Prevalence of Overweight and Obesity among Secondary School Students in Gaza Strip- Palestine

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Abstract

Background

Childhood obesity is one of the most serious public health challenges of the 21st century. The effects of childhood overweight and obesity are devastating to the health and well-being of children now and throughout adulthood. The overweight and obese children are likely to stay obese into adulthood and more likely to develop non-communicable diseases (NCDs) like diabetes, cardiovascular diseases and cancer at a younger age.

***Study Aim**: The aim of the study is investigating the problem of overweight/obesity among secondary school students in Gaza Strip, Palestine.*

***Study design**: The design of this study was cross-sectional, descriptive, analytical, and was used to address the research questions.*

***Setting:** The study was conducted at six secondary schools in Gaza Strip divided evenly between males and females.*

***Method**: A structured self-administered questionnaire was distributed to the randomly selected sample from the six schools in parallel with anthropometric measurements to calculate BMI and then determine the overweight and obesity status.*

***Results**: The results showed that 25% of the study subjects were overweight/ obese; 6.9% were obese, and 18.1% were overweight. Only four factors were significant as determinants of having obesity: sex, residency, monthly income and education level of parents. More specifically, there were statistical significant differences in terms of overweight/obesity between the females (28.9%), the males (21.1%), urban area (29.5%) rural area (19.5%), poor students (30.5%) and not poor students (15.1%). In addition, students with educated parents had less obesity than those with uneducated parents.*

***Recommendation**: There is an urgent necessity to promote health education at both children and adolescent schools about the healthy diet and the importance of improving their lifestyle in terms of healthy nutritional habits and physical activity.*

Keywords: Overweight, Obesity, Health education, Gaza Strip, Palestine.

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1. Introduction

Childhood obesity is one of the most serious public health challenges of the 21st century. In 2012, about 170 million children (under18) were overweight/ obese, which is serious due to the devastating effects of childhood overweight/obesity to the health and well-being of children now and throughout adulthood. Needless to say, the overweight and obese children are likely to stay obese into adulthood and more likely to develop non-communicable diseases (NCDs) like diabetes, cardiovascular diseases and cancer at an early age. (World health organization (WHO), 2016).

WHO defines overweight as one standard deviation in BMI for age and sex, whereas obesity is defined as two standard deviations in BMI for age and sex using BMI for age Z score (WHO, 2016).

The fundamental cause of overweight and obesity is energy imbalance between calories consumed and calories expended. Recently, there has been an increased intake of energy-dense-foods that are high in fat but with little or no physical activity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization (WHO, 2021).

Obesity among children is considered as a global health problem. The percentage of the obese adolescents in the USA, for example, increased from 5% to nearly 21% in the period between 1980 and 2012 (Center of disease control (CDC), 2015). Additionally, in Europe, during the period between 2009 and 2010, one in every three children aged six to nine years was overweight or obese. Similarly, the percentages of the overweight and obesity among children aged 11 and 15 years were 33% and 23%, respectively (WHO, 2014).More specifically, a study in Greece in 2016 showed that the prevalence of overweight among the adolescents of 13 years old was 27.2%, whereas the obesity was 8.5% (Poulimeneas et al., 2016). Another study in Spain in the same year showed that the prevalence of overweight was 26.1% for males (6.2% obese) and 20.6% for females (3.7% obese) (Continente et al., 2016). As for the Arab world, in Kuwait in 2009, a cross- sectional study was conducted showed that the prevalence of overweight and obesity among secondary school adolescents was 50.5% for males and 46.5% for females (Al-Haifi et al., 2015). A similar study was conducted in Palestine in 2015 among 2000 students aged 9 -11 and 14 – 16, living in West Bank and Gaza Strip, to assess their nutritional status. The study concluded that the prevalence of overweight and obesity was 11% for males and 20% for females in both age groups.

Regarding the awareness of the healthy diet, only 49.9% of (14 -16) had enough knowledge about the healthy diet (Nasser et al., 2015). In addition, the study has provided data updates on obesity/ overweight situation for adolescents in Gaza strip – Palestine. Consequently, evidence based intervention programs will be designed and implemented at secondary schools in Gaza Strip.

It is worthwhile to mention that Palestine has strong control over communicable diseases, very strong and advanced EPI, and 100% coverage rate of immunization. However, Palestine still has the issue of non-communicable disease due to obesity and overweight, so it is important to address this problem starting from childhood to adolescence**.**

2. Objectives:

1- To investigate the prevalence of overweight/obesity among secondary school students in Gaza Strip, Palestine.

2- To examine the relationship between socio-economic factors and obesity.

3. Methodology

3.1. Study design

Cross-sectional design to investigate the prevalence of overweight and obesity amongst secondary school students in Gaza strip.

3.2. Target Population:

Secondary school students aged 15-17 years, in Gaza Strip, Palestine.

3.3. Sampling:

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3.3.1. Sample size:

The sample size was calculated using EPI info “7.1.5” software, based on a prevalence of overweight / obesity of 20 % with design effect = 2, confidence limit 5% and 95% confidence level. The minimum required sample size was 535 school children.

3.3.2. Type of sample and method of selection: -

Cluster sampling was conducted to select six secondary schools out of 105 schools (33,089 students) from three directorates in Gaza. That is, three female schools and three male schools were selected from the directorates of North Gaza, Gaza and Khanyounis. The total number of the sample of the study was 535 pupils from the three directorates.

The gender ratio was 1:1 in the three locations. Five hundred twenty-four students agreed to participate in the study, with a response rate of 97.9%.

3.4. Operational definition of overweight and obesity:

The researcher used BMI for age and sex Z scores, which are defined by WHO as follows: Overweight: BMI > +1 standard deviation, whereas obese BMI > + 2 standard deviations.

3.5. Eligibility criteria:

3.5.1. Inclusion criteria:

All students enrolled in governmental secondary school in Gaza Strip aged from 15-17 years old.

3.5.2. Exclusion criteria:

- Students with health problems that need specifically designed physical and nutritional programs.
- Athletic students.

3.6. Anthropometric measurements:

Upon the completion of the questionnaire, respondents were taken individually to a corner in the classroom that was separated by a mobile privacy screen to measure their height, weight, mid arm, waist and hip circumference, biceps and triceps skin folds thickness and calculating BMI using clinic manual protocol for Framingham study. Only the researcher and the respondents were able to view the recorded personal information.

3.6.1. Weight measurement:

Weight in kilograms was captured with a digital scale that was zeroed between respondents. The participants were asked to remove shoes and heavy clothes, then to stand in the middle of the scale platform with head erect and eyes looking straight ahead. The weight was recorded in kilograms.

3.6.2. Standing height measurement:

Height in centimeters was captured with the use of a standard physician scale. Participants were asked to remove shoes and heavy clothes and stand erect with back vertical mounted metal ruler (stadiometer). Participants were asked to let arms hang freely by the side of the trunk, palms facing the thighs; the height was recorded in centimeters.

3.6.3. Calculation of Body Mass Index:

BMI was calculated using the following equation; BMI = (weight in kg/ height in m2) then the estimated BMI was categorized according to WHO standards, Overweight: BMI > +1 standard deviation, whereas obese BMI > + 2 standard deviations.

3.7. Study area

Gaza strip (GS) is a very overcrowded place with an area of 365 $Km^{2,}$ which constitutes only 1.3% of the total area of Palestine. In 2016, the total population in GS was 2 million, concentrated mainly in the cities, small villages, and eight refugee camps that contain two-thirds of the population of GS (Palestinian Central Bureau of Statistics, PCBS, 2017). The majority of GS population is refugees (75%) and 40% of them live in the camps. In GS, the population density is one of the highest in the world; it is estimated 5,453 inhabitants / km2. (PCBS, 2019).

3.8. Ethical considerations:

An approval of the Ethics Committee of Palestinian Health Research Council (Helsinki committee) in Gaza Strip was obtained. Another approval from the Palestinian Ministry of Education was obtained, too. A detailed explanation of the purpose of the research was shared with the respondents and their parents alongside written consents. All the ethical criteria like respect for people, respect for truth, anonymity and confidentiality were ensured and maintained.

3.9. Data management

The collected data were reviewed for accuracy and completeness, coded and analyzed using Statistical Package for Social Sciences (SPSS) version 22. Clearance of data was done as well. To ensure the accuracy and completeness of all variables, frequency distribution and cross tabulation were applied to the entire data. The researcher used some statistical tests as Chi-square test for categorical data, t- test and paired t-test for comparing means of variables, One way ANOVA for multiple variables, Eta square used to calculate the effect size in addition to P-value for statistically significant was ≤ 0.5 with 95% confidence interval.

4. Results

Table 1: Summary table of the Socio- Demographic characteristic of the study population. (N =524)

Variables	Categories	Frequency	Percent	Cumulative Percent
Sex	Male	261	49.8	49.8
	Female	263	50.2	100.0
Age	Mean = 15.5 years			
Place of house	City	228	43.5	43.5
	Village	170	32.4	76.0
	Camp	126	24.0	100.0
Residency	Gaza	261	49.8	49.8
	North Gaza	94	17.9	67.7
	Khanyounis	169	32.3	100.0
Family income per NIS	less than 1830	187	35.7	35.7
	1831 - 2290	151	28.8	64.5
	2300 - 3500	111	21.2	85.7
	more than 3500	75	14.3	100.0
Fathers' education level	Not educated	16	3.1	3.1
	Basic education	97	18.5	21.6
	Secondary	140	26.7	48.3
	University	225	42.9	91.2
	High education	46	8.8	100.0
Mothers' education level	Not educated	20	3.8	3.8
	Basic education	117	22.3	26.1
	Secondary	202	38.5	64.7
	University	182	34.7	99.4
	High education	3	.6	100.0
Fathers' job	Unemployed	78	14.9	14.9
	Worker	58	11.1	26.0
	Handicraft	57	10.9	36.8
	Professional	31	5.9	42.7
	Employee	189	36.1	78.8
	Trader	60	11.5	90.3
	Farmer	43	8.2	98.5
	Others	8	1.5	100.0
Mothers' job	Housewife	431	82.3	82.3
	Employee	61	11.6	93.9
	Worker	21	4.0	97.9
	Others	11	2.1	100.0

The main findings in table (1) show that the sample reflects the natural distribution of population in Gaza Strip as the female to male ratio is 1:1.03, and it reflects the rate of students' enrollment in school, showing 98.5% for male whereas female rate is 99.3%. In term of residency, about half of the study participants (49.8%) live in Gaza governorate, which is normal as Gaza governorate is considered as the biggest governorate in Gaza Strip, followed by Khanyounis 32.3%, and the remaining 17.9% of participants were from North Gaza governorate. Regarding the level of education of fathers, the findings show that the majority of them finished their university education (46%), followed by those who finished secondary level (23%), then those with basic education. However, the lowest percent was for illiteracy, which was about 3%. These findings are consistent with the report of the Palestinian Central Bureau of Statistics (PCBS) of 2017, which reported that the illiteracy rate in Palestine was 3.3%. The researcher divided the monthly income into four categories based on PCBS classifications for a family of two adults and three children. More than 60% of the students live below the poverty line, as their families' income was less than 2300 NIS, while 26% of them live under deep poverty line, as their family's income was less than 1830 NIS, and only 14.3 % of the families income was more than 3500 NIS (PCBS, 2017).

Table 2: Anthropometric measurements of the students by sex. (N=524)

Variable	Total		Male		Female	
	N = 524		N= 261		N= 263	
	Mean	SD	Mean	SD	Mean	SD
Weight	56.5	11.7	58.0	13.5	55.0	9.4
Height	1.63	0.08	1.68	0.08	1.59	0.05
Body mass index	21.1	4.1	20.5	4.4	21.8	3.6
Waist circum.	76.2	9.2	76.0	10.4	77.4	7.7
Hip circum.	91.8	10.2	90.1	11.7	93.5	8.1
Mid arm circum.	23.8	3.1	23.6	3.3	24.0	2.9
Biceps skin fold thickness	8.3	5.3	5.6	3.1	11.1	5.5
Triceps skin fold thickness	14.0	7.1	10.3	5.6	17.6	6.5

In terms of anthropometric measurements, Table (2) shows that female measurements are higher than males except for height and weight, which were higher in favor of males.

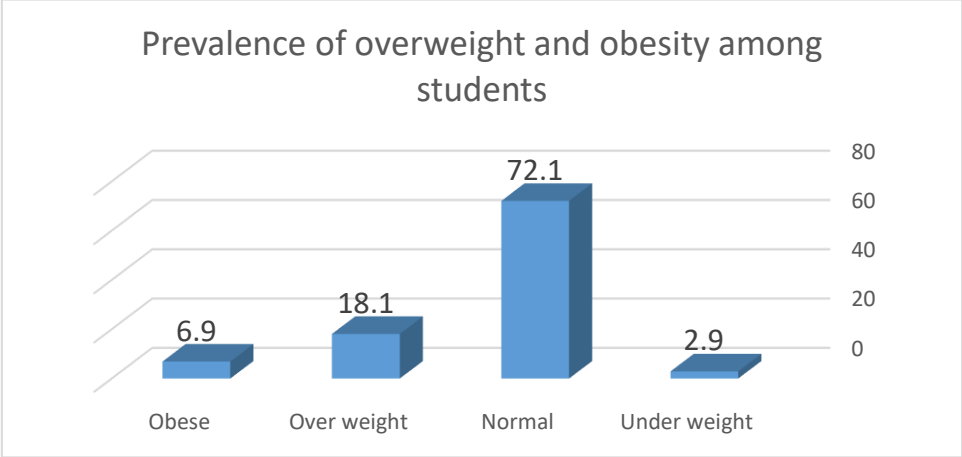

Figure 1: Prevalence of overweight and obesity among students.

Figure 1 shows the prevalence of BMI categories according to BMI for age and sex Z score defined by WHO. The results showed that more than 18% of the study respondents were overweight, and about 7% were obese. However, the majority of the respondents (72.1%) were normal, and only 2.9 of them were underweight.

Table 3: Multiple linear regression model for socioeconomic factors in relation to obesity

Independent variables	B	S.E	T	P- Value
Sex	1.328	.331	4.014	.000
Place of house	-.051	.227	-.225	.822
Residency	-.683	.205	-3.335	.001
Monthly income	-.418	.179	-2.332	.020
Education level of father	-.668	.259	-2.583	.010
Education level of mother	-1.042	.298	-3.502	.001
Job of father	.100	.093	1.070	.285
Job of mother	.284	.267	1.063	.288

$F = 14.263$, $P = 0.000$, $R^2 = 0.181$

The results revealed that out of eight studied factors, only four were significant determinants of having obesity, which are sex, residency, monthly income and education level of parents. The studied variables were accounted for 18% of the variability in relation to obesity.

Table 4: Overweight/obesity and demographic characteristics

Variables		No obesity / overweight		Obesity / over weight		X^2	P-Value
		No.	**%**	**No.**	**%**		
Sex	**Male**	206	78.9%	55	21.1%	4.777	0.039
	Female	187	71.1%	76	28.9%		
Residency	**Gaza**	184	70.5%	77	29.5%	5.876	0.05
	North Gaza	73	77.7%	21	22.3%		
	Khanyounis	136	80.5%	33	19.5%		
Poverty	**Poor**	235	69.5%	103	30.5%	15.214	0.001
	Not poor	158	84.9%	28	15.1%		
Paternal education	**Less than secondary**	73	56.6	56	43.4	54.090	0.001
	Secondary	122	69.3	54	30.7		
	More than secondary	198	90.4	21	9.6		
Maternal education	**Less than secondary**	69	53.9	59	46.1	64.248	0.001
	Secondary	123	69.9	53	30.1		
	More than secondary	201	91.4	19	8.6		

Table (4) shows that the prevalence of overweight/obesity was higher fort female students (28.9%) than the males (21.1%), (OR= 1.5, 95% CI 1.02 – 2.27). There were statistically significant differences between the males and females (P – value .039).

Regarding the residency of the students, Table (4) illustrates that the highest prevalence rate of obesity/ overweight among students was in Gaza directorate (29.5 %), followed by North Gaza directorate (22.3 %) and Khanyounis directorate (19.5 %). These differences were statistically significant with P- value (0.05).

The Chi –square test revealed the strong relationship between obesity and poverty as 30.5% of poor students were obese, whereas 15.1% of their not poor peers were obese (OR= 0.4, 95% CI .25 - .64). The relationship was strongly statistically significant (P-value .001) Table (4) also shows the strong relationship between the education level of the fathers and the overweight /obesity of the students.

That is, 43.4 % of the students with less than secondary level fathers were obese / overweight, 30.7 % of students with secondary level fathers were obese / overweight and 9.6% of students with graduate or post graduate fathers were obese/overweight. The relationship between obesity and education level of fathers was strongly statistically significant (P- value 0.001)

Chi square test was used to examine the relationship between obesity and mothers' education level, Table (4) shows that the higher the level of education the mothers have, the lower the prevalence rate of obesity will be. Only 8.6 % of the students with graduate / post graduate mothers were overweight/ obese, whereas more than 46 % of the students with low level of education mothers were overweight/ obese. The relationship was highly statistically significant, Chi square 64.248.

5. Discussion

Now, more than ever, students need schools to teach lifelong skills for healthy eating and physical activity. Young people are in the grip of an obesity epidemic. Since 1980, the rates of overweight have doubled in children and tripled in teens. (National Center for Health Statistics, 2002). Almost one in every three children weighs more than is optimal for their age and height. (American Obesity Association, 2018). Obesity has a multi-factorial and multi-level etiology with many factors such as genetic, physiological, environmental, and socioeconomic, including gender, family affluence, and education level. (Kowalkowska, 2014; Chaput 2014; Wadolowska, 2016).

The number of school-aged children and adolescents living with obesity is predicted to rise from 150 million worldwide to over 250 million by 2030 (Lobstein & Brinsden, 2019). This extraordinary increase in childhood obesity will place a large burden on healthcare systems since childhood obesity is a strong risk factor for adult obesity and many other chronic diseases, including type 2 diabetes and cardiovascular disease. (Hruby & Hu, 2015). The results of the current study showed that the prevalence of overweight and obesity was 25%: 18.1% overweight and 6.9% obese. From previous studies, we can conclude that the prevalence of overweight and obesity among adolescents has been increasing in a dramatic manner between 2010 (15 %) (Nasser, et al 2010) and 2013 (23.6%) (Elmadfa et al., 2015). When we compared between the prevalence rate of overweight and obesity among Palestine and other countries in the region and Europe, we found out that the situation in Palestine was better.

In Kuwait for example, the results of a cross- sectional study showed that the prevalence of overweight and obesity among secondary school adolescents was 50.5% in males and 46.5% in females. (Al-Haifi et al., 2015). In Europe, the prevalence of overweight and obesity for adolescents was also high. More specifically, in Greece, it was 27.2% for overweight and 8.5% for obesity. ((Poulimeneas et al., 2016). In Spain, the prevalence of overweight was 26.1% in males (6.2% obese) and 20.6% in females (3.7% obese) (Continente et al., 2016).

Our findings revealed that students with low socio-economic status were at higher risk of becoming overweight and obese. Several international and regional studies indicated that factors causing obesity were multi-factorial in nature. These factors might include genetic, behavioral, environmental, cultural, and socioeconomic factors (Lanigan, 2019). A study conducted amongst adolescents showed that students living in a neighborhood and attending a school with lower socioeconomic composition (SEC) were at higher risk of becoming overweight and obese (Niu, Hoyt & Pachucki 2019). In addition, family monthly income, mother's education and working status were among other socioeconomic status factors significantly associated with children's overweight or obesity (Okour et al., 2019). Low socioeconomic status (SES) of individuals or families usually means living in poor environments, which are short of healthy food and physical activity. Families that have a history of low SES often provide information of unhealthy behavior, poor preferences of food selection, shopping, cooking, and exercising (Lanigan, 2019).

6. Conclusion

The present study showed that the prevalence of overweight/ obesity among adolescents in Gaza Strip is on an increasing trend. Gender, parents' education status, monthly family income and residency were found to be significantly associated with overweight /obesity.

This finding is a serious concern for public health in Palestine and calls for launching and organizing prevention programs at the individual, family and community levels. More research is needed on the behavioral and biological causes of overweight and obesity, and on the prevalence among different regions and settings.

7. Recommendations

Due to the lack of specific strategies to achieve a nationally established goal of reducing overweight and obesity, the study results provide several focus areas for possible government strategies and future interventions.

1- The Ministry of Education need to pay more attention to health education at children and adolescents' schools about the healthy diet and importance of improving their life styles in terms of healthy nutritional habits and physical activity. Health education must pay more attention for girls who will be the mothers of the future who will have to improve the health and educational status of the next generation.
2- Future interventions should focus on parents by encouraging them to be good role models, get engaged in healthy dietary behaviors and practice rules that decrease unhealthy dietary behaviors among the adolescents.
3- The Ministry of Education is required to provide suitable facilities to enable the students to do physical activity, especially for girls, as there are very limited facilities for girls to do physical exercises in the community.

References:

1. Al-Haifi, AA,. AlMajed, HT., Al-Hazzaa, HM., Musaiger, AO., Arab, MA., Hasan, RA. (2015). Relative Contribution of Obesity, Sedentary Behaviors and Dietary Habits to Sleep Duration Among Kuwaiti Adolescents. Global Journal of Health Science. 17;8(1):107-17.
2. American Obesity Association. Obesity in Youth [Fact Sheet]. [cited 2018 Feb. 14] Available at: http://www.obesity.org/subs/fastfacts/obesity_youth.shtml
3. Centers for Disease Control and Prevention [Internet]. (2015).Atlanta: The Organization; [cited 2015 June 14]. CDC; [about 4 screens]. Available from: http://www.cdc.gov/healthyyouth/obesity/facts.htm
4. Chaput, J.P., Pérusse, L., Després, JP., Tremblay, A., Bouchard, C. (2014). Findings from the quebec family study on the etiology of obesity: Genetics and environmental highlights. Curr. Obes. 3:54–66. doi: 10.1007/s13679-013-0086-3.
5. Continente, X., Allué, N., Ariza, C., Sánchez-Martínez, J. (2015). Eating habits, sedentary behaviors and overweight and obesity among adolescents in Barcelona (Spain). An Pediatr (Barc). 2015;83:3-10.
6. El-Bathe youmy I, Shady I. (2009). Prevalence of obesity among adolescents (10 to 14 Years) in Kuwait. Asian-Pacific Journal of Public Health. 2009; 21 (2): 153-59.
7. Elmadfa, I., Abu Rub, A., Ben-Abdullah, K., Meyer, A.L., Ramlawi, A., Bahar, L., Rizkallah, N., Skaik, A., Zakout, Z., El-Aissawi, F. (2014). Palestinian micro-nutrient survey. Final report. UNICEF and ministry of health, Palestine.

8. Hruby, A., Hu, FB.*(2015).* The epidemiology of obesity: a big picture. *Pharmacoeconomics;*33*:*673–89.doi:10.1007/s40273-014-0243 xpmid:http://www.ncbi.nlm.nih.gov/pubmed/25471927
9. Kowalkowska J, Wadolowska L., Wuenste, J., Słowińska, M., Niedźwiedzka, E. (2014). Socioeconomic status and overweight prevalence in polish adolescents: The impact of single factors and a complex index of socioeconomic status in respect to age and sex. Iran J. Public Health. 43:913–925.
10. Lanigan, J., Louise, T. (2019). Brandreth Rachael. Childhood obesity. Medicine. (3): 190-4
11. Lobstein, T., Brinsden, H. (2019). Atlas of childhood obesity. World Obesity Federation.
12. Manyanga1, T., El-Sayed, H., Doku, D., Randall, J. (2014). The prevalence of underweight, overweight, obesity and associated risk factors among school going adolescents in seven African countries. BMC Public Health. 14:887.
13. Nasser, K., Awartani, F., Hasan, J. (2010). Nutritional status in Palestinian school children living in West Bank and Gaza Strip: a cross-sectional survey. The lancet [Internet]. [cited 2018 Jan. 11]. Available from:http://www.thelancet.com/health-in-the-occupied-palestinian-territory-2010
14. National center for health statistics. Prevalence of overweight among children and adolescents: United States, 1999-2002. Available at: www.cdc.gov/nchs/products/pubs/pubd/hestats/overwght99.htm
15. Niu, L., Hoyt, LT., Pachucki, MC. (2019). Context matters: adolescent neighborhood and school influences on young adult body mass index. J Adolesc Health. 64(3):405–10. https://doi.org/10.1016/j.jadohealth.2018.09.024.
16. Okour, A., Saadeh. R., Hijazi, M., Al Khalaileh, H., and Alfaqih, M. (2019). Socioeconomic status, perceptions and obesity among adolescents in Jordan. The pan African medical journal. 34 (143). doi: 10.11604/pamj.2019.34.148.19641
17. Palestinian National Authority". World Statesmen.org. Ben Cahoon. Archived from the original on 8 February 2014. Retrieved 8 June 2014. http://www.palestinow.com/landscape-of-palestine/
18. Palestinian Central Bureau of Statistics (PCBS) (2017) The Palestinians at the end of 2016,' The Role and Performance of Palestinian NGOs in Health, Education and Agriculture"(PDF). World Bank. December 2006. Retrieved http://www.pcbs.gov.ps/Downloads/book2362.pdf

19. Palestinian Central Bureau of Statistics (PCBS) (2019), available at https://www.pcbs.gov.ps/postar.aspx?lang=ar&ItemID=3502
20. Poulimeneas, D., Dimitrakopoulos, M., Kotsias, E., Gerothanasi, D., Kyranas, E., Tsigga, M. (2016). Regional differences in the prevalence of underweight, overweight and obesity among 13-year-old adolescents in Greece. International Journal of Pediatrics and Adolescent Medicine 4(12) 1-9.
21. Wadolowska, L., & Kowalkowska J. (2016). Associations between physical activity patterns and dietary patterns in a representative sample of Polish girls aged 13–21 years: A cross-sectional study (GEBaHealth Project) BMC Public Health.16:698. doi: 10.1186/s12889-016-3367.
22. World Health Organization [Internet]. Geneva: The Organization; c2016 [cited 2015 Feb. 11]. WHO; [about 5 screens]. Available from:http://www.who.int/mediacentre/factsheets/fs311/en/
23. World Health Organization [Internet]. Geneva: The Organization; c2016 [cited 2015 July 4].WHO;[about3screens].Available from:http://www.who.int/dietphysicalactivity/childhood/approaches/en/
24. World Health Organization European Food and Nutrition Action Plan 2015–2020, Regional committee for Europe 64th session. [(accessed on 28 July 2018)];2014 Copenhagen, Denmark. Available: www.euro.who.int/__data/assets/pdf_file/0008/253727/64wd14e_FoodNutAP_140426.pdf
25. World Health Organization [Internet]. Geneva: Obesity and overweight. The Organization; c2021 [cited 2021Dec. 4]. WHO; [about 3 screens]. Available: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

معدلات انتشار زيادة الوزن و السمنة في أوساط طلبة المرحلة الثانوية في قطاع غزة – فلسطين

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ملخص

خلفية الدراسة: *تعد زيادة الوزن، أو السمنة في أوساط المراهقين، واحدة من المشاكل الصحية الخطيرة، التي تهدد النظام الصحي العالمي، بعد السيطرة على الكثير من الأمراض السارية، من خلال تطوير التطعيمات، وارتفاع نسبة التغطية العالمية، وأصبحت الأمراض غير المعدية هي الخطر الداهم، خصوصا مع ارتفاع معدلات الإصابة بأمراض السكري وارتفاع ضغط الدم وأمراض القلب، وتعد من أهم مسببات الوفاة على مستوى العالم.*

أهداف الدراسة: *هدفت هذه الدراسة إلى التعرف إلى معدلات زيادة الوزن والسمنة، وارتباطها ببعض المتغيرات بين المراهقين، طلبة المرحلة الثانوية في قطاع غزة – فلسطين*

تصميم الدراسة: *تم استخدام تصميم هذه الدراسة الوصفي التحليلي، لمعالجة أسئلة البحث.*

مكان الدراسة: *أجريت الدراسة في 6 مدارس ثانوية حكومية، في قطاع غزة، ثلاث منها للبنين، وثلاث للبنات.*

طريقة الدراسة: *تم جمع البيانات باستخدام استبانة، تم تصميمها لهذا الغرض، وقد تم توزيعها على عينة الدراسة، البالغ عددهم 535 طالبا وطالبة، في المدارس الست، وبالتوازي مع تعبئة الاستبانة، تم عمل قياسات لأطوال الطلبة، وأوزانهم، وبعد ذلك حساب مؤشر كتلة الجسم، والذي بموجبه تم تحديد الطلبة الذين يعانون من زيادة وزن أو سمنة، والذين هم ضمن المعدل الطبيعي.*

النتائج: *تشير نتائج الدراسة إلى أن 25% من الطلبة يعانون من زيادة الوزن والسمنة، بواقع 6.9% سمنة، و18.1% زيادة وزن، ووجدت الدراسة أنّ هناك علاقة ذات دلالة إحصائية حول ارتباط السمنة بعدد من العوامل، منها الجنس، ومكان السكن، ومستوى تعليم الأبوين، وكذلك مستوى دخل الأسرة.*

التوصيات: *ضرورة تعزيز التثقيف والتعزيز الصحي، وحث الطلبة على تبني نمط حياة صحي متمثل في الأكل الصحي، وممارسة الرياضة، والابتعاد عن الحياة الخاملة، وكذلك حث وزارة التربية والتعليم على تبني برامج، تطبق على مستوى المدارس، خصوصا مدارس الإناث، تهدف إلى تبني نمط الحياة الصحي، الذي سيؤدي ـ بدوره ـ إلى تقليل نسبة السمنة في أوساط الطلبة.*

الكلمات الدالة: زيادة الوزن، السمنة، التثقيف الصحي، قطاع غزة، فلسطين.