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Descriptive study to identify the barriers of healthy diet among children in selected school of Kashmir with a view to develop a lifestyle modification programme

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Abstract
Globally, around 16 million babies are born to adolescent girls between the ages of 15 and 19 years. Although rates of births among adolescent girls have declined in all regions since 1990 but still remain high in Africa, Asia, Latin America, and Caribbean. Nearly 50% of all women aged 20–24 years in Asia and Africa are married by the age of 18 years, placing them at a higher risk for early pregnancy, maternal disability, and death. Adolescence is a critical age group as this is a period to develop specific expertise and hone individual skills to enter the mainstream workforce and contribute to the economic productivity. It is also a period when major changes in health and health-related behaviours such as smoking and substance abuse, unsafe sexual practices, poor eating, and lack of exercise occur, which may substantially impact health outcomes in later life. Due to the success of child survival initiatives over the last few decades, there has been a dramatic rise in the population of adolescents especially in low- and middle-income countries. There is an unacceptable rate of mortality among adolescents, as an estimated 1.3 million adolescents died in 2012; 70% of these deaths occurred in Africa and Southeast Asia. Based on the problem selected and objectives of the study, descriptive research design was selected to identify the barriers of healthy diet among school going children in a selected school of Kashmir with a view to develop a lifestyle modification programme. Sixty subjects were selected in selected area of Kashmir by non-probability sampling technique for this study. Self-structured checklist was used for data collection and was analysed by descriptive and inferential statistics using chi-square and t-test. The findings also revealed that statistically significant association was found between barriers to healthy diet with these variables (educational status and Fathers education) whereas no significant association was found between barriers to healthy diet with these variables (age, area of residence and mothers education) at (p≤0.05).

Keywords: Identify barriers, physical activity, healthy diet, effectiveness, school and life style

1. Introduction
Eat healthy and live healthy' is one of the essential requirements for long life. Unfortunately, today's world has been adapted to a system of consumption of unhealthy foods and physical inactivity which has several adverse effects on health. Lifestyle changes has compelled us so much that one has so little time to really think about eating and being physically active is right. Globalization and urbanization have greatly affected one's eating habits and physical activity.

Lifestyle behaviours related to food consumption and physical activity are important causes of non-communicable diseases in children. However, the current social and physical environment that children encounter at home and school are often counterproductive to promoting healthy eating and physically active lifestyles.

As the future generations, health of children influences not only their health but also the health of future populations. Unhealthy children behaviour can become long term risk factors that conditions in adulthood. Many of the factors that contribute to health risks among children are preventable if identified and changed as early as possible. Early intervention can alter patterns of behaviours that would have placed young people at risk in later life.

Poor nutrition compromises both the quality of life of school-aged children but also their potential to benefit from education.

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Attaining optimal nutrition involves eating three meals a day and two nutritious snacks, as well as limiting the intake of high sugar and high fat foods. Consuming generous amounts of fruits, vegetables, lean meats and low fat dairy products, including three servings of milk, cheese or yoghurt to meet their calcium requirement, can also prevent many medical problems. This includes becoming overweight, developing weak bones, and developing diabetes. Adequate nutrition of school aged children will also ensure they grow to their full potential, and provide the stepping stones to a healthy life.

In developing countries like India various forms of malnutrition affect a large segment of population and both macro and micronutrient deficiencies are of major concerns. The school age period is nutritionally significant because this is the prime time to build up body stores of nutrients in preparation for rapid growth of adolescence. Nutrition plays a vital role, as inadequate nutrition during childhood may lead to malnutrition, growth retardation, reduced work capacity and poor mental and social development. In children, protein/calorie deficient diet results in underweight, wasting and lowered resistance to infection, stunted growth and impaired cognitive development and learning.

School health has been regarded as a high priority intervention in developing countries. However it has not been prioritized in India for many years. Malnutrition is one of a major public health concern affecting a significant number of school children influencing their health, growth and development and school academic performance.

Lifestyle is the nature in which a person or group of people live, including where they live, what they own, type of employment, and activities they enjoy. One's lifestyle can be healthy or unhealthy based on nutrition, physical activity levels, and overall personal behaviours. A positive lifestyle can bring health and happiness, while a negative lifestyle can lead to illness and depression.

An essential component in the prevention and management of diseases is the adoption of a healthy lifestyle that would include the promotion of non-smoking, eating a healthy balanced diet, and actively engaging in organized physical activities.

The World Health Organization Guide for Population-based Approaches to Increase Levels of Physical Activity encourages national action plans, including large-scale interventions to reach the whole population. This guide also emphasizes that, "Some interventions may be tailored to school going children.

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A lifestyle has different components which include: nutrition, physical participation, safety and health awareness, and these components contribute to an individual's health. For example a lifestyle that includes regular physical activity has been associated with numerous health benefits including a reduced risk of coronary heart disease, type 2 diabetes, obesity and associated health risks, cancer, arthritis, sexual dysfunction, depression, anxiety, mood disorders, and cognitive impairment.

An essential component in the prevention and management of diseases is the adoption of a healthy lifestyle that would include the promotion of non-smoking, eating a healthy balanced diet, and actively engaging in organized physical activities.

Childhood and adolescence are critical periods for developing and forming healthy lifestyle habits and behaviours that can last a lifetime. However an unhealthy lifestyle is still a concern among adolescent populations. Some studies reported that more than 30% of the high school students watched TV and played video or computer games or used a computer ≥ 3 h/day on an average school day. Also other studies have shown that more than 60% of students did not meet recommended levels of physical activity and engaged in sedentary behaviours. These lifestyle behaviours may contribute to the prevalence of obesity and other chronic diseases in adulthood.

Despite an increased focus on nutrition and exercise for adolescents in the world over the last few decades, the dietary intake of adolescents remains a major cause of concern with an increasing number of youth consuming fast foods which are high in fat and sugar contents on a daily basis. The rapid rise in the prevalence of chronic diseases suggests lifestyle related factors are responsible. In other words, physical activity has declined, sedentary activities have increased, and there are widespread changes in dietary patterns. Perhaps all of these changes are rooted early in life during the child and adolescent stage, therefore eating and exercise patterns established in adolescence may be more likely to be sustained into adulthood. Childhood healthy lifestyles can continue during adulthood if the behaviours are introduced early. The school setting is a perfect place for learning new attitudes and behaviours, thus adolescents may comply with targeted lifestyle interventions offered through schools more than with those offered in a health care setting. There are two cognitive variables, which account for physical activity levels: perceived benefits and perceived barriers. Perceived benefits can positively, barriers can negatively influence the participation in activity (Buckworth and Dishman, 1999) [19]. These barriers have been classified in different ways. In recent years, examination of perceived physical activity barriers was considered important to contribute to physical inactivity in samples of adolescents. Many studies which were completed in some countries evaluated perceived benefits and barriers to physical activity among young people

Presence of at least 1 perceived barrier to physical activity was reported by 74.9% of physically inactive students, and the average number of perceived barriers was significantly higher [4.36 (SD 4.66)] among them compared with physically active students (SD 4.56)]. The significant barriers among physically inactive students were: time limitations (51.3%); lack of accessible and suitable sports places (31.1%); have other important priorities (28.1%); lack of friends to encourage (27.8%); lack of support and encouragement from others (23.2%); lack of safe sporting places (22.8%); lack of motivation (19.6%); high cost (17.7%); not being interested in sports (18.5%); lack of sports skills (17.8%); feeling tired on physical activity (15.8%) and ignorance about the benefits of sports (9.3%).

J shepherd et al 2005 [17] conducted a study on A systematic review was conducted to examine the barriers to, and facilitators of, healthy eating among young people (11–16 years). The review focused on the wider determinants of

health, examining community- and society-level interventions. Seven outcome evaluations and eight studies of young people's views were included. The effectiveness of the interventions was mixed, with improvements in knowledge and increases in healthy eating but differences according to gender. Barriers to healthy eating included poor school meal provision and ease of access to, relative cheapness of and personal taste preferences for fast food. Facilitators included support from family, wider availability of healthy foods, desire to look after one's appearance and will-power. Friends and teachers were generally not a common source of information. Some of the barriers and facilitators identified by young people had been addressed by soundly evaluated effective interventions, but significant gaps were identified where no evaluated interventions appear to have been published (e.g. better labelling of food products), or where there were no methodologically sound evaluations. Rigorous evaluation is required particularly to assess the effectiveness of increasing the availability of affordable healthy food in the public and private spaces occupied by young people.

Kathryn Silliman *et al* 2004 conducted Survey of dietary and exercise habits and perceived barriers to follow healthy lifestyle in a college participation. The authors assessed the diet and exercise habits and perceived barriers to following a healthy lifestyle of 471 college students. Sixty percent of the participants were female and 31% had BMIs > 25. Breakfast was the most commonly missed meal and 63% of students snacked one to two times per day. Fifty-eight percent of participants ate vegetables and 64% ate whole or canned fruit less than once per day. Men consumed more soda and alcohol and used higher fat dairy, ate more meat, and ate fewer vegetables and fruits than women. Over half of the subjects rated their diet as poor or fair with "lack of time" listed as the number one barrier to eating well. Men exercised more frequently and at greater intensity than women and were more confident with their body image. The most common barrier to exercise was "lack of time." The results of this study have implications for the design of general and specific diet and physical activity interventions among college students.

J P Singh *et al* conducted study on Nutritional status and morbidity among school going children. The objective of this study was to find out the nutritional status and morbidity pattern in school going children. A cross sectional descriptive study was conducted using a structured questionnaire and anthropometric measurements to assess underweight, stunting and thinness for 561 children at 5 to 18 years age, including 285 boys and 276 girls at Dhaura Tanda, Bareilly district, Uttar Pradesh. The prevalence of malnutrition was calculated using World Health Organization (WHO) Anthro Plus software. This study shows that prevalence of under-nutrition in both male and female was 44.56 and 37.32% respectively. The prevalence of chronic malnutrition (stunting) in male was 26.31% and in females was 21.37%. The prevalence of acute malnutrition in both males and females according to the BMI-for-age was 38.24% and 34.05% respectively. The most common morbidities were upper respiratory tract infection 240 (42.78%), diarrhea 81 (14.44%), carbuncle/furancle 78 (13.90%) and scabies 63 (11.23%). Malnutrition in the form of underweight, stunting and thinning were 41.00%, 23.28% and 36.18% respectively among school going children. URTI & Diarrhea were the most common morbidity.

Alaimo *et al*. (2001) [21] conducted a study on food insufficiency, family income and health among preschool and school aged children in US. Researchers Found an association between food insecurity, poor academic performance and poverty. Food insufficient children and teenagers were more likely to miss school and to repeat a grade than food sufficient children. The study also showed the food insufficiency had both biological as well psychological effects on a child, some of which included micronutrient deficiencies, reduced food intake, and feelings of deprivation, stress, and worry. Their research found a strong link between lower income families and food insufficient children. Coming from a lower income family, along with inhibiting the ability to eat healthfully, also affects the amount of health care a child can receive due to lack of affordable health care. This can lead to an inability to diagnose iron deficiency, as well as malnutrition, in children.

Ashakiran *et al*. 2012 [20] conducted study on Fast Foods and their Impact on Health. Research findings showed that Junk foods have certainly carved up the. Third World due to globalisation. It is an integral part of life in the developed and also the developing world, and coming with it is a massive increase in obesity and associated problems. The key to eating these junk foods is moderation, occasional consumption and preferably in small portions. It is not impossible to win war with junk foods against healthy foods. However, one must beware; entice is so strong that you will be addicted. It must be remembered that the addiction to junk is great for business. It is all in our hands to choose junk food or health. avoid junk, accept health! no junk, know health!

2. Objectives of the study
- To assess the barriers to healthy diet among school going children
- To assess the association of barriers to healthy diet of school going children with selected socio demographic variables.
- To develop a lifestyle modification programme for healthy diet.

3. Materials and Methods
A descriptive research study was conducted to identify the barriers of healthy diet among children in selected school of Kashmir with a view to develop a lifestyle modification programme. Only sixty subjects were selected by non-probability convenient sampling technique. The tool consisted of demographic variables, self- structured Observational checklist for data collection. Prior to data collection informed consent was obtained from the participants. The data was analysed by using descriptive and inferential statistics.

4. Results

Table 1: Frequency and percentage distribution of Study subjects according to their age n =60

Age in years	Frequency	Percentage (%)
13yrs	16	26
14yrs	17	28
15yrs	15	25
16yrs	12	20

The data presented in table 1 showed that majority of school going children 17(28.33%) belong to the age of 14years, 16(26.66%) belong to 13years of age, 15(25%) belong to 15 years of age and 12(20%) belong to 16 years of age.

Table 2: Frequency and percentage distribution of Study subjects according to standard of study N = 60

Standard of Study	Frequency	Percentage
8th	20	33
9th	20	33
10th	20	33

The data presented in table 2 depicted that equal number 20(33.33%) of adolescents were belonged to 8th, 9th and 10th standard respectively.

Table 3: Frequency and percentage distribution of Study subjects according to their educational status of father N = 60

Education Of Father	Frequency	Percentage
Illiterate	0	0
Primary school	4	6
Middle school	7	11
High school	8	13
Higher secondary	25	41
Graduation and above	16	26

The data presented in table 3 depicted that most of fathers 25(41.67%) had higher secondary education, 16 (26.67%) were graduates and above, 08(13.3%) had high school

education, 07 (11.67%) had middle school education and only 04 (6.66%) had primary school education respectively.

Table 4: Frequency and percentage distribution of Study subjects according to education of mother. n = 60

Education of Mother	Frequency	Percentage
Illiterate	0	0
Primary school	7	11
Middle school	10	16
High school	17	28
Higher secondary	15	25
Graduation and above	11	18

The data presented in table 4 depicted most of the mothers 17 (28.33) had high school education, 15 (25%) had higher secondary education, 10 (16.67%) had middle school education, 11 (18.3%) were graduates and above and only 07 (11.67%) were educated till primary school.

Table 5: Frequency and percentage distribution of study subjects according to area of residence. n = 60

Residential Area	Frequency	Percentage
Urban	49	81.67
Rural	11	18.34
Total	60	100

The data presented in table 5 showed that depicts that majority of adolescents 49(81.67%) reside in urban area while 11(18.34%) reside in rural area.

Table 6: Frequency and percentage distribution of study subjects according to item wise analysis of the personal barriers to healthy diet among school going children

Content	01		02		03		04		05	
	n	f	n	f	n	f	n	f	n	f
I enjoy eating fast food rather than homemade foods.	10	16.6	17	28.3	10	16.6	12	20	11	18.3
I skip my breakfast early in morning, because of early school timing.	06	10	19	31.6	07	11.6	19	31.6	09	15
I don't like to have diet which is not of my choice.	19	31.6	06	10	05	8.33	17	28.3	13	21.6
I feel homemade food is not healthy.	06	10	05	8.33	21	35	23	38.3	05	8.33
I feel healthy food is not attractive.	14	23.3	07	11.6	02	3.33	23	38.3	14	23.3
I don't like the smell of healthy diet.	06	10	07	11.6	04	6.66	23	38.3	20	33.3
I don't like to eat food which is less tastier than other fast food.	06	10	05	8.33	08	13.3	23	38.3	18	30
I like to eat in front of TV.	15	25	26	43.3	07	11.6	04	6.66	08	13.3
I like to eat in front of computer.	07	11.6	08	13.3	04	6.66	23	38.3	19	31.6
I have the habit of eating more during celebrations.	13	21.6	06	10	15	25	11	18.3	15	25
I have the habit of snacking while studying.	10	16.6	05	8.33	11	18.3	13	21.6	21	35
I have the habit of snacking while partying.	21	35	01	1.66	09	15	15	25	14	23.3

The data presented in table 6 most of the school going children i.e, 35% agreed that they have the habit of snacking while playing, 31.6% agreed that they don't like to have diet which is not of their choice, 43.3% strongly agreed that they like to eat in front of T.v, 31.6% strongly agreed that they skip their breakfast early in morning, because of early

school timing, 35% uncertain that they feel homemade food is not healthy, 38.3% disagreed that they feel homemade food is not healthy, is not attractive, they don't like the smell of healthy diet and they don't like to eat food which is less tastier than other fast food, 33.3% are strongly disagreed that they don't like the smell of healthy diet.

Table 7: Frequency and percentage distribution of study subjects according to item wise analysis of the perceptual barriers to healthy diet among school going children

Content	01		02		03		04		05	
	n	f	n	f	n	f	n	f	n	f
I enjoy snacking with my peer groups	17	28.33	21	35	12	20	02	3.33	08	13.33
Most of my friends enjoy fast foods rather than homemade foods	10	16.6	22	36.66	13	21.66	04	6.66	11	18.33
My friends pressurize me to take fast foods	05	8.33	11	18.33	07	11.66	22	36.66	15	25
Presence of restaurants near to home makes it difficult for me to resist eating foods that are high in calorie	08	13.33	04	6.66	11	18.33	24	40	13	21.66
Food advertisement triggers desire to eat unhealthy food	18	30	20	33.33	02	3.33	14	23.33	06	10
Easy availability of cafeteria in school makes me to eat junk foods	09	15	08	13.33	04	6.66	27	45	12	20

I feel that healthy food costs too much	11	18.33	07	11.66	04	6.66	17	28.33	11	18.33
I feel that my parents promise me to give treats outside for behaving appropriately	04	6.66	15	25	05	8.33	22	36.66	14	23.33
Presence of convenient ready to eat food increases the likelihood of consuming them	08	13.33	13	21.66	18	30	10	16.6	11	18.33
I feel that i eat less when eating with others	15	25	02	3.33	04	6.66	19	31.66	20	33.33
Stressful environment makes me to skip my meals	21	35	03	5	04	6.66	21	35	11	18.33
I use food as a way to cope up with the stress	08	13.33	06	10	09	15	19	31.66	18	30

The data presented in table 7 most of the school going children i.e, 35% agreed that stressful environment makes them to skip their meals, 30% agreed that food advertisement triggers desire to eat unhealthy food, 36.66% strongly agreed that most of their friends enjoy fast foods rather than homemade foods,35% strongly agreed that they enjoy snacking with their peer groups, 45% disagreed that due to easy availability of cafeteria in school makes them to eat junk foods, 40% disagreed that presence of restaurants near to home makes it difficult for them to resist eating foods that are high in calorie, 33.33% strongly disagreed that they eat less when eating with others and 30% strongly disagreed that they use food as a way to cope up with the stress.

Table 8: Frequency and percentage distribution of study subjects according to item wise analysis of the time constraints barriers to healthy diet among school going children

Content	01		02		03		04		05	
	n	f	n	f	n	f	n	f	n	f
Preparing healthy food takes too much time	18	30	08	13.3	05	8.33	09	15	20	33.3
Inconvenient schedule of my parents makes them to prepare ready to eat food at times	06	10	10	16.6	04	6.66	06	10	34	56.6
Parents are too busy to make meals in morning	12	20	04	6.66	11	18.33	13	21.6	20	33.3
I have no time to eat my meals because of my busy lesson schedule	10	16.6	07	11.6	03	5	23	38.3	17	28.3
I have no time to eat my meals because of my social responsibilities	09	15	10	16.6	00	0	19	31.6	22	36.6
I have no time to eat my meals because of my family responsibilities	04	6.66	06	10	12	20	12	20	26	43.3

The data presented in table 8 majority of the school going children 30% agreed that preparing healthy food takes too much time, 20%agreed that their parents are too busy to make meals in morning, 16.6% strongly agreed that due to their social responsibilities they had no time to eat their meals as well as due to inconvenient schedule of their parents makes them to prepare ready to eat food at times, 20% uncertain that due to their family responsibilities they had no time to eat their meals, 56.6% strongly disagreed that due to inconvenient schedule of their parents makes them to prepare ready to eat food at times, and 43.3% strongly disagreed that due to their family responsibilities they had no time to eat their meals.

Table 9: Association between the barriers to healthy diet with selected socio demographic variables

Study Variables	Critical Value	Chi-Square	Df	P Value	Remark
Age	12.59	11.121	3	0.63	Not Significant
Education status	9.49	10.16	2	0.02	Significant
Area Of Residence	5.99	26.6	1	0.72	Not Significant
Fathers education	6.78	13.20	4	0.03	Significant
Mothers education	5.78	9.20	5	0.81	Not Significant

The data presented in table 9 portrayed that there is statistically significant association between barriers to healthy diet with these variables (educational status and Fathers education) whereas no significant association was found between barriers to healthy diet with these variables (age, area of residence and mothers education).

5. Conclusion
This study was conducted with the objective based on the problem to identify the barriers of healthy diet among adolescents in a selected school of Kashmir with a view to develop a lifestyle modification programme. The findings also revealed that statistically significant association was found between barriers to healthy diet with these variables (educational status and Fathers education) whereas no significant association was found between barriers to healthy diet with these variables (age, area of residence and mothers education) at (p$\leq$0.05). So it indicates that there is need to enhance the awareness programmes regarding barrier to healthy diet among school going children.

7. Conflict of Interest
Not available

8. Financial Support
Not available

9. References
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