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### **Descriptive study to identify the barriers of physical activity among adolescents in selected school of Kashmir with a view to develop a lifestyle modification programme**

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#### **Abstract**

Adolescence is a grey area in the spectrum of life falling between childhood and adulthood. It is an age of transition when an individual experiences rapid growth and development, both physical and psychological and changes from being a child to an adult. School going period is also a period of increased vulnerability to obesity, lack of physical activity and outdoor sports along with the consumption of fat-rich 'junk' foods, is the major cause of obesity among the affluent population. Some dietary patterns appear quite common among adolescents, to mention a few: snacking, usually on energy-dense foods, meal skipping, particularly breakfast, or irregular meals, wide use of fast food and low consumption of fruits and vegetables. Based on the problem selected and objectives of the study, descriptive research design was selected to identify the barriers of physical activity among adolescents in a selected school 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 no significant association was found between barriers to physical activity with these variables i.e. age and type of family. The findings also revealed that significant association was found between barriers to physical activity with these variables i.e., educational status and source of information at ( $p \leq 0.05$ ).

**Keywords:** Identify barriers, Physical activity, adolescents, effectiveness, school and life style

#### **Introduction**

Adolescence is a grey area in the spectrum of life falling between childhood and adulthood. It is an age of transition when an individual experiences rapid growth and development, both physical and psychological and changes from being a child to an adult.

School going period is also a period of increased vulnerability to obesity, lack of physical activity and outdoor sports, along with the consumption of fat-rich 'junk' foods, is the major cause of obesity among the affluent population.

'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. Globalisation and urbanisation 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 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.

Some dietary patterns appear quite common among adolescents, to mention a few: snacking, usually on energy-dense foods; meal skipping, particularly breakfast, or irregular meals; wide use of fast food; and low consumption of fruits and vegetables.

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School age is the perfect time for children to learn about healthy food, bodies and activity. This is the time they start a busy social life, have pocket money and begin to help choose their own lifestyle. Children of this age learn quickly and are also influenced by their friends and popular trends.

Children need a wide variety of foods for a well-balanced diet. The amount of physical activity they have in a day will be an important part of how much they need to eat. When children are busy and active, snacking is important to keep energy levels high. A healthy morning snack at recess and one after school are usually needed each day.

Maintaining a balanced diet and regular exercise is important for all individuals, especially school-aged children (6-12 years). These children are required to eat a variety of foods from each food group to ensure optimal intake of all vitamins and minerals. At the same time, they may face new challenges regarding food choices and habits. Decisions about what to eat are partly determined by what is provided in school, at home, the influences from friends at school, and the media, especially television.

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

Physical inactivity has been identified as the fourth leading risk factor for global mortality (accounting for 6% of deaths globally). Most of the important risk factors for non-communicable diseases (NCDs) are closely related to inappropriate diet and physical inactivity (2). World Health Organization (WHO) recommendations are for children aged 18-64 years to do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week or at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity activity in order to improve cardiorespiratory and muscular fitness and bone

health and to reduce the risk of NCDs and depression. Despite the well-documented evidence regarding the negative health consequences of physical inactivity, the majority of adults do not meet the recommended physical activity guidelines.

Regular physical activity is associated with a healthier, longer life. Regular physical activity remains an important behaviour for promoting health, postponing or preventing prevalent musculoskeletal disorders such as mechanical low back pain, neck and shoulder pain and decreasing the risk of developing coronary heart disease, hypertension, diabetes, osteoporosis, obesity and colon cancers. The period of adolescence represents the transition from childhood to adulthood and lifetime habits such as regular exercise are normally begun at this time (Andersen and Haraldsdottir, 1993; Engstrom, 1986) <sup>[18, 19]</sup>. But unfortunately research indicated that physical activity rates decline consistently during the adolescent years (Kann *et al.*, 2000; Trost *et al.*, 2002) <sup>[20, 21]</sup>.

The benefits of physical activity are far-reaching, including decreased weight status, decreased risk of disease, increased self-esteem, and better academic performance. Current physical activity guidelines state that children should be moderately to vigorously active for a minimum of 60 minutes a day (Tremblay *et al.*, 2011a) <sup>[22]</sup>. The new guidelines on sedentary activity state that children should be limited to less than 2 hours a day of screen time such as television, video gaming and computers (2005).

Physical inactivity is widely recognized as a major risk factor for chronic diseases, and ranks between the second and sixth most important risk factor in contributing to the population burden of disease in western society. Its prevalence is higher than that of all other modifiable risk factors. Physical inactivity during the early years of life is currently indicated as a major contributor to the increasing levels of obesity, and other serious medical conditions, seen in children and adolescents in Europe and elsewhere.

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) <sup>[3]</sup>. 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 [3.15 (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%).

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 behaviors. 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.

Rao D R, Vijayapushpam T, *et al*, A study was conducted at four secondary schools of Hyderabad, India in 164 adolescent girls belonging to eighth grade to assess dietary habits and nutrition knowledge levels of the adolescents girls from different schools and to study the efficacy of two different nutrition educational tools in improving their nutritional knowledge in the classroom setting. In total, two interventions 1. Traditional method using print media such as folders leaflets and charts. 2. Audio- visual CD were carried out in a classroom setting for the experimental group. FFQ data on dietary consumption of adolescent girls revealed more consumption of aerated drinks, bakery items, fast foods and less consumption of millets irrespective of their socio- economic conditions. However, consumption of vegetables, green leafy vegetables and fruits was moderate. A significant improvement in the nutrition related knowledge was observed among the experimental group after intervention 1 and 2 as compared to the baseline data. However, no significant difference in the improvement of nutritional knowledge levels was observed with the second intervention over the first intervention as already the children in the experimental group gained knowledge through print media. Education on ill effects of aerated drinks, fast foods and the importance of nutrition during the adolescents phase should be emphasized in future programmes.

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/furuncle 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.

Dianne Neumark- Sztainer, *et al*, A study was conducted to assess the effectiveness of a school based obesity prevention programme among adolescents. Six schools were randomized in to intervention and control group, with 89 girls, in intervention group and 112 girls in the control group. Data was collected at baseline; post intervention and 8 month follow up using participant interviews, interviews with school staff and parent surveys. Results of the study

revealed that participants perceived a positive programme impact on their physical activity, eating patterns. Girls in the intervention group significantly progressed in their stage of behavioural change for physical activity.

Abdulrahman O Musaiger *et al*, conducted a study on perceived barriers to healthy eating and physical activity among adolescents in seven Arab countries. This study indicates that there are several personal, social, and environmental barriers to healthy eating and physical activity among school going children in Arab countries. Lack of information on healthy eating, lack of motivation to eat healthy diets, and not having time to prepare or eat healthy foods due to school commitments were found to be the main barriers to healthy eating. However, lack of motivation to do physical activity, insufficient support from teachers, and lack of time to do physical activity were the main barriers to physical activity.

Poor availability of healthy diets in schools and food outlets and preferences for fast foods and easy access to them may reduce the motivation of school going children to eat healthy foods. The lack of personal motivation to eat a healthy diet has also been shown to be a barrier to school going children. Motivation to practise healthy eating by school children is usually influenced by parents, peers, teachers, and the mass media. Food choices and availability at home are mostly influenced by parents. Study conducted by Shepherd *et al*, reported that parents are not an important barrier to healthy eating; however, the lack of knowledge of sound nutrition among parents as well as their work schedule may continue to reduce the level of supervision and guidance of children's food habits. At the adolescence stage, peers have a high impact on nutritional behaviour; nevertheless, friends were not reported to be a barrier to healthy eating.

According to the U.S. Department of Health and Human Services, a healthy diet should consist of fruits, vegetables, whole grains, low-fat dairy products and lean meats. On top of eating well, school going children must minimize the consumption of cholesterol, sodium, sugar and saturated fat. In conjunction with regular exercise, a healthy diet can reduce the risk of heart disease, osteoporosis, type-2 diabetes, high blood pressure and some cancers.

According to Mary Law, eating healthfully and exercising regularly can help to lose weight safely and keep it off. Physical activity and a healthy diet can help one maintain the current weight and reduce the risk of gaining weight as you age. Healthy foods are generally lower in calories and higher in nutrients than other foods, and regular physical activity burns off extra calories to keep a healthy physique.

The National Institute of Diabetes and Digestive and Kidney Diseases states that, a combination of working out and eating healthy foods can boost the energy level and help one feel more alert and aware, both mentally and physically. Healthy foods give the body the nutrients and vitamins it needs to function at its best.

According to Sallis, J.F., states that with technological advances and conveniences, people's lives have in many ways become increasingly easier, as well as less active. In addition, people have many personal reasons or explanations for being inactive. Some common explanations (barriers) that people cite for resistance to exercise are (Sallis and Hovell; Sallis, Hovell, and Hofstetter) insufficient time to exercise, inconvenience of exercise, lack of self-motivation, non-enjoyment of exercise, boredom

with exercise, lack of confidence in their ability to be physically active (low self-efficacy), fear of being injured or having been injured recently, lack of self-management skills, such as the ability to set personal goals, monitor progress, or reward progress toward such goals, lack of encouragement, support, or companionship from family and friends, non-availability of parks, sidewalks, bicycle trails, or safe and pleasant walking paths close to home or the workplace. The top three barriers to engaging in physical activity across the adult lifespan are time, energy, motivation; other barriers include cost, facilities, illness or injury transportation, partner issues, skill, safety considerations, child care, uneasiness with change, unsuitable programs.

**Objectives of the study**

- To assess the barriers of physical activity among school going children.
- To assess the correlation between barriers to physical activity with barriers to healthy diet.
- To assess the association of barriers to physical activities of school going children with selected socio demographic variables.

**Materials and Methods**

A descriptive research study was conducted to identify the barriers of physical activity 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.

**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 educational status. n =60

Standard of Study	Frequency	Percentage
8 <sup>th</sup>	20	33
9 <sup>th</sup>	20	33
10 <sup>th</sup>	20	33

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

**Table 3:** Frequency and percentage distribution of Study subjects according to type of family. n = 60

Type Of Family	Frequency	Percentage
Nuclear	26	43
Joint	33	55
Extended	1	1

The data presented in table 3 revealed that majority of the adolescents belong 33(55%) to joint family, 26(43.34%) belong to nuclear family and only 01 (1.67%) belong to extended family.

**Table 4:** Frequency and percentage distribution of study subjects according to source of information regarding physical activity. n = 60

Source of information	Frequency	Percentage
Parents	37	61.67
School	2	3.34
Media	18	30
Peer groups	3	5

The data presented in table 4 showed that most of the adolescents 37(61.67%) had source of information regarding physical activity through parents, 18 (30%) had information through media and 03(5%) gained through peer groups.

**Table 5:** Frequency and percentage distribution of study subjects according to item wise analysis of the personal barriers to physical activity among school going children.

Content	01	02	03	04	05
	N %	N %	N %	N %	N %
1. I don't feel like to exercise due to my academic responsibilities.	25 41.6	08 13.3	07 11.6	02 3.33	18 30
2. I feel less motivated to exercise.	04 6.66	03 5	21 35	22 36.6	3 16.6
3. I find it hard to stick to a routine of exercise due to academic responsibilities.	30 50	04 6.66	02 3.33	10 16.6	14 23.3
4. I always feel too tired after exercising.	03 05	02 3.33	04 6.66	30 50	5 35
5. I feel embarrassed to exercise.	05 8.33	01 1.66	09 15	19 31.6	26 43.3
6. I don't get enough exercise because i have never learned the skills for any sport.	18 30	02 3.33	04 6.66	23 38.3	7 21.6
7. Non – availability of playgrounds near home.	08 13.3	09 15	02 3.33	30 50	8 18.3
8. I don't have the peer group to play with.	05 8.33	03 5	10 16.6	20 33.3	9 36.6
9. I have less energy to do any exercise.	19 31.6	02 3.33	04 6.66	17 28.3	18 30
10. I experience pain while doing exercise.	10 16.6	04 6.66	06 10	22 36.6	18 30
11. Exercise makes me perspire excessively.	26 43.3	12 20	02 3.33	15 25	05 8.33
12. Exercise irritates me.	04 6.66	02 3.33	04 6.66	17 28.3	33 55

The data presented in table 5 showed most of the school going children 43.3% agreed that exercise makes them perspire excessively, 41.6% agreed that they don't feel like to exercise due to their academic responsibilities, 50%

agreed that it is hard to stick to a routine of exercise due to academic responsibilities, 15% strongly agreed that there is non-availability of play grounds near home.

**Table 6:** Frequency and percentage distribution of study subjects according to item wise analysis of the perceptual barriers to physical activity among school going children

Content		01		02		03		04		05	
		N	F	N	F	N	F	N	F	N	F
1.	I feel demotivated to exercise due to less involvement of my parents in physical activity.	17	28.3	21	35	12	20	02	0.03	08	13.3
2.	My parents give academic success more importance to exercise.	10	16.6	21	35	13	21.6	04	6.66	02	3.33
3.	I am not interested in exercising.	03	5	08	13.3	07	11.6	22	36.6	20	33.3
4.	Exercise keeps me away from spending time with my friends.	08	13.3	04	6.66	11	18.3	23	38.3	14	23.3
5.	My friends do not encourage me to exercise.	17	28.3	18	30	02	0.03	15	25	08	13.3
6.	Exercise decreases my academic performance.	09	15	08	13.3	04	6.66	27	45	12	20
7.	Exercise decreases my muscle strength.	11	18.3	07	11.6	05	8.33	16	26.6	21	35
8.	I think people in exercise clothes looks funny.	04	6.66	15	25	05	8.33	22	36.6	14	23.3
9.	I think that intermittent exercise do not benefit for me.	25	41.6	06	10	02	0.03	14	23.3	13	21.6
10.	My physical appearance alters after doing exercise.	16	26.6	06	10	08	13.3	07	11.6	23	28.3
11.	Exercise increases feelings of stress and tension for me.	04	6.66	02	0.03	02	0.03	19	31.6	33	55
12.	I don't exercise as my friends are also not exercising.	19	31.6	06	10	03	5	06	10	26	43.3

The data presented in table 6 majority of the school going children 41.6% agreed that intermittent exercise do not benefit for them, 31.6% agreed that they don't want to do exercise as their friends are also not exercising, 28.3% agreed that their friends doesn't encourage them to do exercise as well as they feel demotivated to exercise due to their less involvement of their parents in physical activity,

35% strongly agreed that their parents give academic success more importance to exercise, 21.6% of respondents are uncertain that their parents give academic success more importance to exercise, 45% of them disagreed that exercise decreases their academic performance, and 55% strongly disagreed that exercise increases feelings of stress and tension for them.

**Table 7:** Frequency and percentage distribution of study subjects according to item wise analysis of the time constraints barriers to physical activity among school going children.

Content		01		02		03		04		05	
		N	F	N	F	N	F	N	F	N	F
1.	Exercise takes too much of my time.	11	18.3	06	10	02	3.33	14	23.3	27	45
2.	I have no leisure time to exercise because of my busy lesson schedule.	16	26.6	15	25	07	11.6	11	18.3	11	18.3
3.	I have no leisure time to exercise because of my social responsibilities.	04	6.66	14	23.3	12	20	11	18.3	19	31.6
4.	I have no leisure time to exercise because of my family responsibilities.	01	1.66	02	3.33	08	13.3	30	50	19	31.6
5.	My parents emphasize on giving more time to studies rather than exercising.	13	21.6	09	15	05	8.33	13	21.6	20	33.3
6.	Exercise facilities do not have convenient schedules for me.	06	10	13	21.6	08	13.3	18	30	15	25

The data presented in table 7 most of the school going children i.e. 26.6% agreed that they have no leisure time to exercise because of their busy lesson schedule, 21.6% agreed that their parents emphasize on giving more time to studies rather than exercising, 18.3% are agreed that exercise takes too much of their time, 25% strongly agreed that they have no leisure time to exercise because of their busy lesson schedule, 23.3% also strongly agreed that due to their social responsibilities they have no leisure time to exercise, 20% uncertain that they have no leisure time to exercise due to their social responsibilities, 30% disagreed that exercise facilities do not have convenient schedules for them, 31.6% of the respondents strongly disagreed that they have no leisure time to exercise due to their social and family responsibilities and 33.3% strongly disagreed that their parents emphasize on giving more time to studies rather than exercising.

**Table 8:** Association between the barriers to physical activity with selected socio demographic variables.

Study Variables	Critical Value	Chi-Square	Df	P Value	Remark
Age	12.59	11.121	6	0.63	Not Significant
Education status	9.49	10.16	4	0.02	Significant
Type Of Family	9.49	10.16	4	0.62	Not Significant
Source of information	7.82	72.6	3	0.04	Significant

The data presented in table 8 portrayed that there is statistically significant association between barriers to physical activity with these variables (educational status and source of information) whereas no significant association was found between barriers to physical activity with these variables (age and type of family).

## Conclusion

This study was conducted with the objective based on the problem statement to identify the barriers of physical activity among school going children in a selected school Kashmir with a view to develop a lifestyle modification programme. The findings also revealed that no significant association was found between barriers to physical activity with these variables i.e. age and type of family. The findings also revealed that significant association was found between barriers to physical activity with these variables i.e., educational status and source of information at ( $p \leq 0.05$ ). So it indicates that there is need to enhance the awareness programmes regarding barrier to physical activity among school going children.

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