

Research report

Television use and food choices of children: Qualitative approach

Giovanna Medeiros Rataichesk Fiates^{a,*}, Renata D.M.C. Amboni^b, Evanilda Teixeira^b

^a*Departamento de Nutrição, Centro de Ciências da Saúde, Universidade Federal de Santa Catarina, Florianópolis 88010-970, SC, Brasil*

^b*Departamento de Ciência dos Alimentos, Centro de Ciências Agrárias, Universidade Federal de Santa Catarina, Florianópolis 88034-001, SC, Brasil*

Received 1 September 2006; received in revised form 29 March 2007; accepted 9 May 2007

Abstract

This study reports the results of 12 focus group interviews with primary school students (7–10 years old, $n = 57$) in Florianópolis, Brazil, regarding their food choices, television (TV) viewing, and physical activity habits. In 2005, an average Brazilian child aged 4–11 years watched TV almost 5 h per day. Intensive TV use in childhood and adolescence may contribute to sedentarism and unhealthy eating habits, and excessive viewing might have long-lasting adverse effects on health. Results indicated that frequent ingestion of snack foods was not a habit for most students, possibly because of an acknowledged parental interference, but these were the food items they bought with their own money. Daily TV viewing was reported by almost all students, especially during meals and before bedtime, but students still found the time to be physically active. Most of them mentioned going to sports classes and engaging in active play regularly. No attempts by the parents to regulate TV viewing in the household were mentioned. The habit of eating while watching TV, together with the students' behavior as primary consumers of food products, pointed to the need for strategies that will reduce TV viewing and educate the children as consumers.

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Keywords: Children; Food choices; Television viewing; Consumer behavior

Introduction

This article examines the behavior of a group of Brazilian children regarding their food choices, television (TV) viewing, and physical activity habits.

Nowadays, children's food preferences seem to influence food selection in ways that are inconsistent with dietary guidelines (Birch, 1999). Dietary patterns that result in high intakes of fat, saturated fat, and refined carbohydrate as well as low intakes of fruit, vegetables, and complex carbohydrate are becoming increasingly common, escalating the risks of coronary heart disease, certain cancers, diabetes, hypertension, and obesity (Coon & Tucker, 2002). Excessive TV viewing during childhood and adolescence plays an important role in this matter, since it has been associated with higher intakes of energy, fat, sweet and salty snacks, and carbonated beverages as well as with lower intakes of fruit and vegetables (Coon, Goldberg, Rogers, & Tucker, 2001). One of the reasons why TV has such effect is

because food is the most frequently advertised product category on children's TV programming, and it has been established that exposure to food advertisements effectively promotes consumption of the advertised products (Halford, Gillespie, Brown, Pontin, & Dovey, 2004). TV also contributes to sedentarism, displacing more energetic activities that could help in burning the excessive calories contained in nutritionally unbalanced diets (Gortmaker et al., 1996; Hancox, Milne, & Poulton, 2004).

The average American child spends 5.5 h per day with a variety of media, mostly TV (Strasburger, 2004). In Brazil, the situation is not different. In 2005, Brazilian kids aged 4–11 years watched TV around 4 h and 52 min per day (Instituto MídiaTiva, 2006). In a study about TV programming in Brazil, Almeida, Nascimento, and Quaioti (2002) analyzed 432 h of advertising in Brazilian commercial TV during weekdays and 216 h during Saturdays; they found that foods were the most advertised category of products, especially those rich in fat and sugar.

The fact that children can be very sensitive to the effects of advertising has led to a large body of research. In Chile, the high percentage of children watching TV and the

*Corresponding author. Tel.: +554837219784; fax: +554837219542.

E-mail address: gfiates@ccs.ufsc.br (G.M.R. Fiates).

marked influence of commercials over their food preferences convinced researchers that an urgent educational strategy was necessary to promote healthy eating habits (Olivares, Albala, Garcia, & Jofré, 1999). In a study with Spanish students, Ruano and Pujol (1997) concluded that unhealthy dietary habits clustered in high consumers of TV. In Turkey, Arnas (2006) reported that TV advertisements affected young children's unhealthy food consumption. In the United Kingdom, Halford et al. (2004) concluded that the ability to recognize food advertisements significantly correlated with the amount of food eaten after exposure to them. In the United States, Coon et al. (2001) verified that watching TV during meals negatively affected the dietary patterns of children and their families.

As one can see, TV viewing can certainly influence the behavior of children to an extent that can cause concern. Throughout the world, children do not only influence family purchase decisions in a variety of product categories, but also have considerable amount of money to spend with their own needs, which qualifies them to be an important primary market (McNeal, 1998). It is estimated that children between the ages of 4 and 14 living in urban environments spend approximately US\$ 300 a year in their personal wants and needs. In the US alone, children spend more than US\$ 7 billion a year in food and beverage (McNeal, 2000).

Although it is likely that some aspects of children's consumer behavior are universal across cultures, local studies provide valuable opportunities to generate information about what is happening in different settings. There have been no studies about the consumer behavior of Brazilian children, or how their TV viewing habits affect their food choices.

The present pilot study, which is exploratory in nature, aimed to obtain preliminary data about this relevant and yet unknown situation in Brazil. We expected that the students from the sample, who only attend school for half periods (like virtually every student in Brazil), dedicated most of their leisure time to watching TV, and that this would negatively influence their eating habits and physical activity levels. We expected to find high consumption of snack foods, together with low intakes of fruits and vegetables, and low levels of exercise.

Methods

Study design

The study was conducted in a primary private school in Florianópolis, Brazil. The protocol was approved by the Federal University of Santa Catarina Human Research Ethics Committee (Protocol # 293/05). All 141 students from the seven existing classrooms of 1st to 4th grade were invited to participate in the study, and received informed consent forms to be signed by the parents. This age group was chosen because some of the most important consumer knowledge and skills are developed during this period.

Also, starting at the age of eight, kids already have money of their own to spend, and sometimes spend it independently (John, 1999). Since this is a relatively unexplored area, we chose to apply a qualitative approach to promote idea generation via group interaction. Bringing children together to discuss an idea or concept minimizes direct inquiry and produces richer responses because the children are not only responding to the researcher, but to other members of the group as well (McNeal, 2000; Heary & Hennessy, 2002; Green & Thorogood, 2004).

Participants

A total of 57 students (28 male, 29 female), aged 7–10 years (mean age: 8.9 years), returned the consent forms signed by their parents. The participants' response rate (40.4%) fairly represents the overall student population. The participants were composed of 43% of the 1st graders, 28% of 2nd graders, 38% of 3rd graders, and 49% of 4th graders. Additional data about the sample are presented in Table 1. No children had special needs. The majority of the students were white and from middle-class families living near the school. Nonparticipation in the study was due to failure in returning the signed consent forms or absenteeism on the day of the focus group interview.

Focus group interviews

The students participated in 12 focus group sessions. Participants were divided into groups on the basis of grade and gender with an average of about five students in each focus group (range of 4–6 students per group). Two focus groups were formed from 1st grade students (one with boys and one with girls, $n = 9$), two from 2nd grade students (both mixed, $n = 9$); three from 3rd grade students (two with boys and one with girls, $n = 15$) and five from 4th grade students (two with boys and three with girls, $n = 24$). The mixed groups with 2nd-graders were formed because there were not enough participants to create female or male only groups. Interviews were conducted within the school setting, during school hours, in a special room with little furniture and distraction.

Table 1
Characteristics of interview participants

	Boys ($n = 28$)	Freq. (%)	Girls ($n = 29$)	Freq. (%)	Total (n)	Freq. (%)
<i>Age/grade</i>						
7 years (1st grade)	05	9	04	7	09	16
8 years (2nd grade)	04	7	05	9	09	16
9 years (3rd grade)	10	18	05	9	15	26
10 years (4th grade)	09	15	15	26	24	42
<i>School period</i>						
Morning	13	23	06	10	19	33
Afternoon	15	26	23	40	38	67

- Can a food be healthy and tasty at the same time? Give examples.
- Do you like eating fruits? How often?
- What about vegetables?
- Do you like eating snack foods? How often?
- What else do you like to eat?
- Do your parents try to interfere with your eating habits?
- When you have your own money to spend, what food items do you buy?
- Do you like watching TV? When?
- What are your favorite shows?
- Do you usually eat something while watching TV?
- Do your parents try to interfere with your TV viewing habits?
- Between watching TV and playing outside, what do you prefer?
- Do you practice any sports?

Fig. 1. Focus group interview structure: sample of main questions.

Each focus group interview was conducted in Portuguese by the same moderator (first author), using a discussion guide with open-ended questions to ensure consistency in interviewing style (Fig. 1). Moreover, a semi-structured questioning route was used to ensure consistency in questions asked across groups, yet allow for some flexibility in accordance with the topics raised and level of participation within the groups.

Focus group interviews were audio-recorded with participants' permission and lasted approximately 30 min. Interviews were transcribed verbatim, in Portuguese, and then translated to English. A total of 6.6 h of tape-recorded interviews were obtained to produce a manuscript. Data were analyzed through content analysis (O'Dea, 2003). With this method, ideas or trends were coded in the transcript margin; then, they were selectively retrieved and reassembled together, and grouped according to common themes, using the cut-and-paste technique (Bardin, 2004). Words and phrases used by participants were analyzed to determine the degree of similarity among responses. We considered the context in which responses were given, with particular emphasis on the stimulus that elicited each response. We also considered the frequency of comments to measure the significance of specific topics. Frequencies were used only in the broadest of terms (for example, many, some, a few).

Quotes were pulled from the transcripts to illustrate categories. The specific quotes were selected on the basis that they illustrated a variety of response types, including responses which were typical or common; unusual responses; responses which represented a concise summary of a discussion topic; or responses showing a range of viewpoints on a topic.

After this systematic process was completed, the data were categorized as follows:

- Consumption of fruits, vegetables and snack foods
- Parental interference over food choices
- Food consumer behavior

- TV viewing habits
- Physical activity

Results

Consumption of fruits, vegetables, and snack foods

Most of the interviewed students referred to the ingestion of fruits and vegetables with many positive remarks denoting a regular intake of salads and fresh fruit. Very few students reported intense rejection of fruits and vegetables; negative comments were mostly on restrictions about the way of eating, use of seasoning, or addition of toppings.

"Everyday I eat three fruits: one in the morning, other at noon and another one at night." (2nd-grade boy)

"The salad I like best is beets! No seasoning, of course..." (4th-grade boy)

"I only [eat fruit] when I feel like it...only when my mother buys strawberries, but it has to be with some kind of sweet added to it, like condensed milk...or sugar..." (1st-grade girl)

"...I don't really eat them; I just suck the juice and throw away the rest." (4th-grade girl)

Snack food intake was a topic that generated several controversies. Many students admitted liking and eating more than they should. More students, however, made negative remarks and considered snacks not a regular item in their diets.

"I kind of think, actually [about eating healthy foods], but I go towards not so healthy items, because I think they taste better..." (4th-grade girl)

"I eat a lot of chocolate...almost everything I eat everyday is cookies and chocolate...and milk..." (2nd-grade girl)

"... I hate chocolate... if someone offers me, I eat, but rarely... I really don't like." (3rd-grade boy)

"...ice cream only once a week or even only once a month, but I don't really like ice cream." (4th-grade girl)

"I had esofagitis...I couldn't eat chocolate, soda, chips...now it's been treated, but I still don't eat much because my mom forbids, I eat what...once a month..." (4th-grade boy)

Parental interference over food choices

Students provided many comments about how their parents interfered with their food choices. This topic was brought to discussion because we thought that the students' habits or product requests could generate conflict between them and their parents. Parental control over the children's food choices seemed to be exercised in several ways: (1) some simply did not buy what their children wanted; (2) some bought and restricted access to them at

home; (3) others tried educating, negotiating or forcing; and (4) yet others appealed for health reasons.

“My mother...keeps them in a kitchen cabinet...when she is sleeping I go there and eat everything...then she put a locker in the cabinet...made only two copies of the key...” (3rd- grade boy)

“...they say I must eat at least two or three vegetables per day, fruits...” (4th-grade boy)

“My mom and dad, we have a deal...if I eat lettuce, I don't have to eat apples, which I don't like.” (4th-grade girl)

“...my mother warned me that if I did not eat the vegetables in my plate I would stay all day long eating what was left from my lunch...then I started to eat vegetables.” (4th-grade boy)

“When I get something to eat while watching TV he says I can only have two pieces of it and then put it away...because if not I keep eating...then I get fat and out of shape...(3rd-grade boy)

Most of the students seemed to accept what their parents were doing, acknowledging that they knew better and were acting in their best interest. A few of them reported getting annoyed, indicating that some degree of conflict was taking place.

“They are right...they want our health...” (3rd-grade girl)

“We feel hurt, because we cannot have what we want...they [the parents] go like this: you've had enough, now you can't have it anymore...” (2nd-grade girl)

Food consumer behavior

Many interviewed students reported having money to spend, either as allowance or as pocket money. When prompted to talk about buying food items, every statement obtained referred to buying snack foods, such as sweet and salted snacks, candies, gum, lollipops, and ice pops. Places where they usually shopped were supermarkets, newsstands, shopping malls, and the school cafeteria. These little purchases were often done independently.

“I like candy very much...once I went to the mall and we bought a lot of candy...then we went to the play area, won those tokens, you know, traded them all for gum...” (4th-grade boy)

“Sometimes my mom gives me money, but it's only for buying stuff at the school canteen...I buy popsicles...” (1st grade girl)

“...I sneak to the supermarket and buy a lot of stuff...Tic Tacs...” (3rd-grade boy)

TV viewing habits

The subject of TV viewing generated much interest. Almost all students reported watching TV daily, at all

hours, but especially during meals and at night. Some were really passionate about it, while others regarded it as a last resort, when there was nothing more interesting left to do or no friends to play with. Their favorite shows were cartoons and kid's programs, followed by soap operas and movies. By analyzing the shows they usually watched and the times they were aired, we found that the students watched a lot of adult programming and cable TV. Many students reported having TV sets in their bedrooms, which they left on until they fell asleep. Very few students mentioned watching more TV programs on weekends than on weekdays.

“I will watch anything that is on TV... (1st-grade boy)

“I don't watch much TV because...I've got books to read; sometimes I play with my sister or with my dog.” (3rd grade girl)

“If I have to choose between using the computer, watching TV or playing soccer, I'd rather play soccer.” (4th-grade girl)

“...I try to do other things, but when I have nothing left to do, then I go watch TV...” (4th-grade boy)

When asked to talk about their parents' attitudes towards their TV viewing habits, all the students could remember were warnings about the mess caused by bringing food to the living room or the bedroom, or the parents turned the TV off as punishment for some wrongdoing. Absolutely no comments were made about any attempts to control the hours spent by the children in front of the TV, indicating a situation where there seems to be no conflict at all.

“...when I am watching cartoons I eat in the living room...my mom says: you will have to clean everything, try not to make a mess...” (1st grade boy)

“My father doesn't want me to eat in his bedroom, but in my bedroom it is ok...” (1st grade girl)

The ingestion of food during TV viewing periods appeared as a very strong habit in the studied population. Virtually, every student admitted eating while watching TV, from simple candies to whole meals, in the kitchen, living room, or bedroom.

“...I always stay in front of the television eating something; I eat... whatever is in front of me...” (2nd-grade boy)

“When I get back from school, I go straight to bed...tell my grandma to make me a plate of food...there is a little table, then I eat...and watch cartoons...” (3rd-grade boy)

“...there was a TV set in my bedroom, then she [my mom] put it in the kitchen to watch the news...then I watch from the kitchen table...(4th-grade girl)

“Afternoon snack...and lunch...and dinner... [in front of the TV]” (2nd-grade girl)

Many students mentioned that eating in front of the TV set clearly interfered in the amount of food they ate. Some

reported eating more; others said they almost forgot to eat. Either way, watching TV distracted them to a point where they paid no attention to the amount of food being eaten.

“My mother hands me a full plate, and leaves...I stay watching TV...I don't touch the food...when I see that she is coming back, then I remember to eat...” (4th grade girl)

“Every day, I am watching Xuxa and my mom tells me to go eat in the kitchen...if she lets me eat in the living room I eat everything, when I eat in the kitchen I eat almost nothing...” (1st-grade girl)

“... I turn the TV on, start eating, then sometimes I look more at the television than I look at my food...I end up eating less!” (4th grade girl)

“Sometimes we don't realize what we are eating, and then we get stuffed...” (4th grade girl)

Physical activity

TV viewing apparently did not keep the students from being physically active. Many attended sports classes before or after school (swimming, soccer, dance), and even more reported active leisure activities at home, outside their apartments, with neighbors and friends (bike, roller skating, soccer). Boys were clearly more active than girls. This was the only difference we could observe between sexes. Some of the boys were so restless that they even reported trying to play soccer inside their apartments.

“...can't play ball in the kitchen, can't play in the living room, can't play in my room, and can't play in my sister's room...” (3rd-grade boy)

“When it's a hot day and I am allowed to play, my friend goes to my place...or I go to his...ride our bikes...” (3rd grade boy)

“Sometimes I go skating, I do karate, once in a while I go to the University campus with my father, and we play basketball, handball, when I go to the beach I swim a lot...” (4th grade boy)

“I live in an apartment, my bike is too small, I don't do sports; I stay in front of the computer, eat and sleep.” (4th-grade girl)

Discussion

In this study, a qualitative methodology was used to investigate TV viewing habits and food choices in a group of primary school students. Results showed that TV viewing was indeed an important part of the children's leisure hours, and that eating was a habit strongly associated with it. The findings also provided key insights into the parents' concerns, from the children's viewpoint. The interviewed students could clearly describe their parents' interference over their food choices, but not over the time they spent watching TV.

Contrary to what we expected, the majority of students reported eating fruits and vegetables regularly, and snack

foods only occasionally but mainly when purchased with their own money. TV has a negative influence in the domestic environment, stimulating the consumption of unhealthy foods and reducing the period during which the parents are the main socializing power in their children's lives (Hart, Bishop, & Truby, 2002; Harrison, 2005). This seems not to be true for the studied population, since children could easily mention parental attitudes that affected their food choices and eating habits. Some strategies adopted by them, however, could backfire. Restricting children's access to snack foods makes the restricted foods more attractive, and the pressure to eat may discourage fruit and vegetable intake (Fisher & Birch, 1999; Fisher, Mitchell, Smiciklas-Wright, & Birch, 2002). Children's food choices are shaped by many factors; some are endogenous to the individual child and others are environmental. These include the foods made available to children and the modeling of food behaviors by caregivers, especially parents, who are responsible for choosing most of the food that makes its way into the family kitchen (Harrison, 2005).

Apparently, the food choices made by the children when spending their own money were more difficult to control. Food items purchased by the children as primary consumers were various types of sweet and salted snacks; no fruits or natural fruit juices were mentioned even once. Besides supermarkets, newsstands, and malls, snack food purchases occurred in the school cafeteria. In Florianópolis, southern Brazil, where this study was conducted, school canteens are prohibited by law to sell candy, gum, lollipops, fried snacks and soda, which certainly limits the unhealthy options (Santa Catarina, 2001). Nevertheless, students can still spend money (and apparently were doing so) with unhealthy snacks such as ice cream, chocolate, mini pizza, hot dogs, and hamburgers. The findings were similar to those reported by Olivares, Yáñez, and Díaz (2003) in Chile that whenever Chilean students had money to buy foods, they bought French fries, chocolates, cookies, and other sweet and salted products rich in fat, soft drinks, yogurt and fast food. Coincidentally, these were the same foods advertised in the ads they liked on TV.

We also proved that the children who participated in our study were allowed to watch TV at all hours, apparently without any interference from the parents. They might be heavily exposed to food advertisements for unhealthy products, since these were the most advertised items both in daytime and nighttime TV programming (Almeida, Nascimento, & Quaioti, 2002; Arnas, 2006; Coon & Tucker, 2002; Kuribayashi, Roberts, & Johnson, 2001). It is true that children have a natural fondness for sweets and snacks, but it is also possible that the TV ads are accomplishing their goal and influencing the purchases of the children.

Eating in front of the TV was a common situation for the children in this study. Research has shown that children indeed snack more while watching TV (Borzekowski &

Robinson, 2001; Francis, Lee, & Birch, 2003); that snacking while watching TV was associated with increased overall caloric intake and calories from fat (Gore, Foster, Di Lillo, Kirk, & West, 2003); and that TV ads influence the types and amounts of foods they choose to eat (Arnas, 2006; Harrison, 2005). The students in the present study not only snacked, but they were used to eat their meals with the TV on, denoting a family habit that could have nutritional implications. According to Coon et al. (2001), the dietary patterns of children from families in which TV viewing is a normal part of meal routines may include fewer fruits and vegetables, and more pizzas, snack food, and sodas than the dietary patterns of children from families in which TV viewing and eating are separate activities.

Brazilian children do not go to school full-time; they either spend mornings or afternoons in school, giving them plenty of spare time to dedicate to leisure activities. What we learned from the students' opinions was that their TV viewing habits did not stop them from being physically active. Although we could not determine how much of their spare time was dedicated to activities that required energy expenditure, our results differed considerably from previous research that concluded that TV viewing contributes to sedentarism because it displaces more energetic activities (Gortmaker et al., 1996; Hancox et al., 2004). This was unexpected, since previous studies conducted with schoolchildren in Florianópolis revealed that the prevalence of overweight and obesity was 22.1% (De Assis et al., 2005). When compared to a similar group of French children, the ones from Florianópolis were heavier, had lower levels of physical activity, and watched more TV (De Assis et al., 2006). A possible explanation for our findings could be that the spare time available either before or after school was enough for the students in the present study to both exercise and watch TV. Comments about the physical environment (living in small apartments, lack of space to play) suggested that the children might have no other option than filling their daily schedules with TV watching.

Several studies have come up recently, aimed at reducing the time children spend in front of the TV through educational strategies to be carried out by parents and teachers (Dennison, Russo, Burdick, & Jenkins, 2004; Ford, McDonald, Owens, & Robinson, 2002; Jason & Fries, 2004). Other approaches proposed by the academic community deal with the issue of advertising regulations. In some European countries, like Belgium, it is forbidden to broadcast commercials before, during, and after children's programs. Sweden has introduced a total ban on TV advertising directed at children under 12 years of age (Valkenburg, 2000). Research is also being conducted about how advertising could be used to promote nutritional messages and influence the adoption of good eating behaviors (Bannon & Schwartz, 2006; McNeal, 2000).

Thus, even though they could be considered regular TV watchers, the students in this study benefited from parental guidance that led them to eat fruits and vegetables

regularly, and found time to exercise. When left on their own, however, the students spent their money with a variety of potentially unhealthy snack foods. Since consumption has become part of the way in which children are brought up and socialized, they should probably receive some kind of formal consumer education, in order to become educated, accomplished consumers (Benn, 2002).

In our opinion, the more disturbing findings were the habit of eating while watching TV and the absence of parental control over the children's TV viewing time. Both situations point to the need of developing educational strategies directed towards the children and their families, addressing the issue of excessive TV viewing and its implications. Aside from the media, schools are influential environments in children's lives, and could serve as effective mediums in relaying information to promote modification of "bad" behaviors and adoption of new, "healthier" ones.

Limitations

Several methodological issues need to be considered when interpreting the findings presented in this study. This study's sample comprised students who volunteered to participate, and therefore may have been more likely to have an interest in matters related to nutrition than others. Also, students may have misreported their eating behaviors to be more socially desirable than they actually are. It also should be noted that the study comprised only one school, therefore, results are necessarily of a local nature and findings may differ from those of other regions or countries. There were, however, a number of strengths to the present study. Conclusions were based on responses from 57 students, which is relatively large for a qualitative study. There was a diverse range of students in the sample, not only from different genders, but also of different ages, and, probably, different classes and parental education levels. This study was of exploratory nature; results suggested that the qualitative approach generated valuable and interesting data that can be tested later on by other methods, such as a quantitative survey to be completed by a larger number of students. Additional work is necessary so that more solid conclusions can be obtained.

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