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ARCHIVES OF HELLENIC MEDICINE: ISSN 11-05-3992

ORIGINAL PAPER
ΕΡΕΥΝΗΤΙΚΗ ΕΡΓΑΣΙΑ

ARCHIVES OF HELLENIC MEDICINE 2027, 44(1):32–38
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2027, 44(1):32–38

The impact of television watching on preschool children's eating habits A pilot study

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Η επιρροή της παρακολούθησης τηλεόρασης στις διατροφικές συνήθειες των παιδιών προσχολικής ηλικίας: Μια πιλοτική μελέτη

Περίληψη στο τέλος του άρθρου

OBJECTIVE **To evaluate the impact of television viewing time on the development of eating habits among preschool children.** METHOD **Fifty-six parents participated in the study. Quantitative analysis was conducted using descriptive statistics and Pearson's correlations to explore the relationships between television (TV) viewing duration, food consumption, and demographic factors.** RESULTS **The findings revealed that increased TV viewing time correlated with unhealthy food consumption among preschool children. Most participants reported that advertising for sweets and candies significantly influenced their children's preferences for sugary products. A moderate positive correlation was observed between parental education levels and children's physical activity.** CONCLUSIONS **The study highlights the dual role of TV in promoting both unhealthy eating behaviors and, in some contexts, healthier eating practices during family meals.**

Key words

Advertising
Eating habits
Parent's education
Preschool children
TV watching

Submitted 18.8.2025
Accepted 26.9.2025

Eating habits formed during childhood predict future dietary choices, as this is the period when children learn fundamental eating behaviours that may continue into later life.[1] Television (TV) watching influences the attitudes, behaviours and values of viewers, particularly children. Children's screen time has been linked to a wide range of physical, social and emotional consequences during childhood.[2] Studies have shown that energy intake increases while watching TV, and TV viewing is also associated with poor quality diet.[2–4] The American Academy of Pediatrics (AAP) recommends that children aged 2–5 years limit screen time to one hour or less per day and that children of all ages avoid watching TV during mealtimes.[5]

In the family environment, parents play a key role. Parents' socio-demographic and behavioural characteristics –such as educational level, time spent watching TV, and enforcement of rules– are related to the time their children spend in front of the screen. Maternal education in particular is recognized as one of the most important predictors of child health and child health behaviours.[6] Mothers with high education level monitor their child's TV time frequently than mothers with lower education level, who allowed their children to watch television more frequently.[7]

Increased television viewing has been associated with reduced intake of fruits and vegetables and increased daily energy intake of foods high in fat, sugar and salt (HFSS foods).[5,8] In addition, children's meals in front of the TV are positively associated with consumption of fried foods (e.g., potatoes), salty snacks, ice cream, candy, baked goods, sweetened cereals, and soft drinks,[9,10] while they may consolidate TV viewing habits. Replacing meals at the family table with meals eaten in front of the TV may affect children's dietary choices and habits, as family meals are associated with greater consumption of fruits and vegetables as well as lower intake of sugary drinks.[11]

Watching TV and consequently exposing children to food advertisements can significantly influence their food choices and dietary decisions, thereby increase their risk of overweight and obese.[12] Children are the primary target of food industry marketing and are particularly vulnerable to the persuasive messages used by the marketing industry due to their limited cognitive skills.[13,14] Despite the low nutritional value of the products advertised, most advertise-

ments aimed at children contain nutrition or health claims that mislead consumers into believing these products have healthy properties. As a result, children may end up consuming items with little or no nutritional value.[15–17]

The idea that eating habits established in childhood persist into later life underscores the serious consequences of advertising. Many scholars have linked the dramatic increase in childhood obesity prevalence to the marketing of unhealthy foods.[18] The Institute of Medicine (IoM) has recommended that child characters used in advertisements should only promote foods and beverages that significantly contribute to a healthy diet.[19]

The aim of this pilot study was to investigate the influence of TV viewing on healthy habits in a sample of preschool children. The main hypotheses of the present study were whether children who watch TV for extended periods may tend to consume more convenience foods and snacks, whether children with less TV watching times are more likely to maintain healthier eating habits, including consuming homemade meals or fruits. Furthermore, whether children with more parental supervision may have healthier snacking habits during TV watching, while children with less parental supervision may be more likely to consume unhealthy snacks during TV time. Finally, whether TV snack advertisements may be positively associated with unhealthy snacking consumption in children.

MATERIAL AND METHOD

Participants and tools

The participants in the study were 56 parents of preschool children. All participants were invited to complete an online questionnaire distributed via the Google Forms® platform. The consent page provided detailed information about the study's objectives, the aim of the research, and emphasized the confidentiality of participants' responses.

Measures

The study was divided into two key sections: (a) Demographic questions about participants and their children, and (b) Likert-scale questions on parents' perceptions of their children's eating habits while watching TV. Results were analyzed using descriptive statistics and Pearson's correlations. The researcher developed the questionnaire based on prior literature, though it was not formally validated beyond testing internal consistency (Cronbach's alpha=0.78). Expert feedback was also incorporated. As a pilot study, the tool was exploratory, intended to identify initial associations between TV viewing and eating behaviors. Future research will require more thorough psychometric validation to confirm reliability and accuracy.

Data analyses

Quantitative research methods, such as percentages and means, were utilized to investigate the factors that influenced children's food consumption while watching television. The socio-demographic characteristics of the participants (n=56) were analyzed in relation to the amount of time their children spent in front of the TV. Additionally, descriptive statistics were employed to assess parents' responses, emphasizing the factors that shaped their children's attitudes and habits regarding snacking while watching TV. Lastly, the analysis examined the connection between the duration of TV viewing and the quality of food consumed by children during these viewing sessions to evaluate its potential effect on their eating behaviours.

Ethical considerations

Prior to participation, all respondents were provided with an Informed Consent Form, which they signed. The Consent Form outlined the study's objectives, procedures, potential risks, and benefits. Participants were assured that their involvement was entirely voluntary and that they could withdraw at any time without any consequences. Confidentiality was maintained by anonymizing responses and securely storing data to prevent unauthorized access. There was not any need for further ethical approval. These measures were implemented to uphold the integrity of the research and ensure the ethical treatment of all participants.

RESULTS

This study investigated the relationship between TV viewing, dietary habits, and physical activity among young children, focusing on weekday versus weekend viewing, eating behaviours during TV time, and engagement in outdoor play. Pearson's correlation coefficient (r) was used to determine the strength and direction of these associations, with statistical significance set at $p<0.05$ and $p<0.01$.

Television watching habits related to demographic factors

The average age of the children in the study was 3.34 years. Parents' educational backgrounds varied: 52.63% had a university degree, 29.82% a high school diploma, and 15.79% vocational education. Children's TV viewing was modest overall, averaging 1.51 hours daily, with no child watching more than three hours per day. Most (n=42) watched less than one hour on weekdays, while a smaller group (n=14) watched two to three hours. Notably, 80% of parents reported higher screen time on weekends. A moderate to strong positive correlation was found between overall TV viewing and weekend viewing ($r=0.526$, $p<0.01$) (tables 1 and 2).

Table 1. Eating habits among children watching <1 hour television (TV) daily.

Category (n=42)	<1 hour TV per day (%)				
	Never (%)	Seldom (%)	Sometimes (%)	Often (%)	Always (%)
Chips	54	29	7	5	5
Sweets	59	29	2	5	5
Soft drinks	56	19	15	5	5
Delivery	62	29	5	4	0
Commercial snacks	52	12	26	5	5
Fruits	3	24	30	27	16
Homemade food	3	12	12	40	33
Physical activities	0	3	29	32	36

Table 2. Eating habits among children watching 2–3 hours television (TV) daily.

Category (n=14)	2–3 hours TV per day (%)				
	Never (%)	Seldom (%)	Sometimes (%)	Often (%)	Always (%)
Chips	47	24	16	8	5
Sweets	15	14	36	25	14
Soft drinks	30	23	27	13	7
Delivery	57	29	8	5	1
Commercial snacks	47	15	29	4	5
Fruits	6	26	24	26	18
Homemade food	3	12	21	35	29
Physical activities	3	5	33	28	31

Television watching habits related to dietary habits and food quality

The data in table 3 show a clear association between TV viewing and children's eating habits. Children watching less than one hour daily reported healthier diets: Over half avoided soft drinks, delivery foods, and chips, while fruit and homemade meals were frequently consumed. In contrast, those watching two to three hours daily consumed more processed foods, including soft drinks, delivery foods, sweets, chips, and commercial snacks, while fruit and homemade meal intake declined.

Overall, TV exposure correlated strongly with unhealthy food intake, particularly sweets ($r=0.644$, $p<0.01$), chips ($r=0.461$, $p<0.01$), soft drinks ($r=0.482$, $p<0.01$), and advertised snacks ($r=0.470$, $p<0.01$). Watching TV during lunch reinforced these patterns but was also linked to higher consumption of fruit and homemade meals. Nevertheless, when daily viewing exceeded one-hour, unhealthy choices dominated, with increased consumption of sweets and snacks and reduced intake of fruit and homemade meals.

Weekday versus weekend differences

Parental education revealed consistent associations with children's screen time and behaviours. Higher education was linked to reduced overall TV viewing ($r=-0.408$, $p<0.01$), less viewing during sugary meal consumption ($r=-0.310$, $p<0.05$), and reduced viewing while drinking soft drinks ($r=-0.322$, $p<0.01$). A weaker but still significant negative correlation was also observed with TV viewing during lunch ($r=-0.282$, $p<0.05$). At the same time, parental education was positively associated with children's physical activity ($r=0.286$, $p<0.05$), suggesting that more educated parents may promote healthier habits both in diet and activity.

Children's age was positively correlated with greater TV exposure, both overall ($r=0.526$, $p<0.01$) and on weekends ($r=0.381$, $p<0.05$). Older children were also more likely to watch TV during meals ($r=0.350$, $p<0.01$) and to consume TV-advertised snacks ($r=0.441$, $p<0.01$). Weak but positive, though not statistically significant, correlations were also found between age and consumption of chips ($r=0.325$),

Table 3. Pearson's correlations between variables.

	Variable (n=56)	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Children's age	1												
2	Parental education	-0.153	1											
3	TV time (overall)	0.526**	-0.408**	1										
4	TV time (weekends)	0.381*	-0.006	0.463**	1									
5	TV time during lunch	0.350**	-0.282*	0.585**	0.463**	1								
6	TV time snacks (sweets)	0.338*	-0.310*	0.190	0.318*	0.509**	1							
7	TV time snacks (soft drinks)	0.212	-0.322**	0.227	0.292*	0.289*	0.415**	1						
8	TV time snacks (chips)	0.325*	-0.210	0.422**	0.255	0.269*	0.615**	0.418**	1					
9	TV time snacks (fruits)	0.255	-0.059	0.178	0.208	0.270*	0.180	0.276	0.174	1				
10	Homemade meals	0.189	-0.247	0.223	0.416**	0.496**	0.241	0.278	0.139	0.530**	1			
11	Delivery	0.282*	-0.102	0.477**	0.345	0.270*	0.260	0.539**	0.391**	-0.003	0.304	1		
12	Physical activities	0.352**	0.286*	0.177	0.095	0.036	-0.186	0.025	-0.053	0.375**	0.129	0.091	1	
13	Snacks from commercials	0.441**	-0.174	0.266*	0.328*	0.470**	0.644**	0.482**	0.461**	0.306	0.190	0.330*	0.071	1

TV: Television, *Correlation is sifnificant at the 0.05 level (2-tailed), **Correlation is significant at the 0.05 level (2-tailed)

sweets (r=0.338), and delivery foods (r=0.282). Importantly, age was also linked to higher physical activity (r=0.352, p<0.01), suggesting that although older children watch more TV, they also tend to engage in more outdoor play.

Comparisons between weekdays and weekends revealed notable differences. Screen time increased on weekends, but this did not always lead to poorer dietary choices. In fact, a moderate positive correlation was found between weekend TV viewing and homemade meal consumption (r=0.416, p<0.01), suggesting that even with extended leisure viewing, traditional meals remained common. An unexpected weak correlation also emerged between homemade meal consumption and soft drink intake (r=0.278, non-significant), highlighting some inconsistencies in dietary patterns.

Convenience eating and snack clusters

The study highlighted connections between convenience foods and sugary items. Delivery food orders were strongly correlated with sweets consumption (r=0.539, p<0.01) and moderately with soft drinks (r=0.391, p<0.01). Sweets and soft drinks were positively linked (r=0.415, p<0.01), as were chips and soft drinks (r=0.418, p<0.01). Overall, unhealthy snacks tended to cluster together.

Television watching habits related to dietary habits and physical activities

Children who watched less TV were more active. Among those watching less than one hour daily, 97% participated in outdoor activities, compared to 85% of children watching 2–3 hours. Fruit consumption and physical activity were positively related (r=0.375, p<0.01). Age also predicted higher activity levels (r=0.352, p<0.01), while parental education contributed positively (r=0.286, p<0.05).

DISCUSSION

TV viewing has been associated with various negative consequences for both children's health and behaviour. Since habits formed during early childhood often persist into later life, encouraging healthy screen-time habits during the preschool years may contribute to long-term well-being.[20]

The present study revealed that most children watched less than one hour of television daily, aligning with the AAP recommendation for children aged 2 to 5 years to limit screen time to under an hour per day.[5] Similar results were observed in the GENESIS study in Greece, which found that children aged 1–2 years watched approximately 45 minutes

of TV daily, while those aged 3–5 years watched about 1.5 hours.[21] The study results further noted an increase in TV viewing time on weekends, a trend supported by a previous study, who found that children watched more than two hours of TV on weekends, compared to less than one hour on weekdays.[22] Weekend increase could be attributed to children having more free time, as it has been found that children who attended day care for over four hours per day were less likely to watch TV than those who stayed at home.[23] Additionally, parents with younger children may use TV as a form of childcare.[24]

In terms of dietary habits, the present study found that children with less TV viewing (<1 hour daily) made healthier food choices. These findings align with a cross-sectional secondary data analysis that showed toddlers who watched more than 60 minutes of TV daily consumed more sugar-sweetened beverages, fast food and junk food, while those with less screen time consumed more fruits and vegetables.[5]

Parental education levels emerged as a significant factor in the study, with a negative correlation between education and children's total TV viewing time. Previous study similarly found that children from less-educated families had higher screen time across several European countries (Belgium, France, Greece, Portugal, Romania, Netherlands, Bulgaria).[7] A similar conclusion was drawn in a study across six European countries (Belgium, Finland, Greece, Spain, Bulgaria, Hungary) showing that both parental education levels were associated with reduced odds of children exceeding two hours of screen time per day.[25] On the other side, a previous study in Greece did not report any effect of the mother's educational level on the children's TV viewing time.[21] The findings also indicated that higher parental education was negatively associated with TV viewing during meals. This mirrors previous findings, where households with lower education levels had the TV on during meals more frequently.[7]

Eating meals or snacks in front of the TV negatively influenced food choices in this study and associated with the consumption of sugary snacks, potato chips, soft drinks, and processed foods.[26] These findings are in line with earlier research, which reported that children watching TV during meals consumed more ultra-processed foods in the United Kingdom, which suggests a negative impact on their nutritional quality.[11] Furthermore, earlier research indicated that higher weekly hours of television viewing were associated with less healthy diet, including more sweets and desserts, and TV viewing during mealtime was also found to contribute to the intake of a greater percentage of children's daily calories.[2]

Interestingly, the present study showed a positive relationship between meals eaten in front of the TV and the consumption of home-cooked food and fruit. This is consistent with previous findings, which showed that family meals were linked to better dietary habits, such as higher fruit and vegetable intake and reduced soft drink consumption.[11]

Another factor to consider is the influence of TV advertisements on children's dietary choices. Children are usually exposed to the marketing of unhealthy foods, which tend to be high in saturated fat, sugar and have little nutritional value.[27] The current study found a positive association between the consumption of sweets and soft drinks and exposure to TV ads, echoing previous studies. For example, a previous study observed that exposure to child-targeted TV advertisements was linked to increased intake of advertised products among preschoolers.[28] However, the limited associations in the study may be due to Greece's regulations on advertising to children.[29]

The findings further underscored the adverse effects of increased TV exposure on children's engagement in outdoor activities. Consistent evidence from prior research has demonstrated that screen-based sedentary behaviour hindered physical activity.[30] This association is further corroborated by additional findings indicating that increased screen time was associated with lower physical fitness in children.[31] Parental education was positively correlated with children's physical activity levels in the current study. This finding is consistent with previous research, which showed that children with more educated parents engaged more in outdoor play,[32] while the children of parents with a lower educational level showed lower levels of physical fitness.[33] Higher parental education may reflect greater awareness of the health benefits of physical activity, as well as greater participation in organized sports.[34]

In conclusion, this analysis demonstrates a clear correlation between TV watching duration and children's dietary habits. As TV time increases, children tend to consume more unhealthy snacks, such as chips and sweets, and rely more on food delivery services rather than home-cooked meals. In contrast, shorter TV sessions are associated with healthier eating patterns, including higher consumption of fruits and homemade meals. The findings suggest that increased TV watching, particularly on weekends and during meals, contributes to poorer dietary choices and potentially reduced physical activity, and higher engagement with snack commercials. Factors such as age and parental education significantly influence these behaviours, with children of more educated parents typically watching less TV and

consuming healthier foods. Additionally, may be parental supervision may plays a key role. Lastly, a limitation of this study was the use of a self-developed questionnaire that has not undergone formal psychometric testing. Although the content was informed by existing literature and expert feedback, the lack of established validity and reliability should be considered when interpreting the results. Future studies will focus on validating this tool to ensure its robustness and consistency in measuring the relationship between TV viewing and dietary habits.

ΠΕΡΙΛΗΨΗ

Η επιρροή της παρακολούθησης τηλεόρασης στις διατροφικές συνήθειες των παιδιών προσχολικής ηλικίας: Μια πιλοτική μελέτη

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Τμήμα Αγωγής και Φροντίδας στην Πρώιμη Παιδική Ηλικία, Σχολή Κοινωνικών Επιστημών, Πανεπιστήμιο Ιωαννίνων, Ιωάννινα

Αρχεία Ελληνικής Ιατρικής 2027, 44(1):32–38

ΣΚΟΠΟΣ Η αξιολόγηση του αντίκτυπου του χρόνου παρακολούθησης τηλεόρασης στην ανάπτυξη διατροφικών συνηθειών σε παιδιά προσχολικής ηλικίας. **ΥΛΙΚΟ-ΜΕΘΟΔΟΣ** Πενήντα έξι γονείς συμμετείχαν στη μελέτη. Η ποσοτική ανάλυση πραγματοποιήθηκε χρησιμοποιώντας περιγραφική στατιστική και συσχετίσεις Pearson για τη διερεύνηση των σχέσεων μεταξύ της διάρκειας παρακολούθησης τηλεόρασης, της κατανάλωσης τροφίμων και των δημογραφικών παραγόντων. **ΑΠΟΤΕΛΕΣΜΑΤΑ** Τα ευρήματα αποκάλυψαν ότι ο αυξημένος χρόνος παρακολούθησης τηλεόρασης συσχετίστηκε με την ανθυγιεινή κατανάλωση τροφίμων μεταξύ των παιδιών προσχολικής ηλικίας. Οι περισσότεροι συμμετέχοντες ανέφεραν ότι η διαφήμιση γλυκών και καραμελών επηρέασε σημαντικά τις προτιμήσεις των παιδιών τους για ζαχαρούχα προϊόντα. Παρατηρήθηκε μια μέτρια θετική συσχέτιση μεταξύ του μορφωτικού επιπέδου των γονέων και της σωματικής δραστηριότητας των παιδιών. **ΣΥΜΠΕΡΑΣΜΑΤΑ** Η μελέτη υπογραμμίζει τον διττό ρόλο της τηλεόρασης στην προώθηση τόσο ανθυγιεινών διατροφικών συμπεριφορών όσο και, σε ορισμένα πλαίσια, περισσότερο υγιεινών διατροφικών πρακτικών κατά τη διάρκεια των οικογενειακών γευμάτων.

Λέξεις ευρετηρίου: Διατροφικές συνήθειες, Διαφήμιση, Επίπεδο εκπαίδευσης γονέων, Παρακολούθηση τηλεόρασης, Προσχολική ηλικία

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