge and awareness, likes dislikes regarding various foods also influences consumption pattern of various food items. These things may be corrected by education and food habits.

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