

RESEARCH TITLE

Assessment of Risk Factors for Obesity among School aged Children in Basra city

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Abstract

Background : Overweight and obesity is a health problem in both developed and developing countries.

Objective: to determine risk factors among school aged children and to establish the food consumption patterns of the children .

Material and methods: A descriptive cross-sectional study conducted at school of Basra city, from January to fib wary 2019. A total sample of 600 children were included 400 male and 200 female , were area of sample 200 rural 100 male,100 female and 400 urban 300 male, 100 female in the study. Multi stage systematic random sampling technique was used. Three parts , the part one about socio-demographic characteristic of children the part two physical activity and part three information about dietary habits the pattern was obtained by direct interview method. Weight and height of all subjects were measured according to standard procedures using standard equipment (tape measure , weight measuring device). BMI for age was calculated using WHO charts.

Results : 66.6 % of the sample male and 33.4 % of the sample female , the group age of the sample were between 10-11 years 86.3 % and job of mother high percentage housewife 74.6 % , the means of transport high percentage walking 53 % , spare time high percentage television 51.8 % , high percentage the sample overweight (243) 40.5 % , high percentage female in urban area (overweight) 67 % , the lower percentage underweight 8 % , were the female in rural area and the male in rural area high percentage underweight 64 % . the chi square values between sample activities school provides sports time, children activities at school, school provides games, enjoy a sports lesson, movement within the school are highly significant. the chi square values between sample nutritional status eat sweets between meals , how many times do you eat a day , types snacks or sweets preferred by children are highly significant and children go to school without meal, who chooses the snack or sweets for children are non significant.

Conclusion: Overweight and obesity is a health problem in both developed and developing countries. Unhealthy dietary habits and sedentary lifestyle are the major risk factors for obesity in school aged children.

Key Words: obesity, risk factors, school aged children, Body mass index

Introduction :

Obesity has become a global pandemic and should be regarded as today's principal neglected public health problem. Obesity is increasing in most high income countries as well as in developing countries undergoing nutrition transition and with under nutrition problems. Globally, in 2010 the number of overweight children was estimated to be over 42 million. Close to 35 million of these are living in developing countries. At least 2.8 million people die each year globally, as a result of being overweight or obese.(1) Childhood obesity poses a major risk for serious dieter later chronic diseases, such as type 2 diabetes mellitus, cardiovascular disease, hypertension and stroke, and certain forms of cancer and, it is also noted to be a precursor of adverse health effects in adulthood, as overweight children are more likely to become overweight adolescents and adults.(2,3,4) In addition, overweight and obesity is favored by risky dietary behaviors such as consumption of fast food and drinks, eating away from home, skipping/missing of meal, regular drinking of sugar rich beverages and low serving/ intake of fruit and vegetable.(5,6) One-half of

obese school children become obese adults. However, whether or not obesity persists into adulthood, obesity in childhood appears to increase the risk of subsequent morbidity.(7,8) Eating behavior of the children is influenced by the availability of food, peers, siblings and parent's behavior.(9) Consuming more energy from foods and beverages than the body uses for healthy functioning, growth, and physical activity can lead to extra weight gain over time.(10) The problem of childhood overweight and obesity currently being faced by several countries worldwide is a result of a myriad of factors. In Qatar, the rapid economic success of the state has led to the espousal of some unhealthy lifestyles. These include adoption of poor dietary habits that were more commonly associated with affluent people in Qatar.(11) Both girls and boys enjoy high caloric diets that consist mainly of fast food which are heavily advertised on television, sugar snacks, soft drinks and sweet beverages because their parents can easily afford to pay for these foods.(11–12) In one survey, two out of three children in Qatar reported eating fast food at least once or twice a week with about 90% of the children further consuming unhealthy snacks between meals.(13) Sedentary lifestyles with little to no form of physical activity may be due to some cultural factors. Additionally, increased urbanization and technological advancement adds to the problem of overweight and obesity among the children.(14) It is reported to be commonplace for countries in the GCC region to view being plump as aesthetically acceptable. Being heavy set is also seen as a sign of wealth, which may be one of the reasons why the prevalence of childhood overweight and obesity continues to rise.(11) There are also several methods to measure the percentage of body fat. In research, techniques include underwater weighing (densitometry), multi-frequency bioelectrical impedance analysis (BIA), and magnetic resonance imaging (MRI). In the clinical environment, techniques such as BMI, waist circumference, and skin-fold thickness have been used extensively. Although, these methods are less accurate than research methods, they are satisfactory to identify risk. While BMI seems appropriate for differentiating adults, it may not be as useful in children because of their changing body shape as they progress through normal growth.

In addition, BMI fails to distinguish between fat and fat-free mass (muscle and bone) and may exaggerate obesity in large muscular children. Furthermore, maturation pattern differs between genders and different ethnic groups. Studies that used BMI to identify overweight and obese children based on percentage of body fat have found high specificity (95–100%), but low sensitivity (36–66%) for this system of classification.(15)

The main contributing forces in the increasing prevalence of overweight and obesity are believed to be increasing urbanization and the globalization of food markets.

With rising incomes and urbanizing populations, physical activity levels tend to decline and diets increasingly shift to include foods higher in saturated fats and sugars.(16) that school settings should serve as an essential component of a national strategy to increase physical activity, along with preschool and childcare center settings providing increased physical activity opportunities. Aside from the aforementioned standards, goals and objectives, and recommendations, additional national standards related to preventing childhood obesity in early care and education programs have also been promoted.(17) . Nursing is the sum of services given to individuals and their families to help them maintain their natural state or help them to relieve their organic and psychological pain (62).

Methodology:

A descriptive cross-sectional study conducted at school of Basra city, from January to February 2019. A total sample of 600 children were included 400 male and 200 female , were area of sample 200 rural 100 male,100 female and 400 urban 300 male, 100 female in the study. Multi stage systematic random sampling technique was used. Three parts , the part one about socio-demographic characteristic of children the part two physical activity and part three information about dietary habits the pattern was obtained by direct interview method. Weight and height of all subjects were measured according to standard procedures using standard equipment (tape measure , weight measuring device). BMI for age was calculated using WHO charts.

The study sample and data collection:

A total sample size was 600 which was interviewing with student in school in Basra city. Data analysis was done using the SPSS statistical package. Descriptive analysis of the socio-demographic profile of the participant and putative risk factors were done. The prevalence of overweight and obesity was calculated. The relationship between each putative risk factor and the presence of obesity/overweight was analyzed using standard statistical tests such as the Chi square test. Appropriate multivariate analysis was done to identify associated factors. Chosen P value was 0.05.

assessment of the problem:

Assessment of Risk Factors for Obesity among School aged Children in Basra city.

The objective of the assessment:

- 1-To determine risk factors among school aged children .
- 2- To establish the food consumption patterns of the children .

Statistical data analysis :

- 1- frequency and percentage
- 2-chi-squer
- 3- As well we use SPSS program v.16 for finding the outcome

4-1 Results

Tablet (1) : Socio-demographic characteristic for sample.

	Frequency	Percentage %
Gender		
male	400	66.6 %
Female	200	33.4 %
Age groups		
10-11	517	86.3 %
12-13	83	13.7 %
M \pm SD=22.8 \pm 5.977		
Class		
Fourth	67	11.2 %
Fifth	284	47.3 %
Sixth	249	41.5 %
Job of father		
Employee	314	52.4 %
Free business	274	45.6 %
Deceased	12	2 %
Job of mother		
Employee	151	25.1 %
Housewife	448	74.6 %
Free business	1	0.3 %
What are the means you use to go to school?		
Walking	318	53 %
Private care	282	47 %
Buses		
Spare time		
House work	153	25.5 %
Television	311	51.8 %
Computer	136	22.7 %
Favorite sport		
Boxing	3	0.5 %
Foot ball	473	78.8 %
Swimming	8	1.3 %
Basketball	22	3.6 %
Walking	5	0.8 %
Gymnastics	1	0.1 %
Run	79	13.5 %
Handball	2	0.3 %
Does not have a favorite sport	7	1.1 %
Do your parents give you money ?		
Yes	592	98.7 %
No	8	1.3 %
How many give money?		
2000	39	6.5 %
1000	439	74.5 %
500	108	18 %
250	6	1 %
Where do you spend your money ?		
Buy food	592	100 %
Your parents are obese ?		
Yes	200	33.4 %
No	400	66.6 %
Do you have a disease		
Yes	44	7.3%
No	556	92.7%

Tablet (2) : distribution the sample according body mass index

BMI	Groups	N	F	
underweight	<18.5	168	28 %	
normal	18.5-24.9	189	31.5 %	
overweight	25-29.9	243	40.5 %	
Obese I	30-34.9			
Obese II	35-39.9			
Obese III	≥40			
	Total	600	100	M ±SD=22.8±5.977

Table (3) : distribution the sample according to the sex and resident area (rural, urban)

	Female urban	Female rural	Male Urban	Male rural
Underweight	8	65	31	64
Normal	25	30	98	36
Overweight	67	5	171	
Obese I				
Obese II				
Obese III				
Total	100	100	300	100

This table showed the high percentage female in urban area (overweight) 67 % and the lower percentage underweight 8 % , were the female in rural area underweight high percentage 65 % and the lower percentage overweight 5 % , and show the male in rural area high percentage underweight 64 % and the lower percentage 36 % normal weight .

Table (4) : distribution sample activity

Does the school provide sports time ?			<i>Df</i>	P	SIG
Yes	501	83.5%	210	.000	HS
No	99	16.5%			
How many times a school provides time for sport					
Once	333	66.5 %	105	.000	HS
Twice	96	19.2 %			
three times	72	14.3 %			
Who is the student's guide ?					
Teacher	467	77.8 %	315	000	H.S
Sports teacher	35	5.8 %			
No one	98	16.4 %			
Are children's activities at school adequate ?					
Yes	239	39.8 %	210	.000	HS
No	361	60.2 %			
Is school provides games ?					
Yes	205	34 %	105	.000	HS
No	395	66 %			
Are enjoy a sports lesson ?					
Yes	493	82 %	210	0.01	HS
No	107	18 %			
Movement within the school					
Prefer to walk	567	94.5 %	210	0.000	HS
Sit in your place	33	5.5 %			

This table showed the school provide time to sport the high percentage we answer yes 83,5% and the lower percentage 16,5% in the sample provide time sport the high percentage once

66.5 % and the lower percentage three times 14.3 % , where the student guide high percentage teacher 77.8 % and the lower percentage sport teacher 5.8 % , were the movement within the school high percentage prefer to walk 94.5 % and the lower percentage sit in your place 5.5 % . the chi square values between sample activities school provides sports time, children activities at school, school provides games, enjoy a sports lesson, movement within the school are highly significant.

Tablet (5) : distribution sample nutritional status

Do you eat sweets between meals ?			Df	P	SIG
Yes	405	67.5 %	210	0.000	HS
No	195	32.5 %			
How many times do you eat a day ?					
Once	129	21.6 %	240	0.000	HS
Twice	192	32 %			
three times	250	41.6 %			
four times	29	4.8 %			
Do you go to school without a meal ?					
Yes	365	61 %	210	.994	NS
No	235	39 %			
If the answer is yes	Breakfast	lunch			
	59	306			
	16.2 %	83.8 %			
Types snacks or sweets preferred by children					
Cake and juice	285	47.5 %	420	0.000	HS
Chips and juice	108	18 %			
Chips					
Sandwich	207	34.5 %			
You buy from outside restaurants ?					
Yes	399	66.5 %	210	.6	HS
No	201	33.5 %			
Is a school preparing food ?					
Yes	271	45 %	105	.000	HS
No	329	55 %			
If the answer is yes	Healthy food	Fatty food			
	18	253			
	6.6 %	93.4 %			
Who chooses the snack or sweets ?					
Parents	322	53.6 %	315	.494	NS
Children	265	44.3 %			
Guardian	13	2.1 %			

This tablet show the eat sweet meals the high percentage 67,5% we answer yes and the lower percentage we answer no 32,5% the many times of eat high percentage three times 41.6 % and the lower percentage four times 4.8 % .the children go to school without meal the high percentage we answer yes 61% ,and the lower percentage we answer no 39%,if the children answer yes the high percentage was lunch 83,8% and the lower percentage was breakfast 16,2% where the types snacks or sweets preferred by children high percentage cake and juice 47.5 % and the lower percentage chips and juice 18 % , were the who chooses the snack or sweets high percentage parents 53.6 % and the lower percentage guardian 2.1 % .school preparing food we answer yes 55% ,If answer yes the high percentage about type of food 93,4 fatty food and the lower percentage 6,6 healthy food. the chi square values between sample nutritional status eat sweets between meals , how many times do you eat a day , types snacks or sweets preferred by children are highly significant and children go to school without meal, who chooses the snack or sweets for children are non significant.

Discussion:

This chapter presents asymptotically the following : Interpretation of the evidence is supported by available literature and research studies analysis of such characteristic of 600 children measurement body mass index. 66.6 % of the sample male 400 and 33.4 % of the sample female 200 , the group age of the sample were between 10-11 years 86.3 % and 12-13 years 13.7 % , where the high percentage of class fifth 47.3 % and lower percentage in fourth class 11.2 % , were the job of father high percentage employee 52.4 % and lower percentage deceased 2 % , were the job of mother high percentage housewife 74.6 % and the lower percentage free business 1 % , were the means of transport high percentage walking 53 % and the lower percentage private care 47 % , where the spare time high percentage television 51.8 % and the lower percentage computer 22.7 % , were the favorite sport high percentage football 78.8 % and the lower percentage gymnastics 0.1 % , were the receive money high percentage 1000 74.5 % and the lower percentage 250 1 % . the high percentage the sample overweight (243) 40.5 % , where the lower percentage underweight (168) 28 % . the high percentage female in urban area (overweight) 67 % and the lower percentage underweight 8 % , were the female in rural area underweight high percentage 65 % and the lower percentage overweight 5 % , and show the male in rural area high percentage underweight 64 % and the lower percentage 36 % normal weight . the school provide time to sport the high percentage we answer yes 83,5% and the lower percentage 16,5% in the sample provide time sport the high percentage once 66.5 % and the lower percentage three times 14.3 % , where the student guide high percentage teacher 77.8 % and the lower percentage sport teacher 5.8 % , were the movement within the school high percentage prefer to walk 94.5 % and the lower percentage sit in your place 5.5 % . the chi square values between sample activities school provides sports time, children activities at school, school provides games, enjoy a sports lesson, movement within the school are highly significant. the eat sweet meals the high percentage 67,5% we answer yes and the lower percentage we answer no 32,5% the many times of eat high percentage three times 41.6 % and the lower percentage four times .the children go to school without meal the high percentage we answer yes 61% ,and the lower percentage we answer no 39%,if the children answer yes the high percentage was lunch 83,8% and the lower percentage was breakfast 16,2% where the types snacks or sweets preferred by children high percentage cake and juice 47.5 % and the lower percentage chips and juice 18 % ,were the who chooses the snack or sweets high percentage parents 53.6 % and the lower percentage guardian 2.1 % .school preparing food we answer yes 55% ,If answer yes the high percentage about type of food 93,4 fatty food and the lower percentage 6,6 healthy food. The chi square values between sample nutritional status eat sweets between meals , how many times do you eat a day , types snacks or sweets preferred by children are highly significant and children go to school without meal, who chooses the snack or sweets for children are non significant. study in 2014 in china Prevalence of overweight and obesity among primary school children aged in5 to14 years Wannan area, china. A total of 67956 subjects (36664 male) and (31292 female) aged 5-14 years were recruited in this study. Depending on the references used , the overall prevalence of overweight, including obesity of the subjects was 17.85% , the prevalence of overweight, including obesity was 22.9% in male subjects and 11.9% in female subjects, respectively. The overall prevalence of obesity was3.7%, the prevalence of obesity was 5.2 % in male subjects and 1.8% in female subjects, respectively. study The 2002 in Saudi Arabia Prevalence of Obesity and Overweight In 1-18-Year-Old Saudi Children The overall prevalence of overweight was 10.7% and 12.7% in the boys and girls, respectively, and obesity was 6.0% and 6.74% in the two groups, respectively. The children were grouped according to the province to which they belonged, and prevalence of obesity and overweight were calculated for each province. The highest

frequency was in the Eastern Province, while the lowest was in the Southern Province. The children were further grouped into 1-6, 6-12 and 12-18-year-olds and prevalence of obesity and overweight was calculated. In addition, at yearly intervals, the prevalence of obesity and overweight was calculated. Among the boys and girls, the maximum prevalence of obesity was in the 2-3 year-olds. A decrease in prevalence was found in both males and females up to the age group of 8-13 years, and then the prevalence increased again up to the 18 years age. Study in 2018 in Sri Lanka Overweight and obesity among adolescent school children in the Colombo education zone Prevalence of overweight and obesity among adolescents was revealed as 10.8% (CI 9.3-12.5) and 3.9% (CI 3.1-5.0) respectively, with no gender difference. Studying in semigovernment or international schools was statistically significantly associated with adolescent overweight and obesity ($p=0.000$).

Conclusion:

Overweight and obesity is a health problem in both developed and developing countries. Unhealthy dietary habits and sedentary lifestyle are the major risk factors for obesity in school aged children.

Recommendation;

regular intake of healthy diet, regular physical exercise and active participation in household activities should be promoted. At school level, importance of nutrition, physical activity, games, and sports should be included in school curriculum, and facilities should be provided for outdoor games. . Intervention measures focusing mainly on increasing the physical activity, decreasing consumption of energy dense foods.

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