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Sociodemographic factors associated with fruit and vegetable consumption among adolescents in urban Saudi Arabia

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Abstract: Healthy eating practices and higher consumption of fruits and vegetables during childhood and adolescence are known to reduce the future risk of developing several health problems. This cross-sectional study investigated the association between sociodemographic factors and fruit and vegetable consumption scores among 104 adolescents aged 13–18 years in Jeddah, Saudi Arabia. Sociodemographic factors included age, gender, school type (private or public), body mass index of the adolescents and their parents, parents' education level (high school or below, bachelor's degree, or postgraduate), parents' occupation (employed or unemployed), number of family members, and family income. Daily intake of fruits and vegetables was assessed using a short food frequency questionnaire, which included 18 and 22 questions on the frequency of consumption of different fruits and vegetables, respectively. Adolescents attending public school ($p = 0.02$) and those with large family size ($p = 0.006$) had significantly higher fruit intake score. Father's obesity status tended to be positively related to vegetable consumption score. These significant factors were more observed among adolescents with normal body mass index ($p < 0.05$). Additionally, higher family income was significantly associated with higher vegetable consumption scores ($p =0.02$) only among adolescents with normal body mass index. Adolescents whose fathers had obesity consumed more vegetables (1.58±0.94) than those whose fathers' body mass index was normal (1.16±0.81). Family was the main contributor to the quantity of fruits and vegetables consumed among urban Saudi adolescents.

Keywords: adolescents; family; fruit; obesity; vegetables.

1. Introduction

Ensuring good health in children and adolescents and boosting their well-being is one of the Global Sustainable Development Goals (SDGs) of the 2030 agenda [1], and the Saudi Arabia 2030 vision aims to achieve these SDGs [2]. Healthy dietary patterns among children and adolescents provide them with nutrients required to meet the demands of growth and development, health, and well-being, which are key elements for achieving SDGs [3,4]. Additionally, eating practices and type of food consumed during childhood and adolescence affect the future risk of developing several health problems, such as nutrient deficiencies and non-communicable diseases (NCDs) [4]. The trendy diet among adolescents is characterized by high consumption of energy-dense and nutrient-deficient food, including sweet and salty items, sugar-sweetened drinks, and fast foods, and low intake of fruits and vegetables (F&V) [5].

Evidence-based reports have confirmed increased consumption of F&V resulting in optimal health and reduced risk of NCDs [6]. Results from a meta-analysis demonstrated that each daily serving increase of F&V is associated with reduced risk of all-cause mortality, with reduced relative risk ratios of 0.94 and 0.96 for F&V, respectively [6]. The United States Department of Agriculture recommends that boys aged 14 to 18 years consume at least 2 cups of fruit and 3 cups

of vegetables and girls consume at least 1.5 cups of fruit and 2.5 cups of vegetables per day [7]. F&V have potential protective roles in preventing NCDs because they are a good source of vitamins, minerals, antioxidants, and phytochemicals; are high in dietary fiber; and low in energy density, especially vegetables [8]. Consuming enough F&V is important, especially during childhood and adolescence; it contributes to decreasing the burden of NCDs in later life [3]. Children and adolescents in most Western countries [9] and Saudi Arabia [10, 11] consume inadequate and less than daily recommended amounts of F&V. Data from the US National survey revealed that few adolescents consume the daily recommended amount of fruits, while only 1% reported consuming the daily recommended amount of vegetables [6]. A cross-sectional study conducted in the three biggest Saudi cities showed that only 12.8% and 22.8% of adolescents consumed F&V daily, respectively [10]. A recent study showed that the proportions of adolescents from Qassim region in Saudi Arabia who reported daily consumption of F&V were 28.6% and 35.9%, respectively [11]. However, these amounts may not meet the daily dietary recommended levels.

Thus, it is important to establish a healthy diet high in F&V in the early stage of life. Moreover, adapted healthy dietary pattern during childhood and adolescence will probably be maintained in later life [12]. Moderate increase in F&V intake has been achieved through school intervention [12]. However, involving parents and home environment is essential in improving F&V intake among children and adolescents [12]. Thus, developing an effective strategy or approach to promote F&V consumption among children and adolescents needs consideration of factors influencing intake in this age group [12].

Ecological studies have shown that personal, social, environmental, and physical factors affect eating behaviors including F&V intake [13, 14]. Socioeconomic status is associated with F&V intake among adolescents; those from low and middle socioeconomic backgrounds reported no daily consumption of F&V [15]. The age of adolescents and type of school have also been associated with F&V intakes; older adolescents (aged 15–19 years) and those from private schools had a lower intake of F&V than younger adolescents and the ones from public schools [16]. Previous studies investigating factors associated with F&V consumption among adolescents demonstrated that the level of education, household income, lack of awareness of the importance of F&V consumption, unavailability of F&V in the household, and undernutrition (body mass index [BMI] < 18.5) were significantly related to insufficient intake of F&V [17]. In the United States, a longer lunch period and better fruit accessibility, in addition to establishing a salad bar and involving students in foodservice decisions, were associated with increased consumption of F&V among adolescents [18]. Additionally, sociodemographic and economic factors may contribute to obesity risk among adolescents, which have been shown to influence healthy food consumption, including F&V intake [14, 18].

There are limited published studies in Saudi Arabia investigating factors associated with F&V consumption among adolescents. A study conducted among university students found that those living with their families, planning a daily menu diet, acquainted with the World Health Organization's recommendations regarding F&V consumption, and practicing regular exercise were significantly associated with moderate or high F&V consumption [19]. A recent study conducted among adolescents from Qassim Region in Saudi Arabia showed that older adolescents had lower daily fruit intake, and boys had lower vegetable daily intake than girls [11]. Thus, the current study aimed to determine the correlation between sociodemographic factors and F&V consumption scores among adolescents aged 13–18 years in Jeddah. We hypothesized that sociodemographic factors would be significantly associated with F&V intakes among adolescents, and overweight/obesity among adolescents or their parents would be significantly associated with low F&V intakes.

2. Materials and Methods

2.1 Study participants and design

The adolescents who participated in this cross-sectional analysis were recruited from Jeddah, Saudi Arabia, between February and March 2021. An invitation explaining the study was sent to members of the Food and Nutrition Department at King Abdulaziz University via e-mails to the parents of the adolescents. Figure 1 shows the flowchart of sample selection and instrument application. Boys and girls aged 13–18 years who were apparently healthy based on parents' reports were eligible to participate in the study. Children below 13 years or adolescents above 18 years and those whose parents refused to sign a consent were excluded. The sample size was 104 adolescents. The study was approved by the Unite of Biomedical Ethics Research Committee of King Abdulaziz University (reference No. 101-21), on February 15, 2021. All adolescents completed consent forms, and the parents/guardians provided written consent. The consent form that contains all information about study, was sent to one of parents/guardians via WhatsApp to sign it before adolescents' participation in the study. An interview was conducted with adolescents and their parents via video calls to explain the study, and then a questionnaire was sent to the participants' e-mails. With help from their parents, the adolescents were asked to complete a self-administered online questionnaire hosted on Google forms.

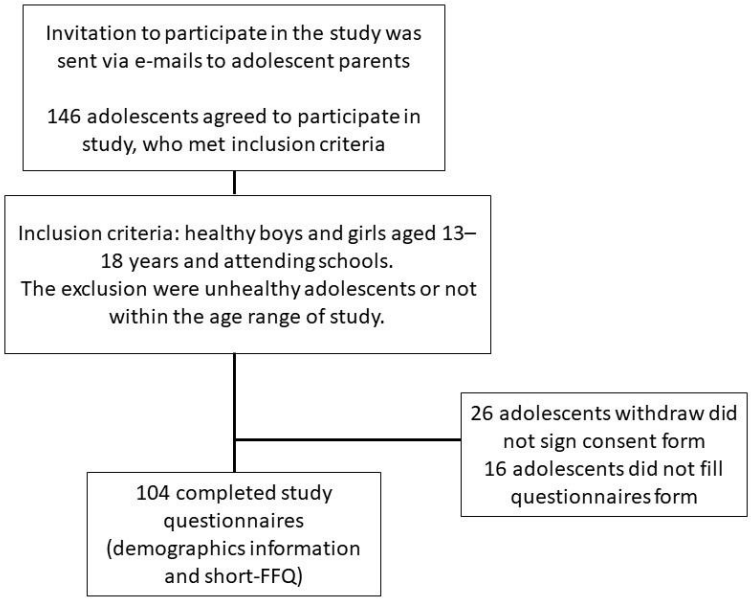

Figure 1. Flow chart of the sample selection and instrument application.

2.2 Questionnaires

The questionnaire consisted of two sections. The first section focused on sociodemographic characteristics, including age, gender, school type (private or public), self-reported weight and height of the adolescents and their parents, parents' education level (high school or below, bachelor's degree, or postgraduate), parents' occupation status (employed or unemployed), family size (defined based on the number of members as: small, 1–3; medium, 4–6; and large, 7–13), and family income (Saudi riyal [SAR]). BMI was calculated as the weight in kilograms divided by the square of the height in meters (kg/m^2) for parents. Adolescent BMI was determined using the Saudi growth chart (BMI for age). Adolescents between the 15th and 85th percentile were considered

normal, those between the 85th and 95th percentile were considered overweight, and those above the 95th percentile were considered to have obesity [20].

2.3 Assessment of fruit and vegetable consumption

The second part of the survey questionnaire was a short food frequency questionnaire (FFQ) used to measure F&V consumption among adolescents. A valid and reliable FFQ was adapted from a previously published study, with some modifications to the items for suitability for Saudi adolescents [21, 22]. For example, Jew's mallow (Arabic: mulukhiyah) was added to vegetable items as it is commonly consumed among Saudi Arabians. Among berry fruits, we only asked about strawberries, as others are considered expensive and not commonly consumed. The responses for each F&V question were recorded as a 7-grade scale (never, 1–3 times a month, 1 or 2 times a week, 3 or 4 times a week, 5 or 6 times a week, 1 time a day, or 2 or more times a day). The response scores range from 0 to 7, with "never" assigned a value of 0 and "2 or more times per day" assigned a value of 7. The FFQ included 22 items on vegetable consumption and 18 items on fruit consumption. The sum of single-item scores was divided by the number of items (22 for vegetable score and 18 for fruit score) to calculate scores for F&V consumption.

2.4 Statistical analyses

Data were analyzed using IBM SPSS Statistics version 27 (IBM Corp., Armonk, NY, USA). Univariate regression analysis was performed to examine associations of sociodemographic and obesity factors with F&V after adjusting for covariates. The following covariates were included in the adjusted regression models: age, gender, adolescents and parents' BMI, parents' education, and family income. Statistical significance was set at $p<0.05$.

3. Results

The sample size was 104 adolescents; 23.1% were boys, with a mean age of 15.13±1.63 years; 75% attended public schools, 17.3% were overweight or obese (Table 1). The mean F&V scores for 104 adolescents were 1.32±0.87 and 1.47±0.96, respectively, indicating a consumption frequency of once monthly. Table 2 shows the variation between sociodemographic data and F&V scores among the adolescents in this study. Girls showed slightly higher fruit scores (1.39±0.91) than boys (1.13±0.73), while boys had higher vegetable scores (1.56±0.98) than girls (1.45±0.96), although the differences based on gender was not statistically significant. Adolescents with fathers holding bachelor's degrees ($p=0.98$, $p=0.67$ for F&V, respectively) or mothers holding postgraduate degrees ($p=0.21$, $p=0.11$ for F&V, respectively) had higher F&V scores than other groups in relation to parents' education level. Adolescents with a family income ranging from 10000 to <20000 SAR showed higher F&V scores ($p=0.11$, $p=0.17$ for F&V, respectively), although the differences were not statistically significant.

Table 1. Baseline characteristics of the study participants

	***n* (%)**
Age (years)	15.13 ± 1.63
Gender	
Boys	24 (23.1)
Girls	80 (76.9)
Type of school	
Government	78 (75.0)
Private	26 (25.0)
BMI (kg/m2)	
Normal	86 (82.7)
Obese	18 (17.3)
Fraternal education	
High school or lower	35 (33.7)
Bachelor	55 (52.9)
Postgraduate	14 (13.5)
Fraternal occupation	
Unemployed	4 (3.8)
Employed	79 (76.0)
Retired	21 (20.2)
Fraternal BMI (kg/m2)	27.46 ± 4.01
Maternal occupation	
Unemployed	63 (60.6)
Employed	37 (35.6)
Retired	2 (1.9)
Student	2 (1.9)
Maternal education	
High school or lower	34 (32.70)
Bachelor	53 (51.0)
Postgraduate	17 (16.3)
Maternal BMI (kg/m2)	26.48 ± 4.72
Family size	
Small (1–3)	26 (25.0)
Medium (4–6)	63 (60.6)
Large (7–13)	15 (14.4)
Family monthly income (SAR)	
Less than 5000	9 (8.7)
5000 to <10,000	17 (16.3)
10,000 to <20,000	43 (41.3)
>20,000	35 (33.7)

Adolescents attending public schools had higher fruit consumption scores than those attending private school (p=0.02). Father obesity status tended to be positively related to the vegetable score. Adolescents whose fathers had obesity consumed more vegetables (1.58±0.94) than those whose fathers' BMI index was normal (1.16±0.81). Family size had a positive and significant effect on

fruit intake for adolescents; as the family size increased, consumption increased (p=0.006). Fruit scores according to family size were 1.47±0.69 for large, 1.44±0.87 for medium, and 0.95±0.74 for small. The same trend was observed for vegetable scores but was not statistically significant.

The analyses for factors associated with F&V scores stratified by adolescent BMI are presented in Table 3. Several significant results were confirmed among adolescents with normal BMI. Adolescents with normal BMI attending public school had a higher fruit consumption score (1.44±0.93) than those attending private school (1.08±0.74), (p=0.02). Moreover, adolescents with normal BMI whose fathers were obese had higher vegetables score than those whose fathers had normal BMI (p=0.03). Larger family size was associated with higher fruit consumption score (p=0.01), and higher family income was associated with higher vegetables intake score (p=0.02) among adolescents with normal BMI only.

Table 2. Association between sociodemographic data and fruit and vegetable scores among adolescents.

	Fruit score	P value	Vegetable score	P value
Age (years)				
13–15	1.38±0.91	0.23	1.45±0.81	0.51
16–18	1.22±0.79		1.52±1.1	
Gender				
Male	1.13±0.73	0.51	1.56±0.98	0.52
Female	1.39±0.91		1.45±0.96	
Body mass index				
Normal	1.35±0.90	0.42	1.47±1.0	0.84
Obese	1.14±0.67		1.50±0.83	
Type of school				
Public	1.40±0.90	0.01	1.56±1.01	0.06
Private	1.11±0.75		1.22±0.77	
Father's education				
High school	1.15±0.84	0.98	1.48±1.1	0.67
Bachelor	1.43±0.85		1.51±0.94	
Postgraduate	1.34±1.0		1.33±0.75	
Father's occupational status				
Unemployed	1.45±1.1	0.99	1.63±1.0	0.67
Employed	1.35±0.89		1.55±0.99	
Retired	1.21±0.79		1.16±0.81	
Father's BMI				
Normal	1.28±0.84	0.77	1.16±0.81	0.03
Obese	1.27±0.84		1.58±0.94	
Mother's occupational status				
Unemployed	1.35±0.86	0.70	1.48±1.0	0.98
Employed	1.31±0.91		1.48±0.95	
Retired	1.45±1.04		1.32±0.21	
Student	0.61±0.54		1.18±0.06	
Mother's education				
High school	1.24±0.81	0.21	1.49±1.1	0.11
Bachelor	1.33±0.79		1.41±0.81	

Postgraduate	1.48±1.2		1.67±1.2	
Mother's BMI				
Normal	1.27±0.90	0.71	1.34±0.84	0.38
Obese	1.28±0.81		1.49±0.96	
Family size				
Small (1–3)	0.95±0.74	0.006	1.16±0.64	0.13
Medium (4–6)	1.44±0.87		1.53±0.98	
Large (7–13)	1.47±0.69		1.79±1.2	
Family income (SAR)				
Less than 5000	0.85±0.57	0.11	0.62±0.21	0.17
5000–< 10000	1.37±0.88		0.94±0.23	
10000–< 20000	1.48±0.96		1.11±0.16	
≥ 20000	1.23±0.79		0.84±0.14	

* Fruit and vegetable scores are presented as mean±SD.
The differences in fruit and vegetable scores were determined using univariate regression analysis adjusted for age, gender, adolescents and parents' BMI, parents' education, and family income, depending on the testing factor.
BMI: Body mass index; SAR: Saudi Riyal.

Table 3. Association between sociodemographic data and fruit and vegetable scores among adolescents stratified by adolescents' obesity status.

	Fruit score				**Vegetable score**			
	Normal	**P value**	**Obese**	**P value**	**Normal**	**P value**	**Obese**	**P value**
Age (years)								
13–15	1.43±0.93	0.15	1.07±0.79	0.55	1.46±0.81	0.28	1.36±0.91	0.77
16–18	1.22±0.85		1.26±0.38		1.48±1.2		1.75±0.67	
Gender								
Male	1.15±0.75	0.71	1.03±0.73	0.49	1.57±1.1	0.33	1.54±0.53	0.63
Female	1.41±0.94		1.18±0.67		1.44±0.98		1.48±0.95	
Type of school								
Public	1.44±0.93	0.02	1.19±0.69	0.51	1.55±1.1	0.14	1.59±0.84	0.15
Private	1.08±0.74		0.92±0.61		1.23±0.81		1.09±0.77	
Father's education								
High school	1.23±0.88	0.89	0.78±0.58	0.26	1.54±1.1	0.39	1.19±0.85	0.50
Bachelor	1.44±0.88		1.39±0.70		1.49±0.97		1.61±0.81	

Postgraduate	1.29±1.1		1.08±0.51		1.21±0.73		1.93±1.1	
Father's occupational status								
Unemployed	1.41±1.32	0.93	1.61±0	0.93	1.39±1.1	0.66	2.36±0	0.35
Employed	1.38±0.91		1.14±0.73		1.57±1.0		1.47±0.78	
Retired	1.24±0.83		0.97±0.48		1.13±0.77		1.33±1.2	
Father's BMI								
Normal	1.34±0.84	0.98	0.71±0.63	0.19	1.17±0.76	0.03	1.07±1.39	0.99
Obese	1.28±0.89		1.23±0.66		1.58±1.0		1.59±0.71	
Mother's occupational status								
Unemployed	1.37±0.89	0.31	1.23±0.71	0.23	1.46±1.03	0.87	1.58±0.91	0.17
Employed	1.31±0.92		1.03±0.76		1.49±0.98		1.44±0.91	
Retired	2.19±0		0.72±0		1.47±0		1.18±0	
Student	0.22±0		1.0±0		1.13±0		1.22±0	
Mother's education								
High school	1.28±0.85	0.26	1.04±0.45	0.21	1.47±1.11	0.07	1.58±1.0	0.09
Bachelor	1.36±0.79		1.15±0.81		1.39±0.82		1.44±0.72	
Postgraduate	1.45±1.34		1.26±0.74		1.72±1.31		1.54±1.11	
Mother's BMI								
Normal	1.36±0.95	0.93	0.95±0.59	0.31	1.42±0.85	0.86	1.07±0.80	0.08
Obese	1.27±0.82		1.35±0.73		1.41±0.99		1.99±0.58	
Family size								
Small (1–3)	1.03±0.77	0.01	0.61±0.49	0.43	1.18±0.66	0.15	1.08±0.61	0.68
Medium (4–6)	1.44±0.91		1.37±0.65		1.52±1.0		1.59±0.86	
Large (7–13)	1.48±0.99		1.27±0		1.73±1.28		2.63±0	
Family income (SAR)								

< 5000	0.85±0.57	0.08	0	0.54	1.36±0.62	0.02	0	0.96
5000–< 10000	1.49±0.91		0.97±0.74		1.19±0.93		1.09±1.13	
10000–< 20000	1.53±1.01		1.20±0.51		1.64±1.17		1.43±0.60	
≥ 20000	1.21±0.77		1.18±0.83		1.41±0.86		1.79±0.83	

* Fruit and vegetable scores are presented as mean±SD.
The differences in fruit and vegetable scores were determined using univariate regression analysis adjusted for age, gender, adolescents and parents' BMI, parents' education, and family income, depending on the testing factor.
BMI: Body mass index; SAR: Saudi Riyal.

4. Discussion

To the best of our knowledge, this is the first study to investigate the sociodemographic data associated with F&V consumption among Saudi adolescents aged 13–18 years. Most adolescents consume F&V once monthly, which is less than recommended. Larger family size and public-school attendance were associated with higher fruit intake among adolescents. In addition, the present study results showed a significant association between high BMI in parents, especially fathers, and increased vegetable intake among adolescents. These significant results were observed much more among adolescents with normal BMI. Furthermore, those with higher family income showed increased vegetable intake.

Adolescents' eating behaviors are influenced by home and family environments [23], as it has been shown that 63% to 65% of total daily calories for adolescents are consumed at home [24]. Consumption of family meals is attributed to increased consumption of healthy food, demonstrating parents as role models [25]. Thus, parents' eating behaviors, such as provision of healthy foods, influence their children's dietary patterns and beliefs [23]. Additionally, previous studies confirmed a positive association between parents' practices and the overall diet quality of their children and adolescents [26, 27]. A cross-sectional study conducted among 9686 students in grades 3–12 and their caregivers demonstrated that a healthier family food environment was associated with increased consumption of F&V among students [28]. However, in the current study, we did not collect information regarding the parents' dietary pattern including their F&V consumption.

Adolescents attending public schools in the current study had higher scores for fruit intake, in line with findings observed among adolescents from Uganda, which showed that the proportion of children and adolescents who met their daily recommendation of fruit was 57% in public schools, compared with 46% in private schools [16]. However, we assume that there is a difference in socioeconomic status between Saudi Arabia and Uganda. This study indicated that larger family size was associated with increased fruit intake. In line with our findings, several previous studies have indicated that family size and structure have a positive impact on F&V intake among children and adolescents. Data from the Korea National Health and Nutrition Examination Survey of 3,217 children (aged 3–18 years) showed that children living with both parents had higher fruit consumption (mean family size was 4.4 persons) than those living with one parent [29]. Another study showed that family structure had an impact on F&V intake. Adolescents living with a single mother or mother and stepfather had low consumption of F&V [30]. In children (aged 1–10 years)

in the United Kingdom, F&V intake was influenced by household structure. Children living in a household with two adults consumed more fruit but not vegetables than children living with one adult. Moreover, household size and the number of children positively correlated with fruit intake but not with vegetables [31]. Our study assumed that most adolescents lived with both parents, as consent was signed by both parents, although information regarding this status was not collected.

We could not find any other study linking father's BMI with F&V intake among adolescents. However, similar to our findings, previous studies did not find a link between mother's BMI and F&V intake among adolescents. A previous cross-sectional study conducted in the United States involving 1,469 mothers with their children (aged <18 years) showed no association between the mother's BMI and F&V intake among their children [32]. Another study showed that mothers of children with obesity were 10% less likely to provide F&V, and mother's BMI was not associated with the provision of F&V [33]. On the other hand, mother's encouragement to consume F&V was associated with increased F&V intake among children with a low BMI, compared with children with a higher BMI [34]. This is consistent with our finding that significant intake of F&V was more observed among adolescents with normal BMI. There were some differences between our study and previous studies, such as race, sample size, methodology, and questionnaires used to assess F&V. Findings from this study indicate that parents with obesity may be more concerned regarding the health status of their children [35], and thus encourage them to consume more vegetables.

Our study showed that higher family income resulted in higher vegetable consumption. Similarly, family income was associated with F&V consumption among adolescent girls from rural communities of southern Nepal, with adolescents from low family income background having insufficient intake of F&V [17]. In our study, we found that some sociodemographic factors associated with F&V intake were highly significant among adolescents with normal BMI. Likewise, a study conducted among Saudi university students observed that normal-weight students reported higher consumption of F&V than overweight and obese students [19]. However, a previous study that investigated F&V consumption among five southeast Asian countries, including India, Indonesia, Myanmar, Sri Lanka, and Thailand, demonstrated that being overweight was not associated with low F&V intake among adolescents [9]. There are some differences between this previous study and our study in age range, population, and method of assessing F&V intake, which may cause discrepancies.

This study had several limitations. The sample size was relatively small; thus, further investigation using a larger sample size is required. The factors examined concerning F&V among adolescents were limited, and future studies should address the dietary patterns of parents, their F&V consumption, F&V accessibility, and purchase habits among family and family structures. Self-reported questionnaire the FFQ was used to measure F&V scores; thus, bias in reporting consumption could have been acquired, especially in younger adolescents. The scoring methods evaluated the average intake of several items, which may not be a good indicator if someone consumes one or two items daily from the list. Despite these limitations, our findings confirmed some statistical results regarding parents' obesity status, type of school, family size, and income, in relation to F&V consumption among adolescents. Future studies should determine the impact of parental dietary patterns including their F&V consumption, availability, and purchase habits on adolescent F&V intake. Additionally, nutritional educational intervention targeting enhanced F&V intake among adolescents should involve the family and consider the factors shown to impact F&V intake, including family structure, obesity status, and family income.

This study revealed that family was the main contributor to the quantity of F&V consumed among Saudi adolescents; parents with obesity, higher family income, public school attendance, and larger family size were linked to an increase in F&V consumption among adolescents. In contrast, adolescents' age, gender, and BMI, and parents' level of education were not associated with F&V intake among the study participants. Based on the findings of this study, family involvement is deemed necessary to implement programs or strategies to improve F&V intake among children and adolescents in Saudi Arabia and provide supportive environments. These strategies should involve improving parental knowledge on healthy eating habits, and encouragement, to ensure that they make healthy food available at home and provide good norms to their children through the development of healthy dietary behavior. Moreover, collaboration between schools, community, and home is highly important for creating supportive environments that enhance F&V consumption among children and adolescents. Public health policies, such as providing free F&V in school or reducing prices of F&V, may assist in enhancing F&V consumption among children and adolescents.

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العوامل الاجتماعية والديموغرافية المرتبطة باستهلاك الفاكهة والخضراوات بين المراهقين في المناطق الحضرية بالمملكة العربية السعودية

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الملخص:

السلوكيات الغذائية الصحية والاستهلاك العالي للفواكه و الخضروات خلال فترة الطفولة و المراهقة يقلل من خطر الاصابة بالمشاكل الصحية في المستقبل. هذة الدراسة المقطعية اختبرت العلاقة بين العوامل الديمغرافية و استهلاك الفواكه و الخضروات لدى ١٠٤ مراهق تتروح أعمارهم بين ١٣–١٨ سنة من مدينة جدة المملكة العربية السعودية. العوامل الديمغرافية تشمل العمر، الجنس، نوع المدرسة (خاصة أو حكومية) و مؤشر كتلة الجسم للمراهق و الوالدين، المستوى التعليمي للوالدين و وظيفتهم و عدد أفراد الأسرة و دخل الأسرة. الاستهلاك اليومي للفواكه والخضروات تم قياسه من خلال استبيان تكرار استهلاك الغذاء مصغر احتوى على ١٨ صنف من الفواكة و ٢٢ صنف من الخضروات. أظهرت النتائج أن المراهقين المسجلين في المدارس الحكومية و كذلك الذين ينتمون الى عائلات حجمها كبير معدل استهلاك عالي من الفواكه. و لوحظ أيضا وجود ارتباط ايجابي بين معدل سمنة الأب و استهلاك الخضروات لدى المراهقين. و كانت هذه النتائج أكثر وضوحا لدى المراهقين ذوي مؤشر كتلة الجسم الطبيعي. دخل الأسرة العالي ارتبط بزيادة استهلاك الخضروات فقط لدى المراهقين ذوي مؤشر كتلة الجسم الطبيعي. الأسرة هي العامل الرئيسي المؤثر في استهلاك الفواكه و الخضروات لدى المراهققين السعوديين في المناطق الحضرية .

الكلمات المفتاحية:

المراهقون؛ الأسرة؛ الفاكهة؛ السمنة؛ الخضراوات.