The Difference in Health Behaviors of High School Female Students According to Their Socioeconomic Status

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خلاصة

الخلفيـة والأهداف: تتداخل السلوكيات الصحية للأفراد مع البيئات الاجتماعية وتتأثر بالروابط الاجتماعية. تهدف هذه الدراسة إلى التعرف على الفروق في السلوكيات الصحية لدى طالبات المرحلة الثانوية باختلاف وضعهن الاجتماعي والاقتصاد .

المنهجية: تم استخدام التصميم الارتباطي الوصفي لتوجيه هذه الدراسة التي شملت عينة عشوائية بسيطة مكونة من 390 طالبة من طالبات المدارس الثانوية اللاتي تم اختيارهن من ثانويات البنات في مدينة البصرة. تتضمن أداة الدراسة مؤشر كتلة الجسم للبيانات الاجتماعية والديموغرافية للمشاركين، ومقياس المحفزات والعوائق أمام السلوكيات الصحية. وتم تحليل البيانات باستخدام الرزمة الإحصائية للعلوم الاجتماعية.

النتائج: أظهرت نتائج الدراسة وجود فروق ذات دلالة إحصائية في اختلاف السلوكيات الصحية بين الصفوف الدراسية .

الاستنتاجات : استنتج الباحثون أنه كلما كان العمر أصغر، كلما زادت العوائق التي تحول دون تناول وجبة إفطار صحي .

الكلمات المفتاحية: السلوكيات الصحية، طالبات المرحلة الثانوية، الحالة الاجتماعية والاقتصادية

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Abstract

Background and Objectives: Health behaviors of individuals are intertwined with social environments and influenced by social connections. this study aims to investigate the differences in health behaviors of high school female students according to their socioeconomic status

Methodology: A descriptive correlational design was used to guide this study which included a simple random sample of 390 high school female students who were recruited from female high schools in Al-Basra City. The study instrument includes participants' sociodemographic data body mass index, Motivators and Barriers to Health Behaviors scale. The data were analyzed by using statistical package for the social sciences.

Results: The study results display that there is a statistically significant difference in health behaviors among grade groups.

Conclusions: The researchers conclude that the younger the age, the greater the barriers to a healthy breakfast, the greater the motivators to consume it. Students whose fathers hold master's degree enjoy healthier behavior in terms of healthy drinks.

Key words: *Health Behaviors, High School Female Students, Socioeconomic Status*

Introduction

Healthy behaviors of high school students aim at improving health, protecting and enhancing physical, cognitive, mental and social wealth of the individual to the utmost degree. Overweight and obesity are responsible for 5% of global mortality, levels of physical inactivity are rising in many countries with major implications for the general health of people worldwide and for the prevalence of non-communicable diseases (NCDs). [(1)] Health is a process which can be changed sophistically and dynamically. Indeed, health can be affected by person's lifestyle. As a result; stated that to maintain health, individuals should practice health promoting lifestyle behaviors. [(2)] Adolescence is one of the most dynamic stages of a human development. It is accompanied by dramatic physical, cognitive, social and emotional changes that present both opportunities and changes for them, their families and their communities. [(3)] Health behaviors are overt behavioral patterns, actions or habits that associated with the maintenance of health, its restoration, and improvement. [(4)] Childhood and adolescent obesity pose a significant public health concern worldwide, displaying a rising trend in low- and middle-income nations (LMICs) and a substantial prevalence in numerous

high-income countries. [5] A mere 23.2% of high school students in the United States engaged in at least 60 minutes of physical activity on a daily basis. This statistic highlights the alarming reality that less than one quarter of American high school students are meeting the recommended level of physical activity (Adolescent and School Health, 2020). A study that was conducted in Basra City, revealed that 22.7% of the children were classified as overweight, while 7.7% were categorized as obese. Additionally, it was observed that 5.9% of the children were identified as underweight. A child's excessive weight can be attributed to various factors. According to research, approximately 29.9% of the weight gain can be linked to a lack of physical exercise. Additionally, spending excessive time watching TV and playing computer games accounts for 30.9% of the weight issue. Furthermore, the use of mobile devices by children contributes to around 32.7% of their weight problem. Surprisingly, the highest percentage, 51.9%, is associated with children utilizing their parents' smartphones. These findings highlight the significant impact of sedentary behaviors and technology usage on a child's weight. Obesity rates in children and adolescents have nearly doubled in the last 20 years. In the US, 31.8% of children are overweight or obese at the moment. [6] An increasing diet rich in fruits and vegetables, maintaining normal body weight, ceasing smoking, maintaining regular follow up to keep blood pressure and diabetes mellitus within control. [7] Unhealthy eating habits during childhood may interfere with optimal growth and development while setting the stage for poor eating habits during adolescence and adulthood. [8] More than 30% of children and youth aged 9–19 years are over -weight or obese, and rates continue to increase. [9] Global reports indicate that physical inactivity is continuous increasing. The prevalence of physical inactivity is estimated at 21.4% worldwide. [10]

A healthy diet is beneficial for adolescents in reducing the risk of malnutrition in all its forms and protecting against many non-communicable diseases, such as obesity, diabetes, cardiovascular disease, and certain types of cancer. [11] Obesity is one of the most important global health problems causing serious health risks and early death in human. [12] The behavior of individuals regarding healthy lifestyle choices is most probably linked to their health beliefs, including their perceptions of susceptibility, severity, benefits and barriers. [13]

Methodology

A descriptive correlational design was used to guide this study, which was conducted for the period from December 3rd, 2023, to June 30st, 2024. The study included a simple random sample of high school female students who were recruited from female high schools in Al-Basra City. The randomization

procedure involved writing the names of all female high schools (N = 7) on identical pieces of paper and folding them in the same way. These papers were put into a container and stirred well. A colleague started drawing one piece and restir these pieces alternatively. The researchers selected five out of the seven schools which constitutes 71.4% of the total population. The sample size was calculated using G*Power software version 3.1.9.2 Based on a medium effect size (0.25), a power of 0.95, an alpha error probability of 0.05, and 10 groups, the total sample size would be 390.

Measures

The study instrument includes participants' sociodemographic data of age, fathers' level of education, mother's education, household's occupation, and family's monthly income. It also includes body mass index (BMI) which is calculated by dividing the body weight (kilogram) by height (centimeter). Uniscale was used to measure weight.

Study Instrument

1. **Family's Socioeconomic Status Scale**

The Family's Socioeconomic Status Scale is used to measure family socioeconomic status which is an adopted version of modified Kuppuswamy scale. [14] The Kuppuswamy scale, created in 1976, is a composite score that considers the education and occupation of the Family Head, as well as the monthly income of the family.

2. **Motivators and Barriers to Health Behaviors**

The Motivators of and Barriers to Health-Smart Behaviors Inventory (MB-HSBI). [15] measures self-reported motivators of and barriers to health-promoting behaviors (called health-smart behaviors).

The MB-HPBI encompasses:

- the Healthy Breakfast-Motivators which includes (14 items).
- The Healthy Breakfast-Barriers includes (8 items).
- The Healthy Foods and Snacks-Motivators includes (20 items).
- The Healthy Foods and Snacks-Barrier's include (15 items).
- The Healthy Drinks-Motivators consists of (16 items)
- The Healthy Drinks–Barrier's includes (13 items).
- The Physical Activity–Motivators includes (22 items).
- The Physical Activity–Barriers includes (19 items).

Ethical Considerations

The current study was approved by the ethics committee at the College of Nursing, University of Baghdad. The researchers assured participants that their participation in the current study is voluntary, and they can withdraw at any time they want to, the data obtained from this study will be securely maintained and safeguarded throughout study phases, publication, and after publication. Informed Consent was obtained from the participants.

Results

Table 1: Participants' sociodemographic characteristics (N = 390)

Variable	Frequency	Percent
Age (Years): Mean (SD): 17.09 ± 1.42		
15-16	154	39.5
17-18	167	42.8
19-20	69	17.9
Grade		*
Fourth	130	33.3
Fifth	130	33.3
Sixth	130	33.3
Fathers' level of education		
Unable to read and write	20	5.1
Read and write	25	6.4
Elementary school	104	26.7
Middle school	106	27.2
High school	43	11.0
Diploma	50	12.8

Bachelor's degree	33	8.5
Postgraduate diploma	1	.3
Master's degree	8	2.1
Mother's Education		
Unable to read and write	40	10.3
Read and write	19	4.9
Elementary school	190	48.7
Middle school	85	21.8
High school	32	8.2
Diploma	15	3.8
Bachelor's degree	9	2.3

Continued….

Variable	**Frequency**	**Percent**
Household's Occupation		
Does not work	68	17.4
Unskilled worker	47	12.1
Semi-skilled worker	49	12.6
Skilled worker	55	14.1
Clerical	33	8.5
Semi-professional	78	20.0
Professional	60	15.4
Family's Monthly Income (Iraqi Dinar)		
< 300.000	126	32.3

300.000-600.000	95	24.4
601.000-900.000	58	14.9
901.000-1.200.000	43	11.0
1.201.000-1.500.000	42	10.8
1.501.000 or more	26	6.7
Socioeconomic Class		
Lower Middle Class	190	48.7
Middle Class	169	43.3
Upper Middle Class	31	7.9

The mean age is 17.09 ± 1.42; more than two-fifths age 17-18-years (*n = 167*; 42.8%), followed by those who age 15-16-years (*n = 154*; 39.5%), and those who age 19-20-years (*n = 69*; 17.9%). Participants are equally distributed in terms of grade (*n = 130*; 33.3%) for each grade.

Concerning father's level of education, more than a quarter are middle school graduates (*n = 106*; 27.2%).

With respect to household's occupation, a fifth are semi-professionals (*n = 78*; 20.0%).

Concerning socioeconomic class, less than a half are of lower middle class (*n = 190;* 48.7%).

Table 2 : Difference in health behaviors among father's level of education groups

Ranks				Kruskal-Wallis H	df	Asymp. Sig.
	Father's Education	N	Mean Rank			
Healthy Breakfast-	Unable to read and write	20	213.03	8.628	8	.375

Motivators	Read and write	25	182.92			
	Elementary school	104	190.46			
	Middle school	106	198.93			
	High school	43	201.17			
	Diploma	50	181.89			
	Bachelor's degree	33	228.36			
	Postgraduate diploma	1	9.00			
	Master's degree	8	153.31			
	Total	390				
Healthy Breakfast Barriers	Unable to read and write	20	201.03	7.780	8	.455
	Read and write	25	176.74			
	Elementary school	104	191.45			
	Middle school	106	202.32			
	High school	43	200.44			
	Diploma	50	218.07			
	Bachelor's degree	33	169.47			
	Postgraduate diploma	1	39.50			
	Master's degree	8	161.88			
	Total	390				
Healthy Foods and Snacks motivators	Unable to read and write	20	203.78	10.212	8	.250
	Read and write	25	156.32			
	Elementary school	104	205.00			

	Middle school	106	186.14			
	High school	43	194.13			
	Diploma	50	193.97			
	Bachelor's degree	33	229.23			
	Postgraduate diploma	1	13.00			
	Master's degree	8	198.44			
	Total	390				
Healthy Foods and Snacks Barriers	Unable to read and write	20	194.13	11.250	8	.188
	Read and write	25	188.48			
	Elementary school	104	212.48			
	Middle school	106	193.07			
	High school	43	212.86			
	Diploma	50	183.89			
	Bachelor's degree	33	175.14			
	Postgraduate diploma	1	31.50			
	Master's degree	8	116.06			
	Total	390				
Healthy Drinks Motivators	Unable to read and write	20	194.55	6.512	8	.590
	Read and write	25	198.04			
	Elementary school	104	207.24			
	Middle school	106	186.75			
	High school	43	180.03			

	Diploma	50	193.47			
	Bachelor's degree	33	206.95			
	Postgraduate diploma	1	1.50			
	Master's degree	8	226.13			
	Total	390				
Healthy Drinks Barriers	Unable to read and write	20	204.65	16.117	8	.041
	Read and write	25	181.16			
	Elementary school	104	216.00			
	Middle school	106	197.81			
	High school	43	193.98			
	Diploma	50	200.78			
	Bachelor's degree	33	139.12			
	Postgraduate diploma	1	22.00			
	Master's degree	8	149.81			
	Total	390				
Physical Activity Motivators	Unable to read and write	20	241.55	9.038	8	.339
	Read and write	25	193.66			
	Elementary school	104	205.89			
	Middle school	106	182.19			
	High school	43	188.21			
	Diploma	50	191.75			
	Bachelor's degree	33	191.48			

	Postgraduate diploma	1	22.00			
	Master's degree	8	228.25			
	Total	390				

The study results exhibit that there is a statistically significant difference in healthy drinks barriers among father's level of education groups (p-value = .041).

Table 3 : Difference in health behaviors among mother's level of education groups

Ranks				Kruskal-Wallis H	Df	Asymp. Sig.
	Mother Education	N	Mean Rank			
Healthy Breakfast-Motivators	Unable to read and write	40	190.91	8.027	6	.236
	Read and write	19	196.58			
	Elementary school	190	192.40			
	Middle school	85	210.90			
	High school	32	160.39			
	Diploma	15	193.57			
	Bachelor's degree	9	261.61			
	Total	390				
Healthy Breakfast Barriers	Unable to read and write	40	217.13	8.682	6	.192
	Read and write	19	153.37			
	Elementary school	190	201.58			
	Middle school	85	188.79			

	High school	32	206.73			
	Diploma	15	153.93			
	Bachelor's degree	9	152.72			
	Total	390				
Healthy Foods and Snacks motivators	Unable to read and write	40	211.44	10.186	6	.117
	Read and write	19	150.32			
	Elementary school	190	203.57			
	Middle school	85	188.24			
	High school	32	157.08			
	Diploma	15	207.50			
	Bachelor's degree	9	234.94			
	Total	390				
Healthy Foods and Snacks Barriers	Unable to read and write	40	218.03	7.509	6	.276
	Read and write	19	188.00			
	Elementary school	190	202.65			
	Middle school	85	177.17			
	High school	32	202.41			
	Diploma	15	177.70			
	Bachelor's degree	9	138.44			
	Total	390				
Healthy Drinks Motivators	Unable to read and write	40	208.79	18.329	6	.005
	Read and write	19	183.58			

	Elementary school	190	203.98			
	Middle school	85	179.06			
	High school	32	157.02			
	Diploma	15	171.00			
	Bachelor's degree	9	315.56			
	Total	390				
Healthy Drinks Barriers	Unable to read and write	40	243.76	15.560	6	.016
	Read and write	19	179.50			
	Elementary school	190	200.01			
	Middle school	85	187.02			
	High school	32	181.14			
	Diploma	15	158.37			
	Bachelor's degree	9	112.56			
	Total	390				
Physical Activity Motivators	Unable to read and write	40	222.23	7.670	6	.263
	Read and write	19	155.45			
	Elementary school	190	195.82			
	Middle school	85	198.34			
	High school	32	186.00			
	Diploma	15	155.03			
	Bachelor's degree	9	229.06			
	Total	390				

Physical Activity Barriers	Unable to read and write	40	225.45	6.560	6	.363
	Read and write	19	167.82			
	Elementary school	190	195.80			
	Middle school	85	195.88			
	High school	32	197.67			
	Diploma	15	151.07			
	Bachelor's degree	9	177.17			
	Total	390				
Health-Smart Behaviors	Unable to read and write	40	226.33	10.274	6	.114
	Read and write	19	163.45			
	Elementary school	190	202.92			
	Middle school	85	189.36			
	High school	32	164.05			
	Diploma	15	153.80			
	Bachelor's degree	9	208.89			
	Total	390				

The study results display that there are statistically significant differences in healthy drinks motivators and healthy drinks barriers among mother's level of education groups (p-value = .005, .016) respectively.

Table 4: Differences in health-smart behaviors among socioeconomic class groups

Ranks				Kruskal-Wallis H	Df	Asymp. Sig.
	SE Class	N	Mean Rank			

Healthy Breakfast-Motivators	Lower Middle Class	190	183.96	7.446	2	.024
	Middle Class	169	212.88			
	Upper Middle Class	31	171.44			
	Total	390				
Healthy Breakfast Barriers	Lower Middle Class	190	192.01	.642	2	.726
	Middle Class	169	200.63			
	Upper Middle Class	31	188.90			
	Total	390				
Healthy Foods and Snacks motivators	Lower Middle Class	190	191.71	.520	2	.771
	Middle Class	169	200.18			
	Upper Middle Class	31	193.19			
	Total	390				
Healthy Foods and Snacks Barriers	Lower Middle Class	190	202.21	2.114	2	.348
	Middle Class	169	186.08			
	Upper Middle Class	31	205.76			
	Total	390				
Healthy Drinks Motivators	Lower Middle Class	190	197.86	.163	2	.922
	Middle Class	169	193.29			

	Upper Middle Class	31	193.10			
	Total	390				
Healthy Drinks Barriers	Lower Middle Class	190	205.67	3.070	2	.215
	Middle Class	169	185.09			
	Upper Middle Class	31	189.97			
	Total	390				
Physical Activity Motivators	Lower Middle Class	190	201.11	1.641	2	.440
	Middle Class	169	193.07			
	Upper Middle Class	31	174.35			
	Total	390				
Physical Activity Barriers	Lower Middle Class	190	206.03	4.138	2	.126
	Middle Class	169	188.74			
	Upper Middle Class	31	167.82			
	Total	390				
Health-Smart Behaviors	Lower Middle Class	190	201.89	1.715	2	.424
	Middle Class	169	191.89			
	Upper Middle Class	31	175.97			
	Total	390				

The study results display that there is a statistically significant difference in difference in health behaviors among grade groups (p-value = .024).

The study results reveal that there is no statistically significant difference in health behaviors among grade group.

The study results reveal that there is no statistically significant difference in health behaviors among BMI groups.

Discussion

The study results exhibited that there was a statistically significant difference in healthy drinks barriers among father's level of education groups. The Kruskal-Wallis Test exhibited that students whose fathers hold master's degree enjoy healthier behavior in terms of healthy drinks. This finding could be explained as fathers who hold master's degree are cognizant of the value of healthy drinks and they could convince their children to consume healthy drinks.

The study results display that there was a statistically significant differences in healthy drinks motivators among mother's level of education groups. The Kruskal-Wallis Test exhibited that students whose mothers hold bachelor's degree enjoy healthier lifestyle in terms of healthy drinks. This finding could be explained as mothers who hold bachelor's degree could be more aware of the value of healthy drinks and could motivate their children to consume these drinks rather than unhealthy ones.

The study results displayed that there was a statistically significant differences in healthy drinks barriers among mother's level of education groups. The Kruskal-Wallis Test displayed those students whose mothers are illiterate face greater barriers to consume healthy. This finding could be explained mothers who are illiterate lack the knowledge about the value of healthy drinks and could not enable their children to overcome these barriers. A number of studies have demonstrated that children are more affected by the healthy and active behaviors modeled by their mothers than by those modeled by their fathers. [16,17] The educational level of mothers has been correlated with the cognitive growth of children. [18] Particularly, girls' health behaviors tend to mirror those of their mothers due to various factors. Firstly, girls often consume the food that their mothers prepare for them. [19] Additionally, at a young age, girls are more inclined to adopt their parents' eating habits. [20] Ultimately, children with physically active mothers are more likely to engage in physical activities themselves compared to those with inactive mothers. [21]

Conclusions

The younger the age, the greater the barriers to a healthy breakfast. The greater the value of a healthy breakfast, the greater the motivators to consume it. Students whose fathers hold master's degree enjoy healthier behavior in terms of healthy drinks.

The need for community health nurses to initiate health education activities for younger students with the goal of overcoming the barriers to a healthy breakfast they encounter, consolidating family cohesion which in turn boosts the motivators to consume healthy foods and snacks, healthy drinks, practice physical activity, and healthier overall health behavior. There is a pressing need to raise mothers' level of education that can create sound family health climate which in turn enables children to enjoy healthier lifestyle beliefs and healthier behavior.

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