

Access to television and food choices and preferences of community school children in Papua New Guinea

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Abstract

The purpose of this study was to ascertain whether or not access to television has an effect on Papua New Guinean community school children's food choices and preferences. The participants in the study were 244 pupils between the ages of 7 and 12 from 4 community schools in the Eastern Highlands Province of Papua New Guinea. Data were collected mainly through the use of questionnaires. It was found that the variables of access to television, number of hours children spent watching television during children's hours, and the frequency of food advertisements on television were related to community school children's food choices and preferences of foods they have seen advertised on television. It was also found that of the foods advertised on television, a significant proportion was for sugared foods and foods with low nutritional value.

Key words: schoolchildren, food choices and preferences, access to television, food advertisements, Papua New Guinea, nutrition, diet

Introduction

The purpose of this study was to ascertain whether or not access to television does have an effect on Papua New Guinean community school children's food choices and preferences for food they see advertised on television. Papua New Guinea (PNG) is predominantly an agrarian society in which a greater proportion (about 80-85 per cent) of the total population of about 7.5 million people subsists on indigenous foods. The traditional Papua New Guinean diet is mainly based on a small number of staple crops (sago, taro, sweet potato, cassava), supplements of green leafy vegetables, and protein, notably fish, poultry, and pig meat (Coyne, 1984; Norgan, Durnin & Ferro-Luzzi, 1979). The choice and provision of daily diet varies from one linguistic group and geographical context to the other.

PNG is a nation in transition. Through her colonial history, assimilation and adoption of the dominant Western culture has meant that PNG is transcending its cultures, lifestyles, and indigenous dietary patterns and behaviours from that of the traditional way of life to a more Western style of living. Although a smaller proportion (approximately 15-20 per cent) of the total population is engaged in the monetary sector of the PNG economy (Mead, Fox, Andrew, Zariga & Kesno, 1995), this section of the population is the one that is most influenced and conditioned by the western culture and style of living.

The transition from a traditional PNG lifestyle to a more Western oriented style of living since the colonial era has also involved changes in the mass-media, communication, and technological conditions operating in PNG. These changes are closely related to a rapidly increasing rate of urbanisation which effects, to a great extent, the lifestyles and consumption choices of goods and services available to those engaged in the monetary sector. Papua New Guineans who have migrated into urban centres and are employed by the monetary sector of the PNG economy have also changed their food choices and diet from traditional foods towards a diet resembling that found in most modern westernised societies. This change in diet is manifested by a move away from nutritious local foods to inferior imported foods, a change which has been claimed as the major contributing factor to emerging nutritional problems (Thaman, 1982; Lambert, 1984 & 1979).

Consumption and choices of goods and services available to urban families are determined and constrained by their wage level and what is produced and made available on the consumer market. Moreover, social factors such as family size and social obligations have been identified as major constraints on populations being adequately fed (Pollock, 1995). Fortnightly wages are often insufficient to provide basic nutritious food for urban families hence, most depend entirely on imported rice and canned food for their daily diet (Kow, 1980). In addition, children have shifted from eating traditional foods to the consumption of mass produced snack food products such as potato chips, twisties, soda drinks and biscuits.

Urban dwellers' consumption and choice of goods and services, especially food, are also affected by a number of socioeconomic factors. One of these factors is the mass-media, particularly the television networks which are accessed mainly by the urban population. Television provides entertainment in terms of movies, sports and comedies, current affairs, and a commercial outlet for the families. It also provides the cultural space in which food advertisements are constructed and their assumed advantages are represented and marketed to the urban population, which is its main audience in PNG. Television is utilized by cooperate organisations to market their goods and services by appealing to the sensibilities and the socioeconomic conditioning of consumers. In doing so, they determine and constrain the choices and preferences that families make in terms of what they consume on a daily basis. In particular, television promotes a food culture which is highly westernised and which focuses upon foods typical of a Western culture with its emphasis on fast foods, snacks, and similar convenience foods (Morton, 1990).

Television in Papua New Guinea is not a need but a luxury. However, many families, particularly in urban areas have access to television by owning a television set and renting satellite facilities, through television sets provided in friends' or neighbours' homes or in community centers. Television is also available in many provincial centers of through satellite. Although there is no accurate information about the number of people that are reached by the television networks operating through satellite, it was estimated in 1995 that up

to 400 000—or about one tenth of the total population, had some access to television (Mead, Fox, Andrew, Zariga & Kesno, 1995). This figure is increasing at a very rapid rate as television services are provided mainly by politicians to their electorates to enable their constituents to have access.

Participants and context of the study

This study was carried out in two urban and two semi-urban community schools in the Eastern Highlands Province of PNG. The purposeful sampling strategy was utilized to select the participants. A total of 244 community school children in four different community schools were selected to participate in the study. The sample comprised of 129 males and 115 females. Participants were categorized into two groups based on whether or not they had access to television. The first group (those who had access to television or Group A) had 116 participants while the second group (those who had no access to television or Group B) had 128 participants.

Data collection

Data for this study were collected mainly through the use of questionnaires consisting of closed items, Likert scales, and open ended questions to gain ~~get~~ information from the participants concerning their exposure and viewing of television, and the effect this had on their food choices and preferences. The questionnaire was completed by the participants under the supervision of their classroom teachers in their own homerooms during school hours. Adequate time was allowed to enable all participants to complete all items. Television programs pre-programmed for the period of study by EM TV for the children's hours, 4pm-8pm Monday through Saturday, were attached to the questionnaire and used to determine programs respondents watched and food advertisements aired while they were viewing television.

Data analysis

In the first instance, responses from the respondents were coded for each respondent and variable using the Statistical Package for the Social Sciences (SPSS). The coded data was then analyzed, using mainly percentages, means and standard deviations to show proportions and the level of frequency of variables. These included access to television, number of hours spent watching television, frequency of food advertisements on television, and frequency of purchases of food seen advertised on television.

Results and discussion

Findings on four variables: access to television, number of hours spent watching television between 4pm-8pm Monday to Saturday, frequency of food advertisements seen advertised on television from 4pm-8pm daily, and frequency of purchases of food seen advertised on television by respondents with access to television, are discussed. Findings are also discussed in relation to findings of studies carried out elsewhere.

Access to television

Since access to television is very much central to the focus of this study, respondents were asked to indicate whether or not they have access to television. Table 1 presents the number of respondents with access to television (Group A) and those with no access to television (Group B) by sex.

Table 1: Number of males and females with access and no access to television

	Group A (n=116)		Group B (n=128)	
Gender	No.	%	No.	%
Male	61	53	68	53
Female	55	47	60	47
Total	116	100	128	100

Fifty three percent of males and 47% of females in group A had access to television. Conversely, 53% of males and 47% of females in group B had no access to television. The percentage of males (53%) and females (47%) in group A is proportional to the percentage of males (53%) and females (47%) in group B. Males in both groups have access or no access to television slightly more (6%) than females. This is insignificant and is due to the composition of the sample rather than anything else.

Number of hours children spent watching television between 4pm-8pm in a week

Respondents were shown a table of television programs ran on television during the week. They were asked to indicate the number of hours they spent watching television between 4pm-8pm from Monday-Saturday of that week. Table two presents the frequency of access for those respondents with access to television (Group A).

Table 2: Number of hours spent watching television between 4pm – 8pm in a week

Day	Mean	s.d.
Monday	1.42	.56
Tuesday	1.43	.57
Wednesday	1.75	.70
Thursday	1.55	.54
Friday	1.62	.62
Saturday	1.63	.60
Total	9.4	3.59

Group A (n=116)

Data in Table 2 indicate that respondents with access to television (group A) watched an average of 1.5 hours of television per day between 4pm and 8pm and an average of 9 hours per week over the test period. This is far less than the average viewing time spent by child television viewers in developed countries. Studies of children's exposure to television done in the 1960s and 1970s, especially in the United States and Great Britain (Leibert, Neal & Davidson, 1973, Tindall, et al., 1977), showed that children watched an average of 2 to 2.5 hours per day. However, the number of hours that children between the ages of 7-12 spend watching television has increased since the television industry's formative years (1960s and 1970s) and, varies from one cohort of the population to the other (Adler, et al., 1980).

Leibert, Neale, and Davidson (1973) noted that a study by the British Broadcasting Corporation in 1961 found children aged 5-11 years viewed an average of 2 hours per day. Tindall, Reid and Goodman (1977) pointed out that Australian children's viewing habits based on a survey of 976 children aged 5-12 years revealed an average 2 hours 58 minutes of viewing per day. However, studies of children's exposure to television in the 1980s and 1990s (Morton, 1990, Liebert and Sprafkin, 1988), showed that children spent an average of 3-4 hours per day viewing television. Morton (1990) in a pilot study of 185 year eight high school students' viewing habits, food behaviours and attitudes toward food advertising noted that 33 per cent of the students reported watching three hours or more of television a day. The average of 1.5 hours of viewing time in a day reported by the respondents in this study is far less than research findings of studies on exposure to television completed in the 1980s and the 1990s. This is despite the fact that not everyone who participated in this study has a television set in their home.

The average of 9 hours children spent watching television in a week between 4pm and 8pm, which is often referred to as the children's hours, indicated in Table 2 is nowhere near the average viewing hours generated by studies on children's exposure to television in other countries, especially developed countries. In a study carried out by the A. C. Nielsen Company (1979) in the United States on the weekly viewing activity for children between the ages of 2 to 5 and 6 to 11 between 4:30pm and 11:00pm, concluded that children in the 6 to 11 years age group watched an average of 24 hours and 35 minutes of television from Monday through Saturday or an average of 4 hours and 5 minutes a day. What is more significant about the finding of the A.C. Nielsen company is that the average viewing hours for all children under the age of 12 who watched television from 4:30pm to 11:00pm, Monday through Sunday, accounts for approximately half their average weekly viewing. In addition, Schram, Lyle, and Parker (1961) carried out a study into children's viewing of television and the content of their television programs and commercials between 4pm and 9pm Monday through Friday. They monitored and analyzed a week of television viewing between 4pm and 9pm of children between the ages of 5 and 12 years in later October of 1960 to analyse the conditions under which children view television and the conditions under which television has an effect on them. The authors concluded that children

ages 5 to 12 watched an average of 24 hours a week or an average of 4.8 hours a day. The authors also observed that between 50 and 70 per cent of children watched television between 4pm and 9pm from Monday through Friday. However, this proportion decreased towards bedtime. Heavy viewing time for children began about an hour after school and gradually decreased after 8pm.

The difference in the average number of hours that children spend watching television in a week revealed by these studies could be due to decisions made by researchers concerning the time slots to be studied. Most studies, including this one, used the evening slot from 4pm-8pm or from 4:30pm-9pm, which is popularly known as children's viewing time, because between 50 and 70 per cent of 5-12 year olds view television in this time slot (Schram, Lyle, & Parker, 1961). Other studies utilize the morning sessions between 6am-7am during school days and 8am-10am on weekends, especially on Saturday mornings, while others include all possible hours when children are actually watching television from Monday to Sunday. Data in Table 2 includes all hours between 4pm and 8pm and revealed an average of 9 viewing hours per week and 1.5 hours per day. In addition, the difference could be due to the viewing behaviour and patterns of participants. For example, some children like to eat and watch television at the same time while others may find this behaviour unacceptable and hence refrain from viewing any television at all while eating.

Sylvester, Achterberg, and Williams (1995) concluded from their review of the literature on children's exposure to television that it appears that average reported amounts of daily and weekly television viewing among children and adolescents has remained fairly consistent over the past two decades. The finding of this study is inconsistent with their conclusion. This is perhaps due to the situation that television is a new phenomenon in Papua New Guinea, most households in Papua New Guinea do not own television sets, and only one tenth of the entire population has any access to television (Mead, Fox, Andrew, Zariga, & Kesno, 1995). On a cultural basis television viewing patterns and habits may differ, because in PNG, compared to most developed countries where most research is done on television dynamics, children have to attend to house chores. For example, girls are expected to help out between 4pm and 6pm, baby sit, visit extended family members, play with friends, or entertain guests.

Frequency of food advertisements viewed by respondents with access to television from 4pm-8pm in a week

Respondents with access to television were asked to indicate from a list of television programs produced by EMTV for the test period the programs they watched between 4pm and 8pm, Monday to Saturday. The purpose of this was to ascertain when participants were actually watching television, rather than the specific programs they watched. Food advertisements aired between 4pm and 8pm were then recorded taking into account the viewing patterns of the respondents construed from the information they provided. A census of food advertisements aired on television between 4pm and 8pm was then made at the

end of the test period to ascertain the type of food advertisements children were exposed to while watching television. Foods were grouped into ten groups, grains (rice & bread), chewing gum (PK & bubble gum), soda drinks (pepsi, coke, sprite, & lemonade), canned food (tinned fish & tinned meat), milk drinks (milk & milo), fruit juice/drinks (pineapple, mango, kalamansi, & orange), snacks (twisties, biscuits, & potato chips), fats and oils (butter & margarine), fresh meat (chicken & red meat), and sweets (ice cream, icy cool, lollies & chocolate)

Table 3: Frequency of food advertisements viewed by respondents with access to television from 4pm-8pm in a week

Food category	Number	%
Grains	60	19
Chewing gum	30	9
Soda drinks	43	14
Canned foods	32	10
Milk drinks	25	8
Fruit juice/drinks	12	4
Snacks	52	17
Fats/oils	22	7
Fresh meat	10	3
Sweets	28	9
Total	314	100

Group A (n=116)

Data from Table 3 show that respondents with access to television viewed a total of 314 food advertisements per week or an average of 45 food advertisements per day or 11 per hour of television viewing time. Of the 314 advertisements for food, 66 per cent were for food with questionable nutritional value while the remaining 34 per cent had very little nutritional value.

The literature differs to some extent on the total number of food advertisements, frequency, and the average number of hours that foods are advertised on television. The finding of this study is inconsistent with the literature on the subject. According to Cerexhe (1996), a thirteen nation study carried out in 1996 monitoring the extent of food advertisements on television during children's television reveals that countries differed greatly in the average number and frequency of food advertisements on television as well as the sorts of food that were advertised more frequently.

The difference in the total number of food advertisements per week, average food advertisements per day and per hour could be attributed to the differences in the way various countries regulate and enforce food advertisements on

television. Although results from Table 3 may be similar or nearly similar to countries such as USA, UK, and Australia, the results may be misleading. Most television programs and advertisements on television in PNG are externally controlled. The PNG Government does not have any clear policies and regulations on food advertisements or advertisements in general presented on commercial network television in PNG. Therefore, television operators capitalize on this and advertise products based on their own policies. In this sense, the frequency of food advertisements on television in PNG will be dissimilar to those of other countries because overseas television operators are subjected to far greater regulation in other countries.

However, it is evident from studies carried out on the frequency of food advertisements on television that food of questionable nutritional value is often advertised more than those with nutritional value. Kaye (1979) in an analysis of advertisements directed to children on a Saturday morning found that almost all of the food products were for sweet and sticky snack foods. Winick, Williamson, Chuzmir and Winick (1973) also found from their study of food advertisements on television on Saturday mornings and during the week that cereals, candy, and soda drinks were the most heavily advertised food products in commercials aimed at children. In two more studies, Barcus (1975a, 1975b) found that advertisements for sugared cereals accounted for one in four food commercials and that they outnumbered those for un-sugared cereals by three to one during both weekend and after school programming directed at children. Similarly, Masover (1977) in a study of food advertisements on television during children's viewing time found that 70 per cent of food advertisements promoted products high in fats, cholesterol, sugar, and salt, while only 3 per cent were for fruits and vegetables. Mauro and Feins (1977) in a similar line of inquiry found that only 7 per cent of commercials promoted dairy products, fruits, and breads, the rest were devoted to the easily mass-produced and profitably marketed, but low-nutritional, packaged products. The finding of this study is consistent with the findings of these studies.

A break-down of foods advertised in Table 3 shows that grains, snacks, drinks, chewing gum, and canned food are the foods most frequently advertised. This is dissimilar to the findings of other studies and what the literature reveals about the frequency in which different foods are advertised. A break-down of food categories based on percentages of total food advertised on Australian Channel 7 by Cerexhe (1996) reveals the following order of frequency: breakfast cereals (20%), restaurants (generally fast food outlets) (19%), savoury snacks (18%), desserts (9%), soft drinks (7%), and confectionery (6%).

Data from table 3 shows that there were no food advertisements for fruit and vegetables in the time slot in which the children were watching television. It also reveals that the foods most frequently advertised were snack foods, soda drinks, and sweets or sugary foods. This is in agreement with the above study and similar studies (Cotugna, 1988, Mohr, 1992, Peck, 1979, Morton, 1990, Kotz & Story, 1994). Cotugna (1988) showed in her 12-hour study of advertising on children's television programs on Saturday morning that out of

160 food advertisements 80% were advertisements for foods of low nutritional value. In a study to identify the types of foods advertised and messages used to sell these products, Kotz and Story (1994) showed that 43.6% of foods advertised were classified in the fats, oils, and sweet food group. Food advertisements target the type of food that children are likely to eat. For example, grain, which includes rice, is an important component of the urban Papua New Guinean diet while breakfast cereals are an important component of the Australian diet.

What can be construed from the data presented in Table 3 and findings of previous studies on the same phenomenon is that the sum, frequency, average, and categories of food advertised on television during children's viewing time in PNG differed from findings of similar studies done in other contexts, especially in developed countries. This could be attributed to the choice of groupings of foods utilized by researchers to make sense of their data, advertisers' awareness of children's food choices and preferences, and their cognizance of the dietary patterns and behaviours of children in different cultural contexts.

However, what is salient is the consistency between the finding of this study and findings of similar studies that, of the foods advertised, foods of low nutritional value were often advertised more than foods with nutritional value. The degree of regulation on television advertising and its enforcement and the history of television (how long television has been present and utilized in a particular context, region or country), it seemed, had no bearing on the types of food and the nutritional value of foods that got advertised.

Frequency of purchases of food seen advertised on television reported by respondents with access to television

Respondents were asked to indicate the frequency of purchases of food they have seen advertised on television either by asking their mothers, by self or through the mothers' own choices. Table 4 represents the data on frequency of purchases of food seen advertised on television as reported by respondents with access to television.

Table 4: Frequency of purchases of food seen advertised on television reported by respondents with access to television

	Group A									
	Never		Very Rarely		Sometimes		Often		Total	%
	No	%	No.	%	No	%	No.	%		
Ask Mum	10	9	17	15	62	53	26	23	116	100
Self	10	9	11	9	75	65	20	17	116	100
Mum's choice	10	9	12	10	67	58	27	23	116	100

Overall, Table 4 shows that a greater proportion of respondents with access to television do purchase food which has been seen advertised on television either individually or through their mothers.

Children purchasing food advertised on television either by asking their mothers, by self or from mother's choice is comparable to results of studies done elsewhere on children's viewing of food advertisements on television and the purchase of these foods by asking or pestering their parents. Morton (1990) concluded from a pilot study of 185 year eight high school students that almost three quarters of the children ask their parents to buy their favourite cereal and 58% had that cereal in the house. Furthermore, in an attempt to find out what parents think of television's influence on their children, Morton (1992) found that 91 % of grade one and 75% of grade 8 parents said that their children often or sometimes asked for advertised foods. Moreover, she suggested that the significant difference between the two age groups was probably a reflection of the relative direct buying power of each group. Morton's finding is comparable to the finding of this study that children sometimes or often ask for or purchase foods advertised on television that they have seen. Other studies (Mohr, 1992, Pickard, 1978, Ward & Wackman, 1972, Holman & Braithwaite, 1982) have drawn similar conclusions from their studies on children's access to television and requests for food they had seen advertised on television.

Data from Table 4 indicates that there is some evidence that children in this study request, choose and prefer to purchase and consume foods they have seen advertised on television. This is comparable to the findings of similar studies carried out on the effect of food advertisements on children's dietary behaviour and the amount of time spent watching television (Taras, Sallis, Patterson, Nader, & Nelson, 1989, Goldberg, Gom & Gibson, 1978, Galst, 1980, Gom & Goldberg, 1982, Galst & White, 1976). For example, Taras, Sallis, Patterson, Nader, and Nelson, (1989) concluded from their study of 66 mothers of children aged 3 to 8 years to assess children's viewing habits and requests for advertised food on television, that weekly viewing hours correlated significantly with reported number of requests by children and purchases by parents of foods advertised on television. Similarly, Galst and White's (1976) study of child-mother interaction in the supermarket and children's television viewing habits, found that children's viewing hours correlated with consumption of foods advertised on television and children's attempts to influence their mothers' food purchases.

Conclusion

The results of this study indicate that access to television, number of hours children spent watching television, the number and frequency of food advertisements, and the types of foods advertised on television during the children's hours, Monday through Saturday, are related to children's choices and preferences for food they see advertised on television in several ways. Access to television did have an effect on children's food choices and preferences. Of the total 244 children who completed the questionnaire 47.5 per cent of them reported having access to television while 52.5 per cent did

not. The relatively high percentage of children with access to television is quite significant given the fact that television is a fairly new phenomenon to many in PNG.

The number of hours children spend watching television is also important in their choice and preferences for food they see advertised on television. Children with access to television in this study viewed an average of 9 hours of television weekly and 1.5 hours daily from Monday to Saturday. Despite the fact that children's average weekly and daily television viewing time is well below that of the children in developed countries such as Australia, United States, and England, the food commercials they viewed at these times have significantly persuaded them to buy these foods individually or by asking their mothers. This suggests that the number of hours children watch television per day and per week do not matter as much as the number of food advertisements on television and their persuasive nature which have a greater influence on children's choices and preferences for food they see advertised on television. In addition, the results of this study also indicate that of the 314 food advertisements aired during the test period, 66 percent was for sugared foods or foods of questionable and low nutritional value. This is significant because, it is not only comparable with similar findings in developed countries such as Australia, United States, and England, but despite no earlier data being available, it suggests that the bombardment of children with food advertisements of sugared and low nutritional value is successful in persuading them to purchase and consume these foods.

The relationship between children's access to television, the number of hours children spend watching television, the frequency and types of foods advertised, and children's choices and preferences for food seen advertised on television may be explained in light of research on children's access to television, viewing patterns, food advertisements, and purchases of foods seen advertised on access to television, number of hours spent watching television, and frequency of food advertisements on television are quite clear in their findings. Results show that children's exposure and access to television, regardless of how much time they spend watching television, influences them to purchase what they see advertised on television either own their own or through their parents, especially their mothers. Food advertising is normally over 50 per cent in the low nutritional and sugared foods category and children tend to purchase and consume these foods for snacks (Moody, 1980, Evra, 1980, Mauro & Feins, 1977, Masover, 1977).

The results of this study also indicate that children and their mothers chose and preferred to buy foods they saw advertised on television. Over 76 per cent of the children either buy food they have seen advertised on television by asking their mothers or they purchase the food themselves. Over 80 per cent of the mothers chose to buy the food their children have seen advertised on television without their children asking them. This strongly suggests that both the children and their mothers preferred and chose to buy food seen advertised on television during children's hours. Given the fact that most foods advertised on television are of dubious nutritional value, purchases made by children and

their mothers are most likely to be of low nutritional value. The results of this study also indicate that more than half of the children preferred and chose to eat both the traditional and non-traditional foods at school lunch, after school, and at dinner. However, of the non-traditional foods, more children preferred to consume sugared and low nutritional foods such as ice cream, crisps, soda drinks, and cakes. Children are purchasing and consuming foods of low nutritional value which are consistently advertised and targeted to children during children's hours. The findings of this study have implications on the nutritional condition of children in particular and Papua New Guinea in general.

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