

profile of body mass index of upper Egypt children

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Original Article

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ABSTRACT

Introduction : Underweight and heavy weight is significant signs to suspect health problem, as malnourished, diabetic, anemic patient or even patient under chemotherapy program so that awareness of such problems through society is very important.

Aim of the study : The aim of the study is to give an idea about body mass index prevalence among a culture of female and male children of Upper Egypt, visiting faculty of oral and dental medicine south valley university, Qena governorate.

Material and methods : both weight and height of children visiting our faculty of dentistry were recorded and related by special equation to obtain body mass index, and four categories of body mass index was obtained.

Results : 511 children were examined, and the body mass index was 70.7% Underweight, 21.7% normal 4.3% Overweight and 2.9% obese.

Conclusion: underweight category was the most prevalent one throughout this study, and this may lead to medical disorders and social awareness is mandated to manage this problem.

Key Words: body mass index, upper Egypt, underweight.

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INTRODUCTION

Body weight is an important vital sign to be determined during routine examination of all patients under, weight is associated with severe illness as malnutrition, anaemia, tuberculosis, and even malignant disease as leukemia, on the other hand Overweight is also associated with human healthy threatening as cardiovascular disease, diabetes mellitus, bone diseases, dental caries and even breast cancer ^[1].

To be standardized the age was related to the body height through specific equation to get body mass index where it equals body weight /squared height body mass index can be used for follow up of the obesity ^[2].

So that getting information about the prevalence of body weight through out certain community can give an idea about the general health state of this community (3)

So that this research was accomplished to obtain knowledge about body mass index distribution among a culture of upper Egypt children

MATERIAL AND METHODS

The acceptance for this research was approved by the scientific committee of faculty of medicine south valley university, From May 2021 to May 2022. the body weight and height and also the ages and sexes recorded. all children examined in Faculty of Oral and Dental Medicine South Valley University, Egypt, after taking the consents from their parents,

The height was measured where the child stand erect without shoes while the weight measured using medical scale while child has no heavy clothes

The body mass index is obtained and classified according to the who classes ^[4] as following

BMI categories

<18.5 = under weight

18.5 : 24.9 = normal weight

25 : 29.9 = over weight

30 or greater = obesity

And the all the collected information were analyzed using ORIGIN LAP SOFT WARE .

RESULTS

Table 1 Age distribution

Age group years	Group1 age≤5	Group2 5<age≤10	Group 3	Total 2
Number	71	272	168	511
Percentage	13.9%	53.2%	32.9%	100%

Table 2 showing body mass index within the groups

The grade	Group1 age≤5	Group2 5<age≤10	Group 3 10<age≤15	Total 2
Underweight	75%	85.6%	45.2%	70.7%
Normal	13%	10.6%	43.5%	21.7%
Overweight	7%	2.5%	5.9%	4.3%
Obese	3%	1.3%	5.3%	2.9%

Table 3 significance of body mass index within the groups using ANOVA(*S-significant,)

Group	mean	Standard deviation	Comparizon between groups	Mean difference	Probability
Group1	17.74	4.82	Group1and2	-1.40952	0.03363*
Group2	16.33396	3.31	Group1and3	2.11737	0.00125*
Group3	19.86084	5.02	Group2and 3	3.52689	0*

Table4 distribution of body mass index among girls and boys

Body mass index	Boys (244) 49 %	Girls(255) 51%
underweight	179 72%	189 72%
Normal	51 21%	55 21 %
Overweight	10 4%	13 5%
Obese	8 3%	6 2%

total number of the children was 511 . group1 (age≤5) represented 13.9%, group2 (5<age≤10)represented 53.2% and group3 (10<age≤15) represented 32.9%

underweight

85.6% of group2 was underweight followed by 75% of group1 and 45.3%of group 3

normal weight

10.6%of group2 was of normal weight followed by 13%of group2 while the group3has the greatest percentage of normal weight which is 43.5%

overweight

group2 has 2.5% overweight children followed by group 3 (7%) finally group1 has the greatest overweight percentage7%

obesity

group2 has the least percentage of obesity, followed by 3% in group1 then 5.3% in group3

it is to be noted that overall percentages of different weight was as following 70.7% Underweight, 21.7%normal, 4.3%overweight, 2.9% obesity

Table 5 shows that there is a significant relationship between age and BMI between the groups

as regard sex distribution

boys represented 49% and girls 51% the underweight and normal weight are 72%and 21%respectively and similar between boys and girls and heavy weight3 is 5% in girls and 4%in boys while obesity is 3% in boys and2%in girls

DISCUSSION

height and weight are considered vital signs that must be recorded during dental patient examination before surgical procedures or any restorative technique, local anaesthetic injection, or determination of drug doses, height and weight are correlated by certain equation to obtain body mass index that is considered as fat assessment meter while both severe underweight or overweight associated with medical problems [5]

throughout this study it is noted that underweight represents the 45% of children in age group more than 10 years while the normal weight children represents 43.5% and this corresponds to the study of Saleh et al [6] where this study was carried in Assiut governorate that is near to Qena on, it was on 1000 children and this study represents underweight percentage that reaches 67% in some region, also through our study the two groups below 10 years the underweight percentages reach 85% in (group2) and 75% (group2) and also this is in accordance to the study of Mahalakshmi [4]

throughout this study it is to be noted that the underweight category is less in group1 than in group 2 and this may be due to younger children of group1 stay in home long time and receive more mother care than group2 that begin to stay in schools more hours than group1

throughout this study the body mass index, and overweight prevalence increased with age, while underweight prevalence decreased with age and this matches the study of Abd alkarim et al [7] in other studies there is controversy about relation between body mass index and sex studies of both bader et al [8] and Aounallah et al [9] showed that the percentage of overweight was higher among girls compared to boys while the study of Siba et al [10]

showed that percentage of overweight was higher among boys compared to girls and these diversity between studies can be explained due to different geographic positions of the studies, different life style genetics and environmental conditions also it is to be noted that overweight and obesity increased from group 2 to group3 with increasing age and this is in accordance to the study of Saleh et al [6]

in this study the girls in group3 showed overweight more than boys and this may be due to decreased girls activity

throughout this study it was noted that the problem of underweight is still young age prevalent problem in Upper Egypt as stated by the National Nutrition Institute, 2003, [11]

also. These results go in consistence with Osman [12]. 10.1079/PHN2001286) who studied nutrition transition in Egypt and found that 16.7% of 2-6 year-old children and 7.4% of 6- 10 year-old children were underweight.

CONCLUSION

underweight category was the most prevalent one throughout this study, so that social awareness regarding nutrition for the children must be followed, also dental care for the young age children including surgery, restorative procedures, drug and anaesthetic dose must be calculated perfectly to avoid several complications

CONFLICTS OF INTEREST

There are no conflicts of interest.

REFERENCES

- 1- Ezzati, M et al. Height and body-mass index trajectories of school-aged children and adolescents from 1985 to 2019 in 200 countries and territories: a pooled analysis of 2181 population-based studies with 65 million participants, *Lancet* 2020; 396: 1511–24
- 2- Prevalence of overweight and obesity in primary school children in Port Said city Badawi, Abo Barakat N, Sherbini S, awzy H. *Egyptian Pediatric Association Gazette* (2013) 61, 31–36
- 3- Ogden, C, Carroll M Katherine M. and Flegal, K. High Body Mass Index for Age Among US Children and Adolescents, 2003-2006. *JAMA*, May 28, 2008—Vol 299, No. 20
- 4- MAHALAKSHMI S and . ABIRAM M .Body mass index profile among school children: an anthropometric study *International Journal of Community Medicine and Public Health* | 2019, Vol 6 ,Issue 9 Page 3820
- 5- Malamed S *Handbook of Local Anesthesia*, seventh edition elsevier inc.2020,chapter 10, Physical and Psychological Evaluation,page 134
- 6- Saleh, M A , Hany AM, and Gad TM Prevalence of Obesity and Nutritional Habits Among Primary School Students in Assiut City, Egypt. *The Egyptian Journal of Community Medicine* 2020 Vol. 38 No. 2
- 7- Abdelkarim O, Ammar A , Khaled Trabelsi K , and Hamdi K. et al Prevalence of Underweight and Overweight and Its Association with Physical Fitness in Egyptian Schoolchildren . *Int. J. Environ. Res. Public Health* 2020, 17, 75;
- 8- Bader, Z.; Musaiger, A.O.; Al-Roomi, K.; D'Souza, R. Overweight and obesity among adolescent in Bahrain. *Anthropol. Anz.* 2008, 66, 401–408.

9- Aounallah-Skhiri, H.; Romdhane, H.B.; Traissac, P. Nutritional status of Tunisian adolescents: Associated gender, environmental and socio-economic factors. *Public Health Nutr.* 2008, 11, 1306–1317.

10- Sibai, A.; Hwalla, M.N.; Adra, N.; Rahal, B. Prevalence and covariates of obesity in Lebanon: Findings from the first epidemiological study. *Obes. Res.* 2003, 11, 1353–1361.

11- National Nutrition Institute, (2003):Prevalence of obesity in Egypt, *Public health bulletin*; 33 (4); 895-926

12- Osman M Galal, (2002):The nutrition transition in Egypt, obesity, under nutrition and the food consumption. *Public Health Nutr* 2002 Feb;5(1A):141-8.